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**eTIR conceptual, functional and technical
documentation:**

Version 4.3:

eTIR technical specifications

Administrative Committee for the TIR Convention, 1975

Seventy- seventh session

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Item 6 of the provisional agenda

eTIR

eTIR conceptual, functional and technical documentation version 4.3: eTIR technical specifications

**Transmitted by the Working Party on Customs Questions affecting
Transport**

Mandate

1. At its 158th session, the Working Party on Customs Questions affecting Transport (WP.30) welcomed the fact that the Group of Experts on Conceptual and Technical Aspects of Computerization of the TIR Procedure (WP.30/GE.1) had completed its mandate on time and that WP.30/GE.1 had agreed on a complete version 4.3 of the eTIR specifications. Recalling Annex 11, Article 5 of the TIR Convention, WP.30 mandated the secretariat to transfer version 4.3 of the eTIR specifications to AC.2 and, more specifically, the countries bound by Annex 11, for consideration and possible adoption of the eTIR concepts and the eTIR functional specifications and to the Technical Implementation Body (TIB) for consideration and possible adoption of the eTIR technical specifications.

2. This document presents the eTIR technical specifications.

Table of contents

	<i>Page</i>
Mandate	1
I. General introduction.....	3
A. Purpose	3
B. Scope	3
C. Target audience.....	4
D. Prerequisites.....	4
E. Applicable documents	4
F. Definitions	5
G. Abbreviations.....	6
H. Availability	8
II. The eTIR international system	9
A. Guiding principles	9
B. Overall architecture of the eTIR system	11
C. Detailed architecture of the eTIR international system.....	18
D. Technical requirements.....	21
E. Development processes.....	32
F. Maintenance processes	43
III. Security of the eTIR system	48
A. Security objectives and principles	48
B. Security requirements	50
C. Security of the eTIR international system.....	57
D. Security of exchanges with the eTIR international system.....	60
E. Security of exchanges between other eTIR stakeholders.....	64
IV. Communication between eTIR stakeholders and the eTIR international system.....	66
A. Interconnection projects.....	66
B. The eTIR data model	69
C. Implementation and tests of the eTIR messages.....	73
D. Requirements and recommendations applicable to eTIR stakeholders.....	86
E. List of eTIR messages	92
F. Declaration mechanisms	332
V. Technical fallback mechanisms.....	336
A. Fault tolerance and system resilience	336
B. Data replication mechanism.....	336
C. Message communication retry mechanism.....	337
VI. Annexes	340
A. Diagram notation	340
B. Technical glossary	340
C. Analysis to determine the needs in terms of capacity and scalability of the eTIR international system	344
D. Information security threats and mitigation measures	349
E. XML and XSD files.....	351
F. Code lists	352
G. Error codes.....	353
List of tables	361
List of Figures	364

I. General introduction

A. Purpose

3. The purpose of the eTIR technical specifications is to translate the eTIR functional specifications into technical requirements, architectures, guidelines, procedures and detailed descriptions of all messages exchanged between the eTIR international system and the eTIR stakeholders.

4. This document is relevant for all eTIR stakeholders (customs authorities, guarantee chains and holders) which need to interconnect their information systems with the eTIR international system. All aspects of these specifications must be considered as mandatory, unless specified otherwise.

5. The main purpose of this document is twofold: to define the technical aspects of the eTIR international system and to define unambiguously how information is exchanged between the eTIR international system and the eTIR stakeholders.

B. Scope

6. This document is divided in six parts: the present general introduction, the eTIR international system, the security of the eTIR system, the communication between eTIR stakeholders and the eTIR international system, the technical fallback mechanisms and annexes and appendices. This section defines the scope and content of these parts.

1. The eTIR international system

7. The eTIR international system is the cornerstone of the eTIR procedure as it receives and records information exchanged with customs authorities, guarantee chains and, possibly, holders. The eTIR international system is developed, maintained, hosted and administered under the auspices of ECE.¹

8. This part starts by defining the three principles that were selected to guide the development activities of the eTIR international system, the rationale for the selection and the implications. It then details the overall architecture of the eTIR system² and the detailed architecture of the eTIR international system, including its components and interfaces. It also details the technical requirements of the eTIR international system i.e. several aspects that are not directly linked with its functionality but that are at least as important to ensure that the system functions well. The development procedures including various guidelines and the list of environments and related procedures are also described to explain the methods followed by ECE for the development and maintenance of the eTIR international system. Finally, the last section is dedicated to the technical requirements related to information security and details the security model of the eTIR system.

2. Security of the eTIR system

9. This part details all aspects of the eTIR system related to information security starting with the objectives, the principles and the requirements. It then describes the corresponding measures and controls put in place to achieve them in the eTIR international system, and in order to secure the data exchanges between the information systems taking part of the eTIR system.

3. Communication between eTIR stakeholders and the eTIR international system

10. In the eTIR system, information systems of the eTIR stakeholders exchange information with the eTIR international system. This part details the technical requirements of the interfaces between the information systems as well as several aspects that the

¹ As per paragraph 1 of Article 11 of Annex 11 of the TIR Convention

² See the definition of the «eTIR system» in section I.F

information systems of the eTIR stakeholders will have to follow. It then describes the web services provided by the eTIR international system and the technical details needed to use them. It elaborates on the architecture and design principles of the implementation of the messages exchanged in the context of the eTIR procedure and provides all technical details. Finally, it explains the interconnection projects that have to be launched by the eTIR stakeholders to connect their information systems with the eTIR international system.

4. Technical fallback mechanisms

11. This part details the technical aspects of the fallback mechanisms that are activated in case of a problem with one or more components of the eTIR international system.

5. Annexes and appendices

12. This final part features the technical glossary and details the notation used for the architecture diagrams. It also presents an analysis to determine the needs in terms of capacity and scalability of the eTIR international system. Finally, it introduces the structure and conventions used for the XSD files and the code lists used in various attributes of the eTIR messages.

C. Target audience

13. This document is prepared for the IT department and IT experts of the eTIR stakeholders that wish to use the eTIR procedure. In particular, this document contains all information needed for the eTIR stakeholders to interconnect their information systems with the eTIR international system.

D. Prerequisites

14. This document should be read after having studied the other documents of the eTIR specifications namely: the introduction, the eTIR concepts and the eTIR functional specifications. In addition, while several key terms and considerations are recalled in this document, a good understanding of the TIR Convention and, in particular, of its Annex 11 is important.

15. It is also assumed that readers have a good understanding of the IT concepts and terminology used in this document, especially related to software engineering. They should also know how web services work and be familiar with SOAP and XML.

E. Applicable documents

16. The following table lists and describes all documents that work in conjunction with the present document to guide the reader on where to find additional information.

Table 1

Applicable documents

<i>Title</i>	<i>Description</i>	<i>Version or date</i>
The TIR Handbook	This document contains the complete text of the TIR Convention, including its annexes (except Annex 11).	2018
Consolidated eTIR legal framework	Annex I of the report of the seventy-second session of AC.2 detailing the adopted changes to the TIR Convention and the text of the new Annex 11 which describes the eTIR procedure.	17 Feb. 2020
Introduction to the eTIR conceptual, functional and technical documentation	This document introduces the conceptual, functional and technical documentation for the eTIR procedure.	4.3.0

<i>Title</i>	<i>Description</i>	<i>Version or date</i>
The eTIR concepts	This document describes the approach and core concepts used to support the business logic, and to implement the eTIR system.	4.3.0
The eTIR functional specifications	The purpose of this document is to translate the eTIR concepts into specifications that enable software developers and message designers to further design the eTIR system.	4.3.0

F. Definitions

17. The following table provides the definitions of several key terms used in this document.

Table 2
Definition of key terms

<i>Term</i>	<i>Definition</i>
Accompanying document	The printed document electronically generated by the customs system, after the acceptance of the declaration, in line with the guidelines contained in the eTIR technical specifications. The accompanying document can be used to record incidents en route and replaces the certified report pursuant to Article 25 of the TIR Convention and for the fallback procedure.
Actor	See “eTIR stakeholder”
Advance amendment data	The data submitted to the competent authorities of the country in which an amendment to the declaration data is requested, in accordance with the eTIR specifications, of the intention of the holder to amend the declaration data.
Advance TIR data	The data submitted to the competent authorities of the country of departure, in accordance with the eTIR specifications, of the intention of the holder to place goods under the eTIR procedure.
Customs office of departure	Any customs office of a contracting party where the TIR transport of a load or part load of goods begins.
Customs office of destination	Any customs office of a contracting party where the TIR transport of a load or part load of goods ends.
Customs office of entry	Any customs office of a contracting party through which a road vehicle, combination of vehicles or container enters this contracting party in the course of a TIR transport.
Customs office of exit	Any customs office of a contracting party through which a road vehicle, combination of vehicles or container leaves this contracting party in the course of a TIR transport.
Customs union	A customs or economic union is composed of two or more member states and form a unique customs territory in the context of the eTIR procedure, provided those member states are contracting party to the TIR Convention and apply Annex 11.
Customs union system	The central information system of the customs union which interconnects the national customs systems of its member states.
Declaration	The act whereby the holder, or his or her representative, indicates, in accordance with the eTIR specifications, the intent to place goods under the eTIR procedure. From the moment of acceptance of the declaration by the competent authorities, based on the advance TIR data or the advance amendment data, and the transfer of the declaration data to the eTIR international system it shall constitute the legal equivalent of an accepted TIR Carnet.
Declaration data	The advance TIR data and the advance amendment data which have been accepted by the competent authorities.

<i>Term</i>	<i>Definition</i>
eGuarantee	In the context of the eTIR procedure, the electronic version of the guarantee described in the TIR Convention and represented by a TIR Carnet in the TIR procedure.
eTIR international system	The Information and Communication Technology (ICT) system devised to enable the exchange of electronic information between the actors involved in the eTIR procedure
eTIR procedure	The TIR procedure, implemented by means of electronic exchange of data, providing the functional equivalent of the TIR Carnet. Whereas the provisions of the TIR Convention apply, the specifics of the eTIR procedure are defined in Annex 11.
eTIR service desk	One of the roles of ECE is to assist the eTIR stakeholders to interconnect their information systems to the eTIR international system.
eTIR specifications	The conceptual, functional and technical specifications of the eTIR procedure adopted and amended in accordance with the provisions of Article 5 of Annex 11.
eTIR stakeholder	An entity being part of the eTIR system and using the eTIR procedure as described in the Annex 11 of the TIR Convention. An eTIR stakeholder uses its information systems to be part of the eTIR system and can be any of the following entities: <ul style="list-style-type: none"> • ECE, with the eTIR international system; • Guarantee chains, with their information systems; • Customs authorities, with their information systems; • Holders, with their information systems.
eTIR system	The set of all eTIR stakeholders, along with their information systems which apply the eTIR procedure as described in Annex 11 of the TIR Convention.
Holder	TIR Carnet holders no longer hold a TIR Carnet in the context of the eTIR procedure, as the goal is precisely to replace the paper TIR Carnet by an electronic guarantee or eGuarantee. However, the term “holder” is retained in the context of the eTIR procedure and represents the same person as described in Article 1, paragraph (o) of the TIR Convention.
Interconnection project	The project started by an eTIR stakeholder to update and connect its information systems to the eTIR international system so that it can start to use the eTIR procedure.
National customs system	The central information system of the customs authorities of a contracting party to the TIR Convention. In the context of Annex 11, this system should be connected to the eTIR international system.
Pre-declaration	Data sent by the holder to the appropriate customs office, prior to presenting the road vehicle, combination of vehicles or container. This can be the advance TIR data, the advance amendment data or the cancellation of previously sent advance TIR data or advance amendment data.
Query mechanism	Set of messages that can be used by eTIR stakeholders (I5/I6 for customs authorities and E5/E6 for guarantee chains) to retrieve information stored in the eTIR international system, related to an eGuarantee, its holder and TIR operations.
Technical Implementation Body	The Technical Implementation Body shall adopt the technical specifications and monitor the technical and functional aspects of implementing the eTIR procedure, as well as coordinate and foster the exchange of information on matters falling within its competence.

G. Abbreviations

18. The following table describes all abbreviations used in this document. The definition of several of these terms and expressions can be found in the technical glossary, available in the appendices of this document.

Table 3
Abbreviations

<i>Abbreviation</i>	<i>Description</i>
AC.2	Administrative Committee for the TIR Convention, 1975
ACE	Arbitrary Code Execution
API	Application Programming Interface
APT	Advanced Persistent Threat
BGP	Border Gateway Protocol
CA	Certification Authority
CAB	Change Advisory Board
CD	Continuous Deployment
CI	Continuous Integration
CL	Code List
CPU	Central Processing Unit
DBMS	Database Management System
DDoS	Distributed Denial Of Service
DMR	Data Maintenance Request
DOD	Definition Of Done
DoS	Denial Of Service
ECE	United Nations Economic Commission for Europe
EDIFACT	Electronic Data Interchange for Administration, Commerce and Transport
GB	Gigabyte
HDD	Hard Disk Drive
HTTP	HyperText Transfer Procotol
HTTPS	HyperText Transfer Protocol Secure
ID	Identifier
IDS	Intrusion Detection System
IDE	Integrated Development Environment
IETF	Internet Engineering Task Force
IPS	Intrusion Prevention System
ISO	International Organization for Standardization
IT	Information Technology
ITDB	International TIR Data Bank
ITIL	Information Technology Infrastructure Library
KB	Kilobyte
KMS	Knowledge Management System
LAN	Local Area Network
MB	Megabyte
MFA	Multi-Factor Authentication
MTO	Maximum Tolerable Outage
MTTR	Mean Time To Recovery
OSS	Open Source Software
OWASP	Open Web Application Security Project
PKI	Public Key Infrastructure
PRD	PRoDuction
PRINCE2	PRojects In Controlled Environments 2
RAID	Redundant Array of Independent Disks

<i>Abbreviation</i>	<i>Description</i>
RAM	Random Access Memory
RBAC	Role-Based Access Controls
SAN	Storage Attached Network
SDLC	Software Development Life Cycle
SSD	Solid-State Drive
SIT	System Integration Testing
SLA	Service Level Agreement
SOAP	Simple Object Access Protocol
SOP	Standard Operating Procedure
SPOC	Single Point Of Contact
SPOF	Single Point Of Failure
TB	Terabyte
TCO	Total Cost of Ownership
TIB	Technical Implementation Body
TIRExB	TIR Executive Committee
TLS	Transport Layer Security
TOGAF	The Open Group Architecture Framework
WSDL	Web Service Description Language
UAT	User Acceptance Testing
UI	User Interface
UN	United Nations
UPS	Uninterruptible Power Supply
UTC	Coordinated Universal Time
UTF	Universal Character Set Transformation Format
VCS	Version Control System
VPN	Virtual Private Network
W3C	World Wide Web Consortium
WCO	World Customs Organization
XML	eXtensible Markup Language
XSD	XML Schema Definition

H. Availability

19. This document is available from the ECE web site and from the web site³ devoted to eTIR where the reader can always find the latest versions of all documents related to the eTIR system, including all technical guides used in the context of the interconnection projects.

³ See ctir.org/documentation

II. The eTIR international system

20. This part describes all the technical aspects of the eTIR international system, and the necessary information is provided to the reader to understand how this system is implemented, managed, hosted and maintained and how it should behave technically.

21. The level of details depends on the aspects being described and not all technical details may be provided for the following two reasons:

- As this document is publicly accessible, certain technical details are voluntarily not mentioned for security reasons. While ECE acknowledges that security through obscurity⁴ should not constitute the only security measure in place, it nonetheless does not wish to divulge too much information that could be used against the security of the eTIR system. Contracting parties wishing to learn more about these additional details can contact the TIR Secretary to organize a study visit of the ECE premises;
- Certain aspects related to the software or hardware products, frameworks or libraries used, as well as implementation facets are subject to regular changes as technology quickly evolves. Flexibility should be given to ECE to be able to freely change these aspects, so that it can address evolving technical requirements (e.g. capacity, scalability, performance) without having to provide an updated version of the technical specifications.

22. Given the fact that several technical details are not mentioned in this document, ECE wishes to remain transparent and demonstrate its professionalism to the contracting parties by detailing its ways of working, its guiding principles and development procedures.

A. Guiding principles

1. Introduction

23. The principles described in this section define the underlying general rules and fundamental values that will guide decision-making activities on the technical aspects of the eTIR international system (e.g. development, hosting, management, maintenance, etc.). The approach to define these three principles is based on the method for expressing architecture principles as detailed in the TOGAF Standard.⁵

2. Principle 1: Information security

(a) Statement

24. Information stored in the eTIR international system is considered confidential and shall be accessible at all times by authorized stakeholders only, by means of eTIR messages that shall be authenticated and secured.

(b) Rationale

25. Articles 7 and 8 of Annex 11 of the TIR Convention set up requirements for authentication and integrity of data.

26. Articles 11 and 12 of Annex 11 of the TIR Convention set up requirements regarding the availability and integrity of data.

(c) Implications

27. The confidentiality, integrity, availability and non-repudiation of information exchanged (data in transit) between the eTIR international system and eTIR stakeholders, and recorded on the eTIR international system (data at rest) should be ensured.

⁴ See en.wikipedia.org/wiki/Security_through_obscurity

⁵ See the TOGAF ® Standard v9.2 : pubs.opengroup.org/architecture/togaf9-doc/arch/chap20.html

28. Information exchanged and recorded in the eTIR international system is classified as confidential information as per the dispositions of the Secretary-General's bulletin titled "Information sensitivity, classification and handling"⁶ and the relevant policies and measures apply.

3. Principle 2: High reliability and quality

(a) Statement

29. The eTIR international system shall be developed and maintained following high standards in terms of reliability and quality, and these standards shall be continuously reviewed and improved.

(b) Rationale

30. A high reliability minimizes the costs to develop, operate and maintain the eTIR international system.

31. A high reliability minimizes the resources required by eTIR stakeholders to develop, operate and maintain the interconnection between their information systems and the eTIR international system.

(c) Implications

32. Proven best practices from the information technology industry should be adopted for the development, operation and maintenance of the eTIR international system.

33. Emerging trends from the information technology industry should be regularly assessed to find ways to continuously improve the development, operation and maintenance of the eTIR international system.

4. Principle 3: Ease of connectivity for the eTIR stakeholders

(a) Statement

34. The eTIR international system shall be designed and documented to facilitate the interconnection of eTIR stakeholders, including the upgrade to new versions.

(b) Rationale

35. Ease of connectivity minimizes the resources required by eTIR stakeholders to develop, operate and maintain the interconnection between their information systems and the eTIR international system.

36. Ease of connectivity minimizes the costs on the eTIR service desk to assist contracting parties in interconnecting their national customs systems to the eTIR international system.

(c) Implications

37. The eTIR international system, its interfaces and documentation should use, to the extent possible, worldwide renowned standards.

38. The necessary documentation should be produced, in addition to the eTIR specifications, to guide and accompany the eTIR stakeholders in their interconnection projects.

39. Thanks to the experience acquired and the feedback received while assisting eTIR stakeholders with their interconnection projects, additional enhancements should be included to continuously improve the documentation and assistance provided by the eTIR service desk.

⁶ See undocs.org/st/sgb/2007/6

B. Overall architecture of the eTIR system

1. Introduction

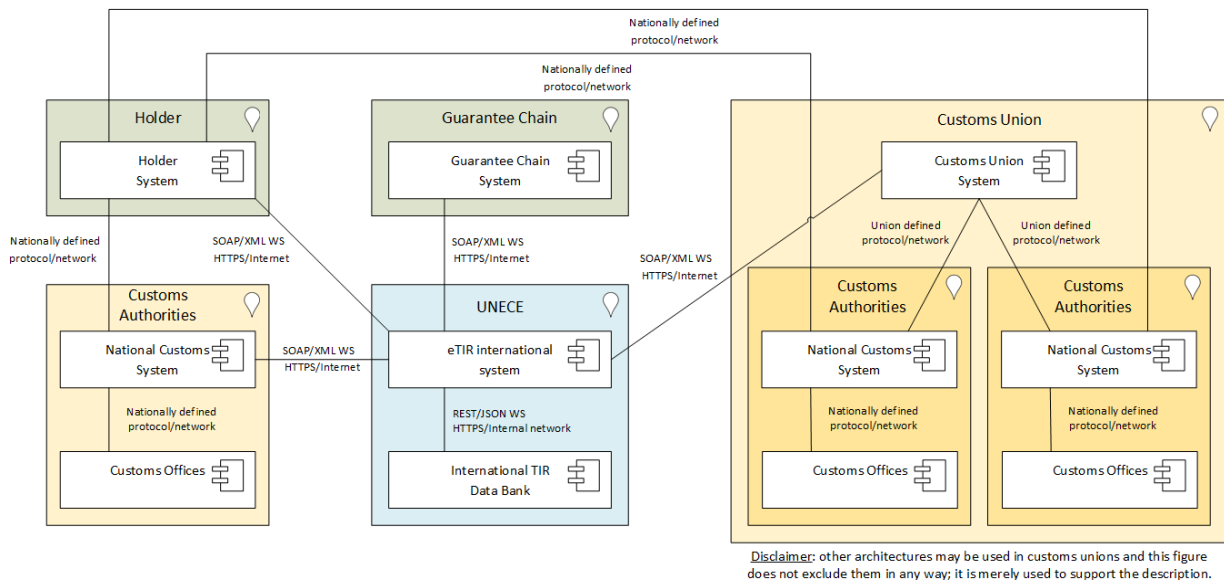
40. This section presents the overall technical architecture of the eTIR system and, in particular, the interactions between the information systems of the different actors of the eTIR procedure. It also provides a more detailed view of each actor's information systems, including the interfaces and the messages exchanged.

41. The diagrams in this section follow the ArchiMate⁷ notations that are described in annex VI.A of the present document.

2. Overview

42. The eTIR system is composed of the interconnection of the information systems of the various actors involved in the eTIR procedure: customs authorities, holders, guarantee chains and ECE. The overall technical architecture presented in the figure below shows the interconnection between the information systems of all actors, including the case of customs unions. The latter could take advantage of information systems and interconnections already set up in the framework of the customs union.⁸

Figure 1
Overall technical architecture of the eTIR system



43. The following sections provide more details of the information systems of each actor, in particular its interfaces and the messages exchanged. In order to avoid repetitions, the interfaces between two information systems are only detailed in the section devoted to the actor that initiates most of the transactions.

3. Customs authorities

44. Customs authorities use information systems to manage customs procedures, such as import, export and transit. The design and architecture of these information systems is the sole decision of each and every customs authority and can therefore greatly vary from one contracting party to another. It is assumed that all customs offices are connected with the central information system of the customs authorities, hereafter called: the national customs system.

45. In order to properly implement the provisions of Annex 11 of the TIR Convention and adapt their information systems to the eTIR procedure, customs authorities must connect their national customs system to the eTIR international system. In the context of the eTIR

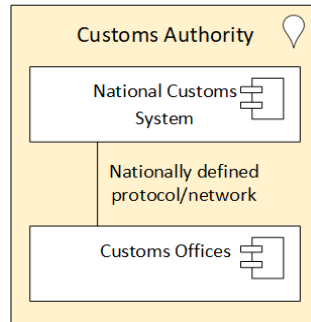
⁷ ArchiMate® 3.0.1 Specification. See: pubs.opengroup.org/architecture/archimate3-doc/

⁸ As proposed in Explanatory Note to article 3, paragraph 2 of Annex 11 of the TIR Convention

procedure, the main actors on the side of customs authorities are customs officers (located in customs offices) who process TIR transports. While it is necessary that all customs offices approved to carry out TIR transports under the eTIR procedure are connected to the national customs system, the way in which these connections are established is defined by each customs authority. Similarly, the user interfaces used by customs officers to handle the eTIR procedure are designed and implemented by each customs authority.

Figure 2

Interactions between the national customs system and the customs offices



46. The customs officers, via their national customs system, exchange information with the eTIR international system using the following messages which allow to:

- accept the guarantee assigned to a TIR transport using the request message “I1 – Accept Guarantee” and its response “I2 – Acceptance Results”;
- verify the authorization of any holder using the request message “I3 – Get Holder Information” and its response “I4 – Holder Information” (this message is optional);
- query all information related to an existing guarantee using the request message “I5 – Query Guarantee” and its response “I6 – Query Results”;
- record the declaration data of a TIR transport using the request message “I7 – Record Declaration Data” and its response “I8 – Record Declaration Data Results”;
- start a TIR operation for the TIR transport using the request message “I9 – Start TIR Operation” and its response “I10 – Start Results”;
- terminate the TIR operation for the TIR transport using the request message “I11 – Terminate TIR Operation” and its response “I12 – Termination Results”;
- discharge the TIR operation for the TIR transport using the request message “I13 – Discharge TIR operation” and its response “I14 – Discharge Results”;
- refuse to start a TIR operation for the TIR transport using the request message “I17 – Refuse to Start TIR Operation” and its response “I18 – Refusal to Start Results”;
- verify the existence of any customs offices using the request message “I19 – Check Customs Offices” and its response “I20 – Customs Offices Validation” (this message is optional).

47. If the customs authorities have a national declaration system available to holders, they may wish also to implement the functionality to send advance TIR data and advance amendment data, using the following optional messages in this direction, to the eTIR international system which will forward them to the customs authorities of the country of departure:

- send the advance TIR data to the customs authorities of the country of departure via the eTIR international system using the request message “E9 – Advance TIR Data” and its response “E10 – Advance TIR Data Results”;
- send the advance amendment data to the customs authorities of the country of departure via the eTIR international system using the request message “E11 – Advance Amendment Data” and its response “E12 – Advance Amendment Data Results”;

- send the cancellation of a previously sent advance TIR data or advance amendment data using the request message “E13 – Cancel Advance Data” and its response “E14 – Cancel Advance Data Results”.

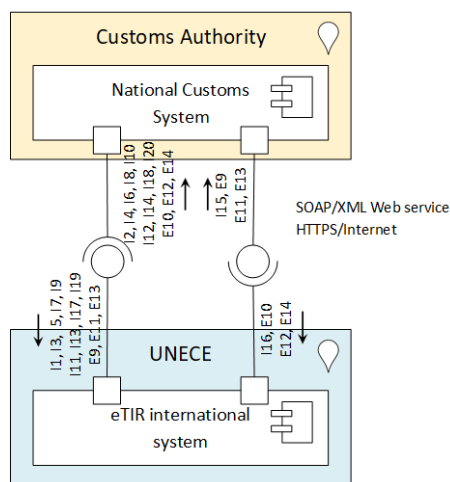
48. In addition, the eTIR international system can notify the national customs system, on specific events related to a TIR transport, using the request message “I15 – Notify Customs” and its response “I16 – Notification Confirmation”.

49. Finally, the eTIR international system can forward information from the holder related to the advance TIR data and the advance amendment data⁹ to the relevant customs authorities using the following messages which allow to:

- receive the advance TIR data sent by the holder via the eTIR international system using the request message “E9 – Advance TIR Data” and its response “E10 – Advance TIR Data Results”;
- receive the advance amendment data sent by the holder via the eTIR international system using the request message “E11 – Advance Amendment Data” and its response “E12 – Advance Amendment Data Results”;
- receive the cancellation of a previously sent advance TIR data or advance amendment data using the request message “E13 – Cancel Advance Data” and its response “E14 – Cancel Advance Data Results”.

Figure 3

Interactions between the national customs system and the eTIR international system



50. All these messages (I1, I2, I3, I4, I5, I6, I7, I8, I9, I10, I11, I12, I13, I14, I15, I16, I17, I18, I19, I20, E9, E10, E11, E12, E13 and E14) are transmitted via HTTPS over the internet using SOAP web services and the data transferred is formatted in XML. Customs authorities should implement all messages, except the following ones that are optional, in these directions:

- From the national customs system to the eTIR international system: I3, I19, E9, E11 and E13;
- From the eTIR international system to the national customs system: I4, I20, E10, E12 and E14.

4. Customs unions

51. Customs unions may have put in place an overarching customs union system to facilitate the exchanges of information between the national customs systems of their member

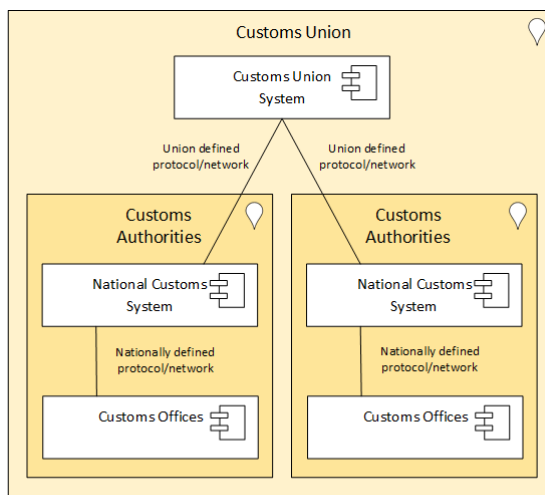
⁹ As per paragraphs 2 and 3 of article 6 of Annex 11 of the TIR Convention

states. The design and architecture of these overarching customs union systems is the sole decision of the customs unions so they can vary from one customs union to another.

52. In order to properly implement the provisions of Annex 11 of the TIR Convention and to adapt their information systems to the eTIR procedure, member states of a customs union may wish to interconnect their national customs systems to the eTIR international system via the customs union system. In such case, the customs union system would then dispatch the messages to the appropriate recipients and, possibly, also act as a converter if the messages exchanged between the customs union system and the national customs system do not follow the eTIR specifications.

Figure 4

Interactions between the customs union system and the national customs systems



Disclaimer: other architectures may be used in customs unions and this figure does not exclude them in any way; it is merely used to support the description.

53. For the rest of this document, we will consider that the interface between the eTIR international system and a customs union system is the same as between the eTIR international system and a national customs system, unless otherwise specified.

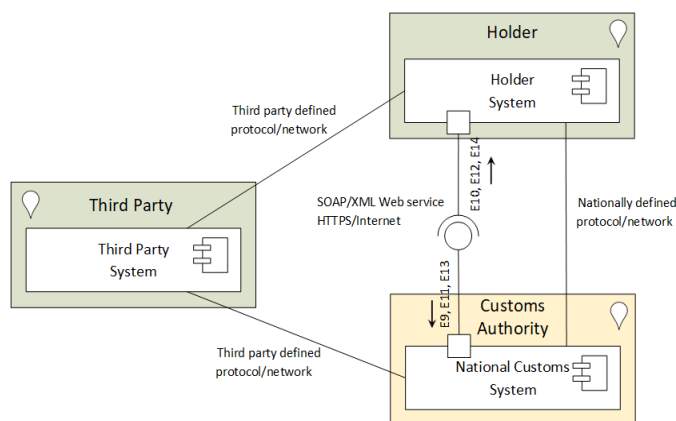
5. Holders

54. Holders have the responsibility to submit to the customs office of departure the advance TIR data of the TIR transport they wish to initiate. The holder can always cancel previously sent advance TIR data and they can resubmit new advance TIR data. Once the declaration has been accepted by the customs office of departure, the holder can send an “advance amendment data” to the next customs office of entry or departure to request the declaration to be amended. The holder can then cancel a previously sent advance amendment data, as long as it has not yet been accepted by customs.

55. Submitting this information to the customs authorities can be done using several electronic means: from a web portal managed by the customs authorities, from a web portal or using web services directly to the eTIR international system, from a web portal managed by a third party, etc. Each and every customs authority shall publish a complete list of the ways of submitting this information.¹⁰ All these electronic means shall submit the information needed in the respective eTIR messages: E9, E11 and E13.

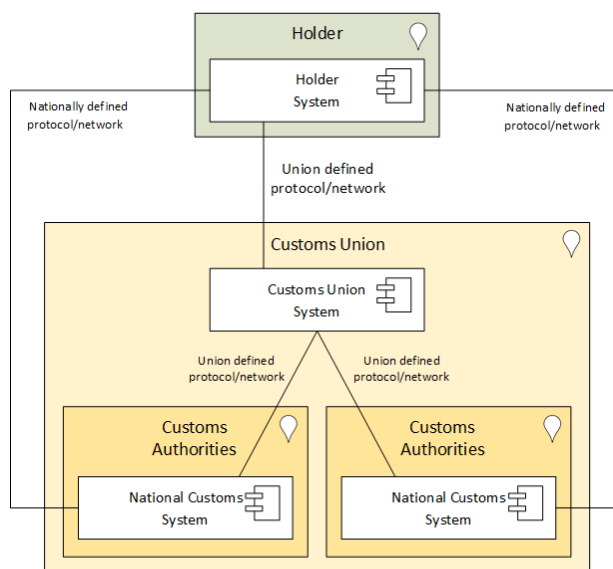
¹⁰ As per paragraph 4 of Article 6 of Annex 11 of the TIR Convention

Figure 5
Possible interactions between the holder system and the national customs system



56. In the case of customs unions, the same approaches exist for holders to submit pre-declaration information to the relevant customs authorities of the member states that compose this customs union. In addition to the means already detailed in the previous paragraph, an additional portal provided at the customs union level might also be available.

Figure 6
Interactions between the holder system and the systems of a customs union



Disclaimer: other architectures may be used in customs unions and this figure does not exclude them in any way; it is merely used to support the description.

57. Finally, holders always have the possibility to submit pre-declaration information to the appropriate customs offices via the eTIR international system¹¹ using a web portal or the following messages which allow to:

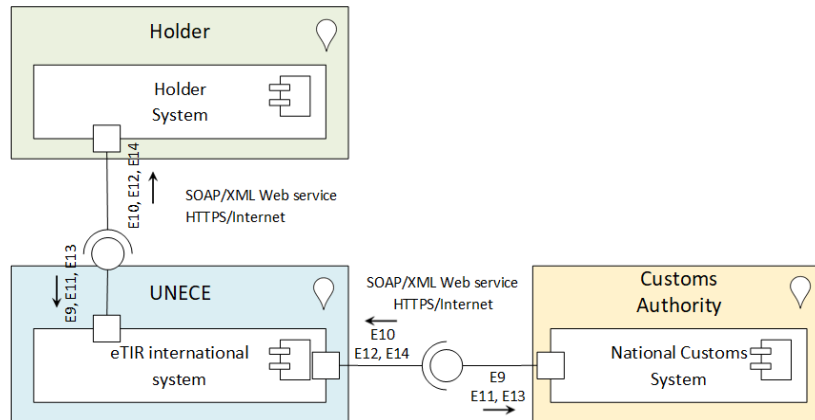
- send the advance TIR data to the customs office of departure via the eTIR international system using the request message “E9 – Advance TIR Data” and its response “E10 – Advance TIR Data Results”;
- send the advance amendment data to the appropriate customs office via the eTIR international system using the request message “E11 – Advance Amendment Data” and its response “E12 – Advance Amendment Data Results”;
- send the cancellation of a previously sent advance TIR data or advance amendment data to the appropriate customs office via the eTIR international system using the

¹¹ As per paragraphs 2 and 3 of Article 6 of Annex 11 of the TIR Convention

request message “E13 – Cancel Advance Data” and its response “E14 – Cancel Advance Data Results”.

Figure 7

Interactions between the holder system and the national customs system via the eTIR international system



58. These messages (E9, E10, E11, E12, E13 and E14) are transmitted via HTTPS over the internet using SOAP web services and the data transferred is formatted in XML.

6. Guarantee chains

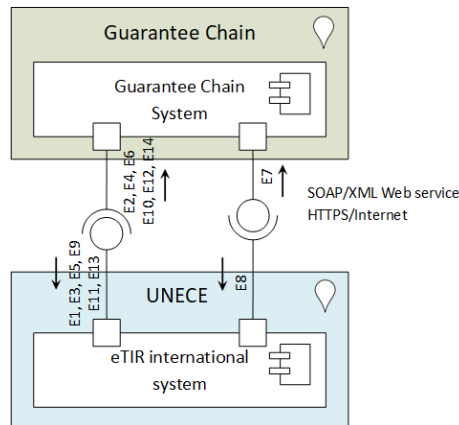
59. Guarantee chains manage the information systems used for the management of electronic guarantees (or eGuarantees) and the exchange of the required data with the eTIR international system using the following messages:

- register a new guarantee using the request message “E1 – Register Guarantee” and its response “E2 – Registration Results”;
- cancel an existing guarantee using the request message “E3 – Cancel Guarantee” and its response “E4 – Cancellation Results”;
- query all information related to an existing guarantee using the request message “E5 – Query Guarantee” and its response “E6 – Query Results”;
- be notified by the eTIR international system on specific events related to an existing guarantee using the request message “E7 – Notify Guarantee Chain” and its response “E8 – Notification Confirmation”.

60. If the guarantee chains have a declaration system available to holders, they may wish also to implement the functionality to send advance TIR data and advance amendment data, using the following optional messages, to the eTIR international system which will forward them to the customs authorities of the country of departure:

- send the advance TIR data to the customs authorities of the country of departure via the eTIR international system using the request message “E9 – Advance TIR Data” and its response “E10 – Advance TIR Data Results”;
- send the advance amendment data to the customs authorities of the country of departure via the eTIR international system using the request message “E11 – Advance Amendment Data” and its response “E12 – Advance Amendment Data Results”;
- send the cancellation of a previously sent advance TIR data or advance amendment data using the request message “E13 – Cancel Advance Data” and its response “E14 – Cancel Advance Data Results”.

Figure 8
Interactions between the guarantee chain system and the eTIR international system



61. These messages (E1, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13 and E14) are transmitted via HTTPS over the internet using SOAP web services and the data transferred is formatted in XML. Guarantee chains should implement all messages, except the following ones that are optional:

- From the guarantee chain system to the eTIR international system: E9, E11 and E13;
- From the eTIR international system to the guarantee chain system: E10, E12 and E14.

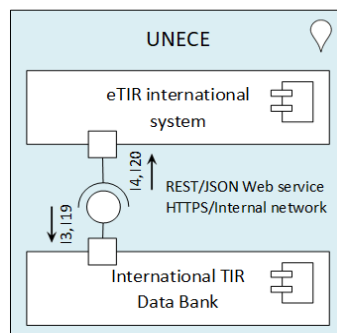
7. United Nations Economic Commission for Europe

62. ECE manages two information systems: the eTIR international system and the International TIR Data Bank (ITDB). The eTIR international system is the cornerstone of the eTIR system and its main role is to receive, validate, record and send data exchanged between the various actors during TIR transports following the eTIR procedure. ITDB is an information system developed under the purview of TIRExB and its main roles, in the context of the eTIR system, are to manage the list of approved TIR Carnet holders and the list of approved customs offices for accomplishing TIR operations.

63. In the context of processing information received in eTIR messages, the eTIR international system queries ITDB (when applicable) to:

- verify the authorization of the holder using the request message “I3 – Get Holder Information” and its response “I4 – Holder Information”;
- verify the existence of the customs offices using the request message “I19 – Check Customs Offices” and its response “I20 – Customs Offices Validation”.

Figure 9
Interactions between the eTIR international system and ITDB



64. These messages (I3, I4, I19 and I20) are transmitted via HTTPS over the secured network of the data centre hosting both information systems, using RESTful web services and the data transferred is formatted in JSON.

C. Detailed architecture of the eTIR international system

1. Introduction

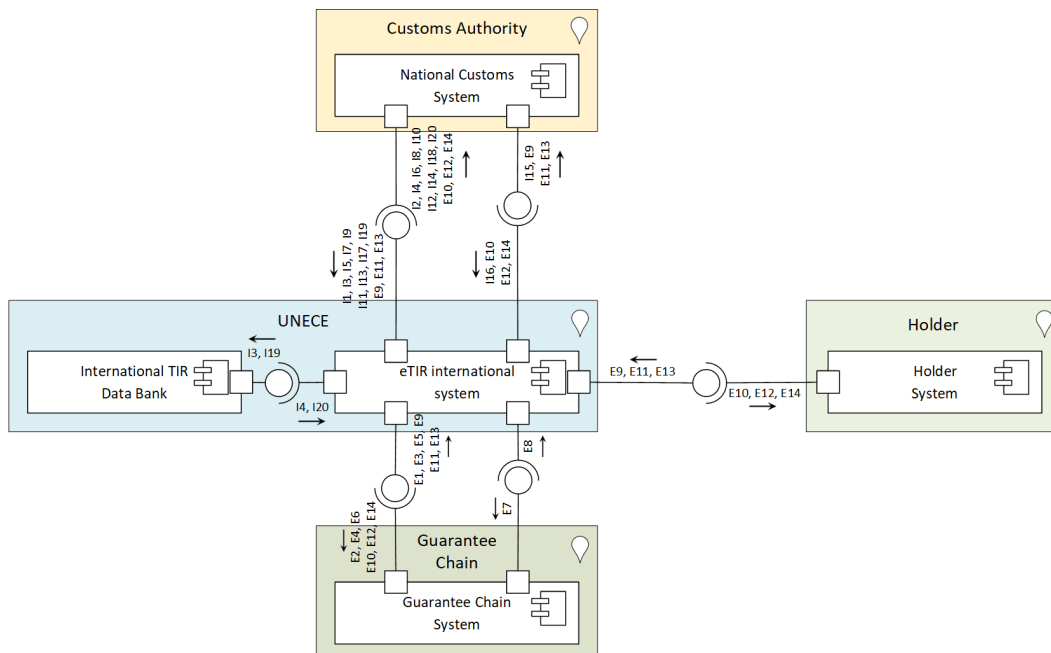
65. This section describes the software and hardware aspects of the architecture of the eTIR international system. In order to remain technology agnostic, this section does not provide information on products, frameworks or libraries used to implement the functions needed by the components. Indeed, as technology quickly evolves, ECE will continuously monitor the available options and perform changes as it sees fit so that the components of the eTIR international system can continue to perform their functions and properly scale over time to match the capacity and performance requirements (see the next section on technical requirements).

2. Interfaces with eTIR stakeholders

66. The interfaces between the eTIR international system and other eTIR stakeholders are already detailed in the previous section. The following figure summarizes them all, by mentioning the message codes and the flow of information.

Figure 10

Interfaces of the eTIR international system



3. Storage locations

67. Messages are processed by the eTIR international system and parts of them are recorded in three different storage locations:

- All incoming and outgoing messages are entirely recorded in the **eTIR logs** to save the data needed to ensure non-repudiation and to provide the information that may be requested by contracting parties;
- Data extracted from the messages is recorded in the **eTIR database** to be used by the query mechanism and for statistical purposes;
- If “attached documents” and “certificates of approval” are embedded into messages (which can be the case in E6, E9, I6, I7 and I15), they are extracted and saved as files in the **eTIR documents**, a separate centralized and secured file system.

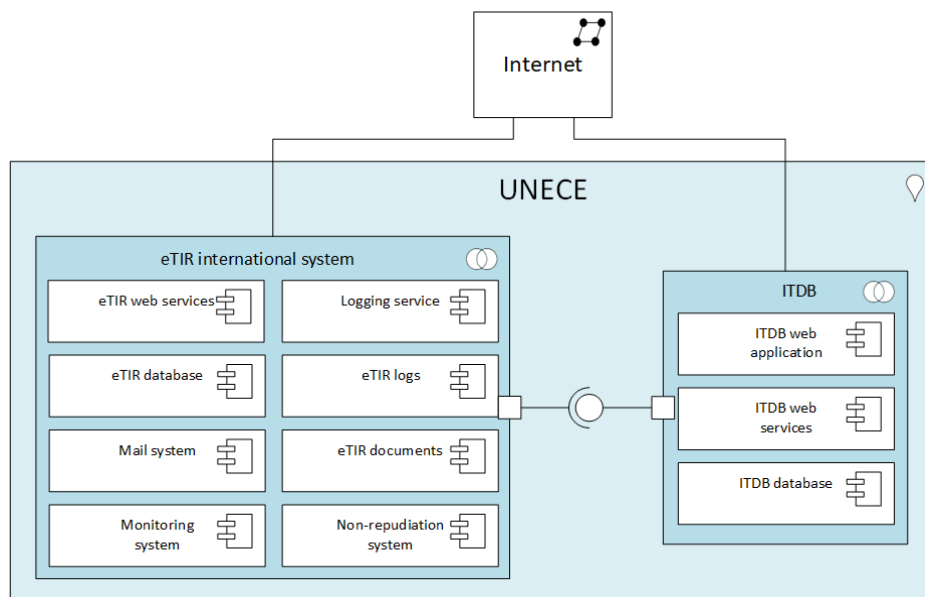
4. Software architecture

68. The eTIR international system relies on the following software components:

- The **eTIR web services** are the core of the eTIR international system where messages are received, validated, processed, recorded and sent;
 - The **logging service** is used to record all messages sent and received by the eTIR international system, as well as all information logged by its other software components, frameworks and libraries.
69. The eTIR international system also relies on the following systems:
- The **mail system** is used to send email messages to eTIR stakeholders on specific occasions, principally during fallback procedures;
 - The **monitoring system** is used to observe the resources and performance of the virtual servers, as well as the availability and performance of the services of the eTIR international system;
 - The **non-repudiation system** will extract data stored in the eTIR logs, index them and feature a user interface only accessible by IT administrators from ECE. This user interface will allow querying the logs to find a particular message (using the unique “Message Identifier”), a pair of request/response messages, and to provide all information needed by contracting parties for verification purposes.¹²
70. The following diagram presents the software architecture of the eTIR international system. The interfaces exposed and consumed by the eTIR international system are not represented, as they are already listed and described in the sections above.

Figure 11

Software architecture of the eTIR international system



71. The technical requirements of the software components of the eTIR international system are listed in the following section. The software components of ITDB are listed for informational purposes as they are managed by ECE, under the purview of the TIRExB.

5. Systems architecture

72. The United Nations entity that hosts the eTIR international system (hereafter the hosting entity) has its own private data centre which is located in a United Nations compound and thus benefits from the privileges and immunities enshrined in the United Nations Charter¹³ and further detailed in the Convention on the privileges and immunities of the United Nations.¹⁴

¹² As per paragraph 3 of article 12 of Annex 11 of the TIR Convention

¹³ See www.un.org/en/charter-united-nations/

¹⁴ See treaties.un.org/doc/Treaties/1946/12/19461214%2010-17%20PM/Ch_III_1p.pdf

73. The hosting entity uses a virtual server farm to provide virtual servers that form the various systems components of the eTIR international system and at the moment, each node corresponds to a virtual server. In a near future, ECE will consider using containers and container orchestration techniques to further ensure the scalability requirements of the eTIR international system while keeping the hosting costs to an acceptable level.

74. The eTIR international system is designed and implemented in a way that limits single points of failure (SPOF) to meet its availability objectives (as detailed in the next section). This architecture also allows to intervene in systems components without having to stop the eTIR international system. This is particularly important to perform regular maintenance activities like replacing defective hardware parts, updating software components and applying security patches.

75. The eTIR international system relies on the following systems components (their technical requirements are listed in the next section):

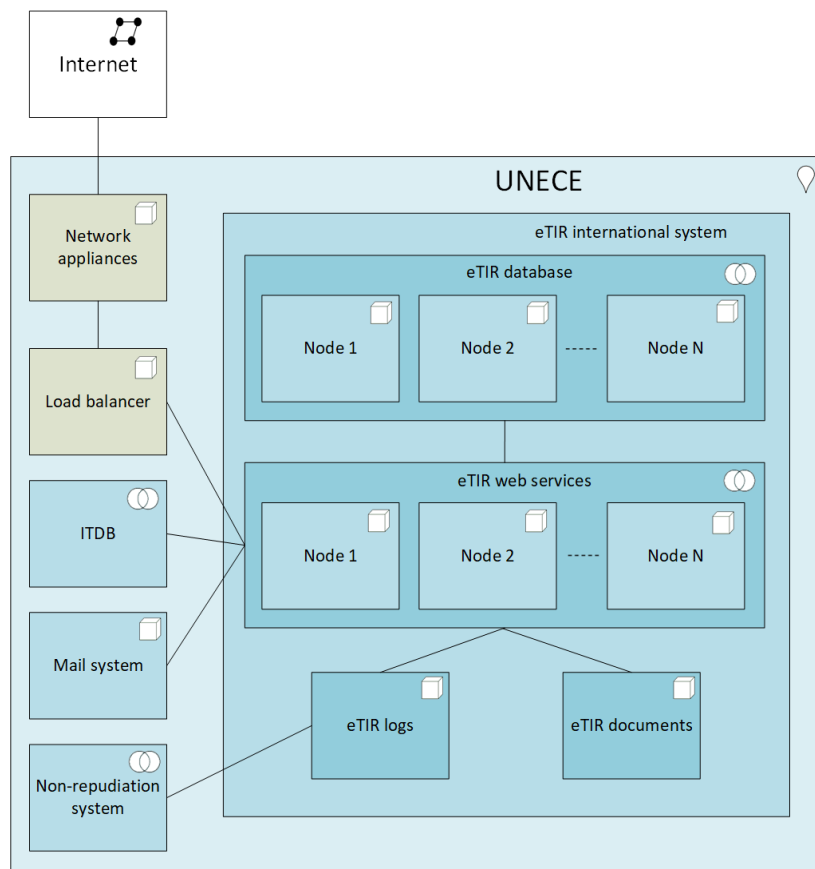
- The **eTIR web services** are the core of the eTIR international system where messages are received, validated, processed, recorded and sent. It consists of several front-end web server nodes to which messages are distributed by the load balancer;
- The **eTIR database** is the core storage location and consists of a clustered database management system (DBMS) using several virtual server nodes and high-performance disk storage;
- The **eTIR logs** is the storage location to which logs are transferred on a daily basis and consists of a virtual server with enough disk space to store all logging information;
- The **eTIR documents** is the storage location to which attached documents are saved and consists of a virtual server with enough disk space to store all documents.

76. The eTIR international system also relies on the following external systems components:

- **ITDB** which has its own systems architecture to meet its availability objectives. In case of unavailability of ITDB, the eTIR international system follows a failover procedure which is described later in the document;
- The **mail system** is provided by the hosting entity and consists of a virtual server only used for sending email messages. The eTIR international system principally uses this external system in case of fallback procedures;
- The **non-repudiation system** is an external administration system which is not directly needed for the proper functioning of the eTIR international system and thus consists of a unique virtual server.

77. The following diagram presents the systems architecture of the eTIR international system.

Figure 12
Systems architecture of the eTIR international system



78. With the following sample scenario, we wish to illustrate the usual exchange of information between systems components. An incoming message sent from an eTIR stakeholder over the internet first gets to the network appliances (BGP router and firewall) of the hosting entity. The message is then transferred to the load balancer system which forwards it to the appropriate node of the eTIR web services (front end web server) which validates and processes the message. This web server then stores relevant data in the eTIR database, in the eTIR logs and, if applicable, in the eTIR documents. Finally, the same web server prepares the response message and sends it back to the eTIR stakeholder who initially sent the request message. For the sake of clarity, additional systems related to network routing and security are not shown in this diagram (routers, switches, firewalls, IDS, IPS, etc.).

D. Technical requirements

1. Introduction

79. This section describes the technical requirements – or non-functional requirements – which must be met by the eTIR international system. Technical requirements specify criteria that can be used to judge how well a system performs its operations and fulfils its mission. These criteria are as important as functional requirements and will drive the architecture and design principles of the system.

80. Each following sub-section describes the requirements of a particular non-functional criterion. These requirements can be qualitative (e.g. the source code must be versioned on Git) and/or quantitative (e.g. the eTIR international system must be available 24 hours per day and 365 days per year). All requirements are given a unique identifier for ease of reference.

81. Quantitative requirements need metrics to be collected to be able to assess whether these requirements are met. Provided these metrics can be revealed without posing a security issue, they may be communicated on a periodic basis to TIB for its information.

82. Given the fact that the eTIR system is based on an exchange of messages using web services and that no user interface is expected to be developed for the eTIR international system (except for internal purposes related to its administration), the following criteria are therefore not applicable and will not be described: accessibility, compatibility and usability.

83. Several quantitative targets will be periodically assessed by ECE and reported to TIB, along with proposals to correct potential deficiencies and further increase the targets. TIB shall then decide whether to apply these proposals or recommend their application to AC.2.

84. Finally, when products, software, frameworks and libraries used to fulfil the requirements, are mentioned, ECE reserves the right to modify its selection later on, as long as there are no costs implications, in order to accrue additional benefits for the eTIR system. The information about these new selections would be communicated to TIB and the next version of the eTIR specifications would be updated accordingly.

2. Availability

85. The availability of the eTIR international system represents the state when it is fully accessible and operable by its authorized users (ECE and all eTIR stakeholders connected to it).

86. The availability of the eTIR international system will be critically important for the proper functioning of the whole eTIR system from the beginning and even more when the number of TIR transports carried under the eTIR procedure will increase. The following tables describe both the qualitative and quantitative aspects of the availability requirements. Several of them will be part of the service level agreement (SLA) to be signed with the United Nations hosting provider (hereafter the hosting entity) which will be selected to host the eTIR international system.

Table 4

Qualitative availability requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
AV.1	Normal maintenance operations for the software and systems components of the eTIR international system are performed transparently as the service remains available.	Design the eTIR international system in a way that avoids single points of failure (SPOF), using several front-end web servers to share the workload, database clustering, duplication of application components, and by possibly using high-availability proxies and orchestration of containers

Table 5

Quantitative availability requirements

<i>Identifier</i>	<i>Description</i>	<i>How to achieve the target</i>	<i>Target value</i>
AV.2	General availability of the eTIR international system	Host the eTIR international system in a UN organization that proposes this level of availability and include it in the SLA.	24 hours per day, each day of the year.
AV.3	Percentage of uptime of the eTIR international system	Normal maintenance operations for the software and systems components of the eTIR international system are performed transparently as the service remains available. Issues with the system are quickly identified and dealt with using standard operating procedures (SOP) and escalation mechanism.	Greater than 99% (i.e. a maximum of 3d 15h 39m 29s of downtime per year).
AV.4	Maximum consecutive eTIR international system downtime in case of a major issue	Monitoring of services, software components and virtual servers is configured and agreed with the hosting provider. Procedures are prepared and agreed in the SLA.	4 hours during weekdays and 24 hours during weekends, per occurrence.

87. Once the eTIR international system starts to be used in production, following the study on measures collected and on the feedback from eTIR stakeholders, ECE or TIB may wish to propose to improve the target values of requirements AV.3 and AV.4 to increase the availability of the service. In this case, ECE would submit to TIB a proposal to improve the above-mentioned target values, along with possible budget implications.

3. Backup

88. A backup is a copy of eTIR related data made and stored elsewhere, in a secured location, so that it can be used to restore them after a data loss event.

89. Each storage location (i.e. eTIR database, eTIR logs and eTIR documents) will be backed up to ensure the requirements are met. The ones indicated in the following table will be part of the SLA to be signed with the hosting entity.

Table 6
Backup requirements

<i>Identifier</i>	<i>Description</i>	<i>How to achieve the target</i>	<i>Target value</i>
BK.1	Frequency of backup of eTIR data	Information stored in the eTIR database, the eTIR logs and the eTIR documents is backed up twice per day and this backed up data is stored in a secured location.	12 hours
BK.2	Maximum time to restore backed up data following a data loss event	Restore procedures are prepared and agreed in the SLA with the hosting provider. Tests are regularly carried out.	6 hours

90. Once the eTIR international system starts to be used in production, ECE or TIB may wish to propose to improve the target values of requirements BK.1 and BK.2. In this case, ECE would submit to TIB a proposal to improve the above-mentioned target values, along with possible budget implications.

4. Capacity and scalability

91. There are basically two aspects to take into consideration regarding capacity management: the throughput of the system (i.e. its ability to process incoming messages and send responses) and the storage of the various pieces of information received. The scalability of the eTIR international system is its capability to handle a growing amount of workload by adding resources to the system.

92. The figures in the following table are based on an analysis performed to determine the needs in terms of capacity and scalability for the eTIR international system and available in annex VI.C. As mentioned in its conclusions, the estimates and forecast in terms of throughput and volume of data are only as good as the various assumptions they are based on. Since the eTIR international system is not yet in operation, this analysis lacks actual data. For this reason, the eTIR international system should be designed while considering the capacity and scalability requirements for the first two years only, as there is a high probability that real data will correct several assumptions, which would change the calculation result and forecast for the next years.

Table 7
Capacity and scalability requirements

<i>Identifier</i>	<i>Description</i>	<i>How to achieve the target</i>	<i>Target value</i>
CP.1	Maximum number of messages to be processed	A queuing component stores incoming messages. Several front-end web servers then pop messages from the queue to be processed under timeout thresholds.	2021: 12 messages per minute 2022: 78 messages per minute 2023: 270 messages per minute 2024: 570 messages per minute 2025: 1200 messages per minute

<i>Identifier</i>	<i>Description</i>	<i>How to achieve the target</i>	<i>Target value</i>
CP.2	Maximum storage dedicated to the eTIR logs	eTIR logs are directly saved on the front-end web servers. On a daily basis, they are moved to a central, secured location which will have enough storage space to aggregate them all.	2021: 371 GB per year 2022: 1.2 TB per year 2023: 4.9 TB per year 2024: 17.1 TB per year 2025: 36.1 TB per year
CP.3	Maximum storage dedicated to the eTIR database	Depending on the actual data received and on regular performance measurements, only the most recent data (last six months for instance) may be kept in the clustered database (while older data is regularly offloaded to a secondary database) to ensure the size of the main database does not negatively impact its performance.	2021: 1.4 GB per year 2022: 4.3 GB per year 2023: 17.9 GB per year 2024: 62.6 GB per year 2025: 133.3 GB per year
CP.4	Maximum storage dedicated to the eTIR documents	eTIR documents are not stored in the database but on a central, secured, file system which will have enough disk space to gather them all.	2021: 100 GB per year 2022: 315 GB per year 2023: 1.3 TB per year 2024: 4.6 TB per year 2025: 9.8 TB per year
CP.5	Maximum size of the messages	Messages need to have a maximum size to prevent degrading the performance of the information systems exchanging and processing them.	20 MB

93. As mentioned in the conclusions of the analysis presented in annex VI.C, ECE shall perform the same analysis six months after the eTIR international system is deployed in production in order to submit to TIB a revision of the above mentioned target values, along with a possible budget proposal.

5. Configuration management

94. Configuration management is the process that tracks all of the individual configuration items of the eTIR international system. A configuration item is an IT asset or a combination of IT assets that may depend on and/or have relationships with other IT processes (e.g. source code, configuration files, procedures, internal documentation, etc.).

95. An appropriate number of measures and procedures related to configuration management is the only effective and sustainable way to develop and maintain a major information system like the eTIR international system and ECE will ensure that the following technical requirements are properly addressed.

Table 8
Configuration management requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
CM.1	The source code of all modules of the eTIR international system should be versioned using a version control system (VCS) to allow for an effective management of this asset.	The source code of all modules of the eTIR international system is versioned using Git and hosted within UN premises.
CM.2	All changes related to the eTIR database should be versioned using a VCS to allow for an effective management of this asset.	All changes related to the eTIR database are versioned using Liquibase and Git and hosted within UN premises.
CM.3	All assets related to the documentation of the eTIR system should be versioned using a VCS to allow for an effective management of this asset.	All assets related to the documentation of the eTIR system are versioned using various VCS depending on their nature and hosted within UN premises.

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
CM.4	All assets related to the internal documentation of the eTIR international system should be versioned and accessible to ECE using a collaboration software to allow for an effective sharing of knowledge and improved productivity.	All assets related to the internal documentation of the eTIR international system are versioned and accessible to ECE on a knowledge management system (KMS) that acts as a secured and versioned collaboration platform hosted within UN premises.
CM.5	All bug reports, feature requests and other issues are logged, managed and eventually addressed using an issue tracking system to ensure that the issues raised by all eTIR stakeholders are properly evaluated and treated with the appropriate level of priority.	All bug reports, feature requests and other issues are logged, managed and eventually addressed using an issue tracking system hosted within UN premises.

6. Data Retention

96. Data Retention defines the policies related to persistent data and records management for meeting legal and business data archival requirements, such as the ones listed in Annex 11. The following table lists the requirements in terms of data retention for the eTIR international system.

Table 9
Data Retention requirements

<i>Identifier</i>	<i>Description</i>	<i>How to achieve the target</i>	<i>Target value</i>
RE.1	Availability of the information stored in the eTIR international system	Information stored in the eTIR database, the eTIR logs and the eTIR documents are backed up on a daily basis and additional copies are made and kept on tapes stored in a separate, secured location, resistant to most disasters.	10 years ¹⁵
RE.2	Retrieval of information requested by contracting parties for verification purposes ¹⁶	Retrieval procedures are prepared and agreed in the SLA with the hosting provider.	Maximum of three days to retrieve the information

7. Disaster recovery

97. Disaster recovery involves a set of policies, tools and procedures to enable the recovery or continuation of the eTIR international system following a natural or human-induced disaster. Disaster recovery focuses on the IT or technology systems supporting critical business functions and can therefore be considered as a subset of business continuity planning.

98. Usually, disaster recovery assumes that the primary site is not recoverable (at least for some time) and represents the set of processes needed to restore the services to a secondary site. In the scope of version 4.3 of the eTIR specifications, it is assumed that only a secondary site of type “warm site” is available for disaster recovery purposes, principally for costs reasons.

99. A “warm site” contains the equipment and data circuits necessary to rapidly establish operations. This equipment is usually preconfigured and ready to install appropriate applications to support an organization’s operations. However, if this secondary site is to be used because the primary site is no longer available because of a disaster, all software components still have to be installed and configured on the servers of the “warm site”. Furthermore, live data from the primary site is not replicated on this type of secondary site in real time but data transactions are only copied on a regular basis.

¹⁵ As per paragraph 1 of article 12 of Annex 11 of the TIR Convention

¹⁶ As per paragraph 3 of article 12 of Annex 11 of the TIR Convention

100. The impact of a disaster is high because it brings the eTIR international system down for an unusual long period of time (typically more than one day). However, the probability of such a disaster occurring is extremely low. The resulting risk is minor in the context of version 4.3 of the eTIR specifications as the number of TIR transports using the eTIR procedure will be low at first and only progressively increase as additional contracting parties interconnect their national customs systems to the eTIR international system. Furthermore, the fallback procedures described in the eTIR functional specifications act as mitigating measures for this risk.

101. The following table lists the disaster recovery requirements for the eTIR international system.

Table 10
Disaster recovery requirements

<i>Identifier</i>	<i>Description</i>	<i>How to achieve the target</i>	<i>Target value</i>
DR.1	The recovery time objective (RTO) ¹⁷ of the eTIR international system, after a disaster.	Prepare a disaster recovery plan with all procedures detailing how to recover the eTIR international system and execute regular tests of this plan.	48 hours
DR.2	The recovery point objective (RPO) ¹⁸ of the eTIR international system.	Regularly and securely send copies of eTIR related data to the warm site. Perform recovery tests.	4 hours

102. Once the eTIR international system starts to be used in production, ECE or TIB may wish to propose to improve the target values of requirements DR.1 and DR.2. In this case, ECE would submit to TIB a proposal to improve the above-mentioned target values, along with possible budget implications.

8. Fault tolerance

103. Fault tolerance is the property that enables a system to continue operating properly in the event of the failure of (or one or more faults within) some of its components. Modern information systems architectures and infrastructure take into account usual technical failures of components like hard disk drives, network connections, power failures and can provide a level of fault tolerance which is transparent to the end users.

104. The requirements listed in the following table provide a first level of technical fallback which does not need to be activated by the eTIR stakeholders. These requirements are mostly fulfilled by the underlying infrastructure and will be part of the SLA to be signed with the hosting entity.

Table 11
Fault tolerance requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
FT.1	Gracefully handle the failure of a physical server, which can be due to a piece of equipment (CPU, memory, motherboard, HDD, network card, etc.) to avoid the eTIR international system becoming unavailable.	An infrastructure based on a virtual server farm relying on several physical servers which manage hot swapping of virtual machines to mitigate such a failure. Architecture based on computer cluster to avoid any SPOF.
FT.2	Gracefully handle the failure of a piece of equipment used by the storage locations (HDD, SSD) to avoid the eTIR international system becoming unavailable.	An infrastructure based on a SAN using a redundant architecture for the disk drives (RAID). Architecture based on computer cluster to avoid any SPOF.

¹⁷ The RTO is the amount of time in which it should be feasibly to recover the IT service in the event of a disaster.

¹⁸ The RPO is the maximum targeted period in which data (transactions) might be lost from an IT service due in the event of a disruption.

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
FT.3	Gracefully handle the loss of internet connectivity to avoid the eTIR international system becoming unavailable.	Double internet connection with two different providers.
FT.4	Gracefully handle power failures to avoid the eTIR international system becoming unavailable.	Racks of uninterruptible power supplies (UPS) and emergency fuel generators to power the data centre with enough fuel in reserve to wait for the power to come back to be refilled with more fuel.

9. Internationalization and localization

105. Internationalization and localization are means of adapting computer software to different languages, regional peculiarities and technical requirements of a target locale. Internationalization is the process of designing a software application so that it can be adapted to various languages and regions without engineering changes. Localization is the process of adapting internationalized software for a specific region or language by translating text and adding locale-specific components.

106. Since the eTIR international system does not have a user interface, the requirements in terms of internationalization are limited to the eTIR messages and how data is stored in the various storage locations. Several approaches have been taken to limit the needs in terms of localization:

- Most of the attributes in the eTIR messages are using code lists. These code lists detail all the possible codes that an attribute can take, which facilitates the transfer of information from one system to another, since all systems are aligned on the same set of code lists. Furthermore, this method avoids having to translate values which therefore do not need to be localized;
- Numbers are expressed using fixed patterns which are clearly defined in the XML Schema Definitions of the eTIR messages. This approach clears any potential ambiguity related to decimal and thousands separators;
- Dates are also expressed using specific patterns either for a date only or for a date and time, including a Coordinated Universal Time (UTC) offset;
- Text fields are kept to a minimum and are used most of the time to represent words that are usually not translated like: identifiers, proper nouns and addresses. A few text fields are used to hold sentences in a given language and the sub attribute “Language, coded” can be used to define the language of the values stored in these text fields.

107. The following table lists the requirements in terms of internationalization and localization

Table 12
Internationalization and localization requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
IL.1	The eTIR messages should be able to handle text values in French, English and Russian.	The character set of the eTIR messages exchanged in SOAP/XML is UTF-8, the content type is “application/soap+xml”.
IL.2	The eTIR database should be able to store text values (from the eTIR messages) in French, English and Russian.	The character set of the eTIR database is UTF-8.
IL.3	The eTIR logs should be able to store the entire eTIR messages as they are received.	The character set of the files stored in the eTIR logs is UTF-8.
IL.4	The eTIR documents should be able to store the attached documents in various languages in addition to French, English and Russian.	The character set of the files stored in the eTIR documents is UTF-8.

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
IL.5	The language of the text values held in the eTIR messages should be identifiable.	The text values are characterized with the “Language, coded” sub attribute which uses a code list to specify the language name.

10. Interoperability

108. Interoperability is a characteristic of a system, whose interfaces are comprehensively detailed, to work with other systems, at present or in the future, in either implementation or access, with full compatibility.

109. The eTIR system is based on machine to machine communication triggered by specific events. Therefore, the interfaces between the various eTIR stakeholders must be clearly defined to ease the interconnection between the systems. Also, in order to further facilitate this interconnection, the interfaces should be based on worldwide renowned standards.

Table 13
Interoperability requirements

<i>Identifier</i>	<i>Description and objectives</i>	<i>How to fulfil the requirement</i>
IT.1	The eTIR data model should be aligned with a worldwide renowned data model to facilitate the connection between the eTIR international system and the information systems of the other eTIR stakeholders.	The eTIR Data Model is fully aligned with the World Customs Organization (WCO). Data maintenance requests (DMR) are submitted by ECE to continuously adapt the WCO data model to the needs of the eTIR procedure.
IT.2	The format and technical specifications of the eTIR messages are following strict guidelines to ensure the electronic exchange of messages is interoperable between information systems.	The eTIR message specifications are following the WCO XML guidelines. Automated compliance tests are also performed to validate this aspect.
IT.3	Information exchanged in the eTIR messages is standardized as much as possible to facilitate their processing by all eTIR stakeholders.	The attributes of the eTIR messages rely as much as possible on code lists from renowned standards (UN/EDIFACT and ISO).
IT.4	eTIR stakeholders should have sufficient time to migrate to the next version of the eTIR specifications while continuing to use the current version of the eTIR specifications.	The eTIR international system will be able to receive, process and send eTIR messages using two versions of the eTIR specifications: the current one and the next one proposed for implementation to all eTIR stakeholders during a specific migration time window which details are described in the release management processes.

11. Maintainability

110. Maintainability is the ease with which a product can be maintained in order to (inter alia): correct defects¹⁹, meet new requirements, make future maintenance easier and cope with a changing environment.

111. A usual pitfall in software engineering and software management is to underestimate the need to continuously invest a reasonable amount of money to maintain and upgrade an information system, in order to prevent having to pay a very high amount of money to refactor it completely because it has not been properly maintained over the years.

112. The IT industry also recognizes that a large portion of the total cost of ownership (TCO) of an information system is spent during the maintenance phase of its lifecycle: usually between 50% to 80%. This highlights the importance of taking the appropriate

¹⁹ See the definition of « defect » in the technical glossary

preventive measures to keep the costs of maintenance of an information system to a reasonable level while ensuring that all exigencies on maintainability are met.

113. In particular, measures should be taken to avoid building a technical debt. Technical debt is a concept in software development that reflects the implied cost of additional rework caused by choosing a poor decision that might yield benefits in the short-term but will increase the costs of maintenance in the long term. Indeed, as with monetary debt, if technical debt is not repaid, it can accumulate 'interest', making it harder to implement changes in the future.

114. The following table lists the requirements in terms of maintainability.

Table 14

Maintainability requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
MT.1	Technical debt should not accumulate on the programming languages, frameworks and libraries used to build the eTIR international system.	The latest stable versions of the underlying programming languages, frameworks and libraries used to build the eTIR international system are regularly reviewed and updates or upgrades are regularly planned. Recurrent reviews of the emerging trends are also performed, and appropriate actions are taken to migrate to better options before a component becomes deprecated.
MT.2	Technical debt should not accumulate on the source code of the eTIR international system.	A static code analysis tool is used to measure the maintainability index of the source code and regular attention is given to reduce the number of issues flagged by this tool. Regular code refactoring activities are also performed to reduce the <i>software entropy</i> ²⁰ of the source code.
MT.3	Knowledge is retained to properly maintain and improve the eTIR international system	The internal documentation of the eTIR international system is managed on a KMS that acts as a secured and versioned collaboration platform between the members of ECE. One of the roles of the IT coordinator is to ensure that the appropriate level of documentation (including SOPs) is prepared and remains updated on the KMS in order to mitigate the risks of turnover and key person. ²¹

12. Performance

115. Performance is the numerical indication, measuring the maximum or optimal possibilities of a hardware, software, system or technical process to perform a given task. In the case of the eTIR international system, the requirements are focused on the response time and the throughput characteristics.

116. Requirements on the throughput of the eTIR international system are already detailed in the section devoted to capacity, respectively with CP.1 and CP.2. Requirements on the response times are detailed in the following quantitative table, while additional requirements related to performance are listed in the qualitative table below.

Table 15

Quantitative performance requirements

<i>Identifier</i>	<i>Description</i>	<i>How to achieve the target</i>	<i>Target value</i>
PE.1	Average response time involving short messages (up to 10KB) measured by the sender from sending the request message to	The eTIR international system is properly designed and free of any logical or technical bottlenecks that could be a performance issue. The management of the eTIR database, writing information to the eTIR	1 second

²⁰ See a definition in the Technical Glossary.

²¹ Key person risk: risk carried by an organization that depends to a great extent on one individual for its success.

	receiving the response message.	logs and connecting to ITDB are all optimized operations.	
PE.2	Maximum response time involving short messages (up to 10KB) measured by the sender from sending the request message to receiving the response message.	Enough nodes are provisioned for the eTIR web services software components to be able to cope with all requests. Enough nodes are provisioned for the eTIR database to be able to cope with all requests.	10 seconds
PE.3	Maximum response time measured by the sender from sending the request message to receiving the response message.	The maximum size of the eTIR messages is set to 20 MB. The connection of the eTIR international system to the Internet has a high bandwidth (over 100 megabits per second).	The timeout is set to 60 seconds

Table 16
Qualitative performance requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
PE.4	Performance metrics of the eTIR international system should be monitored to identify any potential problem.	Metrics related to performance are logged at different key points during the reception of a request message, its processing, recording and sending of the response message. These metrics are monitored to raise an issue for ECE to investigate when their values increase above specific thresholds.
PE.5	Performance metrics of the eTIR international system remain stable or get better over time.	A load testing tool is used to perform automated load tests when new developments are introduced in the eTIR international system to ensure no sensible regression – in terms of performance – is introduced.

13. Reliability

117. Reliability is the ability of an information system to cope with errors during execution and cope with erroneous input. It also encompasses the set of practices followed to ensure that the objectives in terms of quality are met. Maximizing the reliability of the eTIR international system is the essence of the second guiding principle that is followed by ECE.

118. In order to ensure this objective and a high overall quality for the eTIR international system, the following proactive practices are put in place:

- Guidelines are established within ECE on the following aspects of the eTIR international system: development, deployment, operation and maintenance. These guidelines form a common set of rules and practices that ensure predictable, high-quality results;
- Strict versioning procedures exist to ensure that all changes brought to the source code of the eTIR international system and the structure and contents of the eTIR database can be traced back to a requirement entered in the issue tracking system;
- Code reviews are performed to decrease the probability of adding unwanted side-effects (defects) to the source code and to ensure that the coding guidelines are followed;
- All changes to the source code (either to introduce a feature or correct a defect) are accompanied by the appropriate automated tests to ensure that no regression is introduced in the source code;
- The source code is regularly checked by a static code analysis tool to determine several indicators related to maintainability, reliability, security, code coverage and code duplication. The issues raised by this tool are addressed by ECE to meet quality objectives (quality gates) previously set;

- A continuous integration (CI) pipeline is in place to automatically perform several operations during the development of the eTIR international system to ensure a high level of reliability and quality.

119. In addition to proactive practices, the following reactive practice is also put in place to be able to identify issues and solve them as soon as possible:

- The monitoring system continuously watches several indicators and metrics associated with the software and systems components of the eTIR international system to detect any issue and raise the appropriate alerts for a quick resolution of the issue (depending on its severity).

120. The following tables list the requirements in terms of reliability.

Table 17

Quantitative reliability requirements

<i>Identifier</i>	<i>Description</i>	<i>How to achieve the target</i>	<i>Target value</i>
RL.1	Number of remaining issues with the highest severities found by the static analysis tool	Check the source code using the static analysis tool on a regular basis and correct any issue with the highest severities as a high priority.	0 (all issues of this kind should be corrected)
RL.2	Number of remaining issues with a normal severity found by the static analysis tool	Include checking the source code using the static analysis tool in the CI pipeline to provide a quick feedback and improve the ways of working.	Less than 150
RL.3	Percentage of functional source code covered by automated tests (code coverage)	Code reviews and development guidelines ensure that any change to the source code is accompanied by the appropriate number of automated tests.	More than 60%
RL.4	Percentage of duplicated source code (code duplication)	Regular reviews of the code to ensure no code duplication is introduced.	Less than 3%

121. ECE will regularly review and restrict the targets set for the quantitative reliability requirements listed in the above table to continuously increase the overall quality of the source code of the eTIR international system.

Table 18

Qualitative reliability requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
RL.5	All changes to the source code are made in a way that decreases the probability to introduce issues.	Specific guidelines and best practices are followed by ECE while developing the eTIR international system. Automated tests allow to immediately flag any regression introduced. Commits which do not pass specific quality gates are rejected.
RL.6	All changes to the source code are linked to a requirement to ensure proper traceability.	The VCS used for the source code and the issue tracking system are connected. It is possible to find the issue related to a specific commit in the VCS and all commits need to reference an issue.
RL.7	Eliminate as many redundant, manual and error-prone tasks from the development procedures.	Put in place a CI pipeline that relieves IT experts from mundane tasks and allow to give them a quick feedback on the quality of the change they bring to the source code.

14. Reusability

122. Reusability is the use of existing assets in some form within the software product development process. These assets are products and by-products of the software development

life cycle (SDLC) and include code, software components, test suites, designs and documentation.

123. The main objective of reusability is to stop “reinventing the wheel”. In modern software engineering and with the use of object-oriented programming languages, it is easy to reuse existing software components. In addition, this approach is pertinent not only for software components but also for methods and frameworks as a lot of experience and good practices have been used to formulate these standard approaches. Here are the ones used in the development of the eTIR system:

- Project management: The UN secretariat has selected the PROjects IN Controlled Environments - PRINCE2® project methodology and ECE has tailored this method to apply it to the management of its projects;
- Enterprise architecture: ECE is using several aspects of The Open Group Architecture Framework - TOGAF® for its needs in terms of architecture;
- Software development: ECE is following an Agile methodology to develop and maintain the eTIR international system and apply several DevOps practices;
- Service management: ECE is using several aspects of the Information Technology Infrastructure Library - ITIL® for its procedures related to the eTIR service desk and its relationship with the UN entity hosting the eTIR international system;
- Security awareness: ECE is using several aspects of the Open Web Application Security Project - OWASP® to learn about the latest security threats and best practices.

124. Most of the times, selecting an element to be reused should be preferred rather than develop it oneself. Indeed, if the scope of functionality matches the requirements, it is usually quicker and less costly to select an existing element to be reused. In terms of software component or product, this can either be a piece of Open Source Software (OSS) or some proprietary software. In the decision-making process, the following aspects should be considered: TCO (including training and support), maturity and sustainability of the solution, advantages and disadvantages.

125. The following table lists the requirement in terms of reusability.

Table 19

Reusability requirement

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
RU.1	Reuse existing methods, frameworks, software and systems components to save time and achieve higher quality outputs	In case of a new requirement or during the regular assessment performed on currently reused elements, ECE looks for available options and applies its decision-making approach to select the best option.

15. Security

126. All security related aspects and technical requirements of the eTIR international system are described in the dedicated part “Security of the eTIR system” later in the document.

E. Development processes

1. Introduction

127. This section describes the processes followed by the Information Technology (IT) experts of ECE (hereafter “the IT experts”) to develop the eTIR international system so that contracting parties to the TIR Convention and the other eTIR stakeholders have a clear understanding of these aspects. Being transparent about these processes also provides an opportunity to all eTIR stakeholders to suggest proposals for improvement with the ultimate objective to have a more effective and efficient eTIR system in the long term.

2. General guidelines

128. The IT experts have taken the time to prepare, discuss and adopt their own internal guidelines related to all aspects of the development and maintenance of the eTIR international system. Proven best practices from the IT industry and experience acquired by the IT experts drive the formulation of these guidelines. Nevertheless, they are not set in stone and the IT experts will continuously strive to identify opportunities to improve them. This is especially important in an area of expertise such as Information and Communication Technology, that is evolving so quickly.

129. While preparing and improving guidelines, as well as in all decision-making processes, the IT experts are inspired and steered by the three guiding principles detailed at the beginning of this document.

130. When taking a technical decision on any aspect related to the eTIR international system, the IT experts follow the usual best practices in decision-making process, like the ProACT model²². The time needed to explore and study emerging trends, approaches and possible products is invested. Possible options are then formulated, their respective advantages and disadvantages are listed and then a decision can be taken to select the best option. Decisions are documented, along with the rationale that led to this choice, to keep proper institutional memory.

131. Finally, the IT experts also recognize and take into account the Pareto principle²³ in their decision-making process to find the optimum in achieving most of the benefits in the least amount of time possible. This principle is usually confirmed when it is applied in software engineering and it becomes even more pertinent in times of difficult economic situations to ensure funds are wisely spent.

3. Development methodology

132. The development of a major information system such as the eTIR international system requires following an IT project methodology to be successful. In the short – although intense – history of IT, several paradigms and models have been proposed and extensively tested (e.g. Waterfall, V model, Prototyping, Incremental, Agile, etc.). In 2001, emerging from several new agile methodologies (e.g. eXtreme Programming and Scrum), a major breakthrough was achieved with the establishment of the Agile Manifesto²⁴ and its twelve principles. Since then, many IT projects were conducted using agile methodologies which offer the best chances of success for such complex endeavours.

133. ECE has chosen to follow an agile methodology close to Scrum and Kanban to develop the eTIR international system. This approach focuses on the following objectives: developing valuable and working software, being able to quickly respond to change, instil a high level of quality and above all, satisfying the beneficiaries.

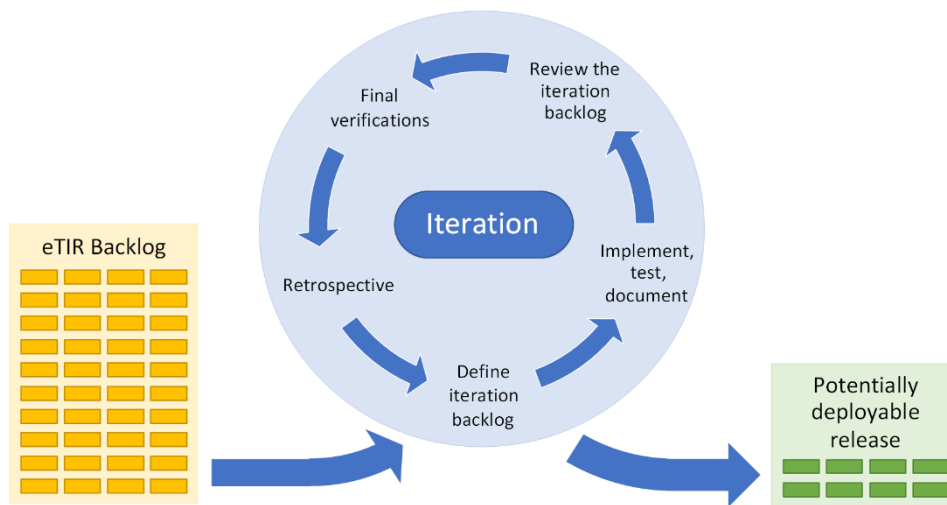
134. All the work that needed to be done is broken down into tasks (hereafter referred to as “issues”) and maintained in a list, called the eTIR backlog. Development is performed by iterations of several weeks. At the beginning of each iteration, the IT experts select from the eTIR backlog a set of issues to define the iteration backlog. During the iteration, the implementation, testing and documentation activities are performed on these selected issues which are then reviewed towards the end of the iteration to define the final scope of the iteration (as several unfinished issues can be removed from the iteration). After a last stage where final verifications are performed on the quality of the iteration, the output of the iteration constitutes a potentially deployable release.

²² See www.project-management-skills.com/decision-making-model.html

²³ See en.wikipedia.org/wiki/Pareto_principle

²⁴ See agilemanifesto.org

Figure 13
Development by iteration



135. Keeping in mind that the eTIR international system should be developed once and then properly operated and maintained indefinitely, ECE has also chosen to adopt several practices from the DevOps movement which aim at preventing issues that may arise while moving from the development phase to the operational phase of the project. These practices are the following (which are further described below): invest in automated testing, rely on continuous integration, analyse telemetry and perform blameless post-mortems.

4. Development guidelines

136. Standard coding guidelines and abundant IT literature²⁵ on the subject constitute the cornerstone of the development guidelines. The underlying technology stack of the eTIR international system is Java and the IT experts use a modern and renowned integrated development environment (IDE) to program effectively with this language and related ecosystem. This IDE also allows integrating some of the development guidelines (access to the VCS, static code analysis tool, code formatting rules).

137. The IT experts use Git as the VCS of the eTIR international system and follow the usual best practices related to this product. Modifications brought to the source code are regularly committed and pushed to the central repository to be shared between all developers and prevent any loss of work in case of a workstation malfunction. Large developments are usually performed on separate branches. Finally, pushing code changes to the central repository requires prerequisites steps (detailed in the next sections) to ensure that each contribution has a high quality.

5. Logging guidelines

138. The logging service of the eTIR international system is very important as it produces the data needed for the non-repudiation system and for producing the metrics required to monitor the global health of the system. As explained in DevOps practices, these metrics (or telemetry) are the only way for the IT experts to monitor the eTIR international system in operation, and to be alerted of any issue arising and, thus, being able to efficiently resolve the issue even before being contacted by end-users.

139. The logging service generates several files, each having its own function. Each entry to a logging file is accompanied with the date and time information when it occurred and a potential severity:

- **eTIR messages:** all contents of the incoming and outgoing messages are saved into a file to store the entire communication threads between the eTIR international system and the information systems connected to it. This data is then used by the non-

²⁵ In particular from authors Kent Beck, Martin Fowler and Robert C. Martin

repudiation system and can be retrieved upon request by the contracting parties to the TIR Convention;

- **Database:** all queries to the eTIR database are saved in a file along with the time needed to perform these queries. This allows to continuously measure the performance of these queries and give indicators to the IT experts to identify and remove potential bottlenecks as well as better plan for future scalability requirements;
- **ITDB:** all calls made to the interface with the ITDB are saved in a file along with the time needed to perform these queries. This allows to continuously measure the performance of these calls and give indicators to the IT experts to further optimize this interface;
- **Application:** all events occurring in the eTIR web services module are saved in a file to store the whole history of events which is used by the monitoring system to alert on any serious issue occurring in real time with the eTIR international system. This data is also used when investigating a past issue to identify its root cause.

6. Testing guidelines

140. Tests are a vital part of software engineering. IT history consistently shows that without proper attention dedicated to this aspect, software projects have a substantially higher probability to fail. Tests can either be manually or automatically executed. In the case of manual execution, the tester follows a series of steps to interact with the information system to be tested and compares the actual results he or she gets with the expected results. If they match, the test is successful and if not, it is a failure. Manual tests are the most obvious action a software engineer can immediately apply on a newly developed piece of software to verify if it works as expected. However, the biggest impediment of manual tests is that they rely on a person to execute them, which is not cost-effective and error prone. Moreover, they only verify the state of the system at the moment they are executed and their result (success/failure) is therefore no longer relevant when the conditions change (the source code is updated, the environment settings are updated, etc.).

141. Nowadays, in modern software engineering practices, it is acknowledged that manual tests are no longer sufficient to ensure high reliability and quality for the information system being developed. As explained in the related DevOps practices, tests now need to be automated to be executed on specific frequent events (when the conditions change, as mentioned above) to ensure that no regressions are introduced. Indeed, when implementing new features or correcting defects in the source code, software engineers always risk bringing in unwanted side-effects (like defects). In order to solve this inherent problem of software engineering, automated tests have to be implemented to verify any change being brought to the source code. It is important to keep in mind that this investment in time in implementing automated tests always pays off. Indeed, when automated tests are absent, the number of defects is much higher, and the time needed to investigate and correct them is substantially higher than the time needed to implement automated tests. In addition, regular issues experienced with systems because of defects can frustrate their users and cause severe reputational damage to the entity in charge of the system.

142. There are several types of automated tests that have their own characteristics that complement one another:

- **Unit tests:** tests written to check that a piece of software (known as the "unit") meets its design and behaves as intended. In object-oriented programming languages like Java, the unit is often an entire interface, such as a class, but could also be an individual method. The goal of unit testing is to isolate each part of the program and show that the individual parts are correct. A unit test provides a strict, written contract that the piece of code must satisfy. Unit tests are usually quick to implement and then to execute;
- **Integration tests:** tests written to check that software modules are combined and tested as a group. Integration testing is conducted to evaluate the compliance of a system with specified functional requirements. It occurs after unit testing and before validation testing. Integration testing takes as its input modules that have been unit

tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for validation testing;

- **Performance tests:** tests written to check that a software system meets its performance requirements. This family of tests also includes tests written to simulate a given load (high number of queries) applied to the software. This type of tests is important to verify that the performance of the software does not degrade over time, in particular when new features are added;
- **Validation tests:** tests written to check that a software system meets its specifications and that it fulfils its intended purpose. Usually these tests are the most complex and costly to implement and maintain, as they involve simulating actions performed by end users on the user interface (UI) of the system. In the specific context of the eTIR international system, there is no UI, as data is exchanged automatically with the information systems of the other eTIR stakeholders using the eTIR messages. This approach allows for a very easy and efficient way to perform validation tests, as each test request message sends back a response message that can be validated to ensure the system behaves as expected;
- **Conformance tests:** similar to the validation tests, this type also includes, in the context of the eTIR system, the necessary tests to ensure that a representative set of simulated TIR transports is properly managed by sending and receiving a specific sequence of eTIR messages that are checked to validate entire scenarios. These tests can also focus on testing the information system of one particular eTIR stakeholder, or they can also include several of them to better replicate real TIR transports following the eTIR procedure.

143. When writing automated tests, software engineers also need to ensure that most (if not all) relevant lines of the source code are covered and validated. In particular, software engineers need to ensure that all paths in the source code are covered with tests (this practice and related metrics are called “branch coverage”). In addition to an appropriate “code coverage”, software engineers also need to make sure that the assertions validating the source code are pertinent and comprehensive, otherwise the tests are not achieving their objective.

144. As described above, achieving a good code coverage is the only sustainable way to develop and maintain an information system and the IT experts have integrated this objective and related practices in the development processes. When a new feature is implemented, the appropriate number of unit and validation tests should be written to meet the code coverage objective. When a defect is corrected, one or more tests should be written to prevent the same issue from occurring again.

7. Static code analysis

145. Static code analysis consists in automatically examining the quality of the source code of a piece of software without actually executing this software. This examination is performed by a tool which is loaded with programming rules and best practices, most of them being defined over the years by the worldwide community of IT experts. Static code analysis is a very efficient way to perform a first check on the quality of the source code and an excellent complement to targeted manual code reviews performed by the IT experts on the source code.

146. While acknowledging the usefulness of this type of automated tool, the IT experts also recognize the need to jointly review the pertinence of several rules, given the specific context of the eTIR international system. As a result, the IT experts configure rules and their severity to best match this context.

147. Static code analysis is regularly performed on the entire source code of the eTIR international system and, in addition, the IT experts also benefit from the integration of this capability in the IDE they use for programming, which gives them an immediate feedback on the quality of the code they produce.

148. The objective is to progressively increase the quality of the source code and maintain it at a very high level throughout its lifecycle. This increases the reliability and

maintainability of the source code and, eventually, saves time to the IT experts, which increases their productivity. This objective is performed in two phases: progressively increasing the quality of the source code and maintaining it at a high level.

149. During the first phase, the IT experts set low quality gates²⁶ in the static code analysis tool and correct as many issues as needed to meet these targets. Once these low targets are met, they are gradually increased, and the IT experts continue working on solving issues to meet the new targets. Once the quality gates reach a level deemed sufficient by the IT experts²⁷ (also by taking into account the Pareto principle), the second phase can start.

150. During the second phase, the objective is to continue developing and maintaining the eTIR international system while continuing to meet all quality gates. Additional measures can be put in place to send a notification to the IT experts if one of these quality gates is breached following the update of the source code, so that the IT experts can immediately look into this issue to solve it.

8. Continuous integration (CI) pipeline

151. In software engineering, CI is the practice of merging all developers' working copies to a shared mainline several times a day. This practice is not new (it dates from the 1990) and was continuously refined and expanded to finally get to the current DevOps practices, known as continuous integration and continuous deployment (CD) or CI/CD. The IT experts have chosen to focus on CI to start with, and once the appropriate maturity level is reached, they may consider also adopting the CD practice, which requires solid foundations.

152. Nowadays, the definition of CI reflects to the automation of all steps related to the integration and verification of changes in the source code of a software. CI allows software developers to get quick feedback on the quality of the code they commit to the VCS by executing all automated tests against a newly built and deployed version of the software, which contains the latest modifications brought to the VCS. CI relieves software developers from mundane, error-prone tasks related to building, testing and deploying a new version of the software, so that they can concentrate on where they have the best added value: to deliver features to the clients.

153. The IT experts have put in place a CI pipeline which consists of a specialized tool in which several actions are defined and configured to execute as successive automated steps. These steps are executed every time one of the IT expert commits a code change to the VCS. These steps are the following:

(a) **Build:** the CI pipeline detects that a commit was added to the VCS and will retrieve the latest version of the source code and build the new software components affected by the code change;

(b) **First testing phase:** automated unit and integration tests are then executed against the newly built software components to verify no regression was introduced with the code change;

(c) **Deployment on the SIT²⁸ environment:** the newly built software components are deployed on the SIT environment as a fully functional instance of the eTIR international system;

(d) **Second testing phase:** automated validation tests are then executed against the new instance of the eTIR international system to continue verifying, at the highest level, that no regression was introduced with the code change.

154. If an error happens during one of the steps (for instance if even only one test fails), the CI pipeline stops and a notification of failure is sent to the IT experts on their collaboration platform. The time of execution for all steps should not take more than 30 minutes to ensure quick feedback to the IT expert who commits a change to the VCS. This CI pipeline combines

²⁶ A quality gate is a quantitative target set on a particular criterion (e.g. «Less than 10 critical issues», «More than 40% of the source code covered with tests»)

²⁷ As detailed in the reliability requirements of the eTIR international system

²⁸ System Integration Testing (SIT), see next section for more information.

several best practices described above and is an excellent way to ensure high reliability of the eTIR international system and increase the productivity of the IT experts.

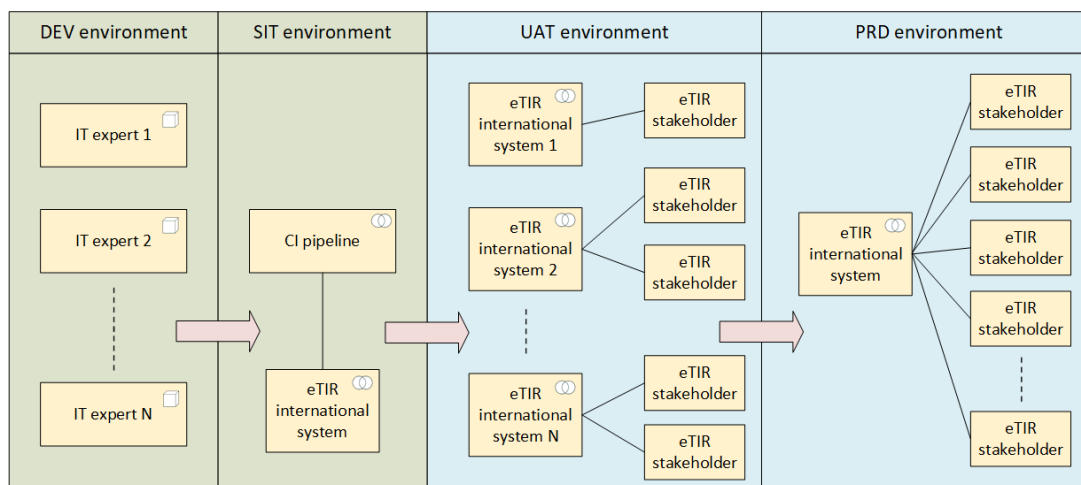
9. Environments

155. Following modern best practices from the IT industry, the IT experts have set up and configured four different environments to develop and maintain the eTIR international system in the best conditions. One of the challenges in managing several environments is to limit the number of variances between each of them to avoid defects linked to a specific environment. Specific development procedures are set up and followed by all IT experts to limit the probability of occurrence of this type of defect.

156. The figure below shows the different environments, which are then described in the following paragraphs.

Figure 14

Environments of the eTIR international system



157. **Development (DEV) environment:** each IT expert has his/her own workstation on which s/he can develop and test a local copy of the eTIR international system without interfering with the work of others. Once a code change has been prepared and tested, the IT expert commits it to the VCS so that it can be automatically deployed and tested on the SIT environment by the CI pipeline.

158. **System Integration Testing (SIT) environment:** this internal environment is used by the CI pipeline as a temporary location where newly instances of the eTIR international system are built, deployed and automatically tested. Once a set of code changes are validated on this environment, the IT experts may decide to build and deploy the latest version of the eTIR international system to the UAT environment.

159. **User Acceptance Testing (UAT) environment:** this environment is accessible by eTIR stakeholders to perform tests in the context of their interconnection projects. Several instances of the eTIR international system are available and each eTIR stakeholder gets access to one or more of these instances. Conformance tests of the eTIR international system and of the information systems of the eTIR stakeholders are also performed in the UAT environment. Once a version of the eTIR international system has been extensively tested in the UAT environment, it can be moved to the PRD environment.

160. **Production (PRD) environment:** this environment holds a unique instance of the eTIR international system which is only accessible to the eTIR stakeholders that have completed their interconnection project. This “live” environment is the only one used for performing TIR transports following the eTIR procedure.

10. Database guidelines

161. The eTIR database uses a DBMS to record the information received in the eTIR messages. This component is the core of the eTIR international system and its development and maintenance should be treated with the utmost care.

162. The structure of the eTIR database was inherited from the eTIR pilot projects and the IT experts have identified several opportunities for improvement and optimization which are planned to be progressively implemented. The IT experts use a specialized tool, Liquibase, to track, version and apply database schema (structure) changes. Furthermore, this library also allows managing changes applied to the master and reference data stored in the database.

163. In the context of the eTIR system, “master and reference data” refers to data about the parties, the roles, and data used to classify or categorize the data processed and stored from the eTIR messages (e.g. eTIR stakeholders identities, country codes, guarantee types, goods classification, etc.). This data changes on rare occasions and needs to be meticulously managed.

164. Using this tool also allows to easily check which changes have been applied to the various copies of the eTIR database, present in all environments listed in the previous section. This is important to ensure that a recent change implemented to the schema or the master and reference data is consistently applied on all environments following the relevant release management procedures.

11. Issue management

165. One of the cornerstones of the adopted agile methodology is a defined and effective issue management. In this context, an issue can represent a feature request, a change request or a defect report. All changes to the eTIR data model, to the source code or to the documentation of the eTIR international system first need to be logged into the issue tracking system of ECE. This is essential to ensure proper traceability of all changes and allows verifying that only authorized changes are applied.

166. When logging an issue into the issue tracking system, an IT expert ensures that all necessary details are documented so that any other IT expert should be able to understand what needs to be done. This is also a prerequisite to ensure retaining institutional memory without being affected by potential turnover in ECE.

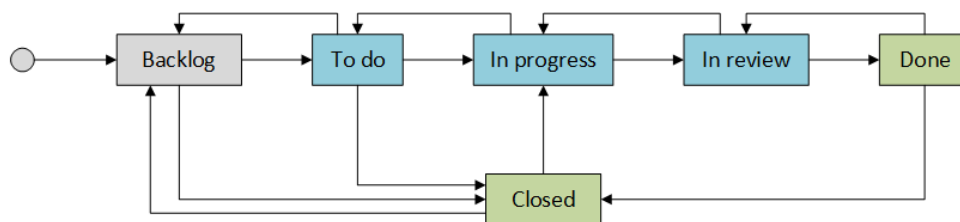
167. The IT experts have agreed on a series of activities that should be performed during the various stages of the lifecycle of any issue before it can be considered as completed. The stages are named with the different statuses of issues. This is the “definition of done” and it is defined as follows:

- **Definition of done (DOD):** is when all conditions, or acceptance criteria,²⁹ that an issue must satisfy, are met. The objective is to ensure a proper level of quality and reliability of the system, at all times. The investment in time spent on all of these activities always pays off in terms of preventing defects from being deployed to the PRD environment. Having less defects prevents from spending time and stress in troubleshooting and avoids impacting the reputation of ECE.

168. A newly created issue gets assigned the “backlog” status, symbolizing its belonging to the eTIR backlog, and a priority is also assigned to it. Issues are the atomic work packages that are assigned to the IT experts by the IT coordinator when they have been selected in the iteration backlog. The following figure shows the issue lifecycle with the various statuses that an issue can take, and the following list describes them.

²⁹ The conditions and acceptance criteria are defined later on in the section.

Figure 15
Issue lifecycle



- **Backlog:** the issue has been identified and logged into the issue tracking system but is not yet selected for processing;
- **To do:** the issue has been selected to be worked during an iteration and is assigned to an IT expert who needs to complete the steps related to the "To do" stage of the DOD (see below);
- **In progress:** the issue is being processed by the IT expert who needs to complete all steps related to the "In Progress" stage of the DOD;
- **In review:** the issue is being reviewed by another IT expert to check several aspects related to quality assurance by following all steps related to the "In Review" stage of the DOD;
- **Done:** the issue is done (implemented and reviewed) and it will be finally validated by the IT experts during regular meetings where all deployed issues on the PRD environment are finally closed;
- **Closed:** the issue is either deployed (coming from "Done") or closed as it will not be corrected or it is considered as a duplicate of another issue (coming from "Backlog" or "To do").

169. The DOD describes the following key objectives and acceptance criteria for the above-mentioned stages:

- **To do:** the issue is sufficiently detailed and has enough background information so that it can be understood by any other IT expert, and a first estimation of the time needed is made;
- **In progress:** the change needed is entirely performed across all appropriate IT assets (eTIR data model, source code, documentation). All exigencies in terms of quality and reliability are met (including the verifications performed by the CI pipeline and the static analysis tool) and all applicable guidelines are followed;
- **In review:** the outputs of the tasks performed during the "In progress" stage are checked by another IT expert. In particular, the test coverage for the source code updated is verified.

12. Documentation guidelines

170. ECE maintains three types of documentation related to the eTIR international system. The first type corresponds to the eTIR specifications, for which amendment procedures are described in Article 5 of Annex 11 of the TIR Convention.

171. The second type corresponds to the internal documentation that is necessary for ECE to properly develop, operate and maintain the eTIR international system. This documentation is prepared and updated by the IT experts of ECE and is managed on a secured KMS that offers versioning capabilities to properly store institutional memory. The internal documentation contains confidential information about, inter alia:

- Development: guidelines, technical documentation, training, stakeholder's documentation, related SOPs, etc.
- Management: team administration, meeting notes, related SOPs, etc.

- Operations: connection with contracting parties, environments, eTIR service desk, related SOPs, etc.

172. The third type corresponds to the documentation that is produced by ECE for the eTIR stakeholders to interconnect their information systems with the eTIR international system. These documents are shared with the eTIR stakeholders on the web site³⁰ dedicated to eTIR. These documents are produced in addition to the eTIR specifications to facilitate the interconnection projects and benefit from the feedback received during these projects. They are a way for ECE to continuously clarify various aspects of the eTIR system in a more frequent and flexible way. All these documents are always fully aligned with Annex 11 and with the version of the eTIR specifications on which they are based.

13. Version management

173. ECE manages the source code of the eTIR international system and the changes applied to the schema and “master and reference data” of the eTIR database with a VCS. ECE has selected Git as its VCS and uses an internal and secured platform as the central Git repository.

174. The IT experts follow the usual best practices from the IT industry related to Git, and especially the ones from DevOps. In particular, IT experts should frequently commit and push their code to the central Git repository, after having performed all tests locally to ensure that this would not create a failure during the execution of the CI pipeline. Each commit should feature changes related to only one issue and the comment of the commit should clearly mention the issue to which it is related and describe the substance of the changes.

175. Branches are created and used in several cases. Firstly, they can be created by an IT expert who needs to work on a complex feature that cannot immediately be committed on the master branch. Once the feature is completed and tested, the branch is merged back into the master branch. Secondly, a branch is created every time a version of the eTIR international system is released on the PRD environment, following the release management guidelines. Tags are also created when a new version of the eTIR international system is deployed on the UAT environment or on the PRD environment.

176. Regarding the version number of the eTIR international system, ECE has selected an approach which uses the following three numbers:

- **Major version number:** it is incremented when a breaking change happens on the API which allows eTIR stakeholders to connect to the eTIR international system. It may also be incremented when a substantial change is brought to the eTIR international system without changing the API.
- **Minor version number:** it is incremented in any other case than the ones that affect the major of the hotfix version numbers. When the major version number is incremented, the minor version number is reset to 0.
- **Hotfix version number:** it is only used when one or more hotfixes need to be deployed on a version which is already deployed on the PRD environment, without willing to create a new version of the eTIR international system.

177. The major and minor version numbers, as well as the hotfix version number, if it exists, are always updated simultaneously on all software components of the eTIR international system and represent its version number under the form XX.YY.ZZ with XX being the major, YY the minor version numbers and ZZ the hotfix version number (ignored if equal to 0). Here are two examples of the version number for the eTIR international system:

- **eTIR international system 4.15**, where 4 is the major version number and 15 is the minor version number (frequent case).
- **eTIR international system 4.15.1**, where 4 is the major version number, 15 is the minor version number and 1 is the hotfix version number (rare case).

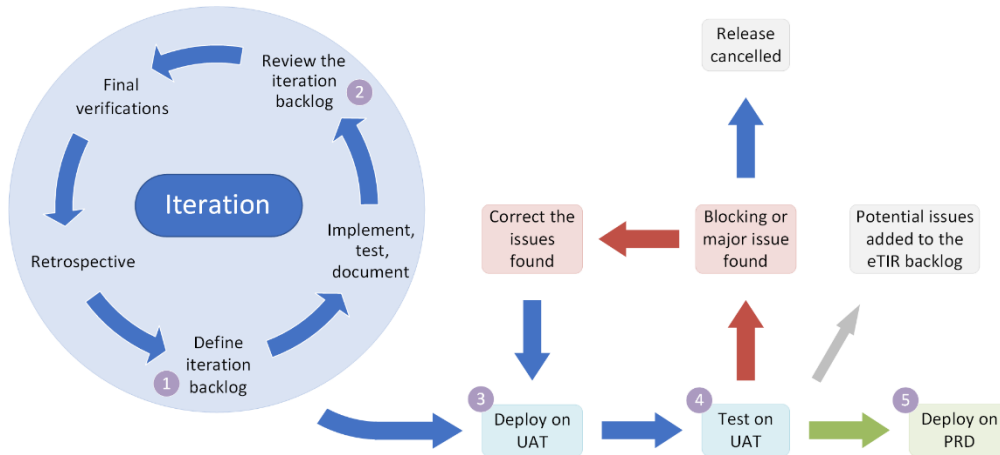
³⁰ See ctir.org/documentation

14. Release management

178. Release management is the process of managing, planning, scheduling and controlling a software build through different stages and environments; including testing and deploying software releases. In the context of the eTIR international system, it refers to the process described in the following figure and stages.

Figure 16

Release management process



(a) **Define the iteration backlog:** the IT experts select from the eTIR backlog which issues should be worked on during the iteration and determine the version number of the new release. Each release has its own, unique version number which is mandatory if the release is to be deployed on the UAT or PRD environments.

(b) **Review the iteration backlog:** the IT experts review which issues are considered as “done” and modify either the iteration length or the list of issues assigned to this version. In the end, all issues are completed, tested and documented and the quality gates are passing on the SIT environment. The release notes, which explain the changes brought by this new version, are prepared.

(c) **Deploy on UAT:** the eTIR stakeholders working on the instances of the eTIR international system are informed about the new deployment to come. Then the new version is deployed on all instances of the eTIR international system and the related eTIR databases are reset. The release notes are communicated to the eTIR stakeholders.

(d) **Test on UAT:** the newly deployed release will then be tested by the eTIR stakeholders during a given period of time agreed by all parties. The IT experts determine if a new execution of the conformance tests is needed or not. Any issue found will be raised to the eTIR service desk to be logged and categorized. If one or more blocking or major issues are found, then either they are corrected, or the current release is cancelled and a new one will be prepared which will include as a priority the issue(s) to be corrected. If these issues are corrected, the updated release needs to be deployed on the UAT environment and tested again by all eTIR stakeholders for a given period of time before being validated. Minor issues can be added to the eTIR backlog to be fixed in a subsequent release.

(e) **Deploy on PRD:** if no major issue was reported after a given period of test on UAT, the release can be scheduled to be deployed on the production environment after a proper communication to the eTIR stakeholders. The details about the new version, including the release notes, are published on the eTIR web site. Once the deployment is performed on this final environment, the eTIR service desk actively monitors the telemetry to verify everything is working correctly.

179. Then, if an issue is identified on the production environment, three cases can happen:

(a) **The issue is blocking:** the IT experts roll back the PRD environment to the previous release and inform all eTIR stakeholders accordingly.

(b) **The issue is major:** the IT experts quickly prepare a hotfix, perform all tests needed on the SIT environment and deploy it on the PRD environment to correct the issue. All eTIR stakeholders are informed accordingly.

(c) **The issue is minor:** the issue is logged and added to the eTIR backlog to be fixed in a subsequent release.

F. Maintenance processes

1. Introduction

180. This section describes the processes followed by the IT experts of ECE to support and maintain the eTIR international system to ensure it functions correctly, to properly deal with issues and to anticipate and prevent possible problems in the future. This section also describes the procedure to be followed by the eTIR stakeholders when reporting an issue and informs of the internal activities performed to address it.

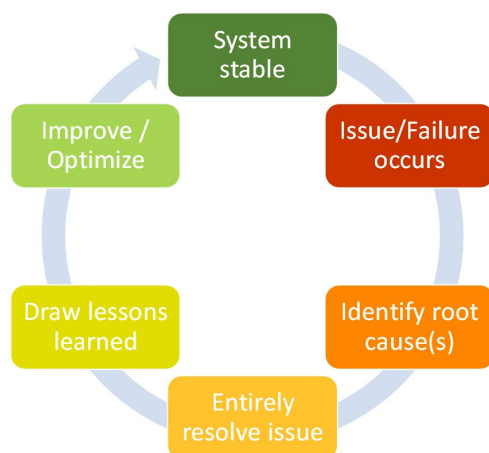
2. Continuous improvement

181. One of the underlying principle of the DevOps practices is about adopting a continuous improvement approach. It means that none of the outputs created (software, processes, documentation, etc.) are ever final as they can always be improved. Especially if an issue (a defect in the system, a flaw in a process, an omission or imprecision in the documentation) is raised, it should always be considered as an opportunity to improve. This principle is similar to the one used in the Deming cycle or PDCA.³¹

182. With this approach, the IT experts recognize the importance of always seizing the opportunity to learn from issues to ensure that the same issues should not happen again in the future (or, at least, that the actions taken decrease the probability for a future occurrence). In particular, it is important to take the time to identify the root cause(s) of the issue to be able to entirely correct them and improve or optimize the processes, if possible. This approach is also applied in development processes but it is especially important in maintenance processes as their main objectives are to solve and prevent issues. The main processes mentioned above are shown in the following figure. They are also further explained in the next sections.

Figure 17

Continuous improvement process

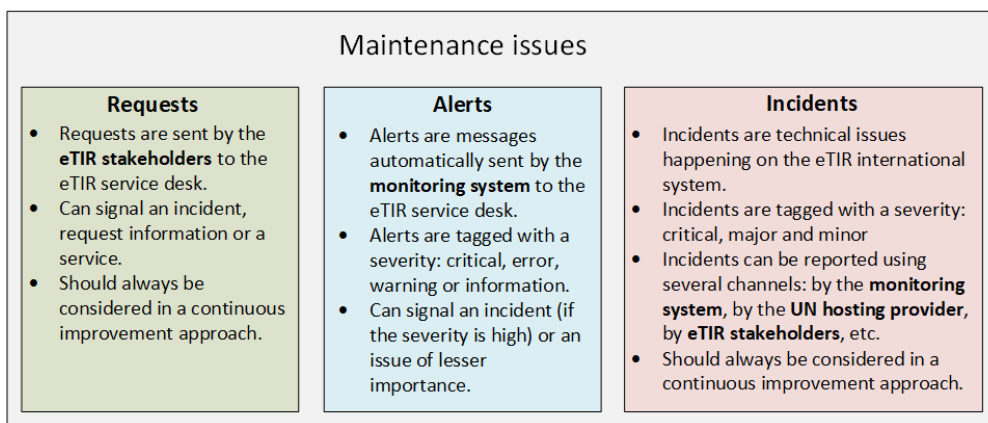


3. Issue management

183. In maintenance, there are three different types of issues that have their own characteristics and that are handled using specific procedures. The following figure describes these three types of issues.

³¹ See en.wikipedia.org/wiki/PDCA

Figure 18
Types of maintenance issues



184. Requests are further described in the section related to the eTIR service desk. Alerts are further described in the section related to monitoring management. Incidents are further described in the section related to incident management.

4. eTIR service desk

185. The eTIR service desk is the single point of contact (SPOC) for eTIR stakeholders to raise any request related to the eTIR system. It is possible to do so by sending messages to its email address (etir@un.org) or through the “contact us” form of the eTIR web site.³² The eTIR service desk is composed of the IT experts and subject matter experts of the TIR Convention of ECE.

186. Requests received by the eTIR service desk are dispatched by a (Tier-1) service desk agent to the appropriate (Tier-2) expert, depending on the nature of the request. Requests that signal an incident or a technical issue are dealt with as a priority.

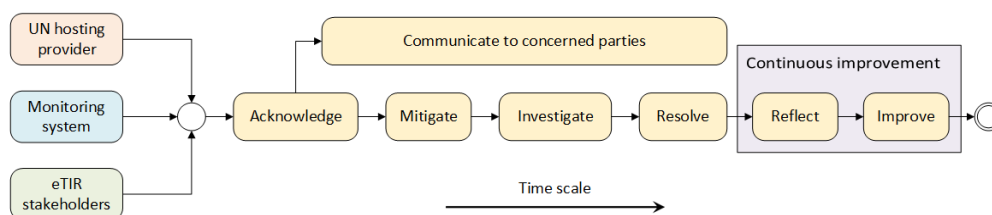
187. In the context of the interconnection projects, the eTIR service desk assists the eTIR stakeholders in connecting their information systems to the eTIR international system. These projects are closer to the development processes and, during the project initiation stage, the eTIR stakeholders define the best ways of communicating with the eTIR service desk to get information and raise any request. Given the limited resources of the eTIR service desk, the scope of its assistance is limited to providing information and guiding the experts of the eTIR stakeholders in their interconnection projects. For instance, the eTIR service desk cannot directly perform changes into the information systems of the eTIR stakeholders to connect them to the eTIR international system.

5. Incident management

188. Incidents are generally technical issues with significant consequences that need to be addressed by the eTIR service desk as a priority. Incidents have a severity associated to them which drive the type of answer that need to be given: critical, major and minor. The whole process to manage them is inspired from the ITIL service management methodology and is described in the following diagram. Its stages are further described hereunder.

³² See etir.org/contact-us

Figure 19
Incident management process



(a) **Acknowledge:** after having been alerted, the IT experts confirm the incident (not a false positive) and ongoing (not already solved). They define its scope (the affected components), its severity and the list of concerned parties. From that point, all actions are logged to be further analysed during the “Reflect” stage;

(b) **Communicate to concerned parties:** transparent communication to the concerned parties about the incident is essential so that information can be given of the estimated time needed to resolve the issue, as this can drive decisions of the parties to apply specific measures (e.g. fallback procedures). The IT experts decide on the content and frequency of the communication until the incident is resolved (step (e));

(c) **Mitigate:** if possible, mitigation measures are applied in order to either decrease the severity of the issue, or to temporarily resolve it;

(d) **Investigate:** the IT experts take the time needed to comprehensively investigate the incident and determine its root cause(s);

(e) **Resolve:** after the investigation, the root cause(s) are addressed and corrected and the incident must be considered as resolved before moving to the next stage;

(f) **Reflect:** the IT experts gather all data and actions performed so far to resolve the incident and have a “blameless post-mortem” meeting. The goal is to take a deeper look at the incident and figure out what happened, why it happened, how the IT experts responded, and what can be done to prevent repeating this type of incident as well as improve future responses; while assuming the responsibility of the incident collectively. An “incident report” is prepared during this meeting and follow-up actions are defined and planned accordingly;

(g) **Improve:** the follow-up actions that have been defined in both previous stages are progressively selected from the eTIR backlog as per their priority, and performed to improve the software, processes, documentation and other assets so that the probability of having the same incident happening is decreased.

189. During the “Reflect” stage, the IT experts prepare an incident report which is then stored in the KMS for institutional memory. This report contains the following information about the incident (including date and time when applicable): severity, description, services affected, how it was notified and by who, response actions performed to mitigate and then solve it, communication sent and received, results of the investigation, list of root causes, lessons learned from the blameless port-mortem and list of follow up actions.

190. With this process, the IT experts wish to achieve the following benefits: the prevention of similar incidents (or at least decreasing their probability to happen), an improvement on the average time to resolve incidents, a further reduction of downtime of the eTIR international system and an overall improved experience for the eTIR stakeholders.

6. Incidents managed by the United Nations hosting provider

191. As displayed in figure 19, incidents can be reported to the eTIR service desk by the United Nations hosting provider which hosts the eTIR international system. An SLA is signed with this provider to ensure a 24/7 support of the eTIR international system. SOPs are prepared by the IT experts for the officers of the United Nations hosting provider so that they can respond to specific types of incidents.

192. When an incident occurs, the officers of the United Nations hosting provider are notified by alerts sent by the monitoring system and they respond using these SOPs. If the

response resolves the incident, they notify the eTIR service desk, for further investigation, mentioning that the incident is closed. If the response does not resolve the incident, they escalate it by contacting the eTIR service desk as displayed in figure 19, using various communication ways and procedures depending on the severity of the incident.

7. Backup and restore management

193. Backup and restore management represents the strategy and related procedures put in place to ensure that copies of eTIR related data are frequently made and can quickly be restored, in case of a data loss event. Indeed, data can be lost during several types of events, inter alia: the malfunction of a server, fire in the data centre or a cyberattack. The preparation of the SOPs are the joint responsibility of the United Nations hosting provider and ECE and they are mentioned in the SLA.

194. Data stored in all eTIR storage locations (the eTIR database, the eTIR logs and the eTIR documents) is backed up twice per day. This backed up data is securely stored in, at least, one other location than the primary site to avoid being destroyed if this site sustains a disaster. It is also not accessible from the same network to avoid being compromised by a cyberattack of type ransomware. Only the most recent and complete backups are kept and old backups are erased.

195. Finally, it should take no more than 6 hours to store the last backup in case of data loss event. Tests are regularly performed with the United Nations hosting provider to ensure that this requirement can be met.

8. Monitoring management

196. The act of monitoring an information system includes the collection of information produced by this system and the ability to produce alerts when certain events are met, so that (automated or manual) actions can be performed as answers to these events. Monitoring a system allows to proactively detect any issue that may turn into a failure and may eventually impact the availability of the system. The ability to quickly respond to these early warnings usually decreases the impact of failures and can also sometimes prevent them altogether.

197. A monitoring system is provided by the United Nations hosting provider and it is configured in collaboration with ECE to observe the resources and performance of the virtual servers, as well as the availability and performance of the various services of the eTIR international system. In particular, the list of indicators that are tracked by the monitoring system include the following metrics: CPU usage, RAM usage, percentage of disk used, processes, availability of the services, system's response time and resource usage of applications.

198. Alerts are configured to be triggered when specific thresholds are exceeded. Alerts have a severity associated to them which drives the type of answer that needs to be given: critical, error, warning and information. Several types of answers can be activated depending on their configuration: an automated process can be executed or a communication can be sent to one or more persons (by email, SMS or phone call) to notify them of the alert so they can take action as soon as possible. The first persons notified are usually the officers of the United Nations hosting provider so they can take immediate actions by applying the SOPs prepared for such occasions. Alerts can also be sent to the eTIR service desk, depending on the urgency and importance of the issue. A comprehensive list of indicators, thresholds, alerts and related answers are jointly documented by the United Nations hosting provider and ECE, and are mentioned in the SLA.

199. In addition to tracking metrics gathered from the virtual servers and processes, the monitoring system also exploits data contained in the eTIR logs. This information, also referred to as telemetry, logged by the eTIR international system, provides valuable data which can be used to detect any potential immediate issue with the system. It also informs about the performance of the system and gives an indication to the IT experts on related trends. It is important to track this data to ensure that target values set in the technical requirements of the eTIR international system are met.

200. Finally, it is important to take into consideration one drawback usually associated with the practice of monitoring. When initially configured, thresholds and alerts can lead to false positives or, on the contrary, they can “miss” issues that should have been detected. For this reason, the practice of continuous improvement is particularly relevant and the configuration of the monitoring system should regularly be reviewed to be optimized.

9. Patch management

201. A patch is a set of changes to a piece of software designed to update, correct, or improve it. This includes fixing security vulnerabilities and other defects. In this document, patch management refers to the strategy and related procedures put in place to ensure that all software components, including the operating systems of the underlying servers, are regularly patched to correct any recently found issues.

202. It is especially important to remove security vulnerabilities that are uncovered in existing versions of all software by the cybersecurity community. Regularly applying patches from authorized and verified sources is one of the most effective way to protect the eTIR international system from cyberattacks (see the part dedicated to the security of the eTIR system).

203. SOPs are prepared and applied on a regular basis (at least every three months) to patch the following software components, if a patch is available: underlying operating systems, frameworks and libraries (e.g. Java virtual machine) and DBMSs. Regular schedules do not prevent applying important patches as needed, most of the time for security reasons. Software components are patched by the United Nations hosting provider and by ECE, depending on the responsibilities detailed in the SLA.

10. Upgrade management

204. An upgrade is generally the replacement of hardware, software or firmware with a newer or better version, in order to bring the system up to date or to improve its functionalities. In this document, upgrade management refers to the strategy and related procedures put in place to ensure that technical debt is regularly addressed and will not grow over time (see the maintainability requirements of the eTIR international system). Upgrade management differs from patch management as upgrades are new versions of software which need to be carefully tested to detect and address potential issues before they can be applied.

205. Replacing the hardware and associated firmware is the responsibility of the United Nations hosting provider. Regarding software, the responsibilities are shared between the United Nations hosting provider, which needs to plan and perform the upgrades of all software components under its purview (e.g. virtual server farm system, operating systems of the virtual servers), and ECE which needs to plan and perform the upgrades of all software components of the eTIR international system.

206. At least once per trimester, the latest versions of the underlying programming language, frameworks and libraries used to build the eTIR international system are checked. The IT experts then regularly review and document the various advantages and disadvantages to migrate a software component to one of its new versions. The following criteria are taken into consideration to decide when to plan such a migration: end of support date of the currently used version, maturity of the new version as assessed by the IT community, potential benefits regarding security and additional features.

207. When the decision is taken to migrate a software component to a new version, an internal project is launched and its associated tasks are included into the eTIR backlog to be prioritized and considered in the usual development by iteration approach. The objectives of this type of project are the following: comprehensively test the new version of the software component to detect any issues that may arise in the context of the eTIR international system, correct any major issue found, possibly take advantage of the new features brought by the new version to improve the eTIR international system, further test and validate on the UAT environment before eventually deploying a new version of the eTIR international system on the PRD environment.

III. Security of the eTIR system

208. This part describes all aspects of the eTIR system related to information security, in particular the objectives and requirements, and the corresponding measures and controls put in place to achieve them. Information security is one of the guiding principles selected for the development of the eTIR international system because of its importance in modern information systems and ECE wishes to properly address this endeavour. The goal is to define a comprehensive baseline embracing all relevant aspects on information security, which should be regularly reviewed and updated by TIB.

209. Information security covers not only software, but all domains that can influence the security of a system. As a result, this part will mention aspects related to the following domains: security and risk management, asset security, security architecture and engineering, communication and network security, identity and access management, security assessment and testing, security operations and software development security.

210. As underlined in the previous part, describing the technical aspects of the eTIR international system, the level of details of the following sections depends on the aspects being described and not all information may be provided for security reasons.

A. Security objectives and principles

1. Information classification and security policies

211. The starting point of any discussion related to information security is to determine the sensitivity of the information managed in the information systems. In the United Nations, these aspects are governed by the Secretary-General's bulletin on "Information sensitivity, classification and handling".³³ Data exchanged by the stakeholders of the eTIR system, as well as data exchanged by the users of the ITDB is classified as "confidential", as defined in section 2 of the bulletin.

212. This classification level is then used, and referred to, in other documents of the United Nations to specify the rules, guidelines and best practices to apply. In particular, the Office of Information and Communications Technology (OICT) issues policies, including several ones related to information security, that specify different security controls, depending on the classification level.³⁴ The eTIR technical specifications comply with these policies by specifying security measures and controls that are as stringent as the ones required in the policies when managing confidential information.

2. Security objectives

213. Information security is based on the following three main fundamental objectives³⁵:

- **Integrity** states that information retains its veracity and is intentionally modified by authorized subjects only.
- **Availability** states that authorized subjects are granted timely and uninterrupted access to information.
- **Confidentiality** states that information is not disclosed to unauthorized subjects.

214. These three fundamental objectives, along with their associated requirements when developing information systems, determine the main information security aspects, as depicted in the following figure.

³³ See undocs.org/st/sgb/2007/6

³⁴ See a list of the policies on iseek.un.org/nyc/department/policies

³⁵ Comprehensive definitions for these three terms are provided in the technical glossary.

Figure 20
Fundamental objectives of information security

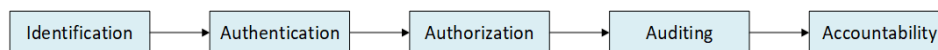


215. In the case of the eTIR system, the requirements of these three objectives are high. Indeed, as data is classified as confidential, its confidentiality should be ensured by adequate security controls. Because the eTIR system is to be used by multiple stakeholders, for the international transport of goods following the eTIR procedure, it should always be available to its users. Finally, the integrity of data transferred between the eTIR stakeholders should be preserved, so that all stakeholders can trust it and also in order to achieve non-repudiation.

3. How to achieve accountability and non-repudiation

216. In addition to integrity, availability and confidentiality, it is important to describe how a subject³⁶ authenticates itself in a system and how its actions can lead to accountability and non-repudiation. This materializes as a sequence of five processes which are listed in the following figure and described hereafter.

Figure 21
From identification to accountability



(a) **Identification** is the process by which a subject claims an identity and accountability is initiated. A subject must provide an identity to a system to be authenticated. Providing an identity might, for example, entail entering a username or positioning a finger in the proximity of a scanning device. A core principle of authentication is that all subjects must have unique identities;

(b) **Authentication** is the process of verifying or testing that the claimed identity is valid. It requires subjects to provide additional information that corresponds to the identity they are claiming, like providing a password or a digital certificate. This process verifies the identity of a subject by comparing one or more factors against a database of valid identities, such as user accounts;

(c) **Authorization** is the process of granting access to a resource or object, based on the authenticated identity. In most cases, the system evaluates an access control matrix that compares the subject, the object, and the intended activity. Only if the specific action is allowed, then the subject is authorized;

(d) **Auditing** is the programmatic means by which a subject's actions are tracked and recorded for the purpose of holding the subject accountable for their actions while authenticated in a system. It is also the process by which unauthorized or abnormal activities are detected by a system;

(d) **Accountability** is the process of holding subjects accountable for their actions. Effective accountability relies on the capability to prove a subject's identity and track their activities. Accountability is established by linking a human to the activities of an online identity through the security services and mechanisms of auditing, authentication, and identification.

217. **Non-repudiation** is an important derived objective which ensures that a subject that triggers an activity or event cannot deny that he or she triggered it. It prevents a subject from

³⁶ A « subject » is to be understood here as an individual or an information system that tries to access another system.

claiming not to have sent a message, not to have performed an action, or not to have been the cause of an event. This objective is important for the eTIR system, as information stored in the eTIR international system can be requested by contracting parties in case of claims.³⁷ By meeting both the objectives of accountability for the subjects and integrity of the data stored in the eTIR international system, the objective of non-repudiation is achieved.

4. Security principles

218. As for the guiding principles selected for the development of the eTIR international system, ECE also acknowledges and adopts the following principles which are recognized and widely used by the community of information security experts.

219. The first one is the principle of **due care** which, in the context of information security, refers to taking reasonable care to protect the assets of an organization on an ongoing basis. This requires a strong level of proactivity and the creation of a culture of security. Implementing the security concepts and procedures covered in this part, along with performing periodic security audits and reviews, demonstrates to the eTIR stakeholders that ECE exercises due diligence to maintain its due care effort.

220. The second one is the **principle of least privilege**, which requires that in a particular abstraction layer of a computing environment, every element (such as a process, a user, or a program, depending on the subject) must be able to access only the information and resources that are necessary for its legitimate purpose.³⁸ This principle also applies for ECE staff members in charge of developing and operating the eTIR international system: permissions and accesses are selectively granted to them to perform their work and administrative controls are put in place to periodically review the list of permissions and to remove them if they are no longer needed. This comes in addition to outboarding procedures, which aim at removing all accesses from individuals (staff members, consultants, interns, etc.) that would no longer work for ECE. Finally, physical and technical access controls are also put in place to ensure that only authorized individuals have access to specific information and systems to perform their duties.

221. The third principle is **defence in depth**, which represents the concept in which multiple layers of security controls (defence) are placed throughout an information system. Its intent is to continue to provide adequate security in the event a security control fails or a vulnerability is exploited that can cover aspects of personnel, procedural, technical and physical security.³⁹ This principle is used on many occasions and, for example, in the eTIR international system by implementing several layers of validation for inputting data (received in the eTIR messages) to verify their quality and conformance with the eTIR specifications.

222. The fourth principle is the **separation of duties**, which represents the concept of having more than one person required to complete a task. In sensitive operations, the separation by sharing of more than one individual in one single task is an internal control intended to prevent fraud and error.⁴⁰ For example, this principle is used in the development process of the eTIR international system, when another IT expert reviews the code of a first IT expert which has implemented and committed lines of code. It allows finding potential omissions and mistakes which can then be immediately corrected by the original submitter.

B. Security requirements

1. Previously mentioned technical requirements

223. As explained in the section above, information security covers a large spectrum of the non-functional (technical) requirements of an information system, as many of them play a role in one or more of the three main objectives: integrity, availability and confidentiality. In particular, the following requirements, already discussed in the previous part on the eTIR

³⁷ As per paragraph 3 of Article 12 of Annex 11 of the TIR Convention

³⁸ See en.wikipedia.org/wiki/Principle_of_least_privilege

³⁹ See [en.wikipedia.org/wiki/Defense_in_depth_\(computing\)](https://en.wikipedia.org/wiki/Defense_in_depth_(computing))

⁴⁰ See en.wikipedia.org/wiki/Separation_of_duties

international system, should be understood as playing a role in the information security component of the eTIR system:

- **Availability**, as one of the three main security objectives, is obviously one of the most important, and the IT experts should dedicate particular attention to this set of requirements: AV.1, AV.2, AV.3 and AV.4.
- **Backup**, with its two requirements (BK.1 and BK.2), is part of the availability objective, as the goal is to restore the access of information to authorized subjects in case of a data loss event.
- The first requirement of **capacity**, CP.1, is also part of the availability objective as the goal is to ensure that the eTIR international system can process, at all times, the messages sent by the eTIR stakeholders. The other requirements (CP.2, CP.3 and CP.4) also follow the same logic, to a lesser extent.
- All **configuration management** requirements (CM.1, CM.2, CM.3, CM.4 and CM.5) impact all three objectives (availability, integrity and confidentiality) as they characterize important aspects of the development and maintenance processes of the eTIR international system.
- **Data retention** requirements (RE.1 and RE.2) detail specific aspects of the availability objective by indicating how long data, exchanged in the eTIR system should be kept, and how to get access to it.
- **Disaster recovery** requirements (DR.1 and DR.2) are also obviously related to the availability objective as they tackle the specific case of restoring the eTIR international system in case of a disaster.
- **Fault tolerance** requirements (FT.1, FT.2, FT.3 and FT.4) which detail various technical fallback aspects of the eTIR international system, and which also impact the availability objective.
- The first two **maintainability requirements**, treating with technical debt (MT.1 and MT.2), are part of the preventive measures put in place to prevent future information security related problems with the eTIR international system.
- As for CP.1, the two **performance requirements** PE.2 and PE.3 are also part of the availability objective, as the goal is to ensure that the exchange of messages between the eTIR international system and another eTIR stakeholder can always be performed within a reasonable amount of time. Furthermore, the last two performance requirements (PE.4 and PE.5) are also part of preventive measures to anticipate a potential issue with the eTIR international system which could impact its availability.
- Most of the **reliability requirements** (RL.1, RL.2, RL.3, RL.5 and RL.7) are also mechanisms put in place to prevent, as much as possible, issues from occurring with the eTIR international system, which could impact its availability.

224. It is obvious that information security is a transversal, pervasive theme that cannot be treated in isolation and requires adopting a consistent approach to consider it in all stages of the software development lifecycle. The following non-functional (and not necessarily technical) requirements are specific to information security and are generally applicable to all components of the eTIR system: to the eTIR international system, to the information systems of all other eTIR stakeholders (including those put at the disposal of the holders to submit advance data) and to the network connections between all these systems. However, it is important to note that several of the following requirements may only apply to a subset of these components.

225. In the following sections, a “user account” is to be understood as an account uniquely identifying either an individual or an information system in another information system (which uses and manages these accounts).

2. Auditing

226. The following table contains the requirement related to the auditing process as mentioned in Figure 21. While this requirement mainly applies to eTIR international system, it is recommended for other information systems of the eTIR system to also conform to it.

Table 20

Auditing requirement

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
AU.1	All information sent to and received by the eTIR international system is linked to a user account and can be audited.	All messages transmitted sent to or received by the eTIR system are entirely logged, including the digital signature. These logs are then securely kept and maintained in the eTIR logs storage location and can be requested by customs authorities in case of claims.

3. Authentication

227. The following table lists the requirements related to the authentication process as mentioned in Figure 21. Only the first one (AE.1) applies to the authentication of the eTIR stakeholders in the eTIR international system while the other requirements apply to the other information systems involved in the eTIR system.

Table 21

Authentication requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
AE.1	Select a strong authentication mechanism for the eTIR international system to prevent unauthorized access	The eTIR stakeholders who wish to access the web services of the eTIR international system should authenticate themselves using a digital certificate. The private key of this certificate should be securely stored by each and every eTIR stakeholder.
AE.2	Enable session lock after inactivity to protect the access to the user accounts.	For user accounts assigned to individuals only: when providing a user interface to access an information system (either on a web site or on a mobile application), a time limit of 15 minutes should be set to close the session if it becomes inactive.
AE.3	Manage passwords securely to prevent unauthorized access.	Password should be securely stored in databases using modern cryptographic hash functions. Passwords should comply with the best practices, including in terms of minimum length and complexity.
AE.4	Recommend multi-factor authentication for system access to protect user accounts.	When applicable, user accounts assigned to individuals should follow a multi-factor authentication using, for instance, a two factor approach with “something the user knows” (a password) and “something the user has” (a security card or a mobile phone).

4. Authorization

228. The following table lists the requirements related to the authorization process as mentioned in Figure 21 for the information systems involved in the eTIR system.

Table 22

Authorization requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
AO.1	Grant the minimum, sufficient access or privileges to prevent unauthorized access.	Any user account should be assigned the minimum access and permissions needed to get the information it is allowed to retrieve and to perform the operations it is allowed to accomplish.

AO.2	Employ role-based access controls (RBAC) to improve the maintenance of the user accounts.	When applicable, user accounts should be granted access and permissions based on roles or groups. This is a sustainable way to manage access control lists as it is easy and less error prone to globally review and update the access and permissions to all members of a group than doing it for each and every user account.
AO.3	Revoke access upon termination of personnel appointments to prevent unauthorized access.	“Offboarding” procedures should be in place to remove access and permissions assigned to the user accounts of the individuals whose appointments are terminated. These user accounts should then be disabled.
AO.4	Review user accounts at least annually to prevent privilege creep.	A procedure should be in place to review, at least annually, all user accounts to verify and validate that the access and permissions assigned to them are accurate.

5. Awareness and training

229. It has been demonstrated several times already that humans are the weakest link in the information security chain. Therefore, it is vital to raise awareness and train in information security, its best practices and common threats, of the personnel that will be using information systems involved in the eTIR system. As humans are targeted by specific attacks like phishing, spear phishing and social engineering, it is important to emphasize these aspects. It is, therefore, recommended for all eTIR stakeholders to put in place similar processes.

230. The following table lists the requirements related to the processes put in place to raise the awareness and train all relevant personnel.

Table 23

Awareness and training requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
AW.1	Ensure all relevant personnel follow basic training courses on information security to raise their awareness.	Basic training courses on information security (including best practices and common threats) should be available to personnel using information systems involved in the eTIR system. Procedures should be in place to ensure that all personnel using information systems related to the eTIR system followed these training courses.
AW.2	Maintain records of participation in required training courses on information security.	Records should be kept and managed to ensure that all personnel using information systems related to the eTIR system have followed basic training courses on information security. Ideally, following these training courses should be performed on a regular basis (for instance, every three years).

6. Confidentiality

231. Information exchanged with and stored in the eTIR system is confidential. As a result, controls should be put in place to ensure that data is protected against unauthorized access while it is exchanged with the eTIR international system (data in motion) and when it is stored inside it (data at rest). The following table lists the confidentiality requirements of the eTIR system.

Table 24

Confidentiality requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
CO.1	Information transferred between the information systems of the eTIR	All messages exchanged between all information systems of the eTIR system are encrypted using protocols and encryption mechanisms that are considered secured by the international InfoSec community. ⁴¹ The eTIR technical specifications should

⁴¹ The term «InfoSec» is a contraction of «Information Security». The international InfoSec community contains national agencies specialized in information security that issue regular publications on the subject, as well as IT experts and researchers specialized in this field.

	system remains confidential.	specify them and this list should be revisited on a regular basis to remove the mechanisms that are no longer considered as secured and replace them with more secured ones
CO.2	Access to the information stored in the eTIR international system is restricted.	Information recorded in the three storage locations of the eTIR international system (eTIR database, eTIR documents and eTIR logs) is restricted to authorized user accounts only. These storage locations are located in a secured environment protected by physical and software security controls.

7. Identification

232. The following table contains the requirement related to the identification process as mentioned in Figure 21 for the information systems involved in the eTIR system.

Table 25

Identification requirement

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
ID.1	Uniquely identify an individual or an information system with a user account to be able to hold it accountable for its actions.	Any user account should be assigned and linked to an individual and not to a group of users (in the case of persons) or to a unique information system (in the case of systems). The same information system should have different identities depending on the environment used (development, user acceptance testing and production).

8. Integrity

233. The integrity of the information exchanged and stored in the eTIR international system needs to be preserved. As a result, controls should be put in place to ensure that data is protected against any change, irrespectively of the nature of the change: error while transferring data, human error, misconfiguration or cyberattacks. The following table lists the integrity requirements of the eTIR international system.

Table 26

Integrity requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
IN.1	The integrity of the information transferred between the information systems of the eTIR stakeholders and the eTIR international system remains intact.	All messages sent to or received by the eTIR international system are digitally signed by the sender. The recipient validates the electronic signature of the message upon reception and discards it if it is not valid.
IN.2	The integrity of the information stored in the eTIR system remains intact.	All messages sent to or received by the eTIR international system are entirely logged, including the digital signature. These logs are then securely kept and maintained in the eTIR logs storage location to which access is restricted.

9. Nodes security

234. As defined in the architecture part, a node represents any device, physical or virtual, which hosts or interacts with programs or information composing the eTIR international system. Nodes can be the virtual servers hosting the various software components of the eTIR international system or the devices part of the network infrastructure, like firewalls, routers, proxies, reverse proxies, or dedicated information security devices (IDS, IPS, etc.). The following table lists the security requirements of the nodes of the eTIR international system.

Table 27
Nodes security requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
NS.1	Securely configure virtual servers, containers or pods to prevent unauthorized access.	Ensure that all recommendations related to information security from the vendors of the operating system are applied. The credentials of the service accounts to these servers are securely kept in a password management system and available only to authorized personnel. When applicable, activate the software firewall and implement default-deny, least-privilege policies.
NS.2	Securely configure network infrastructure devices to prevent unauthorized access.	Implement default-deny, least-privilege policies on network devices like firewalls. Ensure all recommendations from the vendors are applied. Maintain accurate documentation on network interconnections and devices configuration. These actions are performed by the hosting entity.
NS.3	Isolate trusted networks containing sensitive data from non-trusted networks to prevent unauthorized access.	Apply the best practices in terms of network infrastructure design by separating servers into different security zones, based on their role and on the sensitivity of the information stored on them. Implement IP whitelisting to deny access to the eTIR international system by default, except for the a given list of external servers (eTIR stakeholders). These actions are performed by the hosting entity.
NS.4	Monitor events on the nodes to detect potential security issues.	Enable logging for the nodes that support it and direct the metrics to the monitoring system. Restrict log access to authorized staff members only. Protect log data from unauthorized changes and operational problems. Set up automated alerts based on rules, including logging failures.

10. Non-repudiation

235. The following table lists the non-repudiation requirements of the eTIR international system.

Table 28
Non-repudiation requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
NR.1	eTIR stakeholders are accountable for the messages they send to the eTIR international system.	When they send messages to the eTIR international system, eTIR stakeholders should be uniquely identified and authenticated by signing the messages with their electronic signature. In addition, requirement AU.1 should be met.
NR.2	The integrity of the message sent by the eTIR stakeholders to the eTIR international system is ensured.	Requirements IN.1 and IN.2 should be met.
NR.3	The eTIR international system can continue to validate messages stored in the eTIR logs up to the duration mentioned in the data retention period.	As digital certificates should be periodically renewed, a key management system should be implemented to keep the old digital certificates of all eTIR stakeholders to be able to continue to authenticate and verify the integrity of messages exchanged in the past that are kept in the eTIR logs.

11. Physical security

236. This section groups the main requirements and related measures put in place to ensure that the premises, buildings and infrastructures of the United Nations organization hosting the eTIR international system are physically secured. The following table lists the physical security requirements of the buildings and infrastructures hosting the eTIR international system.

Table 29
Physical security requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
PS.1	The data centre hosting the eTIR international system should be immune to search, requisition or confiscation to protect the information stored in it.	The eTIR international system is hosted in a data centre located in one of the United Nations premises and operated by United Nations staff members only. It is, therefore, protected by the dispositions of the Convention on the Privileges and Immunities of the United Nations.
PS.2	The data centre hosting the eTIR international system should be sufficiently protected to prevent intrusions and disasters.	United Nations premises are surrounded by a closed protective perimeter, guarded by security officers 24/7 and covered by a video surveillance system. Access to these premises is restricted to registered people wearing electronic badges. Access to the data centre is restricted to a handful of authorized IT staff members only. Appropriate fire detection and suppression systems are set up in the data centre.

12. Secure coding and application security

237. Secure coding is the practice of developing software in a way that guards against the accidental introduction of security vulnerabilities. Defects and logic flaws are consistently the primary cause of commonly exploited software vulnerabilities. The following table lists the secure coding and application security requirements of the eTIR international system.

Table 30
Secure coding and application security requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
SC.1	Define security requirements in the early stages of the SDLC ⁴² to lower the costs and decrease the number of security issues.	Consider all aspects related to security for each and every feature when designing and adding it to the eTIR backlog. Always validate input data before processing it. Design and integrate validation tests focused on security (evil stories). Execute proper error handling to always leave the system in a stable state. Ensure all security related events are properly logged with the right severity. Regularly review the source code to remove unnecessary classes and functions; and to refactor portions of code.
SC.2	Separate the stages of the SDLC to prevent mixing different versions by having different environments.	Use different environments with appropriate security controls and procedures for the stages of Development (DEV), Systems Integration and Testing (SIT), User Acceptance Testing (UAT) and Production (PRD).

13. Vulnerability management

238. Vulnerability management embeds the practices of identifying, classifying, prioritizing, remediating, and mitigating software vulnerabilities. Vulnerability management is integral to computer security and network security, and includes vulnerability assessment. The following table lists the vulnerability management requirements of the eTIR international system.

Table 31
Vulnerability management requirements

<i>Identifier</i>	<i>Description and objective</i>	<i>How to fulfil the requirement</i>
VU.1	Ensure the known vulnerabilities are patched to prevent	Update and patch nodes, including operating systems and middleware on a regular basis. Regularly upgrade to the latest stable versions of the third party dependencies of the software components. Regularly migrate to the latest versions of the

⁴² See en.wikipedia.org/wiki/Systems_development_life_cycle

	potential security issues.	components of the external systems (ITDB, mail system and non-repudiation system).
VU.2	Conduct vulnerability assessment and testing to prevent potential security issues.	Regularly scan nodes, systems and their components for known vulnerabilities. Conduct code security reviews (like penetration testing) to validate new versions of the eTIR international system.
VU.3	Ensure incidents are properly managed to prevent potential security issues.	Alerts raised from the monitoring system should be investigated based on their severity by following the appropriate procedures. The incident management process is followed for every incident which gives opportunities to learn, improve and perform follow up actions to help preventing further similar issues.

C. Security of the eTIR international system

1. Introduction

239. In addition to the previous parts of the eTIR technical specifications, this section complements various aspects of the security of the eTIR international system, so that contracting parties to the TIR Convention and the other eTIR stakeholders have a clear understanding on these features. This section elaborates on how ECE will meet several of the security requirements pertaining to the eTIR international system, as listed in the previous section. Being transparent about these aspects also provides an opportunity for all eTIR stakeholders to suggest proposals for improvement, with the ultimate objective to have a more secure eTIR system in the long term.

2. Information security awareness

240. It is important to understand that information security is like a chain, which is as strong as its weakest link. As individuals are part of this chain, no matter how many security devices or software barriers are also put in place in the chain, if the individuals do not have the knowledge and experience needed to understand the common threats and how to react, then the overall security of the system is at risk.

241. Information security awareness focuses on raising consciousness regarding potential risks of the rapidly evolving forms of cyberattacks which target human behaviour. As threats have matured and information has increased in value, attackers have also increased their capabilities and expanded to broader intentions, developed new attack methods and methodologies and are acting on more diverse motives. Attackers are more and more targeting (and successfully exploiting) individuals human behaviour to breach corporate networks and critical infrastructure systems. Targeted individuals who are unaware of the sensitivity of information and of the threats, may unknowingly circumvent traditional security controls and processes and enable a breach of the organization.

242. In order for efforts in this domain to be effective, it is not only important for the IT experts directly involved in the eTIR international system to be aware of information security, but also to all staff members of ECE. Indeed, as an example, any staff member opening a document infected by a malware (which would be attached to an email) could potentially open a back door for an attacker to breach the information security of the organization. For this reason, OICT has developed, in 2015, a set of three training courses on information security awareness (foundational, advanced and additional). It is mandatory for all staff members of the United Nations to complete the foundational training course, so that all personnel have the necessary knowledge and awareness of the good practices to adopt in case of a potential threat.

3. Legal aspects

243. The Convention on the Privileges and Immunities of the United Nations,⁴³ passed by the United Nations General Assembly on 13 February 1946 in New York, defines and specifies numerous provisions related to the status of the United Nations, its assets, and officials, in terms of the privileges and immunities that must be granted to them by its member states. In particular, as mentioned in Article 2, the premises of the United Nations are inviolable: its properties and assets, wherever located and by whomever held, are immune to search, requisition, confiscation, expropriation and any other form of interference.

244. In practice, this means that only security officers of the United Nations Department of Safety and Security (UNDSS) are in charge of the safety and security of the properties and assets located in the premises of the United Nations. Police and any other security forces of the hosting country cannot enter the United Nations premises unless having been allowed to do so by security officers of UNDSS. Therefore, as long as the eTIR international system is hosted in a data centre located in the premises of the United Nations, it is covered by the privileges and immunities described above.

4. Physical security

245. Physical security describes security measures that are designed to deny unauthorized access to facilities, equipment and resources and to protect personnel and property from damage or harm (such as espionage, theft, or terrorist attacks). Physical security involves the use of multiple layers of interdependent systems that can include video surveillance, security guards, protective barriers, locks, access control, perimeter intrusion detection, deterrent systems, fire protection, and other systems designed to protect persons and property. In the organizations of the United Nations, this aspect of security is ensured by UNDSS providing professional safety and security services to enable the United Nations to deliver its programmes globally. This section only touches upon the main aspects of physical security for obvious security reasons.

246. United Nations premises are surrounded by a closed protective perimeter (walls, fences, security bollards, etc.) which prevents any individual or vehicle to enter without having received an authorization. The premises are guarded by security officers 24 hours per day, all days of the year. The premises are covered by a video surveillance system continuously monitored by the security guards and recorded for potential future investigations. Access to the premises is restricted to registered people wearing electronic badges issued by UNDSS. Access to the data centre is restricted to a handful of authorized IT staff members only and the location of the data centre inside the premises is not publicly known.

247. Also, regarding safety, fire detection and suppression systems are set up generally in the premises and in particular in the data centre, and security exercises are carried out several times per year.

5. United Nations hosting entity

248. When it comes to the United Nations hosting entity (hereafter the hosting entity), several aspects related to security have already been described in previous parts of the eTIR technical specifications:

- In the detailed architecture of the eTIR international system, the systems architecture describes how the usage of a virtual server farm infrastructure, as well as a load balancer can play a role to design a system free of any Single Point of Failure (SPOF);
- In the technical requirements, the important role that the hosting entity plays is detailed in the requirements related to availability, backup and, especially, fault tolerance, which describes several characteristics of its data centre;

⁴³ See [un.org/en/ethics/assets/pdfs/Convention%20of%20Privileges-Immunities%20of%20the%20UN.pdf](https://www.un.org/en/ethics/assets/pdfs/Convention%20of%20Privileges-Immunities%20of%20the%20UN.pdf)

- In the maintenance processes, the hosting entity also plays an important role in areas like incident management, backup and restore, monitoring, patch and upgrade management.

249. The hosting entity is also in charge of the general security of its data centre, its networks and infrastructure (as mentioned in the nodes security requirements above). Furthermore, in order to demonstrate its maturity and commitment in information security, the hosting entity should ideally hold a renowned certificate like ISO/IEC 27001:2013.

250. Finally, since regular changes have to be applied by the hosting entity of its networks, infrastructure and nodes (network, security or server appliances), a well-defined change management process should be in place to test, prioritize, authorize and deploy changes in a controlled and effective manner. The communication about these changes with the clients of the hosting entity should be appropriate, timely and possible unavoidable downtime periods should be discussed in advance to find alternative solutions or at least inform the eTIR stakeholders concerned. Ideally, ECE should have a say when authorizing and planning changes that have an impact on the eTIR international system or on ITDB, possibly by having a seat in the Change Advisory Board (CAB) of the hosting entity.

6. Software security

251. One of the objectives of DevOps (also coined with the term DevSecOps), is about “leaning security left”, meaning to think about information security very early in the development process, rather than addressing it at the end, when changes made to a piece of software are more expensive. ECE has adopted the following practices and design decisions to pursue this objective:

- **Security requirements as features:** security and compliance are not separate processes that happen at the end of the development of software but are “shifted left” in the development process and are integrated in the same eTIR backlog as any other features.
- **Validations mechanisms:** all input data contained in the eTIR messages is validated at several levels to ensure its correctness, alignment with the specifications and pertinence. These mechanisms include, inter alia: a specific validation layer per request message, a validation layer using the related XSD file and integrity constraints in the eTIR database. In addition, the automated validation tests include testing malformed input data, null or blank values, values too long and specific evil stories.⁴⁴
- **Error handling:** errors occurring during the execution of the eTIR international system should be properly handled to always leave the system in a correct state. All errors should be logged for further study and should be tested, if possible, using automated tests to ensure that the error handling mechanism is behaving as expected.
- **Vulnerability check:** A static code analysis tool is used to regularly check the source code for bad practices that could create potential security vulnerabilities. Also, as numerous software libraries are used nowadays in any piece of software, a dependency checking tool is used to check the versions of the libraries against a database of known vulnerabilities to flag important upgrades to be performed in order to patch these vulnerabilities.
- **Protect the development toolset:** it is important to keep all the tools and internal knowledge used and produced by the IT experts secured. First and foremost, the VCS, keeping the source code of the eTIR international system and of all related utilities. Then, the internal documentation kept in the KMS and in the issue tracking system. Finally, the CI pipeline and all related tools needed in the various development processes, including the documentation for the eTIR stakeholders (like the technical guides).

⁴⁴ «Evil stories» follow a similar approach as «user stories» and describe scenarios that an attacker would follow to breach the security of the eTIR international system.

- **Telemetry:** it is the process of recording the behaviour of the eTIR international system. The IT experts should design and implement it to generate and log metrics that can then be analysed to – inter alia – prevent potential (security) incidents. Such metrics would include the following: eTIR message validation success/failures, use of invalid digital signatures, exceptions raised by the system, performance of the processing of the messages, etc. All these metrics generated and output in the eTIR logs are then exploited and can be displayed in graphics to study variations and potentially trigger alerts, based on specific patterns that may signal a potential cyberattack.
- **Continuous technology watch:** the IT experts should regularly engage in training activities to keep abreast of evolving technologies and techniques in securing software, including studying the latest products from entities like OWASP.⁴⁵

7. Security assessments

252. An IT security assessment is an explicit study to locate IT security vulnerabilities and risks. It can be performed internally by ECE, by information security experts from the United Nations or by external specialized companies mandated by ECE. The goal of a security assessment is to ensure that necessary security controls are integrated into the design and implementation of the eTIR international system. A properly completed security assessment should provide documentation outlining any security gaps and suggestions on how to address them. The results of security assessments are confidential.

253. The IT experts should strive to engage in performing regular security assessments and should ideally automate some of these assessments to be executed frequently. For instance, the type of security assessment called “vulnerability assessment”, whose purpose is to scan the source code and software components used to build and run the eTIR international system, should be automated using specific tools and executed regularly. This way, potential vulnerabilities can immediately be detected (and remediated) when patching and upgrading software components.

254. Whenever a new major version of the eTIR international system is developed, a more thorough security assessment should be performed, either by information security experts from the United Nations, or by an external specialized company, mandated by ECE. This security assessment would, most likely, take the shape of a “penetration testing” where the testers take the role of attackers and try to find and exploit security vulnerabilities in the eTIR international system. Depending on various factors, this exercise can be of type black, grey or white boxes. The colour indicates how much information a tester has at his or her disposal. A black-box tester has no prior knowledge about the system that will be targeted. With a grey-box assessment, the level of access and information is not complete, but only partly provided and available. Finally, a white-box assessment stands for a test in which the tester has full access to the source code, network diagrams and other relevant information.

D. Security of exchanges with the eTIR international system

1. Introduction

255. This section describes the security model and controls that should be followed by the different eTIR stakeholders while exchanging messages with the eTIR international system. The security model is designed to meet the requirements in terms of confidentiality, integrity and non-repudiation listed above. The technical details and versions of the algorithms and protocols mentioned should be regularly reviewed by TIB to ensure that the objectives and exigencies, in terms of security, are continuously covered.

⁴⁵ The Open Web Application Security Project® (OWASP) is a non-profit foundation that works to improve the security of software. See owasp.org

2. Confidentiality

256. As the eTIR messages are exchanged between the eTIR stakeholders over the internet, these exchanges need to be encrypted to prevent any third party from being able to read the messages exchanged and, thus, get access to this confidential information. The HyperText Transfer Protocol Secure (HTTPS), used to access the eTIR international system endpoints, is an extension of the HyperText Transfer Protocol (HTTP) where communication is encrypted using Transport Layer Security (TLS), a cryptographic protocol designed to provide communications security over public networks like the internet. The bidirectional encryption of the exchanges using HTTPS/TLS between a client and server protects against eavesdropping and tampering of the communication. The version of TLS to be used should be either version 1.2 or 1.3.⁴⁶

257. As the encryption of the exchanges between the eTIR stakeholders uses the HTTPS/TLS protocols to ensure the confidentiality of the communication, there is no need to either set up Virtual Private Networks (VPN) or to perform a double encryption at the eTIR messages level using the techniques available using SOAP.

3. Integrity and non-repudiation

258. Messages exchanged with the eTIR international system must be authenticated and their integrity must be ensured to achieve non-repudiation. This is accomplished using the concept of electronic signatures. Definitions of electronic signatures vary depending on the applicable jurisdiction and a common denominator is therefore set in the context of the eTIR specifications. This common denominator states that electronic signatures should achieve the following requirements:

- The signatory can be uniquely identified and linked to the electronic signature;
- The signatory must have sole control of the private key that was used to create the electronic signature;
- The electronic signature must be capable of identifying if its accompanying data has been tampered with after the message was signed.

259. From a technical point of view, this is achieved using a digital certificate (also known as public key certificate) following the X.509 standard,⁴⁷ version 3. Each eTIR stakeholder wishing to interconnect his or her information systems with the eTIR international system should be issued a X.509 certificate from a trusted Certificate Authority (CA)⁴⁸. The X.509 certificate, which uniquely identifies the eTIR stakeholder is used to sign the eTIR messages. This way of implementing electronic signature not only ensures the identity of the sender but also guarantees that the message content has not been tampered during the transmission, thus ensuring integrity.

260. In order for the X.509 certificates to ensure a high level of security, they should be created using the following parameters:

- The validity period should be, maximally, one year;
- The public key algorithm should be RSA with a key length of 4096 bits;
- The signature algorithm should be SHA-256 with RSA;
- The “Country (C)”, “State Name (ST)” and “Locality Name (L)” parameters should reflect where the eTIR stakeholder is located. Only the “State Name (ST)” parameter is optional;
- The “Email (E)” parameter should provide the email address of the IT service desk of the eTIR stakeholder;

⁴⁶ Versions 1.0 and 1.1 of TLS have been deprecated in 2020 as they are no longer considered as secure

⁴⁷ See [itu.int/ITU-T/recommendations/rec.aspx?rec=X.509](https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=X.509)

⁴⁸ Also known as Trusted Third Parties

- The “Common Name (CN)” and the “Organization Name (O)” parameters should hold the same value which is the full name of the eTIR stakeholder as an entity/organization.

261. As the X.509 certificates have a limited validity period, they will be regularly replaced with new ones and the exchange of new certificates should be properly planned between ECE and the other eTIR stakeholders to prevent any interruption of service. Also, since data exchanged and stored with the eTIR international system should be kept for ten years,⁴⁹ ECE will keep all previous X.509 certificates of the eTIR stakeholders in a secure location to be able to verify the electronic signature of old eTIR messages, in case ECE is requested by the competent authorities of contracting parties to provide all data related to a TIR transport.

4. Whitelisting

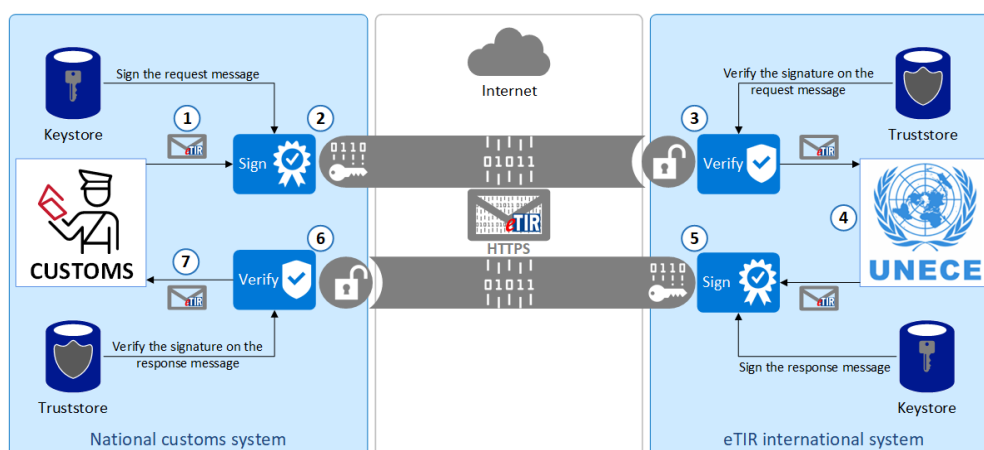
262. As the eTIR stakeholders who wish to communicate with the eTIR international system need to complete an interconnection project, ECE keeps an accurate and up-to-date list of these companies/entities/organizations. This approach allows to put an extremely effective security measure in place: whitelisting. The eTIR international system is configured not to be accessible by anyone from the internet, except by a restricted list of IP addresses which correspond to the main servers of the eTIR stakeholders which have completed their interconnection projects. This approach drastically reduces the potentiality of cyberattacks to the eTIR international system, including “denial of service” and trying to “spoof”⁵⁰ an eTIR stakeholder.

263. During the course of the interconnection project, ECE requests the IP addresses of the servers of the eTIR stakeholder which will connect with the eTIR international system, both on the UAT and PRD environments, and liaises with the United Nations hosting entity to configure the network appliances accordingly.

5. eTIR security model

264. The eTIR security model combines all security aspects mentioned above to provide a highly secured approach. The following figure illustrates how this security model works with an eTIR message being sent from a national customs systems to the eTIR international system using web services. The same approach applies when communicating in the same way with guarantee chains and holders.

Figure 22
eTIR security model



265. In the example above, as a preliminary step, the X.509 certificate of the national customs system is installed in the eTIR international system truststore and the eTIR international system X.509 certificate is installed in the national customs system truststore.

⁴⁹ As per Article 12 of Annex 11 of the TIR Convention

⁵⁰ A spoofing attack is a situation in which a person or program successfully identifies as another by falsifying data, to gain an illegitimate advantage.

This mandatory initial step allows the validation of the digital signatures that are transferred as security tokens in all eTIR messages exchanged in the context of the eTIR procedure. The procedure below describes the steps numbered in the figure above and explains how a request message is sent by the national customs system to the eTIR international system, and how the related response is sent back:

(1) The national customs system generates a request message to be sent to the eTIR international system web service;

(2) The request message is signed with the private key of the national customs system X.509 certificate. It is then encrypted using HTTPS/TLS and sent over the internet. The connection can be successfully established, as the national customs system is whitelisted by the network appliances of the eTIR international system;

(3) The eTIR international system receives the request message, decrypts it, verifies the signature of the message using the public key of the national customs system X.509 certificate to authenticate it and to confirm its integrity. The full message including its digital signature is then securely stored in the eTIR logs;

(4) The eTIR international system processes the request message and generates a response message in return;

(5) The response message is signed with the private key of the eTIR international system X.509 certificate and securely stored in the eTIR logs. It is then encrypted using HTTPS/TLS and sent over the internet;

(6) The national customs system receives the response message, decrypts it, and verifies the signature of the message using the public key of the eTIR international system X.509 certificate to authenticate it and to confirm its integrity;

(7) The national customs system finally processes the response message.

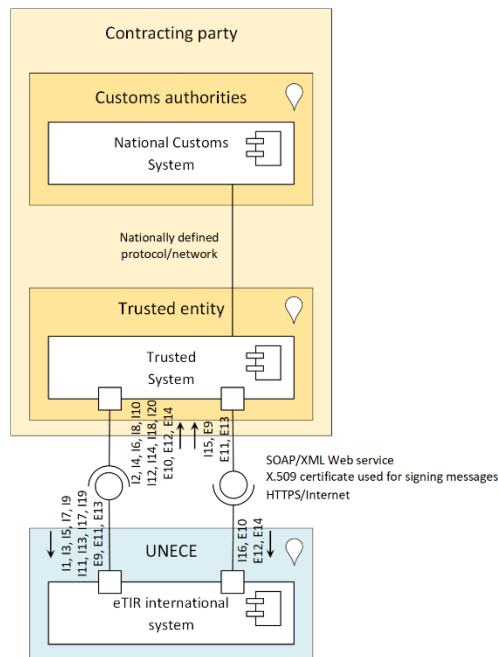
266. The completion of this whole process illustrates the implementation of the various security measures described in the sections above to achieve the requirements of confidentiality, integrity and non-repudiation.

6. Alternative security models

267. National legislations and regulations in contracting parties may prevent their customs authorities from interconnecting their national customs systems to the eTIR international system by following the specifications described above. In that case, an alternative security model should be designed and agreed between the IT experts of ECE and of the customs authorities. It should also be reviewed and approved by TIB. This alternative security model should meet the same security requirements in terms of confidentiality, integrity and non-repudiation, to be accepted.

268. A possible alternative security model is described below in case the customs authorities of a contracting party are required to use specific encryption algorithms or other technical aspects that would prevent them to initiate a direct connection with the eTIR international system. This security model is similar to the one described above, except that another entity under the contracting party government jurisdiction would play the role of a proxy between the eTIR international system and the national customs system. This entity should be trusted by the customs authorities and the technical details of the connection between this entity and the national customs system would be the sole decision of the contracting party and should be described in the eTIR technical specifications. The following figure shows the architecture of this alternative security model.

Figure 23
An alternative security model



269. This alternative security model still requires that the communication between the eTIR international system and the trusted system be done using HTTPS/TLS and signing the eTIR messages using X.509 certificates that would comply with the technical specifications described above. On the contracting party’s end, the X.509 certificate signing messages sent by the customs authorities could belong to the customs authorities or to the trusted entity, at the decision of the customs authorities.

7. Common threats and mitigation measures

270. A table is provided in annex VI.D of the present document to summarize all security measures and controls that should be put in place for the eTIR international system, and to give an overview for the contracting parties to the TIR Convention on how these measures will mitigate the risks posed by common security threats.

E. Security of exchanges between other eTIR stakeholders

1. Introduction

271. The previous section describes the technical specifications of the exchanges between any eTIR stakeholders and the eTIR international system using web services. These eTIR stakeholders include customs authorities, guarantee chains and holders and all of them should have undergone an interconnection project. In addition to these types of exchanges, holders can also exchange information (advance TIR data and advance amendment data) directly with the customs authorities.⁵¹ This section describes the technical specifications of this latter type of communication only.

2. Authentication of the holder

272. Each contracting party shall publish a list of all electronic means by which advance TIR data and advance amendment data can be submitted by the holder to the customs authorities.⁵² The authentication mechanisms used by these electronic means should uniquely identify the holder and should feature security measures and controls which provide sufficient

⁵¹ As per paragraph 2 of Article 6 of Annex 11 of the TIR Convention

⁵² As per paragraph 4 of Article 6 of Annex 11 of the TIR Convention

assurance that the authentication mechanism is secure, in accordance with national laws.⁵³ In order to be specific and transparent about this important point, each contracting party shall publish the list of authentication mechanisms used by these electronic means.⁵⁴ Finally, it is also important to mention that the authentication of the holder performed in this context shall be recognized by the other contracting parties along the itinerary of the TIR transport following the eTIR procedure.⁵⁵

273. The authentication of the holder exchanging data directly with the customs authorities is, therefore, a matter of national concern and is not governed by the eTIR specifications. In order to assist and facilitate the decision of contracting parties about this important topic, the next sections provide guidelines and best practices of authentication mechanisms that do not rely on electronic signatures.

3. Multi-Factor Authentication (MFA)

274. MFA is an electronic authentication method in which a user is granted access to a website or application only after successfully presenting two (or more) pieces of evidence (or factors) to an authentication mechanism. These two (or more) pieces should belong to at least two different classes among the three that exist:

- **Knowledge:** something only the user knows, like a password or a personal identification number (PIN) code;
- **Possession:** something only the user has, like a smartphone with a configured software-based authenticator, a smartcard or a security card (as used in ITDB);
- **Inherence:** something only the user is, like fingerprints, voice prints, retina patterns, iris patterns or face shapes.

275. It is recommended to use MFA in the authentication mechanism as it provides a high level of assurance that the user is indeed who he or she claims to be.

4. Password strength

276. Most of the web sites and web applications rely on passwords (either solely or as part of an MFA) to authenticate their users. It is important to understand and comply with the minimum requirements in terms of password length and complexity as effective attacks can crack passwords that would not be compliant in seconds. All passwords should conform to the following specifications:

- At least 12 characters long; more than 14 characters is better;
- Different from the default (initial) password;
- Not be the same as the username;
- Composed of, at least, three of the following character classes:
 - upper case letters: ABCDEFGHIJKLMNOPQRSTUVWXYZ
 - lower case letters: abcdefghijklmnopqrstuvwxyz
 - numbers: 0123456789
 - punctuation marks: !@#\$%^&*()+=\`{ }[]: ";'< >?,./)
- Not be based on words found in dictionaries of any language or based on simple patterns such as “aaabbb”, “qwerty”, “zyxwvuts”, “123321”, etc.

277. In addition, users should be encouraged not to base their password on any personal information that is easily available to potential adversaries, such as names of family members, pets, friends, co-workers, birthdays, addresses, phone numbers, etc. And, finally, passwords should be regularly changed, at least once per year.

⁵³ As per paragraph 1 of Article 7 of Annex 11 of the TIR Convention

⁵⁴ As per paragraph 3 of Article 7 of Annex 11 of the TIR Convention

⁵⁵ As per Article 8 of Annex 11 of the TIR Convention

IV. Communication between eTIR stakeholders and the eTIR international system

278. This part describes all the technical aspects of the interfaces between the information systems of the eTIR stakeholders and the eTIR international system. The following facets are described: interconnection projects, the eTIR data model, implementation and test of the eTIR messages, requirements and recommendations applicable to eTIR stakeholders, the technical specifications of all eTIR messages.

279. The main objective of this part is to facilitate the interconnection of eTIR stakeholders with the eTIR international system (following the third guiding principle) and to reduce the risks of facing technical issues when performing this interconnection. The following sections intend to demonstrate the consistency and integrity of these interfaces by clearly specifying them, as well as expectations on every constituent part of the whole set of interfaces; while specifying the responsibilities between the parties involved.

A. Interconnection projects

1. Introduction

280. eTIR stakeholders who wish to become part of the eTIR system shall undertake an interconnection project to connect their information systems to the eTIR international system by following the eTIR specifications. ECE will assist countries in connecting their national customs systems to the eTIR international system, in line with paragraph 2 of Article 11 of Annex 11 of the TIR Convention.

281. The size of the project varies between the eTIR stakeholders and is mainly related to the following two factors:

- The differences between the data model and the procedures of the information systems of the eTIR stakeholder on one side and of the eTIR international system on the other side;
- The number of eTIR request messages to be implemented, which depends on the kind of eTIR stakeholders: 3 for holders, 4 for guarantee chains (7 including optional request messages) and 11 for customs authorities (13 including optional request messages).

2. Documentation

282. In order to assist eTIR stakeholders in the context of the interconnection projects, ECE produces additional documentation which is aligned with the eTIR specifications and with Annex 11 of the TIR Convention. The experience acquired and the feedback received during the interconnection projects allows ECE to continuously improve these documents by regularly publishing new versions, available on the eTIR web site⁵⁶.

283. Guides titled “Project guidelines” are addressed at the management team of the eTIR stakeholders. These guides describe the approach proposed by ECE to undertake the interconnection project. It details the project methodology, stages and milestones, communication management plan and teams involved, along with roles and responsibilities. Finally, it proposes a draft project plan in the form of a Gantt chart.

284. A common technical guide titled “Introduction to the eTIR web services” is addressed at the technical team of all eTIR stakeholders. This guide describes how to access the eTIR web services, how to implement and test the eTIR messages, and how to implement and configure the security features of the communication with the eTIR international system.

285. Finally, each pair of eTIR message has its own technical guide addressed at the technical team of the relevant eTIR stakeholders. Each guide recalls at which moment of the

⁵⁶ See etir.org/documentation

TIR transport these messages are used, their context and prerequisites, details the description and usages of all fields of both messages and gives examples on how to use them.

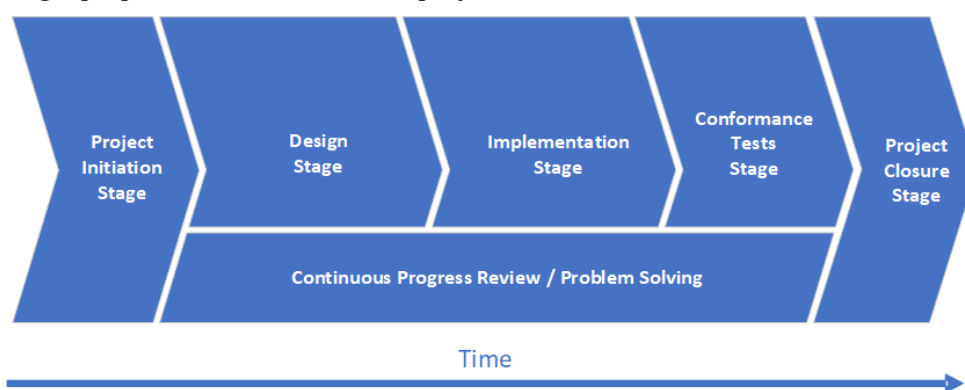
286. Most of the content of the technical guides is available in the next sections of the current part to give a comprehensive overview of the technical specifications of these eTIR messages and how to implement, test and use them. At the same time, these guides propose additional technical details and are updated more frequently than the eTIR specifications to better accompany the eTIR stakeholders during their interconnection project.

3. Stages

287. The stages proposed by ECE for the interconnection projects (which are described in detail in the “Project guidelines” document) are shown in the following figure. Their main objectives and activities are detailed hereafter where the team from the eTIR stakeholder, working on the project, is hereinafter referred to as the “project team”.

Figure 24

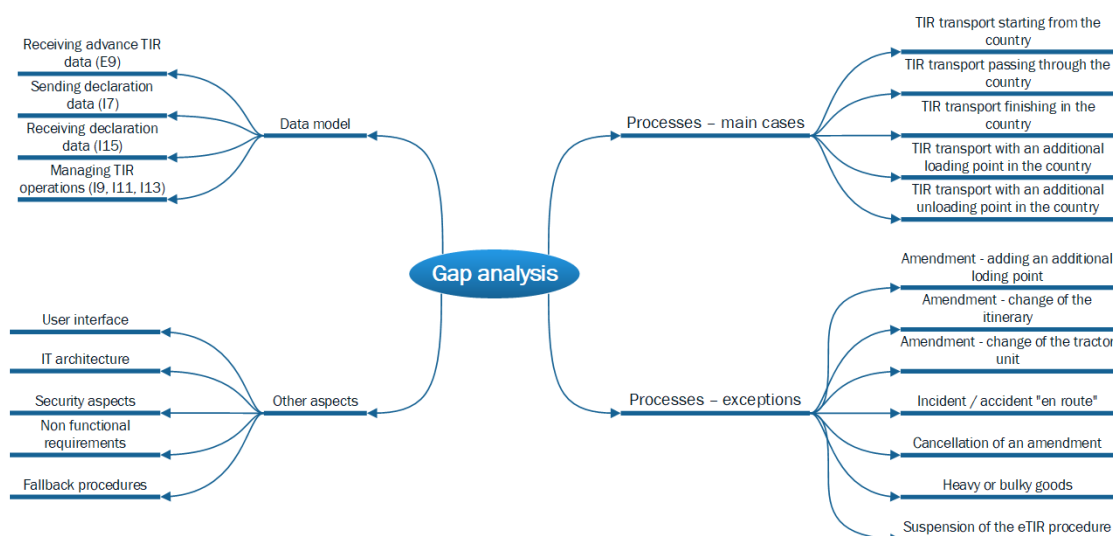
Stages proposed for interconnection projects



288. During the **project initiation stage**, the project team is formed, decides on a project methodology, agrees with ECE on the collaboration arrangements, and start drafting a project plan.

289. During the **design stage**, the project team studies the eTIR specifications and the documentation applicable to them. They perform a gap analysis between several aspects of the information systems of the eTIR stakeholder on one side, and the eTIR international system and the eTIR procedure on the other side. The aspects considered during this gap analysis depend on the kind of eTIR stakeholder and, as an example in the case of customs authorities, these aspects are detailed in the following figure.

Figure 25
Aspects of the gap analysis for customs authorities



290. The objective is to identify the gaps between both sides and to find ways, in collaboration with ECE, to resolve them. Following this study, all changes that need to be applied to the information systems of the eTIR stakeholder are detailed and the relevant documentation is produced to describe to the IT experts of the project team (or the consultants) how to implement these changes. The end of this stage is an opportunity to update the project plan with the insight collected by the project team.

291. During the **implementation stage**, the project team implements and tests the changes that need to be performed on the information systems of the eTIR stakeholder, the interface to connect to the eTIR international system and the relevant eTIR messages. This stage is realized in close collaboration with ECE and by connecting to the UAT environment of the eTIR international system.

292. During the **conformance tests stage**, the project team and ECE perform a comprehensive set of tests between the information systems of the eTIR stakeholder and the eTIR international system, to verify the conformity of the developed solution with the eTIR specifications. In the case of customs authorities, these tests simulate possible TIR transports and cases foreseen in the TIR Convention which can happen in the context of the eTIR procedure. If anomalies are found, the project may need to return to the implementation stage for correction or additional rework. Once all tests are successful, the project team deploys in production the new version of their information systems and train the relevant staff on how to use it.

293. As shown in figure 24, the **continuous progress review stage** is a stage parallel to the others and it represents the continuous collaboration between the project team and ECE during the project. ECE stands ready to answer any question on the TIR Convention, the eTIR procedure and the eTIR specifications; help on the technical aspects and liaise with the project team to find solutions for identified gaps and resolve any issue that may arise.

294. During the **project closure stage**, the project team performs the usual project closure activities, draws the lessons learned from the project and hands over the results to the operations team.

4. Issues

295. During the project initiation stage, a communication management plan is discussed and agreed between ECE and the eTIR stakeholder and it includes how to raise, discuss and resolve issues that may occur during the project. These issues include how to solve the gaps identified during the design stage. If certain issues cannot be solved at the level of the project, they can be brought to the attention of TIB. In particular, the eTIR stakeholder may wish to bring a proposal to amend the eTIR specifications to be discussed by TIB.

B. The eTIR data model

1. Introduction

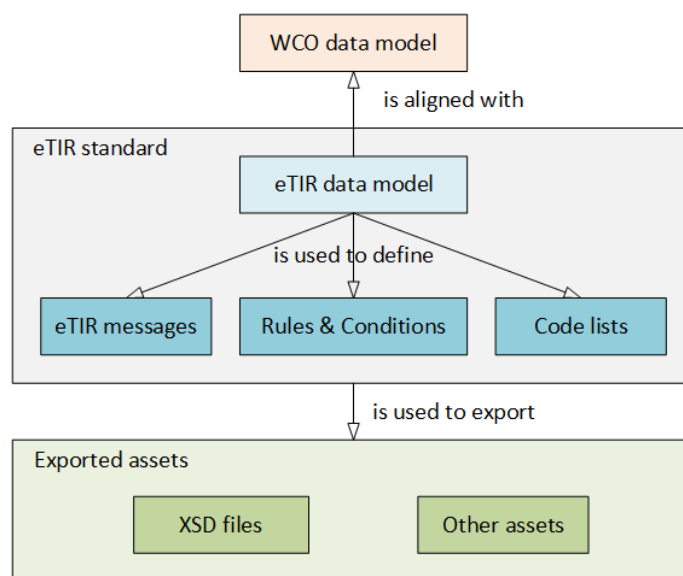
296. The eTIR data model defines the various components of the messages allowing the information systems of the eTIR stakeholders to exchange information in the context of the eTIR procedure. This section details these components and their technical specifications.

2. Structure

297. The structure of the eTIR data model is shown in the following figure and its components are detailed thereafter.

Figure 26

Structure of the eTIR data model



298. The **eTIR messages** define the structure of the data exchanged between the information systems of the eTIR stakeholders. They follow the structure of the eTIR data model and describe, in the form of a tree structure, the information needed in the context of the message. The nodes of the tree structure are called the classes and the leaves of the tree structure are called the attributes. An attribute is an elementary (atomic) piece of information and is part of a class. A class groups together one or more attributes and/or other classes related to the same subject. A field is the generic term to represent either a class or an attribute.

299. The **rules and conditions** define business rules that are translated as constraints on specific attributes and classes of the eTIR messages. The rules and conditions of the eTIR specifications are defined in the functional specifications document.

300. All fields have a **status** which defines whether the field is required in the message (status: “R”), optional (status: “O”), or if its status depends on the evaluation of a condition (status: “D”). In the latter case, a condition is also applied to the field.

301. The **code lists** define specific codes that are used in particular attributes of the eTIR messages. Using codes removes the problem of languages when transferring information and should always be preferred when selecting an item from a defined list. The descriptions of the codes can be translated, thus becoming multilingual. Furthermore, using a code list allows the system receiving the message to validate that attributes bound to a code list are using proper codes from the list. On the other hand, code lists should not be used when an attribute should contain an identifier, a numeric value or a free text value. The list of code lists is available in annex VI.F of this document.

302. All fields have an “eTIR name” which is specific to the eTIR data model and, therefore, might differ from the name given in the WCO data model. This name allows for a

better understanding of the purpose of the fields. In order to remain compliant with the WCO data model, the names of the XML elements corresponding to these fields are not changed and remain the ones from the WCO data model. The following specifications are applied to the eTIR names:

- Attributes that represent an identifier are named “identifier”;
- Attributes that represent a code have their name ending with “, coded”;
- Attributes that represent a date have their name ending with “ date”;
- Attributes that represent a date and a time have their name ending with “ date time”;
- Attributes that represent either a date or a date and a time have their name ending with “ date time”.

303. The eTIR data model is developed and maintained by ECE, based on amendments approved by TIB, and it is then used to export several types of assets. These assets are used either to be integrated in documentation (like the eTIR specifications or the technical guides), or to be used in the context of the interconnection projects. Among them, XSD files are technical assets that contain the XML schemas definitions of each eTIR message and are defined in annex VI.E of this document.

3. Inheritance

304. The eTIR data model is entirely based, and fully aligned, with the WCO data model. This decision has set guidelines for the structure of the eTIR messages in particular and it yields several benefits, the most important being the similarity, consistency and interoperability between the eTIR data model and the data models of the national customs systems which also base theirs on the WCO data model. As a result, the interconnection between these national customs systems and the eTIR international system will be greatly facilitated, which will result in a small number of gaps between systems and thus, less time and cost to interconnect both systems.

305. During the development of the eTIR data model, it may be needed to request additions or updates to the WCO data model. In this case, ECE submits DMRs to the Data Model Project Team (DMPT) sessions organized by WCO to ask them to amend the WCO data model to reflect the needs for the eTIR data model. As these changes are included later on, when the new version of the WCO data model is published, ECE is using and publishing meanwhile these changes as extensions to the WCO data model.

4. Updating the eTIR data model

306. The eTIR data model continues to evolve across the subsequent versions of the eTIR specifications. Many proposals for amending the eTIR data model (including the eTIR messages, rules and conditions and code lists) are submitted by ECE, based on the feedback gathered during the development of the eTIR international system. Working with the project teams of the eTIR stakeholders during the interconnection projects is another important source of amendment proposals. Finally, contracting parties and the guarantee chain can also propose amendments.

307. All these amendment proposals are submitted to TIB for consideration. TIB decides whether these amendments should be approved and if it is the case, requests ECE to include them in one of the next versions of the eTIR specifications. As for the source code of the eTIR international system, the eTIR data model is also versioned using the VCS Git. This allows to easily develop and maintain several versions of the eTIR data model concurrently.

308. Keeping track of all the changes brought to the eTIR messages is done by means of “change logs”.. These “change logs” contain the following information: class and attribute impacted, nature, date and reason of the change, and indication in which version of the eTIR specification this change was applied. All changes are then aggregated by eTIR message and exported using reports to be made available in the section “Overview of changes” of the eTIR functional specifications document.

309. Originally, the version numbers of the eTIR data model had been decorrelated from the version numbers of the eTIR specifications. For version 4.3 of the eTIR specifications, the version number of the eTIR data model has been adapted to create a more obvious link. The following table shows the correspondence between the version numbers of the latest eTIR specifications, the eTIR data model and the related WCO data model on which they were based.

Table 32
Correspondence of the version numbers

<i>Date of publication of the eTIR specifications</i>	<i>eTIR specifications version number</i>	<i>eTIR data model version number</i>	<i>WCO data model version number</i>
4 March 2011	3.0	0.1	3.2.0
10 November 2013	4.0	0.2	3.3.0
25 November 2014	4.1	0.3	3.5.0
27 November 2017	4.2	0.4	3.7.0
<i>To be determined</i>	4.3	0.43	<i>(planned)</i> 3.11.0

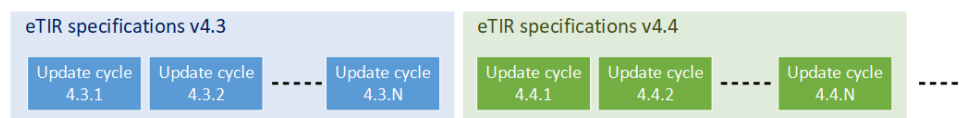
310. The version numbers of the eTIR international system are currently independent from these version numbers above, and are governed as specified in section E.13 of the part of this document dedicated to the eTIR international system.

5. Updating the code lists

311. There are currently 14 code lists managed internally as part the eTIR standard and 11 code lists managed externally by other entities. Some of these external code lists are updated regularly like the ones managed by UN/CEFACT which are revised twice a year. As a result, several code lists may need to be updated more frequently than the eTIR specifications. In order to allow this, a third “update” number is added to the current version number of the eTIR specifications (for instance: 4.3.1, 4.3.2, 4.3.3, etc.) and will be indicated in the metadata information of all messages exchanged between the eTIR stakeholders for them to know which versions of the code lists is used in the message.

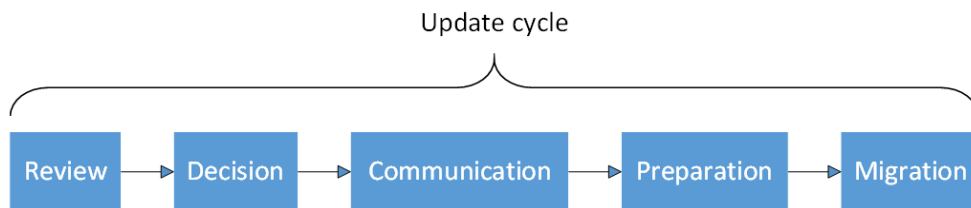
312. The updates of the code lists is managed during so-called “update cycles” within the versions of the eTIR specifications. Depending on the length of validity of a version of the eTIR specifications, there can be one or more of these update cycles, given the fact that the first update cycle starts with the beginning of a version of the eTIR specifications, therefore, with a given list of versions for the code lists. The update cycles have to be subsequent with one another, which means that only one version of code lists is valid at a given date and time to avoid issues in interpreting historical values. The following figure shows the relationship between both notions.

Figure 27
Update cycles in the versions of the eTIR specifications



313. The update cycles consist of a sequence of phases and the length of each of them, as well as the overall length of the cycle, is defined by TIB. The following figure shows the phases involved in an update cycle, which are then described below.

Figure 28
Phases of an update cycle

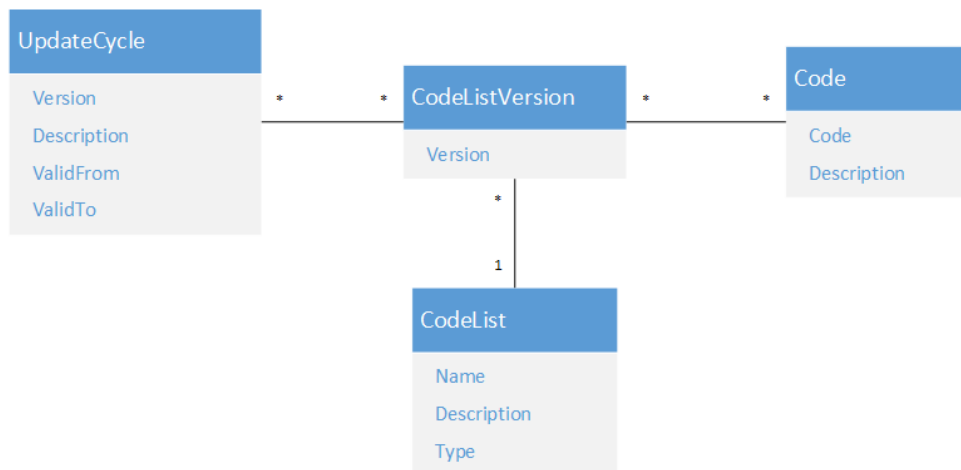


1. **Review:** ECE reviews the latest versions available of the external code lists and prepares a proposal to update one or more of these code lists. ECE can also use this opportunity to update one or more of the internal code lists.
2. **Decision:** ECE presents the proposal to TIB which decides on the list of code lists to update, assigns a new version of the eTIR specifications to it by incrementing its “update” version and decides on the start date and time of the new update cycle.
3. **Communication:** ECE informs all eTIR stakeholders about the decision of TIB related to the new update cycle and related information (new version of eTIR specifications, new versions of the code lists and start date and time).
4. **Preparation:** ECE upgrades the eTIR international system to include the new version of the code lists and configure the system to switch automatically to the new update cycle (using the new version of eTIR specifications and the new versions of the code lists) at the given start date. All eTIR stakeholders are expected to do the same and they can test the new version of their information systems with a dedicated instance of the eTIR international system on the UAT environment.
5. **Migration:** At the given start date and time of the new update cycle, the current update cycle automatically finishes and all eTIR stakeholders (including the eTIR international system) are switching to the new version of the specifications which uses the new version of the code lists.

314. During the migration phase, there are several ways for the eTIR stakeholders to smoothly operate the switch to the new update cycle. One of these options consists in manually deploying a new version of their information system at the start date and time. This new version should have been previously tested in collaboration with ECE during the preparation phase. Deploying a new version of their information system might require taking it off-line for a given period.

315. A second option consists in automating the switch to the new update cycle to avoid the period of unavailability and the manual processes. This can be done by deploying a new version of the information system in advance which includes a test based on the date and time to use the current or the future version of the eTIR specifications and code lists in messages. This can also be done by implementing the notion of update cycles in their database. As an example, the following figure shows how these notions are implemented in the eTIR database.

Figure 29
Update cycles and code lists class diagram



316. As depicted in the above class diagram, an update cycle is linked to specific versions of code lists. Code lists can be of two types: internal (defined in the eTIR specifications) or external. Most of the time, only a few codes differ from one version of a code list to another. Therefore, the design of the structure should allow to link one code to several versions of code lists to prevent unnecessary duplication of codes.

317. With this approach of managing versions of code lists, users of the eTIR system will get an update of the code lists used by the business community on a regular and predictable basis. The update cycles, code lists and their codes will be managed in the eTIR international system to allow for proper management of code lists over time, including being able to query information related to TIR transports that happened in the past with previous versions of code lists.

C. Implementation and tests of the eTIR messages

1. Recommended general approach

318. This section describes the guidelines to be followed by the eTIR stakeholders to implement and test the eTIR messages. This includes translating the information entered by the users of the information systems of the eTIR stakeholder (e.g. customs officers using the national customs systems) into eTIR messages and sending them to the eTIR international system. This also includes validating and processing incoming messages, storing values embedded in them, and presenting the information needed to the customs officers.

319. This section only covers the aspects related to the eTIR messages and does not provide guidelines on how to update the information systems of the eTIR stakeholders to adapt to the eTIR procedure. This aspect, and related decisions, are under the sole responsibility of the eTIR stakeholders and are addressed during the design stage of the interconnection project, especially during the gap analysis. However, the general recommendations given in terms of development and maintenance processes can be applied to this scope as well.

320. ECE describes the processes its IT experts follow for the development and maintenance of the eTIR international system in the part of this document dedicated to the latter. This includes the following practices summarized below:

- Adopt an Agile approach and development by iteration, which allows embracing change and delivering constant value by deploying new versions of the software regularly;
- Configure a KMS featuring a collaboration platform to host the internal documentation, describing all development, managerial and operational aspects; and an issue-tracking system to manage all tasks to be done;

- Have a good traceability by versioning all assets using a VCS including the source code, database schema and all other configuration items needed for the development and maintenance of the software;
- Log and monitor as much information as possible to gain insight in the functioning of the software in production and detect issues early on, to be able to react quickly;
- Focus on quality assurance and keep a high reliability of the system by investing in automated tests, static code analysis and setting up a mature CI pipeline;
- Set up several environments for the different stages of the SDLC and have clear procedures on how to promote new releases of the system;
- Have clear and comprehensive guidelines on how to manage issues and incidents while maintaining the system;
- Consider Information Security in all aspects of the development and maintenance processes, putting in place tools and procedures to decrease the probability of having to face cybersecurity issues.

321. eTIR stakeholders are welcome to adopt all or part of these processes for the development and maintenance of their own information systems and ECE welcomes any feedback from eTIR stakeholders to improve these processes in order to better fulfil the three guiding principles.

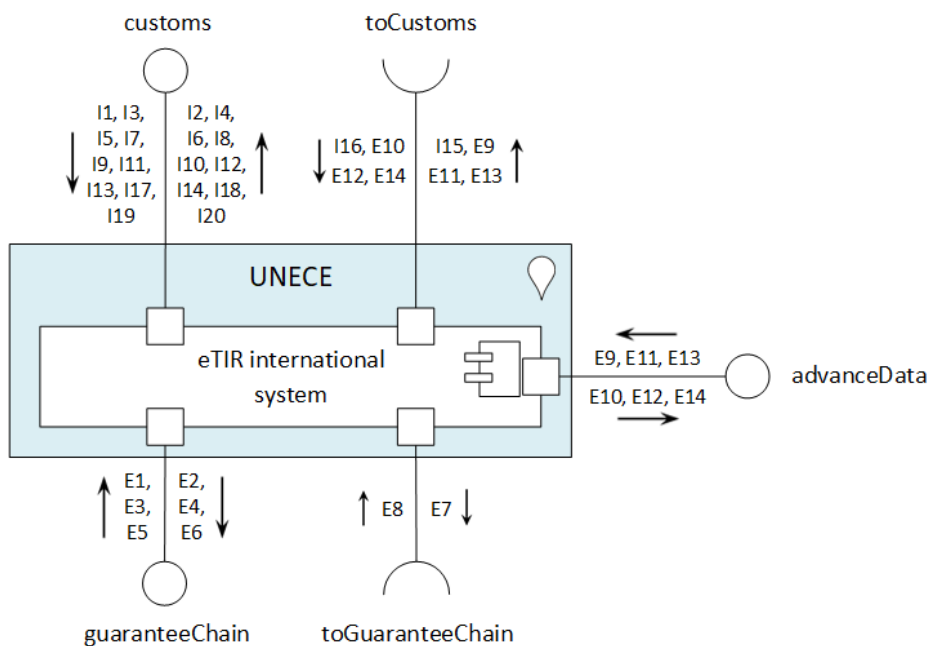
2. The eTIR web services

322. The eTIR messages are exchanged between the information systems of the eTIR stakeholders using web services. This “machine-to-machine” way of exchanging information does not rely on a human being to trigger the sending of the messages, although most of them will be sent as a result of actions performed by an end user on the various information systems taking part in the eTIR system.

323. When an information system sends or receives a message from the eTIR international system, this is done using the eTIR web services that are exposed through several endpoints to authorized eTIR stakeholders, as depicted in the following figure and detailed below.

Figure 30

Endpoints of the eTIR web services



- The endpoint “customs” is exposed for customs authorities to send to the eTIR international system the following messages: I1, I3, I5, I7, I9, I11, I13, I17 and I19.

After having processed the incoming message, the eTIR international system returns the associated message in response: I2, I4, I6, I8, I10, I12, I14, I18 or I20.

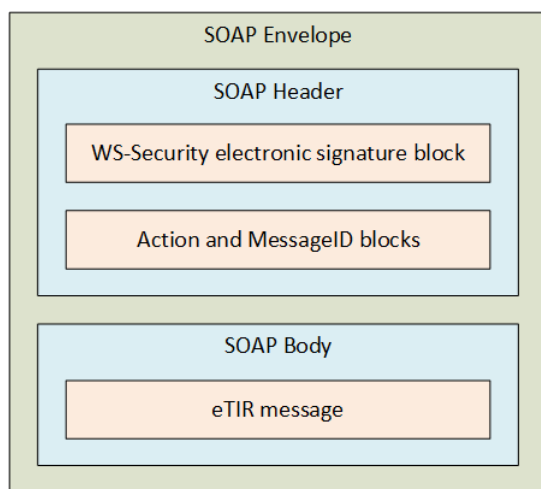
- The endpoint “toCustoms” which should be exposed by each and every customs authority so that the eTIR international system can send them the following messages: I15, E9, E11 and E13. Customs can choose the name of this endpoint. After having processed the incoming message, the customs authorities return the associated message in response: I16, E10, E12 or E14.
- The endpoint “advanceData” is exposed for all eTIR stakeholders who wish to send advance data to customs authorities via the eTIR international system with the following messages: E9, E11 and E13. After having forwarded the incoming message to the relevant customs authorities, the eTIR international system returns their associated message in response to the original sender: E10, E12 or E14.
- The endpoint “guaranteeChain” is exposed for guarantee chains to send to the eTIR international system the following messages: E1, E3 and E5. After having processed the incoming message, the eTIR international system returns the associated message in response: E2, E4 or E6.
- The endpoint “toGuaranteeChain” which should be exposed by guarantee chains so that the eTIR international system can send them the message E7. After having processed the incoming message, the guarantee chains return the message E8 in response.

324. These endpoints are specified and described using WSDL files⁵⁷ available at URLs depending on the environments, as listed in the technical guides⁵⁸. These WSDL files describe the communication protocol, the format of the messages, and the methods that web service users/consumers can call (the actions associated to the eTIR messages). The communication protocol used is Simple Object Access Protocol (SOAP) v1.2⁵⁹.

325. A SOAP message is an XML document featuring an envelope which contains a header and a body as shown in the following figure. The SOAP header includes the action name (referencing which eTIR message is sent) and a security object, following the specifications of the WS-Security SOAP extension, which is used to integrate the electronic signature of the message. How to format the SOAP header is detailed in the dedicated section of the “Introduction to the eTIR web services” technical guide. The SOAP body contains the eTIR message, which includes the metadata information.

Figure 31

Structure of SOAP messages in the eTIR system



⁵⁷ See en.wikipedia.org/wiki/Web_Services_Description_Language

⁵⁸ See etir.org/documentation

⁵⁹ See en.wikipedia.org/wiki/SOAP

326. As specified in the part of this document related to Information Security, access to the various environments of the eTIR international system is limited to eTIR stakeholders who have communicated their servers' IP addresses, which are then whitelisted by the United Nations hosting entity. Therefore, in order to gain access to the eTIR web services, the eTIR stakeholders need to communicate these IP addresses to ECE, in the context of their interconnection projects.

327. In addition, in order to establish a connection with the eTIR international system, the following information needs to be exchanged:

- A unique identifier which will be defined by ECE and recorded in the eTIR database to uniquely identify the eTIR stakeholder. This identifier is used in the metadata class included in all eTIR messages to identify the sender and recipient of the message. Eventually, different identifiers will be set for the eTIR stakeholders for the various environments of the eTIR international system (User Acceptance Tests and Production);
- As specified in the part of this document related to Information Security, the eTIR stakeholder should generate an X.509 certificate and send the certificate (public key) to ECE so that it can be registered in the trust store of the eTIR international system. In return, ECE will also send the certificate (public key) of the eTIR international system (for the relevant environment) to the eTIR stakeholder so that it can be registered in their trust store.

328. Once these prerequisite tasks are completed, the eTIR stakeholder can manually start testing the connection, using software like SoapUI, as described in the "Introduction to the eTIR web services" technical guide. Once the interconnection is successfully tested, the project team of the eTIR stakeholder can start implementing and testing the eTIR messages and the required software component needed to interconnect their information systems with the eTIR international system.

3. Specific implementation details

329. This chapter describes how to implement and format the various types of attributes that are used in the eTIR messages. This section is to be read in conjunction with the tables describing the description and usages of these attributes in the list of eTIR messages in the following section. Explanations are provided for each data type and also for specific attributes.

(a) Metadata fields

330. Each eTIR message starts with a set of attributes that are used to indicate metadata information characterizing the message. This information includes the specifications to which the message belongs and follows, their versions and the entity in charge of managing them. It also indicates at which date and time the message was prepared, the entity that sent it and the entity that should receive it.

331. Except for the date and time of the preparation of the message, which is an optional attribute, all other metadata attributes are mandatory. As they are part of the eTIR message, they belong to the SOAP body and are mentioned before the fields (classes and attributes) of the eTIR message, as per the WCO Data Model XML Guidelines 2nd edition⁶⁰.

332. The values to be used as the unique identifiers of the sender and receiver of the message should follow these specifications. A complete list of possible values is available on the dedicated page of the eTIR web site⁶¹:

- The eTIR international system is represented by the value "eTIR international system";

⁶⁰ See section 6 of document available at wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/instruments-and-tools/tools/data-model/wco_xml_guidelines_2012.pdf

⁶¹ See etir.org/documentation/senders-receivers

- National customs systems are represented by the value following this format: “Customs Authorities *ISO*” where ISO represents the ISO code value for the country of the customs authorities following
- Union customs systems and regional customs systems are represented by the values commonly agreed with ECE during their interconnection projects;
- Guarantee chains are represented by the values commonly agreed with ECE during their interconnection projects;
- TIR Carnet holders are represented by their code (e.g. “UZB/074/32768”);

333. The following two tables list first the details of the fields (classes and attributes) of the metadata section and then their descriptions and usages.

Table 33
Metadata - field list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>	<i>WCO ID</i>
└ Responsible agency, coded	ResponsibleAgencyCode	R	an..2	CL28			
└ Specifications name, coded	AgencyAssignedCustomizationCode	R	an..6	CL29			
└ Specifications version, coded	AgencyAssignedCustomizationVersionCode	R	an..3	CL30			
┌┐ COMMUNICATION METADATA	CommunicationMetaData	R					
└ Preparation date and time	CommunicationMetaData/PreparationDateTime	O	an..35				
┌┐ RECIPIENT	CommunicationMetaData/Recipient	R					
└ Identifier	CommunicationMetaData/Recipient/Identifier	R	an..35				
┌┐ SENDER	CommunicationMetaData/Sender	R					
└ Identifier	CommunicationMetaData/Sender/Identifier	R	an..35				

Table 34
Metadata - field description

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
└ Responsible agency, coded	ResponsibleAgencyCode	Code of the agency controlling the specifications of the message	The value should be the code "AJ" (UN/ECE/TRANS) representing the agency responsible for the eTIR specifications from the list Controlling agency (UN/EDIFACT 0051)
└ Specifications name, coded	AgencyAssignedCustomizationCode	Code of the name of the specifications of the message	The value should be the code "1" (eTIR) representing the name of the specifications followed by this message from the list Specifications name (eTIR)
└ Specifications version, coded	AgencyAssignedCustomizationVersionCode	Code of the version of the specifications of the message	The value should be the code representing the version of the specifications followed by this message from the list Specifications version (eTIR)
┌┐ COMMUNICATION METADATA	CommunicationMetaData	Class giving additional information on the metadata of the message	
└ Preparation date and time	CommunicationMetaData/PreparationDateTime	Date and time when the message has been prepared by the sender	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM For Example: 20200820145600+0100 represents 20 August

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┌ RECIPIENT	CommunicationMetaData/Recipient	Class giving additional information on the recipient of the message	2020 at 14:56 UTC+01:00.
└ Identifier	CommunicationMetaData/Recipient/Identifier	Unique identifier of the recipient of the message	The value should be the unique identifier of the eTIR stakeholder to whom to the message is sent
┌ SENDER	CommunicationMetaData/Sender	Class giving additional information on the sender of the message	
└ Identifier	CommunicationMetaData/Sender/Identifier	Unique identifier of the sender of the message	The value should be the unique identifier of the eTIR stakeholder who sends the message

(b) Conventions on numerical attributes

334. The eTIR messages feature several attributes that should contain numerical values. Here is the list of specifications that are required for this type of attributes:

- All numeric attributes are either a cardinal value (positive integer value) or a decimal value;
- The decimal separator is the decimal point “.” and no other symbols are permitted as decimal separator;
- Thousands separators, such as a comma or a space character, shall not be used;
- Signs, whether positive or negative, shall not be used (all values are intrinsically positive);
- For numerical values, leading and trailing zeroes shall not be used;
- If the decimal point is present, at least one digit shall be present before the decimal point;
- If the decimal point is present, at least one digit shall be present after the decimal point.

335. The table below shows the results of the validation mechanism applied to several examples of numerical values that follow the data type “n..11,3” which describes a decimal number with a total number of digits of eleven maximum and a decimal part of three digits maximum.

Table 35
Validation of numerical values for type “n..11,3”

<i>Value</i>	<i>Validation result</i>	<i>Reason for the result of the validation</i>
12345678.123	Valid	
123456789.123	Invalid	Too many digits in total
1234567.1234	Invalid	Too many digits after the decimal point
0123	Invalid	Leading zeros are not allowed
+123	Invalid	The plus sign is not allowed
-123	Invalid	The minus sign is not allowed
1,234	Invalid	Thousands separators are not allowed
.3	Invalid	A digit is missing before the decimal point
12345.	Invalid	A digit is missing after the decimal point
0.3	Valid	
1.3E1	Invalid	Only digits and the decimal point are allowed
12345678901	Valid	The type “n..11,3” can have maximally 11 digits

(c) Conventions on text attributes

336. The eTIR messages feature attributes that should contain free text values (that are not codes or identifiers). Here is the list of specifications that are required for this type of attributes:

- All text attributes’ values are case sensitive (i.e. uppercase and lowercase letters are treated as distinct);
- Leading and trailing spaces (both normal spaces and non-breaking spaces) shall not be used within text attributes. If it’s the case, they will be trimmed;
- It is recommended for all XML elements representing eTIR text attributes to also feature an optional XML attribute named “languageID” whose value represents the language used for the value of eTIR text attribute. The value of the XML attribute

“languageID” is the code of the language from code list 20 (Language name - ISO 639-1). In case this XML attribute is omitted, the text is considered to be in English.

337. Certain characters cannot be used in XML messages because they have a special meaning. Using these characters can cause the parser to misinterpret the resulting data. The solution is to replace the characters by other expressions so that the parser can interpret them correctly as data, and not confuse them for XML markup. The following table lists all these substitutions.

Table 36
Characters to be replaced with predefined expressions

<i>Character</i>	<i>Expression to be used instead</i>
& (ampersand)	&
> (greater-than character)	>
< (greater-than character)	<
" (straight double quotation mark)	"
' (straight single quotation mark)	'

338. While validating the length of a text value, the system must count each substituted character as 1 character (i.e. “&” is 1 and not 5 characters). For example, if the format of an attribute is “an..100”, the following text should be valid: *This string of 100 ‘characters’ must be <always> valid & not rejected, also with format “an..100” !*

(d) Conventions on coded attributes

339. The eTIR messages feature attributes that should contain codes from given code lists (see annex VI.F of this document). Codes are alphanumerical values and are, therefore, considered as text (and not numerical values). Here is the list of specifications that are required for this type of attributes:

- All coded attributes should feature a code that belongs to the code list to which the attribute is bound;
- If restricted codes are specified for a given coded attribute in the eTIR specifications (functional or technical), then the value of this attribute should only be one of these restricted codes.

(e) Conventions on “date only” attributes

340. The eTIR messages contain several attributes in which dates only have to be entered. The format of these types of attributes is aligned on the UN/EDIFACT format code 102 - CCYYMMDD with:

- CCYY: the year in four digits. Examples: 1979, 2020;
- MM: the month in two digits from 01 to 12, starting with 01 for January;
- DD: the day of the month in two digits from 01 to 31.

341. Samples of valid “date only” attributes include:

- 01 January 1970 is coded as "19700101";
- 29 February 2020 is coded as "20200229";
- 31 December 2045 is coded as "20451231".

342. Date attributes also feature a required XML attribute, named “formatCode”, whose value is, therefore, always set at "102" for “date only” fields. With this format, there is no notion of time zone and the date has to be regarded as valid in all time zones. The figure below gives, as an example, the XML code of how the Validity attribute of the eTIR message E1 is formatted.

Figure 32

Expiration of a guarantee on 01 August 2024

```
<ExpirationDateTime formatCode="102">20240801</ExpirationDateTime>
```

343. It is recommended for all eTIR stakeholders to validate “date only” fields by using the regular expression available in the XSD type “EtirDateType” defined in the Data sets XSD file.

(f) Conventions on “date and time” attributes

344. The eTIR messages contain attributes in which date and time have to be entered. The format of these types of attributes is aligned on the UN/EDIFACT format code 208 - CCYYMMDDHHMMSSZHHMM with, defined sequentially:

- CCYY: the year in four digits. Examples: 1979, 2020;
- MM: the month in two digits from 01 to 12 starting with 01 for January;
- DD: the day of the month in two digits from 01 to 31;
- HH: the hour of the day in two digits from 00 (for midnight) to 23 (for eleven PM);
- MM: the minutes of the day in two digits from 00 to 59;
- SS: the seconds of the day in two digits from 00 to 59. 60 is also allowed in the case of a leap second;
- Z: the introduction of the time zone with either a '+' or a '-'. If the time zone has no offset, then either '+' or '-' can be used;
- HH: the hours of the offset of the time zone from 00 to 14;
- MM: the minutes of the offset of the time zone from 00 to 59.

345. Samples of valid “date and time” attributes include:

- 01 January 1970 00:00:00 in London, UK (Time offset: +00:00) is coded as "19700101000000+0000";
- 29 February 2020 09:45:36 in New York, USA (Time offset: -05:00) is coded as "20200229094536-0500";
- 31 December 2045 22:06:59 in South Tarawa, Kiribati (Time offset: +14:00) is coded as "20451231220659+1400".

346. Date attributes also feature a required XML attribute named “formatCode” whose value is, therefore, always set at "208" for “date and time” fields. With this format, as there is a notion of time zone, it is up to the eTIR stakeholder to select whether they wish to use daylight saving time as it will point to the same absolute time in any case. The figure below gives, as an example, the XML code of how the AcceptanceDateTime attribute of the eTIR message I1 is formatted.

Figure 33

Acceptance of a guarantee on 01 July 2021 10:03:42 in Istanbul (Time offset +03:00)

```
<AcceptanceDateTime formatCode="208">20210701100342+0300</AcceptanceDateTime>
```

347. It is recommended for all eTIR stakeholders to validate “date and time” fields by using the regular expression available in the XSD type “EtirDateTimeType” defined in the Data sets XSD file.

(g) Message Identifier and Original Message Identifier attributes

348. All messages sent and received are uniquely identified using the “Message Identifier” attribute. This attribute must be set by the sender in the request message. The receiver will set another unique value for the “Message Identifier” attribute in the response message. In

addition to that, the receiver will also set the “Original Message Identifier” attribute of the response message with the value of the “Message Identifier” attribute of the related request message. This method allows a proper traceability of the request/response messages.

349. The value of the “Message Identifier” attribute of the message should be set at a universally unique identifier (UUID) following the specifications version 4 detailed in RFC 4122⁶² which is based on pseudorandom numbers. The main programming languages provide native helper classes to generate a UUID v4 as shown in the following two figures.

Figure 34

Generate a UUID in Java

```
java.util.UUID.randomUUID();
```

Figure 35

Generate a UUID in C#

```
System.Guid.NewGuid();
```

(h) Sequence number attributes

350. “Sequence number” attributes are sometimes used in classes that are represented as lists in the eTIR messages. These attributes are needed to express a specific sequence between the elements of these lists. For example, the “Sequence number” attribute in the “TransportMeans” class is used to determine the order of the means by which the goods will be transported.

351. Here is the list of specifications that have to be applied to the “Sequence number” attributes, knowing that they represent the 1-based index⁶³ of the parent class in the list:

- The value of this attribute should always be superior or equal to 1;
- The value of this attribute is unique in the same sequence;
- Except when otherwise specified by the description of the field or by rules, the values of the “Sequence number” attributes of the same list should start with 1 and should be incremented without leaving any gap in the sequence.

(i) Measurement attributes

352. Several attributes are used to contain measurement values: “Total gross weight”, “Gross weight” and “Size”. These eTIR attributes also feature a required XML attribute named “unitCode” which value represents the unit used for the measurement value. The value of the XML attribute “unitCode” is the code of the measurement unit from code list 21 (Measurement unit – UNECE Recommendation 20).

353. The possible codes used for the “Size” attribute belonging to the “BinaryFile” class are restricted to the following:

- AD: byte;
- 2P: kilobytes;
- 4L: megabytes.

354. It is recommended to use the following codes for the “Total gross weight” and “Gross weight” attributes:

- GRM: gram;
- KGM: kilogram;

⁶² See datatracker.ietf.org/doc/html/rfc4122

⁶³ Indexing an array (or list), beginning with 1.

- DTN: decitonne (quintal);
- TNE: tonne (metric ton).

4. Validation mechanism

355. When the eTIR international system receives and processes a message, it first performs a series of validations on the message itself, in the context of the related guarantee, holder or transport. As mentioned in the part dedicated to Information Security of this document, the following layers of validation are applied to ensure the correctness of the message, its alignment with the specifications and its pertinence:

1. A layer validating the structure and the values of the message, capturing all errors found and returning them as a list in the response message. Values of attributes which are bound to code lists are also checked against the possible values of the current versions of the relevant code lists: any value out of the code lists (or the list of restricted codes, if applicable) would raise an error. All these errors are part of the first family of errors (1XX – Validation⁶⁴);
2. A generic layer validating the message as a whole, using the XSD file defining the type of message. Potential errors detected are also part of the first family of errors (1XX – Validation);
3. Then, the message starts to be processed by the eTIR international system. If any inconsistency is detected in the sequence of the messages or with the records of the eTIR database, additional errors may be returned and, in this case, the first error found is immediately returned. At this stage, errors can belong to the second and third families of errors (2XX – Workflow and 3XX – Functional);
4. Finally, a last layer of validation is performed at the eTIR database level, where its set of integrity constraints can reject the recording of the values of the message when they do not match the constraints. In theory, this last safety net should never be catching any issues as they should have been detected and returned by the previous validation layers. If such a rejection occurs, an error from the fourth family will be raised (4XX – Internal) and the eTIR stakeholder who receives such error should contact the eTIR service desk as soon as possible to report it.

356. It is strongly recommended to all eTIR stakeholders to follow the same layered approach in order to validate the eTIR messages they receive from the eTIR international system. In case the eTIR stakeholders detect at least one error in a response message returned by the eTIR international system, they should contact the eTIR service desk immediately to report this problem (as it is not possible to respond to a response message).

5. Error management

357. As described above, when the eTIR international system receives and processes a message, it performs a series of validations on the message and issues a response to the system which has sent this message. If anything goes wrong during these validation and processing steps, a list of errors is returned in the response message. The minimal requirement is to report the first error detected. All other detected errors should be reported, if possible. Each of these errors are presented as an Error code with a list of Pointers that can be used to point to a specific XML element of the request message using the XPath syntax⁶⁵.

358. The list of error codes (code list 99) is specific to eTIR and it allows IT teams to better understand errors, especially while implementing the interconnection of their information systems to the eTIR international system. This should result in an overall faster implementation, and in more accurate processing of the errors from the system sending messages to the eTIR international system. Furthermore, a detailed error code system also greatly simplifies the communication between the eTIR stakeholders and the eTIR service desk, in case of an incident, to identify and resolve the underlying problem.

⁶⁴ Families of errors are defined in the next section

⁶⁵ See www.w3schools.com/xml/xpath_syntax.asp

359. The list of error codes is based on the best practices from the IT industry. Like the list of HTTP status codes, all error codes have three digits, and the first digit of the status code defines the type of error:

- **1XX – Validation:** validation of the message and its fields;
- **2XX – Workflow:** workflow related problems;
- **3XX – Functional:** other functional problems;
- **4XX – Internal:** eTIR international system internal problems;
- **5XX – Customs:** errors raised by customs authorities.

360. Each type of error has a default error code which indicates, at least, the type of the error if the system cannot send a more explicit error. The figure below shows how a single error is returned in XML.

Figure 36

Single error returned: missing field

```
<ns4:Error>
  <ns4:ValidationCode>101</ns4:ValidationCode>
  <ns4:Pointer>
    <ns4:SequenceNumeric>1</ns4:SequenceNumeric>
    <ns4:Location>/InterGov/ObligationGuarantee/ReferenceID</ns4:Location>
  </ns4:Pointer>
</ns4:Error>
```

361. In the above example, the ValidationCode XML element is set to the error code and the Location XML element inside the Pointer XML element points towards the problematic element of the request message using the XPath syntax. When multiple errors with the same error code are returned, they should be aggregated in a single Error XML element, with a list of Pointer XML elements, as shown in this second XML example in the figure below.

Figure 37

Two errors returned of the same type

```
<ns4:Error>
  <ns4:ValidationCode>101</ns4:ValidationCode>
  <ns4:Pointer>
    <ns4:SequenceNumeric>1</ns4:SequenceNumeric>
    <ns4:Location>/InterGov/ObligationGuarantee/ReferenceID</ns4:Location>
  </ns4:Pointer>
  <ns4:Pointer>
    <ns4:SequenceNumeric>2</ns4:SequenceNumeric>
    <ns4:Location>/InterGov/ObligationGuarantee/Surety/ID</ns4:Location>
  </ns4:Pointer>
</ns4:Error>
```

362. If there is more than one type of error, more than one Error XML element is used.

363. eTIR stakeholders who interconnect their information systems with the eTIR international system need to properly handle the errors returned in response messages. When implementing the various pairs of eTIR messages, IT experts will find it convenient to refer to the second table of annex VI.G of this document⁶⁶ to see which error codes could be raised. As new error codes may be added during a version of the specifications (in a new update cycle), it is also important to have a generic mechanism to catch all other errors. In all cases, errors should also be logged.

⁶⁶ See Table 12 of document ECE/TRANS/WP.30/GE.1/2021/32

364. As all errors are critical and mean a failure to process the message, the appropriate follow-up actions should be performed based on the information returned by the error. Immediate action should be taken either by the users of information system to correct the information so that the request message can be re-sent, or the IT service desk of the eTIR stakeholder should be involved to correct the issue. If the problem cannot be corrected and the request message is important for the execution of the TIR transport (as most of messages sent by customs authorities), the eTIR stakeholder may decide to start using the relevant fallback procedure (as described in the functional specifications) if the issues cannot be corrected in a short timeframe.

365. When the information systems of the eTIR stakeholders receive messages from the eTIR international system, they should validate them and use the same error codes to return potential errors in the response message. The list of all error codes is reproduced in the first table of annex VI.G of this document and its latest version, including additional up-to-date information, is available on the eTIR web site.⁶⁷

D. Requirements and recommendations applicable to eTIR stakeholders

366. This section lists the requirements and recommendations that are applicable to all eTIR stakeholders (customs authorities, guarantee chains and holders). They are needed to ensure a proper functioning of the eTIR system and they cover functional and non-functional aspects.

1. Responsibilities

367. eTIR stakeholders are responsible for the correct and timely design, implementation, test, deployment and maintenance of their respective information system involved in the framework of the eTIR system, following the approved version of the eTIR specifications. This includes implementing or modifying the database, software components and user interfaces needed to accommodate TIR transports following the eTIR procedure.

368. eTIR stakeholders are responsible for applying the functional and technical requirements applicable to them, as defined in the eTIR specifications. In particular, eTIR stakeholders are responsible for ensuring and maintaining the information security requirements of their information system and network.

369. eTIR stakeholders are responsible for timely upgrading their information system to keep pace with the evolution of the eTIR specifications, as decided by the relevant governing bodies.

370. eTIR stakeholders are responsible for putting in place (if not already available) an IT service desk which is the counterpart of the eTIR service desk on the side of the eTIR stakeholder. Staff members of the eTIR service desk should communicate with the staff members of the IT service desk of the eTIR stakeholders to regularly check the proper functioning of the interconnection between their two systems and the operations being carried out. Both parties should also liaise to solve any issues that may occur, and should strive to resolve them as quickly as possible.

2. General requirements and recommendations

371. The following table lists all non-functional requirements, previously defined in this document for the eTIR international system, that also apply either as a requirement or as a recommendation for the information system of the eTIR stakeholders that are part of the eTIR system. The denomination of the system is modified in the “description and objective” column, to reflect a generic denomination for the information system of the eTIR stakeholders. Finally, in the case of quantitative requirements, the target values are added to this column. All the requirements and recommendations listed below can be addressed using the mechanisms already described in the previous parts of this document.

⁶⁷ See ctir.org/documentation/error-codes

Table 37

Requirements and recommendations applicable to eTIR stakeholders' information system

<i>Identifier</i>	<i>Description and objective</i>	<i>Requirement or recommendation</i>
AE.1	Select a strong authentication mechanism for the information system to prevent unauthorized access.	Recommendation
AE.2	Enable session lock after inactivity to protect the access to the user accounts.	Recommendation
AE.3	Manage passwords securely to prevent unauthorized access.	Recommendation
AE.4	Recommend multi-factor authentication for system access to protect user accounts.	Recommendation
AO.1	Grant the minimum, sufficient access or privileges to prevent unauthorized access.	Recommendation
AO.2	Employ RBAC to improve the maintenance of the user accounts.	Recommendation
AO.3	Revoke access upon termination of personnel appointments to prevent unauthorized access.	Recommendation
AO.4	Review user accounts at least annually to prevent privilege creep.	Recommendation
AU.1	All information sent to and received by the information system is linked to a user account and can be audited.	Recommendation
AV.1	Normal maintenance operations for the software and systems components of the information system are performed transparently as the service remains available.	Recommendation
AV.2	General availability of the information system. <i>Target value:</i> 24 hours per day, each day of the year.	Requirement
AV.3	Percentage of uptime of the information system. <i>Target value:</i> Greater than 99%.	Requirement
AV.4	Maximum consecutive information system downtime in case of a major issue. <i>Target value:</i> 4 hours during weekdays and 24 hours during weekends, per occurrence.	Requirement
AW.1	Ensure all relevant personnel follow basic training courses on information security to raise their awareness.	Recommendation
AW.2	Maintain records of participation in required training courses on information security.	Recommendation
CM.1	The source code of all modules of the information system should be versioned using a VCS to allow for an effective management of this asset.	Recommendation
CM.3	All assets related to the documentation of the information system should be versioned using a VCS to allow for an effective management of this asset.	Recommendation
CO.1	Information transferred between the information systems of the eTIR system remains confidential.	Requirement
CP.1	Maximum number of expected messages to be processed. <i>Target value:</i> 120 messages per minute.	Requirement
DR.1	The recovery time objective (RTO) ⁶⁸ of the information system, after a disaster. <i>Target value:</i> 48 hours.	Recommendation
DR.2	The recovery point objective (RPO) ⁶⁹ of the information system. <i>Target value:</i> 4 hours.	Recommendation
FT.1	Gracefully handle the failure of a physical server, which can be due to a piece of equipment (CPU, memory, motherboard, HDD, network card, etc.) to avoid the information system becoming unavailable.	Recommendation

⁶⁸ The RTO is the amount of time in which it should be feasibly to recover the IT service in the event of a disaster.

⁶⁹ The RPO is the maximum targeted period in which data (transactions) might be lost from an IT service due in the event of a disruption.

<i>Identifier</i>	<i>Description and objective</i>	<i>Requirement or recommendation</i>
FT.2	Gracefully handle the failure of a piece of equipment used by the storage locations (HDD, SSD) to avoid the information system becoming unavailable.	Recommendation
FT.3	Gracefully handle the loss of internet connectivity to avoid the information system becoming unavailable.	Recommendation
FT.4	Handle gracefully power failures to avoid the information system becoming unavailable.	Recommendation
ID.1	Uniquely identify an individual or an information system with a user account to be able to hold it accountable for its actions.	Recommendation
IN.1	The integrity of the information transferred between the information system and the eTIR international system remains intact.	Requirement
MT.1	Technical debt should not accumulate on the programming languages, frameworks and libraries used to build the information system.	Recommendation
MT.2	Technical debt should not accumulate on the source code of the information system.	Recommendation
MT.3	Knowledge is retained to properly maintain and improve the information system.	Recommendation
NR.1	eTIR stakeholders are accountable for the messages they send to the eTIR international system.	Requirement
NS.1	Securely configure virtual servers, containers or pods to prevent unauthorized access.	Recommendation
NS.2	Securely configure network infrastructure devices to prevent unauthorized access.	Recommendation
NS.3	Isolate trusted networks containing sensitive data from non-trusted networks to prevent unauthorized access.	Recommendation
NS.4	Monitor events on the nodes to detect potential security issues.	Recommendation
PE.1	Average response time involving short messages (up to 10 KB) measured by the sender from sending the request message to receiving the response message. <i>Target value:</i> 1 second.	Requirement
PE.2	Maximum response time involving short messages (up to 10 KB) measured by the sender from sending the request message to receiving the response message. <i>Target value:</i> 10 seconds.	Requirement
PE.3	Maximum response time measured by the sender from sending the request message to receiving the response message. <i>Target value:</i> The timeout is set to 60 seconds.	Requirement
PE.4	Performance metrics of the information system should be monitored to identify any potential problem.	Recommendation
PE.5	Performance metrics of the information system remain stable or get better over time.	Recommendation
PS.2	The data centre hosting the information system should be sufficiently protected to prevent intrusions and disasters.	Recommendation
RL.1	Number of remaining issues with the highest severities found by the static analysis tool. <i>Target value:</i> 0 (all issues of this kind should be corrected).	Recommendation
RL.2	Number of remaining issues with a normal severity found by the static analysis tool. <i>Target value:</i> Less than 150.	Recommendation
RL.3	Percentage of functional source code covered by automated tests (code coverage). <i>Target value:</i> More than 60%.	Recommendation
RL.4	Percentage of duplicated source code (code duplication). <i>Target value:</i> Less than 3%.	Recommendation
RL.5	All changes to the source code are made in a way that decreases the probability to introduce issues.	Recommendation

<i>Identifier</i>	<i>Description and objective</i>	<i>Requirement or recommendation</i>
RL.6	All changes to the source code are linked to a requirement to ensure proper traceability.	Recommendation
RL.7	Eliminate as many redundant, manual and error-prone tasks from the development procedures.	Recommendation
RU.1	Reuse existing methods, frameworks, software and systems components to save time and achieve higher quality outputs	Recommendation
SC.1	Define security requirements in the early stages of the SDLC to lower the costs and decrease the number of security issues.	Recommendation
SC.2	Separate the stages of the SDLC to prevent mixing different versions by having different environments.	Recommendation
VU.1	Ensure the known vulnerabilities are patched to prevent potential security issues.	Recommendation
VU.2	Conduct vulnerability assessment and testing to prevent potential security issues.	Recommendation
VU.3	Ensure incidents are properly managed to prevent potential security issues.	Recommendation

3. Validation mechanisms

372. eTIR stakeholders should implement mechanisms to validate the following aspects of all incoming messages:

- The structure and format of the fields of the messages. In particular, they should validate the specifications applied to the various data types of the fields, as detailed in the “Implementation and tests of the eTIR messages” section;
- The rules and conditions applied to specific fields of the messages;
- The code lists applied to specific fields of the messages.

373. It is strongly recommended for all eTIR stakeholders to include the same validation mechanisms implemented in the eTIR international system, as detailed in the “Implementation and tests of the eTIR messages” section.

4. Error handling mechanisms

374. eTIR stakeholders should put in place the following minimum mechanisms to properly handle errors which can be received in response messages:

- All errors received should be logged by the information system of eTIR stakeholders;
- If the error is due to the action of an end-user (e.g. a customs officer or a holder), this end-user should be notified of the error and that his or her action could not be processed. The information system of the end-user should display a clear message indicating the cause of the error and the next steps to follow, i.e. request the end-user to correct an issue with the data being submitted;
- If the error comes from a problem within the national customs system, from the exchange of data with the eTIR international system or from the eTIR international system, and it cannot be resolved within a reasonable timeframe, the end-user may wish to initiate the appropriate fallback procedure;
- The IT service desk of eTIR stakeholders should be notified of all errors received and logged in order to investigate on their cause and follow up until they are resolved.

375. Additional information related to error handling is available in the “Implementation and tests of the eTIR messages” section.

5. Retry mechanism

376. eTIR stakeholders should put in place a mechanism to retry sending a request message to the eTIR international system, if the first attempt to send the message did not go through and was not acknowledged by a response message. In such case, the information system of the eTIR stakeholder may retry sending the request message after the time waiting for the response message has elapsed. The technical aspects of this retry mechanism may be similar to what is implemented in the eTIR international system and described in the part of this document dedicated to the technical fallback procedures.

377. Depending on the event that triggered the communication of the request message, using a retry mechanism might not be appropriate, in particular if the request message was triggered by an end-user who is waiting for an answer from the system. In these cases, it might be more appropriate to inform the user about the issue immediately so he or she can retry the same action again, or decide to initiate the appropriate fallback procedure.

6. Conformance tests

378. The objective of the conformance tests is to ensure that the information system of eTIR stakeholders that interconnects with the eTIR international system, has been developed in line with the requirements set forth in the eTIR specifications. For this reason, passing the conformance tests is a requirement for all eTIR stakeholders before being able to connect their information system to the eTIR international system and participate to the eTIR system in Production.

379. The conformance tests involve a set of activities that have to be performed by each eTIR stakeholder, in collaboration with ECE, to pass several test sets in order to progressively ascertain that the objective stated above is met. As a result, the conformance tests play an important role in the interconnection project as they constitute one of its stages.

380. It is important to note that all tests are performed on the User Acceptance Test (UAT) environments of both systems (the eTIR international system and the information system of the eTIR stakeholder to be tested). For this reason, the UAT environment should be a replica of the Production environment (server infrastructure, operating systems, middleware, software versions, configurations, etc.). Furthermore, the UAT environment shall be hosted in the same premises and with the same network configuration as the Production environment. Finally, selected customs should be trained on the eTIR procedure and have access to the new version of the national customs systems on the UAT environment to perform the tests.

381. The methodology for carrying out conformance tests is described in the following three stages/levels.

(a). Connectivity

382. The project teams (customs authorities and ECE) should check that both systems (the eTIR international system and the new version of the national customs system) hosted on their UAT environments are connected by:

- Verifying that the WSDL⁷⁰ files of the exposed webservices are visible on both end;
- Ensuring that signed messages can be sent in both directions.

⁷⁰ See en.wikipedia.org/wiki/Web_Services_Description_Language

(b). Messages

(i). Incoming messages (E9, E11, E13, I15)

a. Correct messages

383. The eTIR international system should send messages that do respect the structure and formats, rules and conditions as well as using the codes defined in the eTIR specifications and check that no errors are returned.

b. Incorrect message structure and format

384. The eTIR international system should send messages that do not respect the structure and formats defined in the eTIR specifications and check that the appropriate errors are returned.

c. Breach of rules and conditions

385. The eTIR international system should send messages which break rules or conditions defined in the eTIR specifications and check that the appropriate errors are returned.

d. Incorrect codes

386. The eTIR international system should send messages containing codes that are not part of the code lists defined in the eTIR specifications and check that the appropriate errors are returned.

(ii). Outgoing messages (I1, I3, I5, I7, I9, I11, I13, I17, I19, E9, E11, E13)

a. Message structure and format

387. On the basis of a data set sent to the customs' project team and stored in the national customs system, messages should be generated and sent to the eTIR international system. No structural or formatting errors should be returned.

b. Rules and conditions

388. On the basis of a data set sent to the customs' project team (implying scenarios of increasing complexity) and stored in the national customs system, messages should be generated and sent to the eTIR international system. No errors should be returned regarding the rules and conditions.

c. Validation of codes

389. On the basis of a data set sent to the customs' project team and stored in the national customs system, messages should be generated and sent to the eTIR international system. No errors should be returned regarding validation of codes.

(c). eTIR processes at customs offices

(i). Integration of the eTIR messages in the eTIR processes and customs officers' user interface

390. The eTIR international system should send information to the national customs system using either E9, E11, E13 or I15 messages, and, if required, send a copy of the accompanying document. The eTIR service desk should contact the appropriate customs offices by phone, playing the role of the holder and simulate with customs officers the processing of the information for different scenarios (first departure, first destination, intermediate departure, intermediate destination, entry and exit). Customs officer shall connect to the new version of the national customs systems on the UAT environment for this exercise. The eTIR service desk should ensure that the relevant messages are received by the eTIR international system in due time, contain the relevant information, are formatted correctly and sent in the right sequence.

(ii). *Sequence of the TIR transport*

391. The eTIR international system should send information to the national customs system using either E9, E11, E13 or I15 messages, and, if required, send a copy of the accompanying document. The eTIR service desk should contact customs offices (but not in the right sequence) by phone and check that the appropriate response is provided. Customs officers should connect to the new version of the national customs systems on the UAT environment for this exercise. The eTIR service desk should ensure that no messages are exchanged in this case, other than a query message (I5/I6).

(iii). *Fall back procedures*

392. After sending the relevant accompanying document by email, the eTIR service desk should contact by phone customs officers to ensure that the customs officer can process the accompanying document in line with the eTIR specifications. A filled in copy of the accompanying document should be scanned and returned by email to the eTIR service desk.

(d). **International testing with neighbouring countries**

393. Customs administrations may also wish to participate in international tests with neighbouring countries, the eTIR service desk and the guarantee chain. Such international tests allow verifying the complete sequence of messages, exchanged between all actors, by simulating TIR transports from begin to end.

394. Such international tests remain optional and should be requested by, at least, two (neighbouring) countries which are willing to perform this additional level of testing as part of their conformance tests.

E. List of eTIR messages

1. Introduction

395. This section lists the technical details of all eTIR messages. The details, description and usage of all the fields are presented in two tables for each eTIR message. Important information is also mentioned for the eTIR stakeholders on how to use the information retrieved in the response messages and on how to prepare the several request messages that should be sent to the eTIR international system.

396. The structure of the following messages are defined in the relevant XSD files available on the eTIR web site⁷¹ and it is important to recall that the metadata fields previously defined should be present in all messages before the fields of the messages. Additional information, including examples of the eTIR messages in XML and applicable error codes, is available in the technical guides dedicated to each message pair, that are available on the eTIR web site⁷².

2. I1/I2 message pair

397. This section describes the technical specifications of the “I1 – Accept guarantee” request message sent by the customs authorities to accept a guarantee to start a TIR Transport; and the “I2 – Acceptance results” response message sent back by the eTIR international system.

⁷¹ See etir.org/documentation/xsd-files

⁷² See etir.org/documentation

(a) I1 – Accept guarantee

Table 38

I1 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ GUARANTEE	ObligationGuarantee	R	1..1				
┆ Acceptance date time	ObligationGuarantee/AcceptanceDateTime	R	1..1	an..35			
┆ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
┆ Guarantee type, coded	ObligationGuarantee/SecurityDetailsCode	R	1..1	an..3	CL12		
┆ GUARANTEECHAIN	ObligationGuarantee/Surety	R	1..1				
┆ Code	ObligationGuarantee/Surety/ID	R	1..1	an..35			
┆ HOLDER	ObligationGuarantee/Principal	R	1..1				
┆ Identifier	ObligationGuarantee/Principal/ID	R	1..1	an..35			

Table 39

I1 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to '9' (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "I1"
┆ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Acceptance date time	ObligationGuarantee/AcceptanceDateTime	Date and time of the acceptance of the guarantee by the country of departure	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee being accepted	The value should be the unique identifier of the guarantee for this TIR transport
Guarantee type, coded	ObligationGuarantee/SecurityDetailsCode	Code of the guarantee type	This value should be from the Guarantee type code (eTIR) list, and should be retrieved from a query to the eTIR international system using the I5 - Query guarantee message
┐ GUARANTEECHAIN	ObligationGuarantee/Surety	Class representing the information related to the issuing guarantee chain (providing guarantee for the TIR transport)	
┐┐ Code	ObligationGuarantee/Surety/ID	Unique identifier of the guarantee chain which issued the guarantee	The value should be 'IRU' for guarantees issued by the International Road transport Union
┐ HOLDER	ObligationGuarantee/Principal	Class representing the TIR Carnet holder (transporter) of this transport	
┐┐ Identifier	ObligationGuarantee/Principal/ID	Unique identifier of the TIR Carnet holder	The value should be the unique identifier of the TIR Carnet holder as recorded in the International TIR Data Bank (ITDB)

(b) I2 – Acceptance results

Table 40

I2 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID		1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
┐ ERROR	Error	D	0..*			C006	
┐ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
┐ POINTER	Error/Pointer	R	1..*				

eTIR field name	Mapping to the XML element (XPATH)	Status	Cardinality	Format	Code lists	Conditions	Rules
† Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
† Location	Error/Pointer/Location	R	1..1	an..512			
└ GUARANTEE	ObligationGuarantee	R	1..1				
└ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			

Table 41
I2 – field descriptions and usages

eTIR field name	Mapping to the XML element (XPATH)	Description	Usage
† Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message, the value should be "27" (Not accepted)
† Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I1)
† Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
† Type, coded	TypeCode	Code of the message type	The value should be set to "I2"
└ ERROR	Error	Class representing the list of errors, if any	
† Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
└ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
† Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
† Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
└ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
└ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport

(c) How to use response data in the national customs system

398. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “I2 – Acceptance results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

399. If there are no errors listed in the response message, the national customs system should check that the reference of the guarantee that has been recorded as accepted in the eTIR international system is indeed the same as the one mentioned in the “I1 – Accept guarantee” request message. If it’s not the case, then customs authorities should contact the eTIR service desk to report this issue so that it can be investigated as soon as possible. If there was no error, and the response message content is as expected, the next step for the national customs systems is to send the declaration data to the eTIR international system using the “I7 – Record declaration data” message.

3. I3/I4 message pair

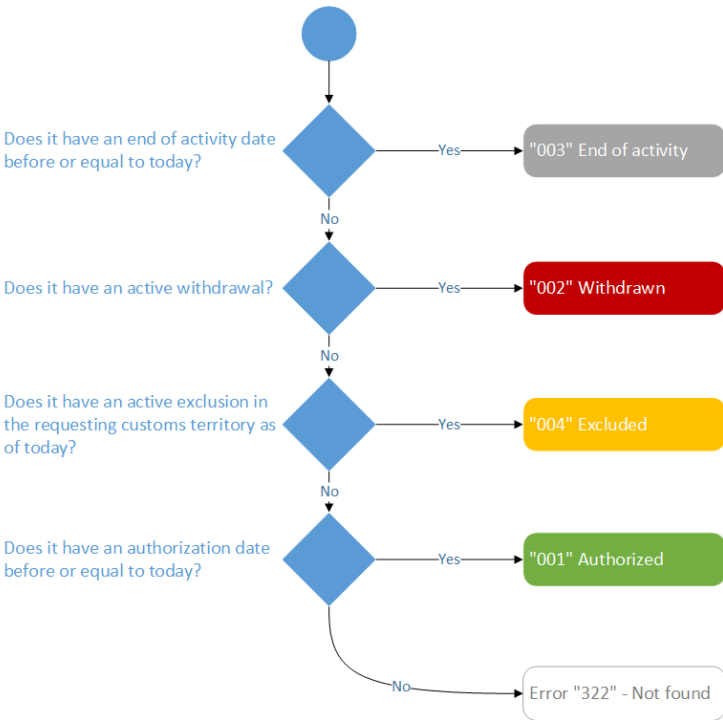
400. This section describes the technical specifications of the “I3 – Get holder information” request message sent by the customs authorities to retrieve information about a holder; and the “I4 – Holder information” response message sent back by the eTIR international system.

401. The “I3 – Get holder information” and the “I4 – Holder information” form the TIR Carnet holder query system available for the customs authorities to verify the status of a TIR Carnet holder and to retrieve its information as recorded in the ITDB. These messages are optional for the customs authorities to implement. Although this web service is available directly in ITDB, the national customs systems can choose to access it via the eTIR international system using the “I3 – Get holder information” and “I4 – Holder information” messages.

402. It is to be noted that the “I3 – Get holder information” message is also used internally by the eTIR international system for any inbound eTIR message where a holder identifier is mentioned to check its validity during the course of the TIR transport.

403. A holder may have different status that depends on the date, its situation toward its national customs authorities and on national transport association as well as towards the customs authority that query the information. Therefore, it is important to understand that the returned information depends on the querying customs authority as described in the figure below.

Figure 38
Algorithm to determine the status of a holder



(a) I3 – Get holder information

Table 42

I3 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ HOLDER	Principal	R	1..1				
┆ Identifier	Principal/ID	R	1..1	an..35			

Table 43

I3 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to "9" (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "I3"
┆ HOLDER	Principal	Class representing the holder	
┆ Identifier	Principal/ID	Unique identifier of the holder requested	The value should be the unique identifier of the holder requested, as recorded in the International TIR Data Bank (ITDB). It can be provided with or without the "/" characters.

(b) I4 – Holder information

Table 44
14 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
ERROR	Error	D	0..*			C006	
Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
Location	Error/Pointer/Location	R	1..1	an..512			
HOLDER	Principal	R	1..1				
Name	Principal/Name	R	1..1	an..70			
Identifier	Principal/ID	R	1..1	an..35			
ADDRESS	Principal/Address	R	1..1				
City name	Principal/Address/CityName	R	1..1	an..35			
Country, coded	Principal/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Principal/Address/Line	R	1..1	an..256			
Postcode identification	Principal/Address/PostcodeID	O	0..1	an..17			
AUTHORIZATION	Principal/AuthorizationCertificate	R	1..1				
Status, coded	Principal/AuthorizationCertificate/StatusCode	R	1..1	an..3	CL23		
ACTIVEWITHDRAWAL	Principal/AuthorizationCertificate/AuthorizationWithdrawal	O	0..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Start date	Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateT ime	R	1..1	an..35			
End date	Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDate Time	O	0..1	an..35			
ACTIVEEXCLUSION	Principal/AuthorizationCertificate/Exclusion	O	0..*				
Start date	Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	R	1..1	an..35			
End date	Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	O	0..1	an..35			
Country, coded	Principal/AuthorizationCertificate/Exclusion/CountryCode	R	1..1	a2	CL04		

Table 45

I4 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "11" if the request was processed correctly. If at least one error is described in this message, the value should be "10"
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I3)
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "I4"
ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
HOLDER	Principal	Class representing the holder	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Name	Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
Identifier	Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
ADDRESS	Principal/Address	Class representing the physical address of the holder	
City name	Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
Country, coded	Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the list Country name code (ISO 3166-1-alpha-2)
Street and number/P.O. Box	Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
Postcode identification	Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder
AUTHORIZATION	Principal/AuthorizationCertificate	Class representing the details related to the authorization of the holder in the TIR system	
Status, coded	Principal/AuthorizationCertificate/StatusCode	Code of the current authorization status of the holder	The value should be the code of the current authorization status of the holder from the code list Holder status (eTIR)
ACTIVEWITHDRAWAL	Principal/AuthorizationCertificate/AuthorizationWithdrawal	Class representing the details related to a potential withdrawal of the holder from the TIR system	
Start date	Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	Start date and time of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD . For Example: 20200820 represents 20 August 2020.
End date	Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	End date and time of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
ACTIVEEXCLUSION	Principal/AuthorizationCertificate/Exclusion	Class representing the list of potential exclusions of the holder in specific countries, as per Article 38 of the TIR Convention	
Start date	Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	Start date and time of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
End date	Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	End date and time of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
L Country, coded	Principal/AuthorizationCertificate/Exclusion/CountryCode	Code of the country in which the holder is excluded	The value should be the code of the country in which the holder is excluded from the list Country name code (ISO 3166-1-alpha-2)

(c) How to use response data in the national customs system

404. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “I4 – Holder information” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

405. If there are no errors listed in the response message, check that the Identifier of the holder is indeed the same as the one mentioned in the “I3 – Get holder information” message that you sent. If it’s not the case, then you should contact the eTIR service desk to report this issue so that it can be investigated as soon as possible. If everything is correct then customs authorities may focus first on the holder status code value as it reflects the holder authorization to use the TIR procedure. Additional information can then be found with the address and potential active withdrawal and active exclusions.

4. I5/I6 message pair

406. This section describes the technical specifications of the “I5 – Query guarantee” request message, sent by the national customs system to query information on a guarantee from the eTIR international system; and the “I6 – Query results” response message, sent back by the eTIR international system. This pair of messages form the query mechanism available for the customs authorities to retrieve information recorded in the eTIR international system about guarantees, their related TIR transports and TIR operations.

407. The national customs system can choose to retrieve more or less information in the “I6 – Query results” message depending on the parameters of the “I5 – Query guarantee” message. Customs authorities can only retrieve information about guarantees that are used in TIR transports starting, ending or passing through their customs territories. As the guarantee can have different statuses, it is important to understand them as they are detailed in the guarantee state chart diagram in the eTIR concepts. The level of details of the “I6 – Query results” response message depends on the value of the "Reply type, coded" field.

(a) 15 – Query guarantee

Table 46

15 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ Reply type, coded	ReplyTypeCode	R	1..1	an..3	CL09		
┆ GUARANTEE	ObligationGuarantee	R	1..1				
┆ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			

Table 47

15 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to “9” (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "I5"
┆ Reply type, coded	ReplyTypeCode	Code used to specify the expected contents of the reply	The value should be the code of the type of reply from the code list Reply type (eTIR)
┆ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
┆ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport

(b) 16 – Query results

Table 48

16 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
ERROR	Error	D	0..*			C006	
Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
Location	Error/Pointer/Location	R	1..1	an..512			
GUARANTEE	ObligationGuarantee	R	1..1				
Acceptance date time	ObligationGuarantee/AcceptanceDateTime	O	0..1	an..35			
Cancellation date time	ObligationGuarantee/CancellationDateTime	O	0..1	an..35			
Validity date	ObligationGuarantee/ExpirationDateTime	R	1..1	an..35			
Issuing date time	ObligationGuarantee/IssueDateTime	R	1..1	an..35			
Status, coded	ObligationGuarantee/StatusCode	R	1..1	an..3	CL22		
Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
Guarantee type, coded	ObligationGuarantee/SecurityDetailsCode	R	1..1	an..3	CL12		
DECLARATIONDATA	ObligationGuarantee/Declaration	O	0..*				
Issuing date time	ObligationGuarantee/Declaration/IssueDateTime	R	1..1	an..35			
Total gross weight	ObligationGuarantee/Declaration/TotalGrossMassMeasure	R	1..1	n..16,6			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ ADDITIONALINFORMATION	ObligationGuarantee/Declaration/AdditionalInformation	O	0..1				
⊥ Remarks	ObligationGuarantee/Declaration/AdditionalInformation/Content	O	0..1	an..512			
⊥ AGENT	ObligationGuarantee/Declaration/Agent	O	0..1				
⊥ Name	ObligationGuarantee/Declaration/Agent/Name	D	0..1	an..70		C001	
⊥ Identifier	ObligationGuarantee/Declaration/Agent/ID	D	0..1	an..35		C001	
⊥ Role, coded	ObligationGuarantee/Declaration/Agent/RoleCode	R	1..1	an..3	CL02		
⊥ AMENDMENT	ObligationGuarantee/Declaration/Amendment	O	0..*				
⊥ Type, coded	ObligationGuarantee/Declaration/Amendment/ChangeReasonCode	R	1..1	an..3	CL17		
⊥ POINTER	ObligationGuarantee/Declaration/Amendment/Pointer	R	1..1				
⊥ Sequence number	ObligationGuarantee/Declaration/Amendment/Pointer/SequenceNumeric	R	1..1	n..5			
⊥ Location	ObligationGuarantee/Declaration/Amendment/Pointer/Location	R	1..1	an..512			
⊥ SUBCONTRACTOR	ObligationGuarantee/Declaration/Carrier	O	0..*				
⊥ Name	ObligationGuarantee/Declaration/Carrier/Name	D	0..1	an..70		C001	
⊥ Identifier	ObligationGuarantee/Declaration/Carrier/ID	D	0..1	an..35		C001	
⊥ ADDRESS	ObligationGuarantee/Declaration/Carrier/Address	D	0..1			C001	
⊥ City name	ObligationGuarantee/Declaration/Carrier/Address/CityName	R	1..1	an..35			
⊥ Country, coded	ObligationGuarantee/Declaration/Carrier/Address/CountryCode	R	1..1	a2	CL04		
⊥ Street and number/P.O. Box	ObligationGuarantee/Declaration/Carrier/Address/Line	R	1..1	an..256			
⊥ Postcode identification	ObligationGuarantee/Declaration/Carrier/Address/PostcodeID	O	0..1	an..17			
⊥ CONSIGNMENT	ObligationGuarantee/Declaration/Consignment	O	0..*				
⊥ Container transport indicator	ObligationGuarantee/Declaration/Consignment/ContainerCode	R	1..1	an..3			
⊥ Sequence number	ObligationGuarantee/Declaration/Consignment/SequenceNumeric	R	1..1	n..5			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Heavy or bulky goods indicator	ObligationGuarantee/Declaration/Consignment/HeavyOrBulkyGoodsIndicator	R	1..1	n..1			
ATTACHEDDOCUMENTS	ObligationGuarantee/Declaration/Consignment/AdditionalDocument	O	0..*				
Number	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/ID	R	1..1	an..70			
Issuing date time	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
Type, coded	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
BINARYFILE	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile	O	0..1				
Identifier	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
Title	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
Author name	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/AuthorName	O	0..1	an..70			
Version	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			
File name	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/FileNametext	O	0..1	an..256			
URI	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..2048			
MIME	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			
Character set	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Include binary object	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/Binary File/IncludedBinaryObjectBinaryObject	O	0..1	N/A			
Access	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/Binary File/Access	O	0..1	an..256			
Description	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/Binary File/Description	O	0..1	an..256			
Size	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/Binary File/SizeMeasure	O	0..1	n..16,6			
Hash code	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/Binary File/HashCode	O	0..1	an..256			
L Hash code algorithm id	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/Binary File/HashCodeAlgorithmIDCode	O	0..1	an..6			
T CONSIGNMENTITEM	ObligationGuarantee/Declaration/Consignment/ConsignmentItem	R	1..*				
Sequence number	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Sequence Numeric	R	1..1	n..5			
T ADDITIONALINFORMATION	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Additional Information	O	0..*				
L Remarks	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Additional Information/Content	R	1..1	an..512			
T GOODS	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodi ty	R	1..1				
Description	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodi ty/CargoDescription	D	0..1	an..256		C004	
L CLASSIFICATION	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodi ty/Classification	O	0..*				R008
Code	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodi ty/Classification/ID	R	1..1	an..18			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊣ Type, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	R	1..1	an..3	CL03		
⊣ CONSIGNEE	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee	O	0..1				
⊣ Name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Name	D	0..1	an..70		C001	
⊣ Identifier	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/ID	D	0..1	an..35		C001	
⊣ ADDRESS	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address	D	0..1			C001	
⊣ City name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/CityName	R	1..1	an..35			
⊣ Country, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/CountryCode	R	1..1	a2	CL04		
⊣ Street and number/P.O. Box	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/Line	R	1..1	an..256			
⊣ Postcode identification	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/PostcodeID	O	0..1	an..17			
⊣ CONSIGNOR	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor	O	0..1				
⊣ Name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Name	D	0..1	an..70		C001	
⊣ Identifier	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/ID	D	0..1	an..35		C001	
⊣ ADDRESS	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address	D	0..1			C001	
⊣ City name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/CityName	R	1..1	an..35			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Country, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor /Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor /Address/Line	R	1..1	an..256			
L Postcode identification	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor /Address/PostcodeID	O	0..1	an..17			
DELIVERYDESTINATION	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Delivery Destination	O	0..1				
Name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Delivery Destination/Name	R	1..1	an..70			
L ADDRESS	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Delivery Destination/Address	R	1..1				
City name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Delivery Destination/Address/CityName	R	1..1	an..35			
Country, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Delivery Destination/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Delivery Destination/Address/Line	R	1..1	an..256			
L Postcode identification	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Delivery Destination/Address/PostcodeID	O	0..1	an..17			
GOODSMEASURE	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/GoodsMeasure	R	1..1				
L Gross weight	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	R	1..1	n..16,6			
PACKAGING	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging	R	1..*				
Sequence number	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging /SequenceNumeric	R	1..1	n..5			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Marks and numbers	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/MarksNumbersID	D	0..1	an..512		C002	
Number of packages	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/QuantityQuantity	D	0..1	n..8		C002	
L Type, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/TypeCode	R	1..1	an..2	CL07		
TRANSPORTEQUIPMENT	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/TransportEquipment	D	0..1			C003	
L Identification	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/TransportEquipment/ID	R	1..1	an..17			
L UCR	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/UCR	O	0..1				
L Identifier	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/UCR/ID	R	1..1	an..35			
L LOADINGLOCATION	ObligationGuarantee/Declaration/Consignment/LoadingLocation	O	0..1				
L Name	ObligationGuarantee/Declaration/Consignment/LoadingLocation/Name	R	1..1	an..256			
L NOTIFYPARTY	ObligationGuarantee/Declaration/Consignment/NotifyParty	O	0..1				
Name	ObligationGuarantee/Declaration/Consignment/NotifyParty/Name	D	0..1	an..70		C001	
Identifier	ObligationGuarantee/Declaration/Consignment/NotifyParty/ID	D	0..1	an..35		C001	
L ADDRESS	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address	D	0..1			C001	
City name	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/CityName	R	1..1	an..35			
Country, coded	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/Line	R	1..1	an..256			
L Postcode identification	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/PostcodeID	O	0..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┐ CUSTOMSOFFICEOFDEPARTURE	ObligationGuarantee/Declaration/Consignment/TransitDeparture	R	1..1				
┐┐ Identifier	ObligationGuarantee/Declaration/Consignment/TransitDeparture/ID	R	1..1	an..35			
┐ CUSTOMSOFFICEOFDESTINATION	ObligationGuarantee/Declaration/Consignment/TransitDestination	R	1..1				
┐┐ Identifier	ObligationGuarantee/Declaration/Consignment/TransitDestination/ID	R	1..1	an..35			
┐┐ TRANSPORTMEANS	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans	R	1..*				R002
┐┐ Identification	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/ID	R	1..1	an..25			
┐┐ Type, coded	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/TypeCode	R	1..1	an..4	CL05		
┐┐ Nationality, coded	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/RegistrationNationalityCode	R	1..1	a2	CL04		
┐┐ Conveyance reference number	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/JourneyID	O	0..1	an..17			
┐┐ Sequence number	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/SequenceNumeric	R	1..1	n..5			
┐┐┐ COUNTRYOFROUTING	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary	R	1..*				R001
┐┐┐ Sequence number	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	R	1..1	n..5			
┐┐┐ Country, coded	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	R	1..1	a2	CL04		
┐┐┐ TRANSPORTEQUIPMENT	ObligationGuarantee/Declaration/Consignment/TransportEquipment	D	0..*				C003
┐┐┐ Sequence number	ObligationGuarantee/Declaration/Consignment/TransportEquipment/SequenceNumeric	R	1..1	n..5			
┐┐┐ Size and type, coded	ObligationGuarantee/Declaration/Consignment/TransportEquipment/CharacteristicCode	R	1..1	an..4	CL01		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Identification	ObligationGuarantee/Declaration/Consignment/TransportEquipment/ID	R	1..1	an..17			
CERTIFICATEOFAPPROVAL	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument	D	0..1			C005	
Number	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/ID	R	1..1	an..70			
Issuing date time	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/IssueDateTime	R	1..1	an..35			
Type, coded	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/TypeCode	R	1..1	an..3	CL06		
BINARYFILE	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile	O	0..1				
Identifier	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/ID	R	1..1	an..256			
Title	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/Title	R	1..1	an..256			
Author name	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/AuthorName	O	0..1	an..70			
Version	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/VersionID	O	0..1	an..17			
File name	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/FileNameText	O	0..1	an..256			
URI	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/URIID	O	0..1	an..204 8			
MIME	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/EncodingCode	O	0..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Character set	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	O	0..1	N/A			
Access	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/Access	O	0..1	an..256			
Description	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/Description	O	0..1	an..256			
Size	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Additio nalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
SEAL	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal	O	0..*				
Sequence number	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/Se quenceNumeric	R	1..1	n..5			R003, R004
Seal number	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
Seal type, coded	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/T ypeCode	O	0..1	an..3	CL08		
GUARANTEE	ObligationGuarantee/Declaration/DeclarationGuarantee	R	1..1				
Validity date	ObligationGuarantee/Declaration/DeclarationGuarantee/ExpirationDateTim e	R	1..1	an..35			
Reference	ObligationGuarantee/Declaration/DeclarationGuarantee/ReferenceID	R	1..1	an..35			
Guarantee type, coded	ObligationGuarantee/Declaration/DeclarationGuarantee/SecurityDetailsCod e	R	1..1	an..3	CL12		
NATIONALREFERENCE	ObligationGuarantee/Declaration/NationalReference	O	0..*				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Reference	ObligationGuarantee/Declaration/NationalReference/ID	R	1..1	an..35			
L Country, coded	ObligationGuarantee/Declaration/NationalReference/IssuingCountryCode	R	1..1	a2	CL04		
L HOLDER	ObligationGuarantee/Declaration/Principal	O	0..1				
Name	ObligationGuarantee/Declaration/Principal/Name	O	0..1	an..70			
Identifier	ObligationGuarantee/Declaration/Principal/ID	R	1..1	an..35			
L ADDRESS	ObligationGuarantee/Declaration/Principal/Address	O	0..1				
City name	ObligationGuarantee/Declaration/Principal/Address/CityName	R	1..1	an..35			
Country, coded	ObligationGuarantee/Declaration/Principal/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	ObligationGuarantee/Declaration/Principal/Address/Line	R	1..1	an..256			
L Postcode identification	ObligationGuarantee/Declaration/Principal/Address/PostcodeID	O	0..1	an..17			
GUARANTEECHAIN	ObligationGuarantee/Surety	R	1..1				
L Code	ObligationGuarantee/Surety/ID	R	1..1	an..35			
TIROPERATION	ObligationGuarantee/TransitOperation	O	0..*				
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
START	ObligationGuarantee/TransitOperation/OperationStart	O	0..1				
End date time	ObligationGuarantee/TransitOperation/OperationStart/InspectionEndDateTime	R	1..1	an..35			
Time limit date time	ObligationGuarantee/TransitOperation/OperationStart/LimitDateTime	O	0..1	an..35			
ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation	O	0..1				
L Remarks	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation/Content	R	1..1	an..512			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┐ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment	O	0..1				R007, R006
└ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment	R	1..*				
┐ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/ID	R	1..1	an..17			
└ SEAL	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal	R	1..*				
┐ Sequence number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
┐ Seal number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
└ Seal type, coded	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
┐ CONTROL	ObligationGuarantee/TransitOperation/OperationStart/Control	R	1..1				
┐ Type, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/TypeCode	R	1..1	an..3	CL25		
└ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult	R	1..1				
└ Result, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult/ID	R	1..1	an..3	CL24		
┐ NATIONALITINERARY	ObligationGuarantee/TransitOperation/OperationStart/Itinerary	O	0..*				
└ NATIONALITINERARYCUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice	R	1..1				
└ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice/ID	R	1..1	an..17			
└ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
L Identifier	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice/ID	R	1..1	an..17			
T TERMINATION	ObligationGuarantee/TransitOperation/OperationTermination	O	0..1				
End date time	ObligationGuarantee/TransitOperation/OperationTermination/InspectionEndDate/DateTime	R	1..1	an..35			
Number of packages	ObligationGuarantee/TransitOperation/OperationTermination/PackageQuantity/Quantity	R	1..1	n..8			
Termination type, coded	ObligationGuarantee/TransitOperation/OperationTermination/TypeCode	R	1..1	an..3	CL27		
T ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation	O	0..1				
L Reservations	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation/Content	R	1..1	an..512			
T CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment	O	0..1				R007, R006
T TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment	R	1..*				
Identifier	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/ID	R	1..1	an..17			
T SEAL	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal	R	1..*				
Sequence number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
Seal number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
L Seal type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
T CONTROL	ObligationGuarantee/TransitOperation/OperationTermination/Control	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊢ Type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/TypeCode	R	1..1	an..3	CL25		
⊢ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult	R	1..1				
⊢ Result, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult/ID	R	1..1	an..3	CL24		
⊢ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice	R	1..1				
⊢ Identifier	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice/ID	R	1..1	an..17			
⊢ DISCHARGE	ObligationGuarantee/TransitOperation/OperationDischarge	O	0..1				
⊢ End date time	ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndDateTime	R	1..1	an..35			
⊢ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice	R	1..1				
⊢ Identifier	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice/ID	R	1..1	an..17			
⊢ REFUSALTOSTART	ObligationGuarantee/TransitOperation/RefusalToStart	O	0..1				
⊢ End date time	ObligationGuarantee/TransitOperation/RefusalToStart/InspectionEndDateTime	R	1..1	an..35			
⊢ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation	R	1..1				
⊢ Reason	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation/Content	R	1..1	an..512			
⊢ CONTROL	ObligationGuarantee/TransitOperation/RefusalToStart/Control	O	0..1				
⊢ Type, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/TypeCode	R	1..1	an..3	CL25		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ CONTROLRESULT	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult	R	1..1				
⊥ Result, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult/ID	R	1..1	an..3	CL24		
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice	R	1..1				
⊥ Identifier	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice/ID	R	1..1	an..17			
⊥ HOLDER	ObligationGuarantee/Principal	R	1..1				
⊥ Name	ObligationGuarantee/Principal/Name	R	1..1	an..70			
⊥ Identifier	ObligationGuarantee/Principal/ID	R	1..1	an..35			
⊥ ADDRESS	ObligationGuarantee/Principal/Address	R	1..1				
⊥ City name	ObligationGuarantee/Principal/Address/CityName	R	1..1	an..35			
⊥ Country, coded	ObligationGuarantee/Principal/Address/CountryCode	R	1..1	a2	CL04		
⊥ Street and number/P.O. Box	ObligationGuarantee/Principal/Address/Line	R	1..1	an..256			
⊥ Postcode identification	ObligationGuarantee/Principal/Address/PostcodeID	O	0..1	an..17			
⊥ AUTHORIZATION	ObligationGuarantee/Principal/AuthorizationCertificate	R	1..1				
⊥ Status, coded	ObligationGuarantee/Principal/AuthorizationCertificate/StatusCode	R	1..1	an..3	CL23		
⊥ ACTIVEWITHDRAWAL	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal	O	0..1				
⊥ Start date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	R	1..1	an..35			
⊥ End date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	O	0..1	an..35			
⊥ ACTIVEEXCLUSION	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion	O	0..*				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
└ Start date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	R	1..1	an..35			
└ End date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	O	0..1	an..35			
└ Country, coded	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/CountryCode	R	1..1	a2	CL04		

Table 49

I6 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ Message function, coded	Function	Code describing the function of the message	The value should be "11" if the request was processed correctly. If at least one error is described in this message, the value should be "10"
└ Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I5)
└ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
└ Type, coded	TypeCode	Code of the message type	The value should be set to "I6"
└ ERROR	Error	Class representing the list of errors, if any	
└ Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
└ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
└ Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
└ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
└ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
└ Acceptance date time	ObligationGuarantee/AcceptanceDateTime	Date and time of the acceptance of the guarantee by the country of departure	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Cancellation date time	ObligationGuarantee/CancellationDateTime	Date and time of the cancellation of the guarantee	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Validity date	ObligationGuarantee/ExpirationDateTime	Date of the last day of validity of the guarantee	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
Issuing date time	ObligationGuarantee/IssueDateTime	Date at which the message E9 (or E11) received by the customs, was issued	The value should be the one from the "Issuing date" attribute of the I9 - Start TIR operation message received by the customs
Status, coded	ObligationGuarantee/StatusCode	Current status of the guarantee	The value should be the code of the status of the guarantee from the code list Guarantee status (eTIR)
Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
Guarantee type, coded	ObligationGuarantee/SecurityDetailsCode	Code of the guarantee type	This value should be from the Guarantee type code (eTIR) list, and should be retrieved from a query to the eTIR international system using the I5 - Query guarantee message
DECLARATIONDATA	ObligationGuarantee/Declaration	Class representing the declaration data as accepted by customs	
Issuing date time	ObligationGuarantee/Declaration/IssueDateTime	Date at which the message E9 (or E11) received by the customs, was issued	The value should be the one from the "Issuing date" attribute of the message E9 received by the customs
Total gross weight	ObligationGuarantee/Declaration/TotalGrossMassMeasure	Total gross weight of goods (including packaging) of the declaration	The value should be the total gross weight as a decimal number. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the list Measurement unit code (UNECE Recommendation 20)
ADDITIONALINFORMATION	ObligationGuarantee/Declaration/AdditionalInformation	Class containing potential additional information at the declaration level	
Remarks	ObligationGuarantee/Declaration/AdditionalInformation/Content	Text used to allow for remarks to the declaration from the holder	The value should be containing the remarks to the declaration from the transporter, or should remain blank if there are none
AGENT	ObligationGuarantee/Declaration/Agent	Class representing the potential agent which would declare the goods on behalf of the holder	
Name	ObligationGuarantee/Declaration/Agent/Name	Name of the agent	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	ObligationGuarantee/Declaration/Agent/ID	Unique identifier of the agent	The value should be the unique identifier of the agent

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊣ Role, coded	ObligationGuarantee/Declaration/Agent/RoleCode	Code of the role of the agent	The value should be the code matching the role of the agent from the list Party role code (UN/EDIFACT 3035)
⊢ AMENDMENT	ObligationGuarantee/Declaration/Amendment	Class representing the list of potential amendments to the declaration	
⊢ Type, coded	ObligationGuarantee/Declaration/Amendment/ChangeReasonCode	Code describing the type of amendment	The value should be the code matching the type of amendment from the list Amendment type code (eTIR)
⊣ POINTER	ObligationGuarantee/Declaration/Amendment/Pointer	Class representing the pointer to the part of the declaration to be amended	
⊢ Sequence number	ObligationGuarantee/Declaration/Amendment/Pointer/SequenceNumeric	Index of the pointer in the list	The value should be the 1-based index of the pointer in the list
⊣ Location	ObligationGuarantee/Declaration/Amendment/Pointer/Location	Location of the class or attribute to be amended	The value should be the location of the class or attribute following the XPath syntax
⊢ SUBCONTRACTOR	ObligationGuarantee/Declaration/Carrier	Class representing the potential agent which undertakes or arranges transport of goods between named points	
⊢ Name	ObligationGuarantee/Declaration/Carrier/Name	Name of the subcontractor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
⊢ Identifier	ObligationGuarantee/Declaration/Carrier/ID	Unique identifier of the subcontractor	The value should be the unique identifier of the subcontractor
⊣ ADDRESS	ObligationGuarantee/Declaration/Carrier/Addresses	Class representing the physical address of the subcontractor	
⊢ City name	ObligationGuarantee/Declaration/Carrier/Addresses/CityName	City name of the physical address of the subcontractor	The value should be the city name of the physical address of the subcontractor
⊢ Country, coded	ObligationGuarantee/Declaration/Carrier/Addresses/CountryCode	Code of the country of the physical address of the subcontractor	The value should be the code of the country of the physical address of the subcontractor from the Country name code (ISO 3166-1-alpha-2) list
⊢ Street and number/P.O. Box	ObligationGuarantee/Declaration/Carrier/Addresses/Line	Street name of the physical address of the subcontractor	The value should be the street name and number (or equivalent) of the physical address of the subcontractor
⊣ Postcode identification	ObligationGuarantee/Declaration/Carrier/Addresses/PostcodeID	Postal/Zip code of the physical address of the subcontractor	The value should be the postal/ZIP code of the physical address of the subcontractor
⊢ CONSIGNMENT	ObligationGuarantee/Declaration/Consignment	Class representing the list of details on the transport of goods between a loading point and an unloading point	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Container transport indicator	ObligationGuarantee/Declaration/Consignment/ContainerCode	Code describing whether the goods are transported in a container or not	The value should be "1" if the goods are transported in a container or "0" otherwise
Sequence number	ObligationGuarantee/Declaration/Consignment/SequenceNumeric	Index of the consignment in the list	The value should be the 1-based index of the consignment in the list
Heavy or bulky goods indicator	ObligationGuarantee/Declaration/Consignment/HeavyOrBulkyGoodsIndicator	Code describing whether the goods are considered (according to article 29) as "heavy or bulky", as defined article 1 (p) of the TIR Convention.	The value should be "1" if the goods are considered by the customs as "heavy or bulky" or "0" otherwise
ATTACHEDDOCUMENTS	ObligationGuarantee/Declaration/Consignment/AdditionalDocument	Class representing the list of potential additional documents supplied as part of the declaration and related to the consignment	
Number	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/ID	Identifier of the document	The value should be an ID identifying the document and it should be unique among all other attached documents of the declaration
Issuing date time	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/TypeCode	Code of the type of the document	The value should be the code of the type of the document from the Document name code (UN/EDIFACT 1001) list
BINARYFILE	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile	Class representing the content of the document	
Identifier	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
Author name	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Version	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
File name	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/FileNametext	File name of the document	The value should be the name of the file representing the document, including the extension
URI	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
MIME	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)
Access	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
Description	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
Size	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit code (UNECE Recommendation 20)
Hash code	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┐ CONSIGNMENTITEM	ObligationGuarantee/Declaration/Consignment/ConsignmentItem	Class representing the list of details on the items in the consignment	
┐ Sequence number	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/SequenceNumeric	Index of the consignment item in the list	The value should be the 1-based index of the consignment item in the list, allowing for quick physical identification upon inspection
┐ ADDITIONALINFORMATION	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/AdditionalInformation	Class representing the list of potential additional information at the consignment item level	
┐┐ Remarks	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/AdditionalInformation/Content	Remarks on the consignment item	The value should be a text allowing for additional remarks on the consignment item
┐┐ GOODS	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity	Class representing the details on the goods	
┐┐ Description	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/CargoDescription	Description of the goods	The value should be a text describing the goods
┐┐┐ CLASSIFICATION	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification	Class representing the list of classification details of the goods	
┐┐┐ Code	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification/ID	Identifier of the classification of the goods	The value should be the identifier of the non-commercial classification of the goods
┐┐┐ Type, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	Code of the classification	The value should be the code of the classification from the Item type identification code (UN/EDIFACT 7143) list
┐┐ CONSIGNEE	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee	Class representing the potential consignee of the goods	
┐┐ Name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Name	Name of the consignee	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
┐┐ Identifier	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/ID	Unique identifier of the consignee	The value should be the unique identifier of the consignee
┐┐┐ ADDRESS	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address	Class representing the physical address of the consignee	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊢ City name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/CityName	City name of the physical address of the consignee	The value should be the city name of the physical address of the consignee
⊢ Country, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/CountryCode	Code of the country of the physical address of the consignee	The value should be the code of the country of the physical address of the consignee from the Country name code (ISO 3166-1-alpha-2) list
⊢ Street and number/P.O. Box	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/Line	Street name of the physical address of the consignee	The value should be the street name and number (or equivalent) of the physical address of the consignee
⊣ Postcode identification	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/PostcodeID	Postal/Zip code of the physical address of the consignee	The value should be the postal/ZIP code of the physical address of the consignee
⊢ CONSIGNOR	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor	Class representing the potential consignor of the goods	
⊢ Name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Name	Name of the consignor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
⊢ Identifier	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/ID	Unique identifier of the consignor	The value should be the unique identifier of the consignor
⊣ ADDRESS	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address	Class representing the physical address of the consignor	
⊢ City name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/CityName	City name of the physical address of the consignor	The value should be the city name of the physical address of the consignor
⊢ Country, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/CountryCode	Code of the country of the physical address of the consignor	The value should be the code of the country of the physical address of the consignor from the Country name code (ISO 3166-1-alpha-2) list
⊢ Street and number/P.O. Box	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/Line	Street name of the physical address of the consignor	The value should be the street name and number (or equivalent) of the physical address of the consignor
⊣ Postcode identification	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/PostcodeID	Postal/Zip code of the physical address of the consignor	The value should be the postal/ZIP code of the physical address of the consignor

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┐ DELIVERYDESTINATION	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination	Class representing the potential party to which the goods should be delivered	
┐ Name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Name	Name of the delivery destination	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification.
┐ ADDRESS	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address	Class representing the physical address of the delivery destination	
┐ City name	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	City name of the physical address of the delivery destination	The value should be the city name of the physical address of the delivery destination
┐ Country, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	Code of the country of the physical address of the delivery destination	The value should be the code of the country of the physical address of the delivery destination from the list (Country name code (ISO 3166-1-alpha-2))
┐ Street and number/P.O. Box	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/Line	Street name of the physical address of the delivery destination	The value should be the street name and number (or equivalent) of the physical address of the delivery destination
┐ Postcode identification	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	Postal/Zip code of the physical address of the delivery destination	The value should be the postal/ZIP code of the physical address of the delivery destination
┐ GOODSMEASURE	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/GoodsMeasure	Class representing the details on the measures of the goods	
┐ Gross weight	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	Total gross weight of the goods	The value should be the weight (mass) of goods including packaging but excluding the transport equipment. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit code (UNECE Recommendation 20)
┐ PACKAGING	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging	Class representing the list of details on the packaging of the goods	
┐ Sequence number	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/SequenceNumeric	Index of the packaging in the list	The value should be the 1-based index of the packaging in the list, allowing for quick physical identification upon inspection
┐ Marks and numbers	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/MarksNumbersID	Packaging marks and numbers	The value should be a text describing the marks and numbers on a transport unit or package.

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Number of packages	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/QuantityQuantity	Number of packages	The value should be the number of individual items packaged in such a way that they cannot be divided without first undoing the packing
L Type, coded	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/TypeCode	Code of the packaging type	The value should be the code of the type of packaging from the code list Package type description code (UNECE Recommendation 21 Annex VI)
T TRANSPORTEQUIPMENT	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/TransportEquipment	Class representing the transport equipment used for the consignment item	
L Identification	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
T UCR	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/UCR	Class representing the Unique Trader Reference	
L Identifier	ObligationGuarantee/Declaration/Consignment/ConsignmentItem/UCR/ID	Unique identifier of the goods	The value should be the unique identifier assigned to goods being subject to cross border transactions
T LOADINGLOCATION	ObligationGuarantee/Declaration/Consignment/LoadingLocation	Class representing the place of loading of the goods	
L Name	ObligationGuarantee/Declaration/Consignment/LoadingLocation/Name	Name of the loading location	The value should be the name of a seaport, airport, freight terminal, rail station or other place at which goods are loaded onto the means of transport being used for their carriage
T NOTIFYPARTY	ObligationGuarantee/Declaration/Consignment/NotifyParty	Class representing a potential party to be notified	
Name	ObligationGuarantee/Declaration/Consignment/NotifyParty/Name	Name of the party to be notified	The value should be the name (first and last name or company) of the party to be notified
Identifier	ObligationGuarantee/Declaration/Consignment/NotifyParty/ID	Unique identifier of the party to be notified	The value should be the unique identifier of the party to be notified
T ADDRESS	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address	Class representing the physical address of the party to be notified	
City name	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/CityName	City name of the physical address of the party to be notified	The value should be the city name of the physical address of the party to be notified
Country, coded	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/CountryCode	Code of the country of the physical address of the party to be notified	The value should be the code of the country of the physical address of the party to be notified from the code list Country name code (ISO 3166-1-alpha-2)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ Street and number/P.O. Box	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/Line	Street name of the physical address of the party to be notified	The value should be the street name and number (or equivalent) of the physical address of the party to be notified
└ Postcode identification	ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/PostcodeID	Postal/Zip code of the physical address of the party to be notified	The value should be the postal/ZIP code of the physical address of the party to be notified
└└ CUSTOMSOFFICEOFDEPARTURE	ObligationGuarantee/Declaration/Consignment/TransitDeparture	Class representing the customs office where the goods are loaded	
└ Identifier	ObligationGuarantee/Declaration/Consignment/TransitDeparture/ID	Unique identifier of the customs office of departure	The value should be the unique identifier used of the customs of departure, where the goods are loaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
└└ CUSTOMSOFFICEOFDESTINATION	ObligationGuarantee/Declaration/Consignment/TransitDestination	Class representing the customs office where the goods are unloaded	
└ Identifier	ObligationGuarantee/Declaration/Consignment/TransitDestination/ID	Unique identifier of the customs office of destination	The value should be the unique identifier used of the customs of destination, where the goods are unloaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
└└ TRANSPORTMEANS	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans	Class representing the list of the means of transport for the consignment	
└ Identification	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/ID	Unique identifier of the transport means	The value should be the unique identifier of the means of transport used for the transit
└ Type, coded	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/TypeCode	Code of the means of transport	The value should be the code of the means of transport from the list Transport means description code (UNECE Recommendation 28)
└ Nationality, coded	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/RegistrationNationalityCode	Nationality of the means of transport	The value should be the code of the country for the nationality of the means of transport from the list Country name code (ISO 3166-1-alpha-2)
└ Conveyance reference number	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/JourneyID	External identifier/reference identifying a journey of a means of transport	The value should be an identifier referencing a journey of a means of transport (e.g. vessel, train or plane), like voyage number, flight number, or trip number.
└ Sequence number	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/SequenceNumeric	Index of the transport means in the list	The value should be the 1-based index of the transport means in the list
└ COUNTRYOFROUTING	ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary	Class representing the list of countries of the itinerary of the consignment	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Sequence number	ObligationGuarantee/Declaration/Consignment/TransportMeans/Itinerary/SequenceNumeric	Index of the country in the list	The value should be the 1-based index of the country in the list representing the itinerary of the consignment
Country, coded	ObligationGuarantee/Declaration/Consignment/TransportMeans/Itinerary/RoutingCountryCode	Code of the country	The value should be the code of the country from the code list Country name code (ISO 3166-1-alpha-2)
TRANSPORTEQUIPMENT	ObligationGuarantee/Declaration/Consignment/TransportEquipment	Class representing the list of the transport equipment used for the consignment	
Sequence number	ObligationGuarantee/Declaration/Consignment/TransportEquipment/SequenceNumeric	Index of the transport equipment in the list	The value should be the 1-based index of the transport equipment in the list
Size and type, coded	ObligationGuarantee/Declaration/Consignment/TransportEquipment/CharacteristicCode	Code of the transport equipment	The value should be the code of the transport equipment (specifying its characteristics) from the list Equipment size and type description code (UN/EDIFACT 8155)
Identification	ObligationGuarantee/Declaration/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
CERTIFICATEOFAPPROVAL	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument	Class representing the details of the certificate of approval of the transport equipment	
Number	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/ID	Unique identifier of the certificate of approval	The value should be the unique identifier of the certificate of approval
Issuing date time	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	Issuing date of the certificate of approval	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/TypeCode	Code of the type of the certificate of approval	The value should be the code of the type of the certificate of approval from the code list Document name code (UN/EDIFACT 1001)
BINARYFILE	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile	Class representing the contents of the certificate of approval	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Identifier	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	Title of the certificate of approval	The value should be the title of the certificate of approval
Author name	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the certificate of approval	The value should be the first and last name of the author (or the issuing organization) of the certificate of approval
Version	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	Version number of the certificate of approval	The value should be the version of the certificate of approval
File name	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNametext	File name of the certificate of approval	The value should be the name of the file representing the certificate of approval, including the extension
URI	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	URI of the certificate of approval	The value should be the Unique Resource Identifier (URI) allowing to access the certificate of approval instead of relying on a binary object representation
MIME	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the contents of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Access	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
Description	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Description	Description of the certificate of approval	The value should be the description of the certificate of approval and explain what it contains
Size	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit code (UNECE Recommendation 20)
Hash code	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
SEAL	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
Sequence number	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list
Seal number	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
Seal type, coded	ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the code list Seal type (eTIR)
GUARANTEE	ObligationGuarantee/Declaration/DeclarationGuarantee	Class representing the guarantee of this TIR transport	
Validity date	ObligationGuarantee/Declaration/DeclarationGuarantee/ExpirationDateTime	Expiration date of the guarantee	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
Reference	ObligationGuarantee/Declaration/DeclarationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊥ Guarantee type, coded	ObligationGuarantee/Declaration/DeclarationGuarantee/SecurityDetailsCode	Code of the type of guarantee	The value should be the unique identifier of the guarantee for this TIR transport
⊥ NATIONALREFERENCE	ObligationGuarantee/Declaration/NationalReference	Class representing the list of national references under which the declaration data has been saved in the countries along the itinerary of the transport	
⊥ Reference	ObligationGuarantee/Declaration/NationalReference/ID	Identifier of the national reference of the declaration	The value should be the identifier of the national reference under which the declaration has been saved in the country along the itinerary of the transport
⊥ Country, coded	ObligationGuarantee/Declaration/NationalReference/IssuingCountryCode	Code of the country along the itinerary	The value should be the code of the country along the itinerary from the list Country name code (ISO 3166-1-alpha-2)
⊥ HOLDER	ObligationGuarantee/Declaration/Principal	Class representing the holder (transporter) of this transport	
⊥ Name	ObligationGuarantee/Declaration/Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
⊥ Identifier	ObligationGuarantee/Declaration/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
⊥ ADDRESS	ObligationGuarantee/Declaration/Principal/Address	Class representing the physical address of the holder	
⊥ City name	ObligationGuarantee/Declaration/Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
⊥ Country, coded	ObligationGuarantee/Declaration/Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the list Country name code (ISO 3166-1-alpha-2)
⊥ Street and number/P.O. Box	ObligationGuarantee/Declaration/Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
⊥ Postcode identification	ObligationGuarantee/Declaration/Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder
⊥ GUARANTEECHAIN	ObligationGuarantee/Surety	Class representing the information related to the issuing guarantee chain (providing guarantee for the TIR transport)	
⊥ Code	ObligationGuarantee/Surety/ID	Unique identifier of the guarantee chain which issued the guarantee	The value should be 'IRU' for guarantees issued by the International Road transport Union

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊥ TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the list of potential TIR operations that have already been carried out with the guarantee	
⊥ Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
⊥ Registration number	ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier under which the TIR operation is nationally registered
⊥ START	ObligationGuarantee/TransitOperation/OperationStart	Class representing the details related to the start of the TIR operation	
⊥ End date time	ObligationGuarantee/TransitOperation/OperationStart/InspectionEndTime	Date and time when the TIR operation has been started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
⊥ Time limit date time	ObligationGuarantee/TransitOperation/OperationStart/LimitDateTime	Date (with or without the time) by when the TIR operation should be completed	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
⊥ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation	Class representing the potential additional information regarding the start of the TIR operation	
⊥ Remarks	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation/Content	Remarks added when starting the TIR operation	The value should be the remark text a customs officer would record when starting the TIR operation
⊥ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment	Class representing potential parent object grouping all transport equipments and related seals information	
⊥ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment	Class representing the list of all transport equipments used for all consignments in the TIR operation	
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊥ SEAL	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
⊥ Sequence number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list
⊥ Seal number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
⊥ Seal type, coded	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the code list Seal type (eTIR)
⊥ CONTROL	ObligationGuarantee/TransitOperation/OperationStart/Control	Class representing the details of the control performed by the customs officer before starting the TIR operation	
⊥ Type, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the code list Control type (eTIR)
⊥ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
⊥ Result, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the code list Control result (eTIR)
⊥ NATIONALITINERARY	ObligationGuarantee/TransitOperation/OperationStart/Itinerary	Class representing the potential national itinerary that has to be followed by the TIR transport, mentioning one or more customs offices to be visited	
⊥ NATIONALITINERARYCUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice	Class representing the details identifying a customs office that has to be visited by the TIR transport during its itinerary	
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice/ID	Unique identifier of the customs office of the itinerary	The value should be the unique identifier of the customs office of the itinerary. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice	Class representing the details of the customs office where the TIR operation started	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
└ Identifier	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice/ID	Unique identifier of the customs office where the TIR operation is started	The value should be the unique identifier of the customs office where the TIR operation is started. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
┐ TERMINATION	ObligationGuarantee/TransitOperation/OperationTermination	Class representing the details related to the termination of the TIR operation	
└ End date time	ObligationGuarantee/TransitOperation/OperationTermination/InspectionEndTime	Date and time when the TIR operation has been terminated	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
└ Number of packages	ObligationGuarantee/TransitOperation/OperationTermination/PackageQuantityQuantity	Number of packages unloaded	The value should be the number of packages potentially unloaded during the termination of the TIR operation
└ Termination type, coded	ObligationGuarantee/TransitOperation/OperationTermination/TypeCode	Code of the type of termination of the TIR operation	The value should be the type of termination code of the TIR operation from the code list Termination type (eTIR)
┐ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation	Class representing potential additional information regarding the termination of the TIR operation	
└└ Reservations	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation/Content	Reservations/remarks added when terminating the TIR operation	The value should be the reservations a customs officer would have added when terminating the TIR operation
┐ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment	Class representing potential parent object grouping details about all transport equipments and related seals information	
└┐ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment	Class representing the list of all transport equipments used for all consignments in the TIR operation	
└└ Identifier	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be the marks (letters and/or numbers) which identify the transport equipment
└┐ SEAL	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
└└ Sequence number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊢ Seal number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
⊣ Seal type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the code list Seal type (eTIR)
⊢ CONTROL	ObligationGuarantee/TransitOperation/OperationTermination/Control	Class representing the details of the control performed by the customs officer while terminating the TIR operation	
⊢ Type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the code list Control type (eTIR)
⊣ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
⊣ Result, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the code list Control result (eTIR)
⊣ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice	Class representing the details of the customs office where the TIR operation is terminated	
⊣ Identifier	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice/ID	Unique identifier of the customs office where the TIR operation is terminated	The value should be the unique identifier of the customs office where the TIR operation is terminated. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
⊢ DISCHARGE	ObligationGuarantee/TransitOperation/OperationDischarge	Class representing the details related to the discharge of the TIR operation	
⊢ End date time	ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndTime	Date and time when the TIR operation has just been discharged	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
⊣ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice	Class representing the details of the customs office where the TIR operation is discharged	
⊣ Identifier	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice/ID	Unique identifier of the customs office where the TIR operation is discharged	The value should be the unique identifier of the customs office where the TIR operation is discharged. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊥ REFUSALTOSTART	ObligationGuarantee/TransitOperation/RefusalToStart	Class representing the details related to the refusal to start the TIR operation	
⊥ End date time	ObligationGuarantee/TransitOperation/RefusalToStart/InspectionEndTime	Date and time when the TIR operation has been refused to be started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
⊥ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation	Class representing additional information regarding the refusal to start the TIR operation	
⊥ Reason	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation/Content	Reason for refusing to start the TIR operation	The value should be the reason(s) a customs officer would have refused to start a TIR operation
⊥ CONTROL	ObligationGuarantee/TransitOperation/RefusalToStart/Control	Class representing the details of the control performed by the customs officer before refusing to start the TIR operation	
⊥ Type, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the code list Control type (eTIR)
⊥ CONTROLRESULT	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
⊥ Result, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the code list Control result (eTIR)
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice	Class representing the details of the customs office where the TIR operation is refused to be started	
⊥ Identifier	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice/ID	Unique identifier of the customs office where the TIR operation is refused to be started	The value should be the unique identifier of the customs office where the TIR operation is refused to be started. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
⊥ HOLDER	ObligationGuarantee/Principal	Class representing the holder (transporter) of this transport	
⊥ Name	ObligationGuarantee/Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
⊥ Identifier	ObligationGuarantee/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
⊥ ADDRESS	ObligationGuarantee/Principal/Address	Class representing the physical address of the holder	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
City name	ObligationGuarantee/Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
Country, coded	ObligationGuarantee/Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the list Country name code (ISO 3166-1-alpha-2)
Street and number/P.O. Box	ObligationGuarantee/Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
Postcode identification	ObligationGuarantee/Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder
└ AUTHORIZATION	ObligationGuarantee/Principal/AuthorizationCertificate	Class representing the details related to the authorization of the holder in the TIR system	
Status, coded	ObligationGuarantee/Principal/AuthorizationCertificate/StatusCode	Code of the current authorization status of the holder	The value should be the code of the current authorization status of the holder from the code list Holder status (eTIR)
└ ACTIVEWITHDRAWAL	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal	Class representing the details related to a potential withdrawal of the holder from the TIR system	
Start date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	Start date of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
End date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	End date of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
└ ACTIVEEXCLUSION	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion	Class representing the list of potential exclusions of the holder in specific countries, as per Article 38 of the TIR Convention	
Start date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	Start date of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
End date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	End date of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
Country, coded	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/CountryCode	Code of the country in which the holder is excluded	The value should be the code of the country in which the holder is excluded from the list Country name code (ISO 3166-1-alpha-2)

(c) **How to use response data in the national customs system**

408. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “16 – Query results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

409. If there was no error, and the response message content is as expected, the next step for the national customs system is to find the information needed in the response. Depending on the case in which the query mechanism was used, the national customs system may need to store in its database all information contained in the “16 – Query results”, or on the contrary, the national customs system may need to retrieve only a few fields from the response and process them.

5. **I7/I8 message pair**

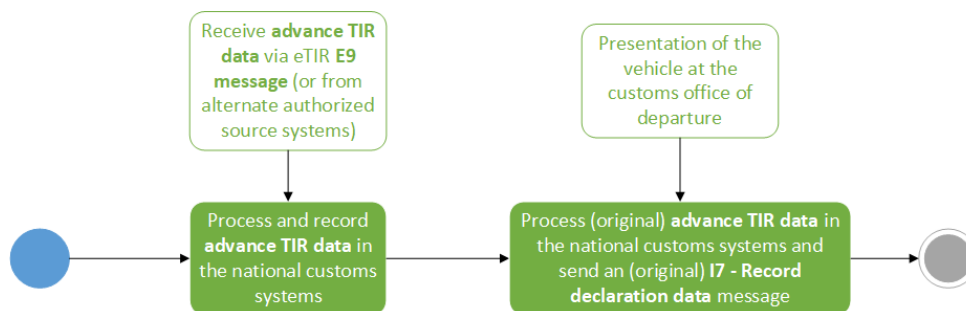
410. This section describes the technical specifications of the “17 – Record declaration data” request message, sent by the national customs system to send the data relevant to the declaration accepted by the customs authorities; and the “18 – Record declaration data results” response message, sent back by the eTIR international system.

(a) **I7 – Record declaration data**

411. It is important to note that the “17 – Record declaration data” message can be used in two different approaches. The first approach is by the initial customs office of departure that will start the TIR transport and where the national customs system will send the original declaration data to the eTIR international system. This declaration data is built upon the “advance TIR data” previously sent by the holder as shown in the following figure.

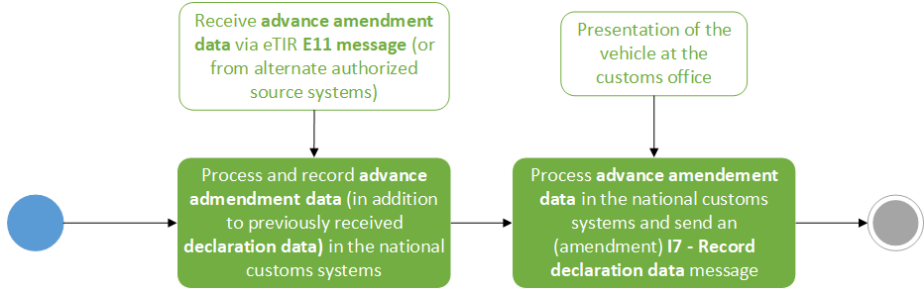
Figure 39

Sending the original declaration data



412. The second approach is by any other customs office along the itinerary which would have received "advance amendment data" from the holder. In this case, and upon acceptance of this data by the customs officer, the national customs system of this customs office will send an amendment of the declaration data to the eTIR international system.

Figure 40
Sending the amended declaration data



413. The way to indicate if the “I7 – Record declaration data” message is used as “original” or an “amended” declaration data is by setting the appropriate value in the first field of the message: "Message function, coded".

Table 50
17 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
└─ DECLARATIONDATA	Declaration	R	1..1				
Issuing date time	Declaration/IssueDateTime	R	1..1	an..35			
Total gross weight	Declaration/TotalGrossMassMeasure	O	0..1	n..16,6			
└─ ADDITIONALINFORMATION	Declaration/AdditionalInformation	O	0..1				
└─ Remarks	Declaration/AdditionalInformation/StatementDescription	O	0..1	an..512			
└─ AGENT	Declaration/Agent	O	0..1				
Name	Declaration/Agent/Name	D	0..1	an..70		C001	
Identifier	Declaration/Agent/ID	D	1..1	an..35		C001	
└─ Role, coded	Declaration/Agent/RoleCode	R	1..1	an..3	CL02		
└─ AMENDMENT	Declaration/Amendment	D	0..*			C008	
Type, coded	Declaration/Amendment/ChangeReasonCode	R	1..1	an..3	CL17		
└─ POINTER	Declaration/Amendment/Pointer	R	1..1				
Sequence number	Declaration/Amendment/Pointer/SequenceNumeric	R	1..1	n..5			
└─ Location	Declaration/Amendment/Pointer/Location	R	1..1	an..512			
└─ SUBCONTRACTOR	Declaration/Carrier	O	0..*				
Name	Declaration/Carrier/Name	D	0..1	an..70		C001	
Identifier	Declaration/Carrier/ID	D	0..1	an..35		C001	
└─ ADDRESS	Declaration/Carrier/Address	D	0..1			C001	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
City name	Declaration/Carrier/Address/CityName	R	1..1	an..35			
Country, coded	Declaration/Carrier/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Declaration/Carrier/Address/Line	R	1..1	an..256			
Postcode identification	Declaration/Carrier/Address/PostcodeID	O	0..1	an..17			
CONSIGNMENT	Declaration/Consignment	D	0..*			C008	
Container transport indicator	Declaration/Consignment/ContainerCode	R	1..1	an..3			
Sequence number	Declaration/Consignment/SequenceNumeric	R	1..1	n..5			
Heavy or bulky goods indicator	Declaration/Consignment/HeavyOrBulkyGoodsIndicator	R	1..1	n..1			
ATTACHEDDOCUMENTS	Declaration/Consignment/AdditionalDocument	O	0..*				
Number	Declaration/Consignment/AdditionalDocument/ID	R	1..1	an..70			
Issuing date time	Declaration/Consignment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
Type, coded	Declaration/Consignment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
BINARYFILE	Declaration/Consignment/AdditionalDocument/BinaryFile	O	0..1				
Identifier	Declaration/Consignment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
Title	Declaration/Consignment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
Author name	Declaration/Consignment/AdditionalDocument/BinaryFile/AuthorName	O	0..1	an..70			
Version	Declaration/Consignment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			
File name	Declaration/Consignment/AdditionalDocument/BinaryFile/FileNametext	O	0..1	an..256			
URI	Declaration/Consignment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..204 8			
MIME	Declaration/Consignment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	Declaration/Consignment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Character set	Declaration/Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	Declaration/Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObject	O	0..1	N/A			
Access	Declaration/Consignment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			
Description	Declaration/Consignment/AdditionalDocument/BinaryFile/Description	O	0..1	an..256			
Size	Declaration/Consignment/AdditionalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	Declaration/Consignment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	Declaration/Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
CONSIGNMENTITEM	Declaration/Consignment/ConsignmentItem	R	1..*				
Sequence number	Declaration/Consignment/ConsignmentItem/SequenceNumeric	R	1..1	n..5			
ADDITIONALINFORMATION	Declaration/Consignment/ConsignmentItem/AdditionalInformation	O	0..*				
Remarks	Declaration/Consignment/ConsignmentItem/AdditionalInformation/Content	R	1..1	an..512			
GOODS	Declaration/Consignment/ConsignmentItem/Commodity	R	1..1				
Description	Declaration/Consignment/ConsignmentItem/Commodity/CargoDescription	D	0..1	an..256		C004	
CLASSIFICATION	Declaration/Consignment/ConsignmentItem/Commodity/Classification	O	0..*				
Code	Declaration/Consignment/ConsignmentItem/Commodity/Classification/ID	R	1..1	an..18			
Type, coded	Declaration/Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	R	1..1	an..3	CL03		
CONSIGNEE	Declaration/Consignment/ConsignmentItem/Consignee	O	0..1				
Name	Declaration/Consignment/ConsignmentItem/Consignee/Name	D	0..1	an..70		C001	
Identifier	Declaration/Consignment/ConsignmentItem/Consignee/ID	D	0..1	an..35		C001	
ADDRESS	Declaration/Consignment/ConsignmentItem/Consignee/Address	D	0..1			C001	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
City name	Declaration/Consignment/ConsignmentItem/Consignee/Address/CityName	R	1..1	an..35			
Country, coded	Declaration/Consignment/ConsignmentItem/Consignee/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/Consignee/Address/Line	R	1..1	an..256			
Postcode identification	Declaration/Consignment/ConsignmentItem/Consignee/Address/PostcodeID	O	0..1	an..17			
CONSIGNOR	Declaration/Consignment/ConsignmentItem/Consignor	O	0..1				
Name	Declaration/Consignment/ConsignmentItem/Consignor/Name	D	0..1	an..70		C001	
Identifier	Declaration/Consignment/ConsignmentItem/Consignor/ID	D	0..1	an..35		C001	
ADDRESS	Declaration/Consignment/ConsignmentItem/Consignor/Address	D	0..1			C001	
City name	Declaration/Consignment/ConsignmentItem/Consignor/Address/CityName	R	1..1	an..35			
Country, coded	Declaration/Consignment/ConsignmentItem/Consignor/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/Consignor/Address/Line	R	1..1	an..256			
Postcode identification	Declaration/Consignment/ConsignmentItem/Consignor/Address/PostcodeID	O	0..1	an..17			
DELIVERYDESTINATION	Declaration/Consignment/ConsignmentItem/DeliveryDestination	O	0..1				
Name	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Name	R	1..1	an..70			
ADDRESS	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address	R	1..1				
City name	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	R	1..1	an..35			
Country, coded	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/Line	R	1..1	an..256			
Postcode identification	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	O	0..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊞ GOODSMEASURE	Declaration/Consignment/ConsignmentItem/GoodsMeasure	R	1..1				
⊣ Gross weight	Declaration/Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	R	1..1	n..16,6			
⊞ PACKAGING	Declaration/Consignment/ConsignmentItem/Packaging	R	1..*				
⊞ Sequence number	Declaration/Consignment/ConsignmentItem/Packaging/SequenceNumeric	R	1..1	n..5			
⊞ Marks and numbers	Declaration/Consignment/ConsignmentItem/Packaging/MarksNumbersID	D	0..1	an..512		C002	
⊞ Number of packages	Declaration/Consignment/ConsignmentItem/Packaging/QuantityQuantity	D	0..1	n..8		C002	
⊣ Type, coded	Declaration/Consignment/ConsignmentItem/Packaging/TypeCode	R	1..1	an..2	CL07		
⊞ TRANSPORTEQUIPMENT	Declaration/Consignment/ConsignmentItem/TransportEquipment	D	0..1			C003	
⊣ Identifier	Declaration/Consignment/ConsignmentItem/TransportEquipment/ID	R	1..1	an..17			
⊣ UCR	Declaration/Consignment/ConsignmentItem/UCR	O	0..1				
⊣ Identifier	Declaration/Consignment/ConsignmentItem/UCR/ID	O	0..1	an..35			
⊞ LOADINGLOCATION	Declaration/Consignment/LoadingLocation	O	0..1				
⊣ Name	Declaration/Consignment/LoadingLocation/Name	O	0..1	an..256			
⊞ NOTIFYPARTY	Declaration/Consignment/NotifyParty	O	0..1				
⊞ Name	Declaration/Consignment/NotifyParty/Name	D	0..1	an..70		C001	
⊞ Identifier	Declaration/Consignment/NotifyParty/ID	D	0..1	an..35		C001	
⊣ ADDRESS	Declaration/Consignment/NotifyParty/Address	D	0..1			C001	
⊞ City name	Declaration/Consignment/NotifyParty/Address/CityName	R	1..1	an..35			
⊞ Country, coded	Declaration/Consignment/NotifyParty/Address/CountryCode	R	1..1	a2	CL04		
⊞ Street and number/P.O. Box	Declaration/Consignment/NotifyParty/Address/Line	R	1..1	an..256			
⊣ Postcode identification	Declaration/Consignment/NotifyParty/Address/PostcodeID	O	0..1	an..17			
⊞ CUSTOMSOFFICEOFDEPARTURE	Declaration/Consignment/TransitDeparture	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ Identifier	Declaration/Consignment/TransitDeparture/ID	R	1..1	an..35			
⊥ CUSTOMSOFFICEOFDESTINATION	Declaration/Consignment/TransitDestination	R	1..1				
⊥ Identifier	Declaration/Consignment/TransitDestination/ID	R	1..1	an..35			
⊥ TRANSPORTMEANS	Declaration/Consignment/TransitTransportMeans	R	1..*				
⊥ Identifier	Declaration/Consignment/TransitTransportMeans/ID	R	1..1	an..25			
⊥ Type, coded	Declaration/Consignment/TransitTransportMeans/TypeCode	R	1..1	an..4	CL05		
⊥ Nationality, coded	Declaration/Consignment/TransitTransportMeans/RegistrationNationalityCode	R	1..1	a2	CL04		
⊥ Conveyance reference number	Declaration/Consignment/TransitTransportMeans/JourneyID	O	0..1	an..17			
⊥ Sequence number	Declaration/Consignment/TransitTransportMeans/SequenceNumeric	R	1..1	n..5			
⊥ COUNTRYOFROUTING	Declaration/Consignment/TransitTransportMeans/Itinerary	R	1..*				
⊥ Sequence number	Declaration/Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	R	1..1	n..5			
⊥ Country, coded	Declaration/Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	R	1..1	a2	CL04		
⊥ TRANSPORTEQUIPMENT	Declaration/Consignment/TransportEquipment	D	0..*			C003	
⊥ Sequence number	Declaration/Consignment/TransportEquipment/SequenceNumeric	R	1..1	n..5			
⊥ Size and type, coded	Declaration/Consignment/TransportEquipment/CharacteristicCode	R	1..1	an..4	CL01		
⊥ Identifier	Declaration/Consignment/TransportEquipment/ID	R	1..1	an..17			
⊥ CERTIFICATEOFAPPROVAL	Declaration/Consignment/TransportEquipment/AdditionalDocument	D	0..1			C005	
⊥ Number	Declaration/Consignment/TransportEquipment/AdditionalDocument/ID	R	1..1	an..70			
⊥ Issuing date time	Declaration/Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
⊥ Type, coded	Declaration/Consignment/TransportEquipment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊔ BINARYFILE	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File	O	0..1				
⊔ Identifier	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/ID	R	1..1	an..256			
⊔ Title	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/Title	R	1..1	an..256			
⊔ Author name	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/AuthorName	O	0..1	an..70			
⊔ Version	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/VersionID	O	0..1	an..17			
⊔ File name	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/FileNameText	O	0..1	an..256			
⊔ URI	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/URIID	O	0..1	an..204 8			
⊔ MIME	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/MIMECode	O	0..1	an..70			
⊔ Encoding	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/EncodingCode	O	0..1	an..17			
⊔ Character set	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/CharacterSetCode	O	0..1	n..17			
⊔ Include binary object	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/IncludedBinaryObjectBinaryObject	O	0..1	N/A			
⊔ Access	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/Access	O	0..1	an..256			
⊔ Description	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/Description	O	0..1	an..256			
⊔ Size	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/SizeMeasure	O	0..1	n..16,6			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Hash code	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
SEAL	Declaration/Consignment/TransportEquipment/Seal	O	0..*				
Sequence number	Declaration/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			
Seal number	Declaration/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			
Seal type, coded	Declaration/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
GUARANTEE	Declaration/DeclarationGuarantee	R	1..1				
Reference	Declaration/DeclarationGuarantee/ReferenceID	R	1..1	an..35			
HOLDER	Declaration/Principal	R	1..1				
Name	Declaration/Principal/Name	O	0..1	an..70			
Identifier	Declaration/Principal/ID	R	1..1	an..35			
ADDRESS	Declaration/Principal/Address	D	0..1			C001	
City name	Declaration/Principal/Address/CityName	R	1..1	an..35			
Country, coded	Declaration/Principal/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Declaration/Principal/Address/Line	R	1..1	an..256			
Postcode identification	Declaration/Principal/Address/PostcodeID	O	0..1	an..17			

Table 51
17 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be set to "9" if this message is the original (the first one to be submitted for this TIR transport) or "4" if this message reflects an amendment to the declaration

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "I7"
└ DECLARATIONDATA	Declaration	Class representing the declaration data as accepted by customs	
Issuing date time	Declaration/IssueDateTime	Date at which the message E9 (or E11) received by the customs, was issued	The value should be the one from the "Issuing date" attribute of the message E9 received by the customs
Total gross weight	Declaration/TotalGrossMassMeasure	Total gross weight of goods (including packaging) of the declaration	The value should be the total gross weight as a decimal number. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the list Measurement unit code (UNECE Recommendation 20)
└ ADDITIONALINFORMATION	Declaration/AdditionalInformation	Class containing potential additional information at the declaration level	
└ Remarks	Declaration/AdditionalInformation/StatementDescription	Text used to allow for remarks to the declaration from the holder	The value should be containing the remarks to the declaration from the transporter, or remains blank if there are none
└ AGENT	Declaration/Agent	Class representing the potential agent which would declare the goods on behalf of the holder	
Name	Declaration/Agent/Name	Name of the agent	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Declaration/Agent/ID	Unique identifier of the agent	The value should be the unique identifier of the agent
└ Role, coded	Declaration/Agent/RoleCode	Code of the role of the agent	The value should be the code matching the role of the agent from the list Party role code (UN/EDIFACT 3035)
└ AMENDMENT	Declaration/Amendment	Class representing the list of potential amendments to the declaration	
Type, coded	Declaration/Amendment/ChangeReasonCode	Code describing the type of amendment	The value should be the code matching the type of amendment from the list Amendment type code (eTIR)
└ POINTER	Declaration/Amendment/Pointer	Class representing the pointer to the part of the declaration to be amended	
Sequence number	Declaration/Amendment/Pointer/SequenceNumber	Index of the pointer in the list	The value should be the 1-based index of the pointer in the list
└ Location	Declaration/Amendment/Pointer/Location	Location of the class or attribute to be amended	The value should be the location of the class or attribute following the XPath syntax
└ SUBCONTRACTOR	Declaration/Carrier	Class representing the potential agent which undertakes or arranges transport of goods between named points	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Name	Declaration/Carrier/Name	Name of the subcontractor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Declaration/Carrier/ID	Unique identifier of the subcontractor	The value should be the unique identifier of the subcontractor
ADDRESS	Declaration/Carrier/Address	Class representing the physical address of the subcontractor	
City name	Declaration/Carrier/Address/CityName	City name of the physical address of the subcontractor	The value should be the city name of the physical address of the subcontractor
Country, coded	Declaration/Carrier/Address/CountryCode	Code of the country of the physical address of the subcontractor	The value should be the code of the country of the physical address of the subcontractor from the list Country name code (ISO 3166-1-alpha-2)
Street and number/P.O. Box	Declaration/Carrier/Address/Line	Street name of the physical address of the subcontractor	The value should be the street name and number (or equivalent) of the physical address of the subcontractor
Postcode identification	Declaration/Carrier/Address/PostcodeID	Postal/Zip code of the physical address of the subcontractor	The value should be the postal/ZIP code of the physical address of the subcontractor
CONSIGNMENT	Declaration/Consignment	Class representing the list of details on the transport of goods between a loading point and an unloading point	
Container transport indicator	Declaration/Consignment/ContainerCode	Code describing whether the goods are transported in a container or not	The value should be "1" if the goods are transported in a container or "0" otherwise
Sequence number	Declaration/Consignment/SequenceNumeric	Index of the consignment in the list	The value should be the 1-based index of the consignment in the list
Heavy or bulky goods indicator	Declaration/Consignment/HeavyOrBulkyGoodsIndicator	Code describing whether the goods are considered (according to article 29) as "heavy or bulky", as defined article 1 (p) of the TIR Convention.	The value should be "1" if the goods are considered by the customs as "heavy or bulky" or "0" otherwise
ATTACHEDDOCUMENTS	Declaration/Consignment/AdditionalDocument	Class representing the list of potential additional documents supplied as part of the declaration and related to the consignment	
Number	Declaration/Consignment/AdditionalDocument/ID	Identifier of the document	The value should be an ID identifying the document and it should be unique among all other attached documents of the declaration
Issuing date time	Declaration/Consignment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	Declaration/Consignment/AdditionalDocument/TypeCode	Code of the type of the document	The value should be the code of the type of the document from the list Document name code (UN/EDIFACT 1001)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊥ BINARYFILE	Declaration/Consignment/AdditionalDocument/BinaryFile	Class representing the content of the document	
⊥ Identifier	Declaration/Consignment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
⊥ Title	Declaration/Consignment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
⊥ Author name	Declaration/Consignment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document
⊥ Version	Declaration/Consignment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
⊥ File name	Declaration/Consignment/AdditionalDocument/BinaryFile/FileNameText	File name of the document	The value should be the name of the file representing the document, including the extension
⊥ URI	Declaration/Consignment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
⊥ MIME	Declaration/Consignment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
⊥ Encoding	Declaration/Consignment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
⊥ Character set	Declaration/Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
⊥ Include binary object	Declaration/Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)
⊥ Access	Declaration/Consignment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
⊥ Description	Declaration/Consignment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
⊥ Size	Declaration/Consignment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Hash code	Declaration/Consignment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	should match one of the values listed in the Measurement unit code (UNECE Recommendation 20) The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	Declaration/Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
CONSIGNMENTITEM	Declaration/Consignment/ConsignmentItem	Class representing the list of details on the items in the consignment	
Sequence number	Declaration/Consignment/ConsignmentItem/SequenceNumeric	Index of the consignment item in the list	The value should be the 1-based index of the consignment item in the list, allowing for quick physical identification upon inspection
ADDITIONALINFORMATION	Declaration/Consignment/ConsignmentItem/AdditionalInformation	Class representing the list of potential additional information at the consignment item level	
Remarks	Declaration/Consignment/ConsignmentItem/AdditionalInformation/Content	Remarks on the consignment item	The value should be a text allowing for additional remarks on the consignment item
GOODS	Declaration/Consignment/ConsignmentItem/Commodity	Class representing the details on the goods	
Description	Declaration/Consignment/ConsignmentItem/Commodity/CargoDescription	Description of the goods	The value should be a text describing the goods
CLASSIFICATION	Declaration/Consignment/ConsignmentItem/Commodity/Classification	Class representing the list of classification details of the goods	
Code	Declaration/Consignment/ConsignmentItem/Commodity/Classification/ID	Identifier of the classification of the goods	The value should be the identifier of the non-commercial classification of the goods
Type, coded	Declaration/Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	Code of the classification	The value should be the code of the classification from the list Item type identification code (UN/EDIFACT 7143)
CONSIGNEE	Declaration/Consignment/ConsignmentItem/Consignee	Class representing the potential consignee of the goods	
Name	Declaration/Consignment/ConsignmentItem/Consignee/Name	Name of the consignee	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Declaration/Consignment/ConsignmentItem/Consignee/ID	Unique identifier of the consignee	The value should be the unique identifier of the consignee

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊣ ADDRESS	Declaration/Consignment/ConsignmentItem/Consignee/Address	Class representing the physical address of the consignee	
⊣ City name	Declaration/Consignment/ConsignmentItem/Consignee/Address/CityName	City name of the physical address of the consignee	The value should be the city name of the physical address of the consignee
⊣ Country, coded	Declaration/Consignment/ConsignmentItem/Consignee/Address/CountryCode	Code of the country of the physical address of the consignee	The value should be the code of the country of the physical address of the consignee from the list Country name code (ISO 3166-1-alpha-2)
⊣ Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/Consignee/Address/Line	Street name of the physical address of the consignee	The value should be the street name and number (or equivalent) of the physical address of the consignee
⊣ Postcode identification	Declaration/Consignment/ConsignmentItem/Consignee/Address/PostcodeID	Postal/Zip code of the physical address of the consignee	The value should be the postal/ZIP code of the physical address of the consignee
⊣ CONSIGNOR	Declaration/Consignment/ConsignmentItem/Consignor	Class representing the potential consignor of the goods	
⊣ Name	Declaration/Consignment/ConsignmentItem/Consignor/Name	Name of the consignor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
⊣ Identifier	Declaration/Consignment/ConsignmentItem/Consignor/ID	Unique identifier of the consignor	The value should be the unique identifier of the consignor
⊣ ADDRESS	Declaration/Consignment/ConsignmentItem/Consignor/Address	Class representing the physical address of the consignor	
⊣ City name	Declaration/Consignment/ConsignmentItem/Consignor/Address/CityName	City name of the physical address of the consignor	The value should be the city name of the physical address of the consignor
⊣ Country, coded	Declaration/Consignment/ConsignmentItem/Consignor/Address/CountryCode	Code of the country of the physical address of the consignor	The value should be the code of the country of the physical address of the consignor from the list Country name code (ISO 3166-1-alpha-2)
⊣ Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/Consignor/Address/Line	Street name of the physical address of the consignor	The value should be the street name and number (or equivalent) of the physical address of the consignor
⊣ Postcode identification	Declaration/Consignment/ConsignmentItem/Consignor/Address/PostcodeID	Postal/Zip code of the physical address of the consignor	The value should be the postal/ZIP code of the physical address of the consignor
⊣ DELIVERYDESTINATION	Declaration/Consignment/ConsignmentItem/DeliveryDestination	Class representing the potential party to which the goods should be delivered	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Name	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Name	Name of the delivery destination	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification.
ADDRESS	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address	Class representing the physical address of the delivery destination	
City name	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	City name of the physical address of the delivery destination	The value should be the city name of the physical address of the delivery destination
Country, coded	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	Code of the country of the physical address of the delivery destination	The value should be the code of the country of the physical address of the delivery destination from the list Country name code (ISO 3166-1-alpha-2)
Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/Line	Street name of the physical address of the delivery destination	The value should be the street name and number (or equivalent) of the physical address of the delivery destination
Postcode identification	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	Postal/Zip code of the physical address of the delivery destination	The value should be the postal/ZIP code of the physical address of the delivery destination
GOODSMEASURE	Declaration/Consignment/ConsignmentItem/GoodsMeasure	Class representing the details on the measures of the goods	
Gross weight	Declaration/Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	Total gross weight of the goods	The value should be the weight (mass) of goods including packaging but excluding the transport equipment. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit code (UNECE Recommendation 20)
PACKAGING	Declaration/Consignment/ConsignmentItem/Packaging	Class representing the list of details on the packaging of the goods	
Sequence number	Declaration/Consignment/ConsignmentItem/Packaging/SequenceNumeric	Index of the packaging in the list	The value should be the 1-based index of the packaging in the list, allowing for quick physical identification upon inspection
Marks and numbers	Declaration/Consignment/ConsignmentItem/Packaging/MarksNumbersID	Packaging marks and numbers	The value should be a text describing the marks and numbers on a transport unit or package.
Number of packages	Declaration/Consignment/ConsignmentItem/Packaging/QuantityQuantity	Number of packages	The value should be the number of individual items packaged in such a way that they cannot be divided without first undoing the packing
Type, coded	Declaration/Consignment/ConsignmentItem/Packaging/TypeCode	Code of the packaging type	The value should be the code of the type of packaging from the list Package type description code (UNECE Recommendation 21 Annex VI)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊞ TRANSPORTEQUIPMENT	Declaration/Consignment/ConsignmentItem/TransportEquipment	Class representing the transport equipment used for the consignment item	
⊣ Identifier	Declaration/Consignment/ConsignmentItem/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
⊣ UCR	Declaration/Consignment/ConsignmentItem/UCR	Class representing the Unique Trader Reference	
⊣ Identifier	Declaration/Consignment/ConsignmentItem/UCR/ID	Unique identifier of the goods	The value should be the unique identifier assigned to goods being subject to cross border transactions
⊞ LOADINGLOCATION	Declaration/Consignment/LoadingLocation	Class representing the place of loading of the goods	
⊣ Name	Declaration/Consignment/LoadingLocation/Name	Name of the loading location	The value should be the name of a seaport, airport, freight terminal, rail station or other place at which goods are loaded onto the means of transport being used for their carriage
⊞ NOTIFYPARTY	Declaration/Consignment/NotifyParty	Class representing a potential party to be notified	
⊣ Name	Declaration/Consignment/NotifyParty/Name	Name of the party to be notified	The value should be the name (first and last name or company) of the party to be notified
⊣ Identifier	Declaration/Consignment/NotifyParty/ID	Unique identifier of the party to be notified	The value should be the unique identifier of the party to be notified
⊣ ADDRESS	Declaration/Consignment/NotifyParty/Address	Class representing the physical address of the party to be notified	
⊣ City name	Declaration/Consignment/NotifyParty/Address/CityName	City name of the physical address of the party to be notified	The value should be the city name of the physical address of the party to be notified
⊣ Country, coded	Declaration/Consignment/NotifyParty/Address/CountryCode	Code of the country of the physical address of the party to be notified	The value should be the code of the country of the physical address of the party to be notified from the list Country name code (ISO 3166-1-alpha-2)
⊣ Street and number/P.O. Box	Declaration/Consignment/NotifyParty/Address/Line	Street name of the physical address of the party to be notified	The value should be the street name and number (or equivalent) of the physical address of the party to be notified
⊣ Postcode identification	Declaration/Consignment/NotifyParty/Address/PostcodeID	Postal/Zip code of the physical address of the party to be notified	The value should be the postal/ZIP code of the physical address of the party to be notified
⊞ CUSTOMSOFFICEOFDEPARTURE	Declaration/Consignment/TransitDeparture	Class representing the customs office where the goods are loaded	
⊣ Identifier	Declaration/Consignment/TransitDeparture/ID	Unique identifier of the customs office of departure	The value should be the unique identifier used of the customs of departure, where the goods are loaded. This

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
CUSTOMSOFFICEOFDESTINATION	Declaration/Consignment/TransitDestination	Class representing the customs office where the goods are unloaded	identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
Identifier	Declaration/Consignment/TransitDestination/ID	Unique identifier of the customs office of destination	The value should be the unique identifier used of the customs of destination, where the goods are unloaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
TRANSPORTMEANS	Declaration/Consignment/TransitTransportMeans	Class representing the list of the means of transport for the consignment	
Identifier	Declaration/Consignment/TransitTransportMeans/ID	Unique identifier of the transport means	The value should be the unique identifier of the means of transport used for the transit
Type, coded	Declaration/Consignment/TransitTransportMeans/TypeCode	Code of the means of transport	The value should be the code of the means of transport from the list Transport means description code (UNECE Recommendation 28)
Nationality, coded	Declaration/Consignment/TransitTransportMeans/RegistrationNationalityCode	Nationality of the means of transport	The value should be the code of the country for the nationality of the means of transport from the list Country name code (ISO 3166-1-alpha-2)
Conveyance reference number	Declaration/Consignment/TransitTransportMeans/JourneyID	Unique identifier of the journey	The value should be the unique identifier of the journey of a means of transport (for example voyage number, flight number or trip number)
Sequence number	Declaration/Consignment/TransitTransportMeans/SequenceNumeric	Index of the transport means in the list	The value should be the 1-based index of the transport means in the list
COUNTRYOFRouting	Declaration/Consignment/TransitTransportMeans/Itinerary	Class representing the list of countries of the itinerary of the consignment	
Sequence number	Declaration/Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	Index of the country in the list	The value should be the 1-based index of the country in the list representing the itinerary of the consignment
Country, coded	Declaration/Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	Code of the country	The value should be the code of the country from the list Country name code (ISO 3166-1-alpha-2)
TRANSPORTEQUIPMENT	Declaration/Consignment/TransportEquipment	Class representing the list of the transport equipment used for the consignment	
Sequence number	Declaration/Consignment/TransportEquipment/SequenceNumeric	Index of the transport equipment in the list	The value should be the 1-based index of the transport equipment in the list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Size and type, coded	Declaration/Consignment/TransportEquipment/CharacteristicCode	Code of the transport equipment	The value should be the code of the transport equipment (specifying its characteristics) from the list Equipment size and type description code (UN/EDIFACT 8155)
Identifier	Declaration/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
CERTIFICATEOFAPPROVAL	Declaration/Consignment/TransportEquipment/AdditionalDocument	Class representing the details of the certificate of approval of the transport equipment	
Number	Declaration/Consignment/TransportEquipment/AdditionalDocument/ID	Unique identifier of the certificate of approval	The value should be the unique identifier of the certificate of approval
Issuing date time	Declaration/Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	Declaration/Consignment/TransportEquipment/AdditionalDocument/TypeCode	Code of the type of file	The value should be the code of the type of the document from the list Document name code (UN/EDIFACT 1001)
BINARYFILE	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile	Class representing the content of the document	
Identifier	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
Author name	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document
Version	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
File name	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNameText	File name of the document	The value should be the name of the file representing the document, including the extension

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
URI	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
MIME	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)
Access	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
Description	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
Size	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit code (UNECE Recommendation 20)
Hash code	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
SEAL	Declaration/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
Sequence number	Declaration/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
Seal number	Declaration/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ Seal type, coded	Declaration/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
┐ GUARANTEE	Declaration/DeclarationGuarantee	Class representing the guarantee of this TIR transport	
└ Reference	Declaration/DeclarationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
┐ HOLDER	Declaration/Principal	Class representing the holder (transporter) of this transport	
└ Name	Declaration/Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
└ Identifier	Declaration/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
┐ ADDRESS	Declaration/Principal/Address	Class representing the physical address of the holder	
└ City name	Declaration/Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
└ Country, coded	Declaration/Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the list Country name code (ISO 3166-1-alpha-2)
└ Street and number/P.O. Box	Declaration/Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
└ Postcode identification	Declaration/Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder

(b) How the national customs system should prepare and send declaration data

(i) Case of the original declaration

414. When starting a TIR transport from the initial customs office of departure, the holder presents the road vehicle, the combination of vehicles or the container to the customs officer along with the reference to the advance TIR data previously submitted. This reference was received in the “E10 – Advance TIR data” results message or in the acknowledgement of the other way of submitting advance TIR data, authorized by the customs administration of the country of departure.

415. With this reference, the customs officer finds in the national customs system the associated advance TIR data and checks the goods according to it. After this verification, the customs officer prepares the declaration that the national customs system will send to the eTIR international system, using the “I7 – Record declaration data” message (in “original” mode). Depending on the results of the verification, the declaration data might be exactly the same as the advance TIR data or the customs officer may wish to carry out changes to it and/or add additional information.

416. In all cases, the declaration data should contain all attached documents that were initially sent along with the advance TIR data. These additional documents might be required by countries along the itinerary in order to meet their national requirements.

(ii) Case of an amendment to the declaration

417. In order to amend the declaration, the holder has previously sent advance amendment data with the “E11 – Advance amendment data” message to the relevant customs office. During the TIR transport, the holder presents the road vehicle, the combination of vehicles or the container to that customs office, along with the reference to the advance amendment data previously submitted. This reference was received in the “E12 – Advance amendment data results” message or in the acknowledgement of the other way of submitting advance amendment data, authorized by the customs administration of the country of the customs office in question.

418. With this reference, the customs officer finds in the national customs system the associated advance amendment data and checks the amendment according to it. The amendment can be about loading additional goods, modifying the itinerary, changing the tractor unit, etc. After this verification, the customs officer prepares the amendment to the declaration that the national customs system will send to the eTIR international system, using the “I7 – Record declaration data” message (in “amendment” mode). Depending on the results of the verification, this amendment to the declaration might be exactly the same as the advance amendment data or the customs officer may wish to carry out changes to it and/or add additional information.

419. In all cases, the amendment to the declaration should contain all attached documents that were initially sent, along with the advance amendment data. Indeed, these additional documents might be required by countries along the itinerary in order to meet their national requirements.

(iii) How to generate an “I7 – Record declaration data” message in “amendment” mode

420. In this type of “I7 – Record declaration data” message, the amendment list represents the requests for amendments that the holder has sent, using an “E11 – Advance amendment data” message (or using any other authorized ways) and that the customs officer accepts. When treating all received advance amendment data at a customs office where the holder is present, it is possible for the customs authorities to group all received “E11 – Advance amendment data” messages and accept them by sending a unique “I7 – Record declaration data” message to the eTIR international system, or to send as many “I7 – Record declaration data” messages as there are “E11 – Advance amendment data” messages. It is recommended to proceed using the latter solution, as aggregating amendments into a the same list might cause issues when interpreting them in the same message.

421. In “I7 – Record declaration data” messages, just as in “E11 – Advance amendment data” messages, amendments are aggregated by type of amendment (addition, update, deletion). For each of these types, the national customs system needs to specify a list of pointers, referring to each of the elements to be amended in the original declaration. For example: if the customs officer wishes to modify the “Agent” class and the “Heavy or bulky goods indicator” attribute, it can be done through a single “I7 – Record declaration data” message. This message can have one amendment element of type “change” containing 2 pointers “/Declaration/Agent” and “/Declaration/Consignment”.

422. The following points describe guidelines regarding addition amendments (code 1 from the code list “Amendment type”):

- The addition amendment can only be used on non-existing XML elements or empty XML attributes (else, if the element/attribute already exists, a change amendment is needed to update it);
- When using the addition amendment, the new elements defined in the pointer list must be provided in the message content;
- When adding an element to a list, the sequence number (if present) must be properly set (and must be equal to the last sequence number of the current list plus one). Furthermore, it is important to note that the pointer should be set to the list and not to the new item in this list (e.g.: the value should be “/Declaration/Consignment” when adding a consignment).

423. The following points describe guidelines regarding change amendments (code 2 from the code list “Amendment type”):

- The change amendment can only be used on existing and non-empty XML elements/attributes (else, if the element/attribute doesn’t exist, an addition amendment is needed to add it);
- When using the change amendment, the elements defined in the pointer list must be provided in the message content. If a non-empty element/attribute needs to be replaced by an empty one, please use a deletion amendment;
- When setting the pointer to a class (non-final element), all child elements will be overwritten. This means that missing elements will be deleted and that new elements will be added;
- When modifying multiple elements of the same class, it is recommended setting the pointer to the class, and resending all of its data instead of sending multiple amendments;
- If a list needs to be reordered, the change amendment type must be used, the list element is set to the pointer and the entire list needs to be resent;
- When changing an element in a list, the pointer is set to the specific element of the list (note that the list indexing is 1-based in XPath). E.g.: to change the second consignment information, the pointer is set to /Declaration/Consignment[2].

424. The following points describe guidelines regarding deletion amendments (code 3 from the code list “Amendment type”):

- It is not possible to delete a required element;
- When deleting an element in a list, the pointer should be set to the specific element of the list. If the pointer is set to the list, then all the elements of the list will be deleted.

425. Amendments shall not invalidate conditions. In order to allow for easier message validation by the recipient, we recommend the senders of the “I7 – Record declaration data” message to use change amendments on parent elements rather than using combined deletion/addition amendments.

(c) **18 – Record declaration data results**

Table 52

18 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
┐ DECLARATIONDATA	Declaration	R	1..1				
┐┐ NATIONALREFERENCE	Declaration/NationalReference	O	0..*				
┐┐┐ Reference	Declaration/NationalReference/ID	R	1..1	an..35			
┐┐┐┐ Country, coded	Declaration/NationalReference/IssuingCountryCode	R	1..1	a2	CL04		
┐┐ ERROR	Error	D	0..*			C006	
┐┐┐ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
┐┐┐┐ POINTER	Error/Pointer	R	1..*				
┐┐┐┐┐ Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
┐┐┐┐┐┐ Location	Error/Pointer/Location	R	1..1	an..512			

Table 53

18 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "44" if the request was processed correctly. If at least one error is described in this message, the value should be "27"
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I7)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "I8"
└─ DECLARATIONDATA	Declaration	Class representing the declaration data as accepted by customs	
└─ NATIONALREFERENCE	Declaration/NationalReference	Class representing the list of national references under which the declaration data has been saved in the countries along the itinerary of the transport	
Reference	Declaration/NationalReference/ID	Identifier of the national reference of the declaration	The value should be the identifier of the national reference under which the declaration has been saved in the country which has received the "I15 - Notify customs" notification message
└─ Country, coded	Declaration/NationalReference/IssuingCountryCode	Code of the country along the itinerary	The value should be the code of the country which has received the notification "I15" from the list Country name code (ISO 3166-1-alpha-2)
└─ ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the list Error code (eTIR)
└─ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
└─ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors

(d) How to use response data in the national customs system

426. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “I8 – Record declaration data results” response message should always be to look for potential error elements in the response message and address them accordingly, as mentioned in the Error management section.

427. If there was no error, and the response message content is as expected, the next step for the national customs systems is to record all national references sent back by the countries along the itinerary of the transport. These national references will then be included into the accompanying document that will be generated by the national customs systems and handed over to the truck driver. This accompanying document can then be used in case of accident/incident "en route" or for the fallback procedures.

428. After having performed this action, the next step for the customs officer is to enter the details about the seal(s) affixed to the road vehicle, the combination of vehicles or the container in the national customs systems so that it can send the notification of the start of the TIR operation to the eTIR international system using the “I9 – Start TIR operation” message.

6. I9/I10 message pair

429. This section describes the technical specifications of the “I9 – Start TIR operation” request message sent by the national customs system to the eTIR international system to start a TIR operation; and the “I10 – Start results” response message sent back by the eTIR international system. This request message is sent immediately after having sent the declaration data using the “I7 – Record declaration data” message.

(a) I9 – Start TIR operation

430. If it is the first TIR operation of the TIR transport, this message should contain all information about the seal(s) affixed to the road vehicle, the combination of vehicles or the container.

Table 54
19 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
└ GUARANTEE	ObligationGuarantee	R	1..1				
Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
└ TIROPERATION	ObligationGuarantee/TransitOperation	R	1..1				
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
└ START	ObligationGuarantee/TransitOperation/OperationStart	R	1..1				
End date time	ObligationGuarantee/TransitOperation/OperationStart/InspectionEndDateTime	R	1..1	an..35			
Time limit date time	ObligationGuarantee/TransitOperation/OperationStart/LimitDateTime	O	0..1	an..35			
└ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation	O	0..1				
└ Remarks	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation/Content	R	1..1	an..512			
└ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment	O	0..1				R007, R006, R009
└ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment	R	1..*				
Identifier	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/ID	R	1..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ SEAL	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal	R	1..*				
Sequence number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
Seal number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
⊥ Seal type, coded	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
⊥ CONTROL	ObligationGuarantee/TransitOperation/OperationStart/Control	R	1..1				
Type, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/TypeCode	R	1..1	an..3	CL25		
⊥ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult	R	1..1				
⊥ Result, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult/ID	R	1..1	an..3	CL24		
⊥ NATIONALITINERARY	ObligationGuarantee/TransitOperation/OperationStart/Itinerary	O	0..1				
⊥ NATIONALITINERARYCUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice	R	1..1				
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice/ID	R	1..1	an..17			
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice	R	1..1				
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice/ID	R	1..1	an..17			

Table 55
19 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
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<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to "9" (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "I9"
┆ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
┆ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
┆ TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the TIR operation that is being started	
┆ Sequence number	ObligationGuarantee/TransitOperation/Sequence Numeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
┆ Registration number	ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier under which the TIR operation is nationally registered
┆ START	ObligationGuarantee/TransitOperation/Operation Start	Class representing the details related to the start of the TIR operation	
┆ End date time	ObligationGuarantee/TransitOperation/Operation Start/InspectionEndTime	Date and time when the TIR operation has been started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
┆ Time limit date time	ObligationGuarantee/TransitOperation/Operation Start/LimitDateTime	Date (with or without the time) by when the TIR operation should be completed	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
┆ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/Operation Start/AdditionalInformation	Class representing the potential additional information regarding the start of the TIR operation	
┆ ┆ Remarks	ObligationGuarantee/TransitOperation/Operation Start/AdditionalInformation/Content	Remarks added when starting the TIR operation	The value should be the remark text a customs officer would record when starting the TIR operation

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊥ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment	Class representing potential parent object grouping all transport equipments and related seals information	
⊥ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment	Class representing the list of all transport equipments used for all consignments in the TIR operation	
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
⊥ SEAL	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
⊥ Sequence number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list
⊥ Seal number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
⊥ Seal type, coded	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the code list Seal type (eTIR)
⊥ CONTROL	ObligationGuarantee/TransitOperation/OperationStart/Control	Class representing the details of the control performed by the customs officer before starting the TIR operation	
⊥ Type, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the code list Control type (eTIR)
⊥ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
⊥ Result, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the code list Control result (eTIR)
⊥ NATIONALITINERARY	ObligationGuarantee/TransitOperation/OperationStart/Itinerary	Class representing the potential national itinerary that has to be followed by the TIR transport, mentioning one or more customs offices to be visited	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊥ NATIONALITINERARYCUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice	Class representing the details identifying a customs office that has to be visited by the TIR transport during its itinerary	
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice/ID	Unique identifier of the customs office of the itinerary	The value should be the unique identifier of the customs office of the itinerary. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice	Class representing the details of the customs office where the TIR operation started	
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice/ID	Unique identifier of the customs office where the TIR operation is started	The value should be the unique identifier of the customs office where the TIR operation is started. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office

(b) I10 – Start results

Table 56

I10 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
⊥ ERROR	Error	D	0..*			C006	
Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
⊥ POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
⊥ Location	Error/Pointer/Location	R	1..1	an..512			
⊥ GUARANTEE	ObligationGuarantee	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Status, coded	ObligationGuarantee/StatusCode	R	1..1	an..3	CL22		
Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
TIROPERATION	ObligationGuarantee/TransitOperation	R	1..1				
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
START	ObligationGuarantee/TransitOperation/OperationStart	R	1..1				
End date time	ObligationGuarantee/TransitOperation/OperationStart/InspectionEndDateTime	R	1..1	an..35			
HOLDER	ObligationGuarantee/Principal	R	1..1				
Identifier	ObligationGuarantee/Principal/ID	R	1..1	an..35			
AUTHORIZATION	ObligationGuarantee/Principal/AuthorizationCertificate	R	1..1				
Status, coded	ObligationGuarantee/Principal/AuthorizationCertificate/StatusCode	R	1..1	an..3	CL23		
ACTIVEWITHDRAWAL	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal	O	0..1				
Start date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	R	1..1	an..35			
End date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	O	0..1	an..35			
ACTIVEEXCLUSION	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion	O	0..*				
Start date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	R	1..1	an..35			
End date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	O	0..1	an..35			
Country, coded	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/CountryCode	R	1..1	a2	CL04		

Table 57
I10 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed without error, else, in case of error(s) reported in this message, the value should be "27" (Not accepted)
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I9)
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "I10"
ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the list Error code (eTIR)
POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
Status, coded	ObligationGuarantee/StatusCode	Current status of the guarantee	The value should be the code of the status of the guarantee from the code list Guarantee status (eTIR)
Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the TIR operation that is being started	
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier under which the TIR operation is nationally registered
START	ObligationGuarantee/TransitOperation/OperationStart	Class representing the details related to the start of the TIR operation	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
└ End date time	ObligationGuarantee/TransitOperation/OperationStart/InspectionEndDateTime	Date and time when the TIR operation has been started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
└ HOLDER	ObligationGuarantee/Principal	Class representing the holder (transporter) of this transport	
Identifier	ObligationGuarantee/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
└ AUTHORIZATION	ObligationGuarantee/Principal/AuthorizationCertificate	Class representing the details related to the authorization of the holder in the TIR system	
Status, coded	ObligationGuarantee/Principal/AuthorizationCertificate/StatusCode	Code of the current authorization status of the holder	The value should be the code of the current authorization status of the holder from the code list Holder status (eTIR)
└ ACTIVEWITHDRAWAL	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal	Class representing the details related to a potential withdrawal of the holder from the TIR system	
Start date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	Start date of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
End date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	End date of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
└ ACTIVEEXCLUSION	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion	Class representing the list of potential exclusions of the holder in specific countries, as per Article 38 of the TIR Convention	
Start date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	Start date of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
End date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	End date of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
Country, coded	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/CountryCode	Code of the country in which the holder is excluded	The value should be the code of the country in which the holder is excluded from the list Country name code (ISO 3166-1-alpha-2)

(c) How to use response data in the national customs system

431. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “I10 – Start results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

432. If there was no error, and the response message content is as expected, the next step for the national customs systems is to authorize the holder to start his journey across the country (the TIR operation).

7. I11/I12 message pair

433. This section describes the technical specifications of the “I11 – Terminate TIR operation” request message sent by the national customs system to terminate (complete) a TIR operation; and the “I11 – Termination results” response message sent back by the eTIR international system.

(a) I11 – Terminate TIR operation

Table 58

I11 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ GUARANTEE	ObligationGuarantee	R	1..1				
┆ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
┆ TIROPERATION	ObligationGuarantee/TransitOperation	R	1..1				
┆ Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
┆ Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
┆ TERMINATION	ObligationGuarantee/TransitOperation/OperationTermination	R	1..1				
┆ End date time	ObligationGuarantee/TransitOperation/OperationTermination/InspectionEnd DateTime	R	1..1	an..35			
┆ Number of packages	ObligationGuarantee/TransitOperation/OperationTermination/PackageQuant ityQuantity	R	1..1	n..8			
┆ Termination type, coded	ObligationGuarantee/TransitOperation/OperationTermination/TypeCode	R	1..1	an..3	CL27		
┆ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInf ormation	O	0..1				
┆ Reservations	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInf ormation/Content	R	1..1	an..512			
┆ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment	O	0..1				R007, R006
┆ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/ TransportEquipment	R	1..*				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Identifier	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/ID	R	1..1	an..17			
SEAL	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal	R	1..*				
Sequence number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
Seal number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
Seal type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
CONTROL	ObligationGuarantee/TransitOperation/OperationTermination/Control	R	1..1				
Type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/TypeCode	R	1..1	an..3	CL25		
CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult	R	1..1				
Result, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult/ID	R	1..1	an..3	CL24		
CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice	R	1..1				
Identifier	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice/ID	R	1..1	an..17			

Table 59

III – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be set to “9” (Original)
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Type, coded	TypeCode	Code of the message type	The value should be set to "111"
└ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
└ TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the TIR operation that is being terminated	
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier of the TIR operation
└ TERMINATION	ObligationGuarantee/TransitOperation/OperationTermination	Class representing the details related to the termination of the TIR operation	
End date time	ObligationGuarantee/TransitOperation/OperationTermination/InspectionEndTime	Date and time when the TIR operation has just been terminated	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Number of packages	ObligationGuarantee/TransitOperation/OperationTermination/PackageQuantityQuantity	Number of packages unloaded	The value should be the number of packages unloaded during the termination of the TIR operation
Termination type, coded	ObligationGuarantee/TransitOperation/OperationTermination/TypeCode	Code of the type of termination of the TIR operation	The value should be the type of termination code of the TIR operation from the code list Termination type (eTIR)
└ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation	Class representing potential additional information regarding the termination of the TIR operation	
Reservations	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation/Content	Reservations added when terminating the TIR operation	The value should be the reservations or remarks a customs officer would record when terminating the TIR operation
└ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment	Class representing potential parent object grouping details about all transport equipments and related seals information	
└ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment	Class representing the list of all transport equipments used for all consignments in the TIR operation	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊢ Identifier	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be the marks (letters and/or numbers) which identify the transport equipment
⊣ SEAL	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
⊢ Sequence number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list
⊢ Seal number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
⊣ Seal type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the code list Seal type (eTIR)
⊢ CONTROL	ObligationGuarantee/TransitOperation/OperationTermination/Control	Class representing the details of the control performed by the customs officer while terminating the TIR operation	
⊢ Type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the code list Control type (eTIR)
⊣ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
⊣ Result, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the code list Control result (eTIR)
⊣ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice	Class representing the details of the customs office where the TIR operation is terminated	
⊣ Identifier	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice/ID	Unique identifier of the customs office where the TIR operation is terminated	The value should be the unique identifier of the customs office where the TIR operation is terminated. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office

(b) I12 – Termination results

Table 60

I12 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
ERROR	Error	D	0..*			C006	
Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
Location	Error/Pointer/Location	R	1..1	an..512			
GUARANTEE	ObligationGuarantee	R	1..1				
Status, coded	ObligationGuarantee/StatusCode	R	1..1	an..3	CL22		
Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
TIROPERATION	ObligationGuarantee/TransitOperation	R	1..1				
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
TERMINATION	ObligationGuarantee/TransitOperation/OperationTermination	R	1..1				
End date time	ObligationGuarantee/TransitOperation/OperationTermination/InspectionEnd DateTime	R	1..1	an..35			
HOLDER	ObligationGuarantee/Principal	R	1..1				
Identifier	ObligationGuarantee/Principal/ID	R	1..1	an..35			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
└ AUTHORIZATION	ObligationGuarantee/Principal/AuthorizationCertificate	R	1..1				
└ Status, coded	ObligationGuarantee/Principal/AuthorizationCertificate/StatusCode	R	1..1	an..3	CL23		
└ ACTIVEWITHDRAWAL	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal	O	0..1				
└ Start date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	R	1..1	an..35			
└ End date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	O	0..1	an..35			
└ ACTIVEEXCLUSION	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion	O	0..*				
└ Start date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	R	1..1	an..35			
└ End date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	O	0..1	an..35			
└ Country, coded	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/CountryCode	R	1..1	a2	CL04		

Table 61
I12 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message, the value should be "27" (Not accepted)
└ Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I11)
└ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
└ Type, coded	TypeCode	Code of the message type	The value should be set to "I12"
└ ERROR	Error	Class representing the list of errors, if any	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊢ Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
⊣ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
⊢ Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
⊣ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
⊣ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
⊢ Status, coded	ObligationGuarantee/StatusCode	Current status of the guarantee	The value should be the code of the status of the guarantee from the code list Guarantee status (eTIR)
⊢ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
⊣ TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the TIR operation that is being terminated	
⊢ Sequence number	ObligationGuarantee/TransitOperation/Sequence Numeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
⊢ Registration number	ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier of the TIR operation
⊣ TERMINATION	ObligationGuarantee/TransitOperation/Operation Termination	Class representing the details related to the termination of the TIR operation	
⊣ End date time	ObligationGuarantee/TransitOperation/Operation Termination/InspectionEndDateTime	Date and time when the TIR operation has been terminated	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
⊣ HOLDER	ObligationGuarantee/Principal	Class representing the holder (transporter) of this transport	
⊢ Identifier	ObligationGuarantee/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
⊣ AUTHORIZATION	ObligationGuarantee/Principal/AuthorizationCertificate	Class representing the details related to the authorization of the holder in the TIR system	
⊢ Status, coded	ObligationGuarantee/Principal/AuthorizationCertificate/StatusCode	Code of the current authorization status of the holder	The value should be the code of the current authorization status of the holder from the code list Holder status (eTIR)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ ACTIVEWITHDRAWAL	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal	Class representing the details related to a potential withdrawal of the holder from the TIR system	
└ Start date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	Start date of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
└ End date	ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	End date of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
└ ACTIVEEXCLUSION	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion	Class representing the list of potential exclusions of the holder in specific countries, as per Article 38 of the TIR Convention	
└ Start date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	Start date of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
└ End date	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	End date of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
└ Country, coded	ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/CountryCode	Code of the country in which the holder is excluded	The value should be the code of the country in which the holder is excluded from the list Country name code (ISO 3166-1-alpha-2)

(c) How to use response data in the national customs system

434. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “I12 – Termination results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

435. If there was no error, and the response message content is as expected, the next step for the national customs systems is to discharge the TIR operation by sending the “I13 – Discharge TIR operation” message to the eTIR international system.

8. I13/I14 message pair

436. This section describes the technical specifications of the “I13 – Discharge TIR operation” request message sent by the national customs to discharge a TIR operation; and the “I14 – Discharge results” response message sent back by the eTIR international system.

(a) I13 – Discharge TIR operation

437. The “I13 – Discharge TIR operation” is mandatory to discharge the TIR operation that was just terminated (completed) and should be triggered once the appropriate discharge process has been performed by the customs authorities. In the eTIR procedure, since all actions are performed electronically, the discharge operation could potentially be performed automatically by comparing the information stored in the national customs system while starting and terminating the same TIR operation.

Table 62
I13 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ GUARANTEE	ObligationGuarantee	R	1..1				
┆ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
┆ TIROPERATION	ObligationGuarantee/TransitOperation	R	1..1				
┆ Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
┆ Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
┆ DISCHARGE	ObligationGuarantee/TransitOperation/OperationDischarge	R	1..1				
┆ End date time	ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndDate ateTime	R	1..1	an..35			
┆ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperation nDischargeOffice	R	1..1				
┆ Identifier	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperation nDischargeOffice/ID	R	1..1	an..17			

Table 63
I13 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to “9” (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "I13"

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
└ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
└ TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the TIR operation that is being discharged	
└ Sequence number	ObligationGuarantee/TransitOperation/Sequence Numeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
└ Registration number	ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier under which the TIR operation is nationally registered
└ DISCHARGE	ObligationGuarantee/TransitOperation/Operation Discharge	Class representing the details related to the discharge of the TIR operation	
└ End date time	ObligationGuarantee/TransitOperation/Operation Discharge/InspectionEndTime	Date and time when the TIR operation has just been discharged	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
└ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/Operation Discharge/TransitOperationDischargeOffice	Class representing the details of the customs office where the TIR operation is discharged	
└ Identifier	ObligationGuarantee/TransitOperation/Operation Discharge/TransitOperationDischargeOffice/ID	Unique identifier of the customs office where the TIR operation is discharged	The value should be the unique identifier of the customs office where the TIR operation is discharged. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office

(b) I14 – Discharge results

Table 64

I14 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
└ Message function, coded	Function	R	1..1	n..2	CL16		
└ Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
└ Message identifier	ID	R	1..1	an..70			
└ Type, coded	TypeCode	R	1..1	an..3	CL26		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┌ ERROR	Error	D	0..*			C006	
┌ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
┌ POINTER	Error/Pointer	R	1..*				
┌ Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
┌ Location	Error/Pointer/Location	R	1..1	an..512			
┌ GUARANTEE	ObligationGuarantee	R	1..1				
┌ Status, coded	ObligationGuarantee/StatusCode	R	1..1	an..3	CL22		
┌ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
┌ TIROPERATION	ObligationGuarantee/TransitOperation	R	1..1				
┌ Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
┌ Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
┌ DISCHARGE	ObligationGuarantee/TransitOperation/OperationDischarge	R	1..1				
┌ End date time	ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndDate ateTime	R	1..1	an..35			

Table 65

I14 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┌ Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message, the value should be "27" (Not accepted)
┌ Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I13)
┌ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┌ Type, coded	TypeCode	Code of the message type	The value should be set to "I14"

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
┌ ERROR	Error	Class representing the list of errors, if any	
┌ Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
┌ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
┌ Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
┌ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
┌ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
Status, coded	ObligationGuarantee/StatusCode	Current status of the guarantee	The value should be the code of the status of the guarantee from the code list Guarantee status (eTIR)
Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
┌ TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the TIR operation that is being discharged	
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier under which the TIR operation is nationally registered
┌ DISCHARGE	ObligationGuarantee/TransitOperation/OperationDischarge	Class representing the details related to the discharge of the TIR operation	
┌ End date time	ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndTime	Date and time when the TIR operation has just been discharged	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.

(c) How to use response data in the national customs system

438. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “I14 – Discharge results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

439. If there was no error, and the response message content is as expected, then the actions performed on this TIR operation are completed and no further action is needed with regard to the eTIR procedure.

9. I15/I16 message pair

440. This section describes the technical specifications of the “I15 – Notify customs” request message, sent by the eTIR international system to the national customs system to notify them about information related to the TIR transport; and the “I16 – Notification confirmation” response message, sent back by the national customs system. Customs authorities should be ready to receive and process this notification at any time. In addition, it is important to note that these notifications can be sent for several reasons and in different contexts.

441. In the eTIR specifications v4.3, the “I15 – Notify customs” message can be sent by the eTIR international system in the following two situations:

- Declaration: when the declaration of a TIR transport is received for the first time by the eTIR international system or when it is subsequently updated along the itinerary;
- Seals: when the seals of, at least, one of the transport equipment of the TIR transport are affixed for the first time or when they are changed during the TIR transport.

(a) I15 – Notify customs

Table 66

I15 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
┐ DECLARATIONDATA	Declaration	D	0..1			C010	
Issuing date time	Declaration/IssueDateTime	R	1..1	an..35			
Total gross weight	Declaration/TotalGrossMassMeasure	R	1..1	n..16,6			
┐ ADDITIONALINFORMATION	Declaration/AdditionalInformation	O	0..1				
Remarks	Declaration/AdditionalInformation/StatementDescription	O	0..1	an..512			
┐ AGENT	Declaration/Agent	O	0..1				
Name	Declaration/Agent/Name	D	0..1	an..70		C001	
Identifier	Declaration/Agent/ID	D	1..1	an..35		C001	
Role, coded	Declaration/Agent/RoleCode	R	1..1	an..3	CL02		
┐ AMENDMENT	Declaration/Amendment	O	0..*				
Type, coded	Declaration/Amendment/ChangeReasonCode	R	1..1	an..3	CL17		
┐ POINTER	Declaration/Amendment/Pointer	R	1..1				
Sequence number	Declaration/Amendment/Pointer/SequenceNumeric	R	1..1	n..5			
Location	Declaration/Amendment/Pointer/Location	R	1..1	an..512			
┐ SUBCONTRACTOR	Declaration/Carrier	O	0..*				
Name	Declaration/Carrier/Name	D	0..1	an..70		C001	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Identifier	Declaration/Carrier/ID	D	0..1	an..35		C001	
ADDRESS	Declaration/Carrier/Address	D	0..1			C001	
City name	Declaration/Carrier/Address/CityName	R	1..1	an..35			
Country, coded	Declaration/Carrier/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Declaration/Carrier/Address/Line	R	1..1	an..256			
Postcode identification	Declaration/Carrier/Address/PostcodeID	O	0..1	an..17			
CONSIGNMENT	Declaration/Consignment	O	0..*				
Container transport indicator	Declaration/Consignment/ContainerCode	R	1..1	an..3			
Sequence number	Declaration/Consignment/SequenceNumeric	R	1..1	n..5			
Heavy or bulky goods indicator	Declaration/Consignment/HeavyOrBulkyGoodsIndicator	R	1..1	n..1			
ATTACHEDDOCUMENTS	Declaration/Consignment/AdditionalDocument	O	0..*				
Number	Declaration/Consignment/AdditionalDocument/ID	R	1..1	an..70			
Issuing date time	Declaration/Consignment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
Type, coded	Declaration/Consignment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
BINARYFILE	Declaration/Consignment/AdditionalDocument/BinaryFile	O	0..1				
Identifier	Declaration/Consignment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
Title	Declaration/Consignment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
Author name	Declaration/Consignment/AdditionalDocument/BinaryFile/AuthorName	O	0..1	an..70			
Version	Declaration/Consignment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			
File name	Declaration/Consignment/AdditionalDocument/BinaryFile/FileNameText	O	0..1	an..256			
URI	Declaration/Consignment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..204 8			
MIME	Declaration/Consignment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Encoding	Declaration/Consignment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			
Character set	Declaration/Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	Declaration/Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	O	0..1	N/A			
Access	Declaration/Consignment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			
Description	Declaration/Consignment/AdditionalDocument/BinaryFile/Description	O	0..1	an..256			
Size	Declaration/Consignment/AdditionalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	Declaration/Consignment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	Declaration/Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
CONSIGNMENTITEM	Declaration/Consignment/ConsignmentItem	R	1..*				
Sequence number	Declaration/Consignment/ConsignmentItem/SequenceNumeric	R	1..1	n..5			
ADDITIONALINFORMATION	Declaration/Consignment/ConsignmentItem/AdditionalInformation	O	0..*				
Hash Remarks	Declaration/Consignment/ConsignmentItem/AdditionalInformation/Content	R	1..1	an..512			
GOODS	Declaration/Consignment/ConsignmentItem/Commodity	R	1..1				
Description	Declaration/Consignment/ConsignmentItem/Commodity/CargoDescription	D	0..1	an..256		C004	
Hash CLASSIFICATION	Declaration/Consignment/ConsignmentItem/Commodity/Classification	O	0..*				R008
Code	Declaration/Consignment/ConsignmentItem/Commodity/Classification/ID	R	1..1	an..18			
Hash Type, coded	Declaration/Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	R	1..1	an..3	CL03		
CONSIGNEE	Declaration/Consignment/ConsignmentItem/Consignee	O	0..1				
Name	Declaration/Consignment/ConsignmentItem/Consignee/Name	D	0..1	an..70		C001	
Identifier	Declaration/Consignment/ConsignmentItem/Consignee/ID	D	0..1	an..35		C001	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ ADDRESS	Declaration/Consignment/ConsignmentItem/Consignee/Address	D	0..1			C001	
⊥ City name	Declaration/Consignment/ConsignmentItem/Consignee/Address/CityName	R	1..1	an..35			
⊥ Country, coded	Declaration/Consignment/ConsignmentItem/Consignee/Address/CountryCode	R	1..1	a2	CL04		
⊥ Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/Consignee/Address/Line	R	1..1	an..256			
⊥ Postcode identification	Declaration/Consignment/ConsignmentItem/Consignee/Address/PostcodeID	O	0..1	an..17			
⊥ CONSIGNOR	Declaration/Consignment/ConsignmentItem/Consignor	O	0..1				
⊥ Name	Declaration/Consignment/ConsignmentItem/Consignor/Name	D	0..1	an..70		C001	
⊥ Identifier	Declaration/Consignment/ConsignmentItem/Consignor/ID	D	0..1	an..35		C001	
⊥ ADDRESS	Declaration/Consignment/ConsignmentItem/Consignor/Address	D	0..1			C001	
⊥ City name	Declaration/Consignment/ConsignmentItem/Consignor/Address/CityName	R	1..1	an..35			
⊥ Country, coded	Declaration/Consignment/ConsignmentItem/Consignor/Address/CountryCode	R	1..1	a2	CL04		
⊥ Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/Consignor/Address/Line	R	1..1	an..256			
⊥ Postcode identification	Declaration/Consignment/ConsignmentItem/Consignor/Address/PostcodeID	O	0..1	an..17			
⊥ DELIVERYDESTINATION	Declaration/Consignment/ConsignmentItem/DeliveryDestination	O	0..1				
⊥ Name	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Name	R	1..1	an..70			
⊥ ADDRESS	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address	R	1..1				
⊥ City name	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	R	1..1	an..35			
⊥ Country, coded	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	R	1..1	a2	CL04		
⊥ Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/Line	R	1..1	an..256			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
^L Postcode identification	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	O	0..1	an..17			
[└] GOODSMEASURE	Declaration/Consignment/ConsignmentItem/GoodsMeasure	R	1..1				
^L Gross weight	Declaration/Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	R	1..1	n..16,6			
[└] PACKAGING	Declaration/Consignment/ConsignmentItem/Packaging	R	1..1				
[└] Sequence number	Declaration/Consignment/ConsignmentItem/Packaging/SequenceNumeric	R	1..1	n..5			
[└] Marks and numbers	Declaration/Consignment/ConsignmentItem/Packaging/MarksNumbersID	D	0..1	an..512		C002	
[└] Number of packages	Declaration/Consignment/ConsignmentItem/Packaging/QuantityQuantity	D	0..1	n..8		C002	
^L Type, coded	Declaration/Consignment/ConsignmentItem/Packaging/TypeCode	R	1..1	an..2	CL07		
[└] TRANSPORTEQUIPMENT	Declaration/Consignment/ConsignmentItem/TransportEquipment	D	0..1			C003	
^L Identifier	Declaration/Consignment/ConsignmentItem/TransportEquipment/ID	R	1..1	an..17			
[└] UCR	Declaration/Consignment/ConsignmentItem/UCR	O	0..1				
^L Identifier	Declaration/Consignment/ConsignmentItem/UCR/ID	R	1..1	an..35			
[└] LOADINGLOCATION	Declaration/Consignment/LoadingLocation	O	0..1				
^L Name	Declaration/Consignment/LoadingLocation/Name	R	1..1	an..256			
[└] NOTIFYPARTY	Declaration/Consignment/NotifyParty	O	0..1				
[└] Name	Declaration/Consignment/NotifyParty/Name	D	0..1	an..70		C001	
[└] Identifier	Declaration/Consignment/NotifyParty/ID	D	0..1	an..35		C001	
[└] ADDRESS	Declaration/Consignment/NotifyParty/Address	D	0..1			C001	
[└] City name	Declaration/Consignment/NotifyParty/Address/CityName	R	1..1	an..35			
[└] Country, coded	Declaration/Consignment/NotifyParty/Address/CountryCode	R	1..1	a2	CL04		
[└] Street and number/P.O. Box	Declaration/Consignment/NotifyParty/Address/Line	R	1..1	an..256			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ Postcode identification	Declaration/Consignment/NotifyParty/Address/PostcodeID	O	0..1	an..17			
⊥ CUSTOMSOFFICEOFDEPARTURE	Declaration/Consignment/TransitDeparture	R	1..1				
⊥ Identifier	Declaration/Consignment/TransitDeparture/ID	R	1..1	an..35			
⊥ CUSTOMSOFFICEOFDESTINATION	Declaration/Consignment/TransitDestination	R	1..1				
⊥ Identifier	Declaration/Consignment/TransitDestination/ID	R	1..1	an..35			
⊥ TRANSPORTMEANS	Declaration/Consignment/TransitTransportMeans	R	1..*				R002
⊥ Identifier	Declaration/Consignment/TransitTransportMeans/ID	R	1..1	an..25			
⊥ Type, coded	Declaration/Consignment/TransitTransportMeans/TypeCode	R	1..1	an..4	CL05		
⊥ Nationality, coded	Declaration/Consignment/TransitTransportMeans/RegistrationNationalityCode	R	1..1	a2	CL04		
⊥ Conveyance reference number	Declaration/Consignment/TransitTransportMeans/JourneyID	O	0..1	an..17			
⊥ Sequence number	Declaration/Consignment/TransitTransportMeans/SequenceNumeric	R	1..1	n..5			
⊥ COUNTRYOFROUTING	Declaration/Consignment/TransitTransportMeans/Itinerary	R	1..*				R001
⊥ Sequence number	Declaration/Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	R	1..1	n..5			
⊥ Country, coded	Declaration/Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	R	1..1	a2	CL04		
⊥ TRANSPORTEQUIPMENT	Declaration/Consignment/TransportEquipment	D	0..*				C003
⊥ Sequence number	Declaration/Consignment/TransportEquipment/SequenceNumeric	R	1..1	n..5			
⊥ Size and type, coded	Declaration/Consignment/TransportEquipment/CharacteristicCode	R	1..1	an..4	CL01		
⊥ Identifier	Declaration/Consignment/TransportEquipment/ID	R	1..1	an..17			
⊥ CERTIFICATEOFAPPROVAL	Declaration/Consignment/TransportEquipment/AdditionalDocument	D	0..1				C005
⊥ Number	Declaration/Consignment/TransportEquipment/AdditionalDocument/ID	R	1..1	an..70			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Issuing date time	Declaration/Consignment/TransportEquipment/AdditionalDocument/IssueDate/IssueDate	R	1..1	an..35			
Type, coded	Declaration/Consignment/TransportEquipment/AdditionalDocument/TypeCode/TypeCode	R	1..1	an..3	CL06		
BINARYFILE	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/BinaryFile	O	0..1				
Identifier	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
Title	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
Author name	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/AuthorName	O	0..1	an..70			
Version	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			
File name	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNameText	O	0..1	an..256			
URI	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..2048			
MIME	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			
Character set	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludedBinaryObject/BinaryObject	O	0..1	N/A			
Access	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Description	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/Description	O	0..1	an..256			
Size	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/SizeMeasure	O	0..1	n..16,6			
Hash code	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/HashCode	O	0..1	an..256			
Hash code algorithm id	Declaration/Consignment/TransportEquipment/AdditionalDocument/Binary File/HashCodeAlgorithmIDCode	O	0..1	an..6			
SEAL	Declaration/Consignment/TransportEquipment/Seal	O	0..*				
Sequence number	Declaration/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
Seal number	Declaration/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
Seal type, coded	Declaration/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
GUARANTEE	Declaration/DeclarationGuarantee	R	1..1				
Validity date	Declaration/DeclarationGuarantee/ExpirationDateTime	R	1..1	an..35			
Reference	Declaration/DeclarationGuarantee/ReferenceID	R	1..1	an..35			
Guarantee type, coded	Declaration/DeclarationGuarantee/SecurityDetailsCode	R	1..1	an..3	CL12		
HOLDER	Declaration/Principal	O	0..1				
Name	Declaration/Principal/Name	O	0..1	an..70			
Identifier	Declaration/Principal/ID	R	1..1	an..35			
ADDRESS	Declaration/Principal/Address	O	0..1				
City name	Declaration/Principal/Address/CityName	R	1..1	an..35			
Country, coded	Declaration/Principal/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Declaration/Principal/Address/Line	R	1..1	an..256			
Postcode identification	Declaration/Principal/Address/PostcodeID	O	0..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
└ GUARANTEE	ObligationGuarantee	O	1..1				
└ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
└ TIROPERATION	ObligationGuarantee/TransitOperation	O	0..*			C010	
└ Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
└ Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
└ START	ObligationGuarantee/TransitOperation/OperationStart	O	0..1				
└ End date time	ObligationGuarantee/TransitOperation/OperationStart/InspectionEndDateTime	R	1..1	an..35			
└ Time limit date time	ObligationGuarantee/TransitOperation/OperationStart/LimitDateTime	O	0..1	an..35			
└ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation	O	0..1				
└ Remarks	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation/Content	R	1..1	an..512			
└ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment	O	0..1				R007, R006
└ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment	R	1..*				
└ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/ID	R	1..1	an..17			
└ SEAL	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal	R	1..*				
└ Sequence number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
└ Seal number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
└ Seal type, coded	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ CONTROL	ObligationGuarantee/TransitOperation/OperationStart/Control	R	1..1				
⊥ Type, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/TypeCode	R	1..1	an..3	CL25		
⊥ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult	R	1..1				
⊥ Result, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult/ID	R	1..1	an..3	CL24		
⊥ NATIONALITINERARY	ObligationGuarantee/TransitOperation/OperationStart/Itinerary	O	0..1				
⊥ NATIONALITINERARYCUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice	R	1..1				
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice/ID	R	1..1	an..17			
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice	R	1..1				
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice/ID	R	1..1	an..17			
⊥ TERMINATION	ObligationGuarantee/TransitOperation/OperationTermination	O	0..1				
⊥ End date time	ObligationGuarantee/TransitOperation/OperationTermination/InspectionEndDateTime	R	1..1	an..35			
⊥ Number of packages	ObligationGuarantee/TransitOperation/OperationTermination/PackageQuantityQuantity	R	1..1	n..8			
⊥ Termination type, coded	ObligationGuarantee/TransitOperation/OperationTermination/TypeCode	R	1..1	an..3	CL27		
⊥ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation	O	0..1				
⊥ Reservations	ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation/Content	R	1..1	an..512			
⊥ CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment	O	0..1				R007, R006

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment	R	1..*				
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/ID	R	1..1	an..17			
⊥ SEAL	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal	R	1..*				
⊥ Sequence number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
⊥ Seal number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
⊥ Seal type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
⊥ CONTROL	ObligationGuarantee/TransitOperation/OperationTermination/Control	R	1..1				
⊥ Type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/TypeCode	R	1..1	an..3	CL25		
⊥ CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult	R	1..1				
⊥ Result, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult/ID	R	1..1	an..3	CL24		
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice	R	1..1				
⊥ Identifier	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice/ID	R	1..1	an..17			
⊥ DISCHARGE	ObligationGuarantee/TransitOperation/OperationDischarge	O	0..1				
⊥ End date time	ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndDateTime	R	1..1	an..35			
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
L Identifier	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice/ID	R	1..1	an..17			
└ REFUSALTOSTART	ObligationGuarantee/TransitOperation/RefusalToStart	O	0..1				
End date time	ObligationGuarantee/TransitOperation/RefusalToStart/InspectionEndDateTime	R	1..1	an..35			
└ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation	R	1..1				
L Reason	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation/Content	R	1..1	an..512			
└ CONTROL	ObligationGuarantee/TransitOperation/RefusalToStart/Control	O	0..1				
Type, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/TypeCode	R	1..1	an..3	CL25		
└ CONTROLRESULT	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult	R	1..1				
L Result, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult/ID	R	1..1	an..3	CL24		
└ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice		1..1				
L Identifier	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice/ID	R	1..1	an..17			

Table 67

I15 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be, depending on the type of notification, either: "69" (New declaration data), "T2" (Amended declaration data), "T7" (Seals information when starting a TIR operation) or "T8" (Seals information when terminating a TIR operation). Those codes will soon be included in the CL16 - Message function code (UN/EDIFACT 1225) code list.

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "I15"
┐ DECLARATIONDATA	Declaration	Class representing the declaration data as accepted by customs	
Issuing date time	Declaration/IssueDateTime	Date at which the message E9 (or E11) received by the customs, was issued	The value should be the one from the "Issuing date" attribute of the message E9 received by the customs
Total gross weight	Declaration/TotalGrossMassMeasure	Total gross weight of goods (including packaging) of the declaration	The value should be the total gross weight as a decimal number. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the code list Measurement unit (UNECE Recommendation 20)
┐ ADDITIONALINFORMATION	Declaration/AdditionalInformation	Class containing potential additional information at the declaration level	
Remarks	Declaration/AdditionalInformation/StatementDescription	Text used to allow for remarks to the declaration from the holder	The value should be containing the remarks to the declaration from the transporter, or remains blank if there are none
┐ AGENT	Declaration/Agent	Class representing the potential agent which would declare the goods on behalf of the holder	
Name	Declaration/Agent/Name	Name of the agent	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Declaration/Agent/ID	Unique identifier of the agent	The value should be the unique identifier of the agent
Role, coded	Declaration/Agent/RoleCode	Code of the role of the agent	The value should be the code matching the role of the agent from the code list Party role (UN/EDIFACT 3035)
┐ AMENDMENT	Declaration/Amendment	Class representing the list of potential amendments to the declaration	
Type, coded	Declaration/Amendment/ChangeReasonCode	Code describing the type of amendment	The value should be the code matching the type of amendment from the code list Amendment type (eTIR)
┐ POINTER	Declaration/Amendment/Pointer	Class representing the pointer to the part of the declaration to be amended	
Sequence number	Declaration/Amendment/Pointer/SequenceNumber	Index of the pointer in the list	The value should be the 1-based index of the pointer in the list
Location	Declaration/Amendment/Pointer/Location	Location of the class or attribute to be amended	The value should be the location of the class or attribute following the XPath syntax
┐ SUBCONTRACTOR	Declaration/Carrier	Class representing the potential agent which undertakes or arranges transport of goods between named points	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Name	Declaration/Carrier/Name	Name of the subcontractor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Declaration/Carrier/ID	Unique identifier of the subcontractor	The value should be the unique identifier of the subcontractor
ADDRESS	Declaration/Carrier/Address	Class representing the physical address of the subcontractor	
City name	Declaration/Carrier/Address/CityName	City name of the physical address of the subcontractor	The value should be the city name of the physical address of the subcontractor
Country, coded	Declaration/Carrier/Address/CountryCode	Code of the country of the physical address of the subcontractor	The value should be the code of the country of the physical address of the subcontractor from the code list Country name (ISO 3166-1-alpha-2)
Street and number/P.O. Box	Declaration/Carrier/Address/Line	Street name of the physical address of the subcontractor	The value should be the street name and number (or equivalent) of the physical address of the subcontractor
Postcode identification	Declaration/Carrier/Address/PostcodeID	Postal/Zip code of the physical address of the subcontractor	The value should be the postal/ZIP code of the physical address of the subcontractor
CONSIGNMENT	Declaration/Consignment	Class representing the list of details on the transport of goods between a loading point and an unloading point	
Container transport indicator	Declaration/Consignment/ContainerCode	Code describing whether the goods are transported in a container or not	The value should be "1" if the goods are transported in a container or "0" otherwise
Sequence number	Declaration/Consignment/SequenceNumeric	Index of the consignment in the list	The value should be the 1-based index of the consignment in the list
Heavy or bulky goods indicator	Declaration/Consignment/HeavyOrBulkyGoodsIndicator	Code describing whether the goods are considered (according to article 29) as "heavy or bulky", as defined article 1 (p) of the TIR Convention.	The value should be "1" if the goods are considered by the customs as "heavy or bulky" or "0" otherwise
ATTACHEDDOCUMENTS	Declaration/Consignment/AdditionalDocument	Class representing the list of potential additional documents supplied as part of the declaration and related to the consignment	
Number	Declaration/Consignment/AdditionalDocument/ID	Identifier of the document	The value should be an ID identifying the document and it should be unique among all other attached documents of the declaration
Issuing date time	Declaration/Consignment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	Declaration/Consignment/AdditionalDocument/TypeCode	Code of the type of the document	The value should be the code of the type of the document from the code list Document name (UN/EDIFACT 1001)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊣ BINARYFILE	Declaration/Consignment/AdditionalDocument/BinaryFile	Class representing the content of the document	
⊣ Identifier	Declaration/Consignment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
⊣ Title	Declaration/Consignment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
⊣ Author name	Declaration/Consignment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document
⊣ Version	Declaration/Consignment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
⊣ File name	Declaration/Consignment/AdditionalDocument/BinaryFile/FileNameText	File name of the document	The value should be the name of the file representing the document, including the extension
⊣ URI	Declaration/Consignment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
⊣ MIME	Declaration/Consignment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
⊣ Encoding	Declaration/Consignment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
⊣ Character set	Declaration/Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
⊣ Include binary object	Declaration/Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)
⊣ Access	Declaration/Consignment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
⊣ Description	Declaration/Consignment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
⊣ Size	Declaration/Consignment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Hash code	Declaration/Consignment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	should match one of the values listed in the code list Measurement unit (UNECE Recommendation 20) The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	Declaration/Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
CONSIGNMENTITEM	Declaration/Consignment/ConsignmentItem	Class representing the list of details on the items in the consignment	
Sequence number	Declaration/Consignment/ConsignmentItem/SequenceNumeric	Index of the consignment item in the list	The value should be the 1-based index of the consignment item in the list, allowing for quick physical identification upon inspection
ADDITIONALINFORMATION	Declaration/Consignment/ConsignmentItem/AdditionalInformation	Class representing the list of potential additional information at the consignment item level	
Remarks	Declaration/Consignment/ConsignmentItem/AdditionalInformation/Content	Remarks on the consignment item	The value should be a text allowing for additional remarks on the consignment item
GOODS	Declaration/Consignment/ConsignmentItem/Commodity	Class representing the details on the goods	
Description	Declaration/Consignment/ConsignmentItem/Commodity/CargoDescription	Description of the goods	The value should be a text describing the goods
CLASSIFICATION	Declaration/Consignment/ConsignmentItem/Commodity/Classification	Class representing the list of classification details of the goods	
Code	Declaration/Consignment/ConsignmentItem/Commodity/Classification/ID	Identifier of the classification of the goods	The value should be the identifier of the non-commercial classification of the goods
Type, coded	Declaration/Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	Code of the classification	The value should be the code of the classification from the code list Item type identification (UN/EDIFACT 7143)
CONSIGNEE	Declaration/Consignment/ConsignmentItem/Consignee	Class representing the potential consignee of the goods	
Name	Declaration/Consignment/ConsignmentItem/Consignee/Name	Name of the consignee	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Declaration/Consignment/ConsignmentItem/Consignee/ID	Unique identifier of the consignee	The value should be the unique identifier of the consignee

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊥ ADDRESS	Declaration/Consignment/ConsignmentItem/Consignee/Address	Class representing the physical address of the consignee	
⊥ City name	Declaration/Consignment/ConsignmentItem/Consignee/Address/CityName	City name of the physical address of the consignee	The value should be the city name of the physical address of the consignee
⊥ Country, coded	Declaration/Consignment/ConsignmentItem/Consignee/Address/CountryCode	Code of the country of the physical address of the consignee	The value should be the code of the country of the physical address of the consignee from the code list Country name (ISO 3166-1-alpha-2)
⊥ Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/Consignee/Address/Line	Street name of the physical address of the consignee	The value should be the street name and number (or equivalent) of the physical address of the consignee
⊥ Postcode identification	Declaration/Consignment/ConsignmentItem/Consignee/Address/PostcodeID	Postal/Zip code of the physical address of the consignee	The value should be the postal/ZIP code of the physical address of the consignee
⊥ CONSIGNOR	Declaration/Consignment/ConsignmentItem/Consignor	Class representing the potential consignor of the goods	
⊥ Name	Declaration/Consignment/ConsignmentItem/Consignor/Name	Name of the consignor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
⊥ Identifier	Declaration/Consignment/ConsignmentItem/Consignor/ID	Unique identifier of the consignor	The value should be the unique identifier of the consignor
⊥ ADDRESS	Declaration/Consignment/ConsignmentItem/Consignor/Address	Class representing the physical address of the consignor	
⊥ City name	Declaration/Consignment/ConsignmentItem/Consignor/Address/CityName	City name of the physical address of the consignor	The value should be the city name of the physical address of the consignor
⊥ Country, coded	Declaration/Consignment/ConsignmentItem/Consignor/Address/CountryCode	Code of the country of the physical address of the consignor	The value should be the code of the country of the physical address of the consignor from the code list Country name (ISO 3166-1-alpha-2)
⊥ Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/Consignor/Address/Line	Street name of the physical address of the consignor	The value should be the street name and number (or equivalent) of the physical address of the consignor
⊥ Postcode identification	Declaration/Consignment/ConsignmentItem/Consignor/Address/PostcodeID	Postal/Zip code of the physical address of the consignor	The value should be the postal/ZIP code of the physical address of the consignor
⊥ DELIVERYDESTINATION	Declaration/Consignment/ConsignmentItem/DeliveryDestination	Class representing the potential party to which the goods should be delivered	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Name	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Name	Name of the delivery destination	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification.
ADDRESS	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address	Class representing the physical address of the delivery destination	
City name	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	City name of the physical address of the delivery destination	The value should be the city name of the physical address of the delivery destination
Country, coded	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	Code of the country of the physical address of the delivery destination	The value should be the code of the country of the physical address of the delivery destination from the code list Country name (ISO 3166-1-alpha-2)
Street and number/P.O. Box	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/Line	Street name of the physical address of the delivery destination	The value should be the street name and number (or equivalent) of the physical address of the delivery destination
L Postcode identification	Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	Postal/Zip code of the physical address of the delivery destination	The value should be the postal/ZIP code of the physical address of the delivery destination
GOODSMEASURE	Declaration/Consignment/ConsignmentItem/GoodsMeasure	Class representing the details on the measures of the goods	
L Gross weight	Declaration/Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	Total gross weight of the goods	The value should be the weight (mass) of goods including packaging but excluding the transport equipment. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
PACKAGING	Declaration/Consignment/ConsignmentItem/Packaging	Class representing the list of details on the packaging of the goods	
Sequence number	Declaration/Consignment/ConsignmentItem/Packaging/SequenceNumeric	Index of the packaging in the list	The value should be the 1-based index of the packaging in the list, allowing for quick physical identification upon inspection
Marks and numbers	Declaration/Consignment/ConsignmentItem/Packaging/MarksNumbersID	Packaging marks and numbers	The value should be a text describing the marks and numbers on a transport unit or package.
Number of packages	Declaration/Consignment/ConsignmentItem/Packaging/QuantityQuantity	Number of packages	The value should be the number of individual items packaged in such a way that they cannot be divided without first undoing the packing
L Type, coded	Declaration/Consignment/ConsignmentItem/Packaging/TypeCode	Code of the packaging type	The value should be the code of the type of packaging from the code list Package type description (UNECE Recommendation 21 Annex VI)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ TRANSPORTEQUIPMENT	Declaration/Consignment/ConsignmentItem/TransportEquipment	Class representing the transport equipment used for the consignment item	
└┐ Identifier	Declaration/Consignment/ConsignmentItem/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
└ UCR	Declaration/Consignment/ConsignmentItem/UCR	Class representing the Unique Trader Reference	
└ Identifier	Declaration/Consignment/ConsignmentItem/UCR/ID	Unique identifier of the goods	The value should be the unique identifier assigned to goods being subject to cross border transactions
└┐ LOADINGLOCATION	Declaration/Consignment/LoadingLocation	Class representing the place of loading of the goods	
└┐ Name	Declaration/Consignment/LoadingLocation/Name	Name of the loading location	The value should be the name of a seaport, airport, freight terminal, rail station or other place at which goods are loaded onto the means of transport being used for their carriage
└┐ NOTIFYPARTY	Declaration/Consignment/NotifyParty	Class representing a potential party to be notified	
└┐ Name	Declaration/Consignment/NotifyParty/Name	Name of the party to be notified	The value should be the name (first and last name or company) of the party to be notified
└┐ Identifier	Declaration/Consignment/NotifyParty/ID	Unique identifier of the party to be notified	The value should be the unique identifier of the party to be notified
└┐ ADDRESS	Declaration/Consignment/NotifyParty/Address	Class representing the physical address of the party to be notified	
└┐ City name	Declaration/Consignment/NotifyParty/Address/CityName	City name of the physical address of the party to be notified	The value should be the city name of the physical address of the party to be notified
└┐ Country, coded	Declaration/Consignment/NotifyParty/Address/CountryCode	Code of the country of the physical address of the party to be notified	The value should be the code of the country of the physical address of the party to be notified from the code list Country name (ISO 3166-1-alpha-2)
└┐ Street and number/P.O. Box	Declaration/Consignment/NotifyParty/Address/Line	Street name of the physical address of the party to be notified	The value should be the street name and number (or equivalent) of the physical address of the party to be notified
└┐ Postcode identification	Declaration/Consignment/NotifyParty/Address/PostalCodeID	Postal/Zip code of the physical address of the party to be notified	The value should be the postal/ZIP code of the physical address of the party to be notified
└┐ CUSTOMSOFFICEOFDEPARTURE	Declaration/Consignment/TransitDeparture	Class representing the customs office where the goods are loaded	
└┐ Identifier	Declaration/Consignment/TransitDeparture/ID	Unique identifier of the customs office of departure	The value should be the unique identifier used of the customs of departure, where the goods are loaded. This

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
┐ CUSTOMSOFFICEOFDESTINATION	Declaration/Consignment/TransitDestination	Class representing the customs office where the goods are unloaded	identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
┐┐ Identifier	Declaration/Consignment/TransitDestination/ID	Unique identifier of the customs office of destination	The value should be the unique identifier used of the customs of destination, where the goods are unloaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
┐┐ TRANSPORTMEANS	Declaration/Consignment/TransitTransportMeans	Class representing the list of the means of transport for the consignment	
┐┐ Identifier	Declaration/Consignment/TransitTransportMeans/ID	Unique identifier of the transport means	The value should be the unique identifier of the means of transport used for the transit
┐┐ Type, coded	Declaration/Consignment/TransitTransportMeans/TypeCode	Code of the means of transport	The value should be the code of the means of transport from the code list Transport means description (UNECE Recommendation 28)
┐┐ Nationality, coded	Declaration/Consignment/TransitTransportMeans/RegistrationNationalityCode	Nationality of the means of transport	The value should be the code of the country for the nationality of the means of transport from the code list Country name (ISO 3166-1-alpha-2)
┐┐ Conveyance reference number	Declaration/Consignment/TransitTransportMeans/JourneyID	Unique identifier of the journey	The value should be the unique identifier of the journey of a means of transport (for example voyage number, flight number or trip number)
┐┐ Sequence number	Declaration/Consignment/TransitTransportMeans/SequenceNumeric	Index of the transport means in the list	The value should be the 1-based index of the transport means in the list
┐┐┐ COUNTRYOFROUTING	Declaration/Consignment/TransitTransportMeans/Itinerary	Class representing the list of countries of the itinerary of the consignment	
┐┐┐ Sequence number	Declaration/Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	Index of the country in the list	The value should be the 1-based index of the country in the list representing the itinerary of the consignment
┐┐┐ Country, coded	Declaration/Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	Code of the country	The value should be the code of the country from the code list Country name (ISO 3166-1-alpha-2)
┐┐┐ TRANSPORTEQUIPMENT	Declaration/Consignment/TransportEquipment	Class representing the list of the transport equipment used for the consignment	
┐┐┐ Sequence number	Declaration/Consignment/TransportEquipment/SequenceNumeric	Index of the transport equipment in the list	The value should be the 1-based index of the transport equipment in the list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Size and type, coded	Declaration/Consignment/TransportEquipment/CharacteristicCode	Code of the transport equipment	The value should be the code of the transport equipment (specifying its characteristics) from the code list Equipment size and type description (UN/EDIFACT 8155)
Identifier	Declaration/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
CERTIFICATEOFAPPROVAL	Declaration/Consignment/TransportEquipment/AdditionalDocument	Class representing the details of the certificate of approval of the transport equipment	
Number	Declaration/Consignment/TransportEquipment/AdditionalDocument/ID	Unique identifier of the certificate of approval	The value should be the unique identifier of the certificate of approval
Issuing date time	Declaration/Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	Declaration/Consignment/TransportEquipment/AdditionalDocument/TypeCode	Code of the type of file	The value should be the code of the type of the document from the code list Document name (UN/EDIFACT 1001)
BINARYFILE	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile	Class representing the content of the document	
Identifier	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
Author name	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document
Version	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
File name	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNametext	File name of the document	The value should be the name of the file representing the document, including the extension

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
URI	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
MIME	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)
Access	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
Description	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
Size	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
Hash code	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
SEAL	Declaration/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
Sequence number	Declaration/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Seal number	Declaration/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
Seal type, coded	Declaration/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
GUARANTEE	Declaration/DeclarationGuarantee	Class representing the guarantee of this TIR transport	
Validity date	Declaration/DeclarationGuarantee/ExpirationDateTime	Last day of validity of the guarantee for starting a TIR transport	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
Reference	Declaration/DeclarationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
Guarantee type, coded	Declaration/DeclarationGuarantee/SecurityDetailsCode	Code of the guarantee type	This value should be the code of the guarantee type from the code list Guarantee type (eTIR)
HOLDER	Declaration/Principal	Class representing the holder (transporter) of this transport	
Name	Declaration/Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
Identifier	Declaration/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
ADDRESS	Declaration/Principal/Address	Class representing the physical address of the holder	
City name	Declaration/Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
Country, coded	Declaration/Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the code list Country name (ISO 3166-1-alpha-2)
Street and number/P.O. Box	Declaration/Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
Postcode identification	Declaration/Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder
GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the list of potential TIR operations that have already been carried out with the guarantee	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier under which the TIR operation is nationally registered
START	ObligationGuarantee/TransitOperation/OperationStart	Class representing the details related to the start of the TIR operation	
End date time	ObligationGuarantee/TransitOperation/OperationStart/InspectionEndDateTime	Date and time when the TIR operation has been started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Time limit date time	ObligationGuarantee/TransitOperation/OperationStart/LimitDateTime	Date (with or without the time) by when the TIR operation should be completed	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation	Class representing the potential additional information regarding the start of the TIR operation	
Remarks	ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation/Content	Remarks added when starting the TIR operation	The value should be the remark text a customs officer would record when starting the TIR operation
CONSIGNMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment	Class representing potential parent object grouping all transport equipments and related seals information	
TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment	Class representing the list of all transport equipments used for all consignments in the TIR operation	
Identifier	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
SEAL	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Sequence number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list
Seal number	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
L Seal type, coded	ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the code list Seal type (eTIR)
CONTROL	ObligationGuarantee/TransitOperation/OperationStart/Control	Class representing the details of the control performed by the customs officer before starting the TIR operation	
Type, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the code list Control type(eTIR)
L CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
L Result, coded	ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the code list Control result (eTIR)
NATIONALITINERARY	ObligationGuarantee/TransitOperation/OperationStart/Itinerary	Class representing the potential national itinerary that has to be followed by the TIR transport, mentioning one or more customs offices to be visited	
L NATIONALITINERARYCUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice	Class representing the details identifying a customs office that has to be visited by the TIR transport during its itinerary	
L Identifier	ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice/ID	Unique identifier of the customs office of the itinerary	The value should be the unique identifier of the customs office of the itinerary. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
L CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice	Class representing the details of the customs office where the TIR operation started	
L Identifier	ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice/ID	Unique identifier of the customs office where the TIR operation is started	The value should be the unique identifier of the customs office where the TIR operation is started. This identifier

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┌┐ TERMINATION	ObligationGuarantee/TransitOperation/Operation Termination	Class representing the details related to the termination of the TIR operation	is the one recorded in the International TIR Data Bank (ITDB) for the customs office
┌┐ End date time	ObligationGuarantee/TransitOperation/Operation Termination/InspectionEndTime	Date and time when the TIR operation has been terminated	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
┌┐ Number of packages	ObligationGuarantee/TransitOperation/Operation Termination/PackageQuantityQuantity	Number of packages unloaded	The value should be the number of packages potentially unloaded during the termination of the TIR operation
┌┐ Termination type, coded	ObligationGuarantee/TransitOperation/Operation Termination/TypeCode	Code of the type of termination of the TIR operation	The value should be the type of termination code of the TIR operation from the Termination type code (eTIR) list
┌┐┐ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/Operation Termination/AdditionalInformation	Class representing potential additional information regarding the termination of the TIR operation	
┌┌┐ Reservations	ObligationGuarantee/TransitOperation/Operation Termination/AdditionalInformation/Content	Reservations/remarks added when terminating the TIR operation	The value should be the reservations a customs officer would have added when terminating the TIR operation
┌┐┐ CONSIGNMENT	ObligationGuarantee/TransitOperation/Operation Termination/Consignment	Class representing potential parent object grouping details about all transport equipments and related seals information	
┌┌┐┐ TRANSPORTEQUIPMENT	ObligationGuarantee/TransitOperation/Operation Termination/Consignment/TransportEquipment	Class representing the list of all transport equipments used for all consignments in the TIR operation	
┌┌┐┐ Identifier	ObligationGuarantee/TransitOperation/Operation Termination/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be the marks (letters and/or numbers) which identify the transport equipment
┌┌┐┐ SEAL	ObligationGuarantee/TransitOperation/Operation Termination/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
┌┌┐┐ Sequence number	ObligationGuarantee/TransitOperation/Operation Termination/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Seal number	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
Seal type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the Seal type code (eTIR) list
CONTROL	ObligationGuarantee/TransitOperation/OperationTermination/Control	Class representing the details of the control performed by the customs officer while terminating the TIR operation	
Type, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the Control type code (eTIR) list
CONTROLRESULT	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
Result, coded	ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the Control result code (eTIR) list
CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice	Class representing the details of the customs office where the TIR operation is terminated	
Identifier	ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice/ID	Unique identifier of the customs office where the TIR operation is terminated	The value should be the unique identifier of the customs office where the TIR operation is terminated. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
DISCHARGE	ObligationGuarantee/TransitOperation/OperationDischarge	Class representing the details related to the discharge of the TIR operation	
End date time	ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndTime	Date and time when the TIR operation has just been discharged	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice	Class representing the details of the customs office where the TIR operation is discharged	
Identifier	ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice/ID	Unique identifier of the customs office where the TIR operation is discharged	The value should be the unique identifier of the customs office where the TIR operation is discharged. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
└ REFUSALTOSTART	ObligationGuarantee/TransitOperation/RefusalToStart	Class representing the details related to the refusal to start the TIR operation	
└ End date time	ObligationGuarantee/TransitOperation/RefusalToStart/InspectionEndTime	Date and time when the TIR operation has been refused to be started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
└ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation	Class representing additional information regarding the refusal to start the TIR operation	
└ Reason	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation/Content	Reason for refusing to start the TIR operation	The value should be the reason(s) a customs officer would have refused to start a TIR operation
└ CONTROL	ObligationGuarantee/TransitOperation/RefusalToStart/Control	Class representing the details of the control performed by the customs officer before refusing to start the TIR operation	
└ Type, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the Control type code (eTIR) list
└ CONTROLRESULT	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
└ Result, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the Control result code (eTIR) list
└ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice	Class representing the details of the customs office where the TIR operation is refused to be started	
└ Identifier	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice/ID	Unique identifier of the customs office where the TIR operation is refused to be started	The value should be the unique identifier of the customs office where the TIR operation is refused to be started. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office

(b) How the national customs system should process the information received in the notification

442. Depending on the event triggering the communication of the notification, the eTIR international system will fill specific fields of the “I15 – Notify customs” message. It will also indicate in the “Message function, coded” field the reason for sending this notification.

443. If the notification is related to the declaration of the TIR transport (codes 69 and T2 in the “Message function, coded” field, respectively for new and amended declaration data), the eTIR international system will send the information about the declaration data in the "DECLARATIONDATA" class of the message. In this scenario, the national customs system should record all information related to the TIR transport in its database and will return, in the “I16 – Notification confirmation” message, the national reference associated to the TIR transport.

444. If the notification is related to the seals affixed to the transport equipment(s) of the TIR transport (codes T7 and T8 in the “Message function, coded” field respectively for new or updated seals during the start or the termination of a TIR operation), the eTIR international system will send the information related to the seals either in the "GUARANTEE/TIROPERATION/START" class or in the "GUARANTEE/TIROPERATION/TERMINATION" class. In this scenario, the national customs system should record the information about the new seals in its database.

(c) I16 – Notification confirmation

Table 68

I16 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
⊔ DECLARATIONDATA	Declaration	O	1..1				R011
⊔ NATIONALREFERENCE	Declaration/NationalReference	R	1..1				
Reference	Declaration/NationalReference/ID	R	1..1	an..35			
⊔ Country, coded	Declaration/NationalReference/IssuingCountryCode	R	1..1	a2	CL04		
⊔ ERROR	Error	D	0..*				C006
Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
⊔ POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
⊔ Location	Error/Pointer/Location	R	1..1	an..512			

Table 69

I16 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "6" (Confirmation) if the request was processed correctly. If at least one error is described in this message, the value should be "27" (Not accepted)
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I15)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "I16"
└ DECLARATIONDATA	Declaration	Class representing the declaration data as accepted by customs	
└└ NATIONALREFERENCE	Declaration/NationalReference	Class representing the list of national references under which the declaration data has been saved in the countries along the itinerary of the transport	
└ Reference	Declaration/NationalReference/ID	Identifier of the national reference of the declaration	The value should be the identifier of the national reference under which the declaration has been saved in the country which has received the "I15 - Notify customs" notification message
└ Country, coded	Declaration/NationalReference/IssuingCountryCode	Code of the country along the itinerary	The value should be the code of the country which has received the notification "I15" from the Country name code (ISO 3166-1-alpha-2) list
└ ERROR	Error	Class representing the list of errors, if any	
└ Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
└└ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
└ Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
└ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors

(d) How the national customs system should prepare and send the notification confirmation

445. Upon reception, the “I15 – Notify customs” message should be validated and any error found should be returned in the “I16 – Notification confirmation” message. If no error was found, the national customs system will generate the “I16 – Notification confirmation” message and send it to the eTIR international system to acknowledge receipt of the notification. In case the “I15 – Notify customs” message was sent to forward information related to the declaration data, the national customs system should return the national reference information used to record the TIR transport.

10. I17/I18 message pair

446. This section describes the technical specifications of the “I17 – Refusal to start TIR operation” request message sent by the national customs system to refuse the start of a TIR operation; and the “I18 – Refusal results” response message sent back by the eTIR international system.

447. The “I17 – Refusal to start TIR operation” is an exception message to be used, by the customs authorities, to refuse the start of the TIR operation that should be triggered for crossing their country. This message can logically be used only when a TIR operation has already been performed by the holder and the related messages sent by the customs authorities of the previous country on the itinerary of the TIR transport.

448. It is important to note that although the customs authorities may refuse the start of the TIR operation at their border, the holder still has the option to change its itinerary using “E11 – Advance amendment data message, that may be recorded/confirmed by the customs authorities with a “I7 – Record declaration data” message. Alternatively, the holder may end its TIR transport at this point.

(a) I17 – Refusal to start TIR operation

Table 70
I17 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
└ GUARANTEE	ObligationGuarantee	R	1..1				
Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
└ TIROPERATION	ObligationGuarantee/TransitOperation	R	1..1				
Sequence number	ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			R010
Registration number	ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
└ REFUSALTOSTART	ObligationGuarantee/TransitOperation/RefusalToStart	R	1..1				
End date time	ObligationGuarantee/TransitOperation/RefusalToStart/InspectionEndDateTime	R	1..1	an..35			
└ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation	R	1..1				
Reason	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation/Content	R	1..1	an..512			
└ CONTROL	ObligationGuarantee/TransitOperation/RefusalToStart/Control	O	0..1				
Type, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/TypeCode	R	1..1	an..3	CL25		
CONTROLRESULT	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult	R	1..1				
Result, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult/ID	R	1..1	an..3	CL24		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
└ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStart Office	R	1..1				
└ Identifier	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStart Office/ID	R	1..1	an..17			

Table 71

I17 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ Message function, coded	Function	Code describing the function of the message	The value should be set to “9” (Original)
└ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
└ Type, coded	TypeCode	Code of the message type	The value should be set to "I17"
└ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
└ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
└ TIROPERATION	ObligationGuarantee/TransitOperation	Class representing the TIR operation that is being refused to be started	
└ Sequence number	ObligationGuarantee/TransitOperation/Sequence Numeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
└ Registration number	ObligationGuarantee/TransitOperation/Registrati onID	Identifier of the TIR operation	The value should be the unique identifier under which the TIR operation is nationally registered
└ REFUSALTOSTART	ObligationGuarantee/TransitOperation/RefusalT oStart	Class representing the details related to the refusal to start the TIR operation	
└ End date time	ObligationGuarantee/TransitOperation/RefusalT oStart/InspectionEndDateTime	Date and time when the TIR operation has been refused to be started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
└ ADDITIONALINFORMATION	ObligationGuarantee/TransitOperation/RefusalT oStart/AdditionalInformation	Class representing additional information regarding the refusal to start the TIR operation	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊥ Reason	ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation/Content	Reason for refusing to start the TIR operation	The value should be the reason(s) a customs officer would have refused to start a TIR operation
⊥ CONTROL	ObligationGuarantee/TransitOperation/RefusalToStart/Control	Class representing the details of the control performed by the customs officer before refusing to start the TIR operation	
⊥ Type, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the Control type (eTIR) code list
⊥ CONTROLRESULT	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
⊥ Result, coded	ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the Control result (eTIR) code list
⊥ CUSTOMSOFFICE	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice	Class representing the details of the customs office where the TIR operation is refused to be started	
⊥ Identifier	ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice/ID	Unique identifier of the customs office where the TIR operation is refused to be started	The value should be the unique identifier of the customs office where the TIR operation is refused to be started. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office

(b) I18 – Refusal to start results

Table 72

I18 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
⊥ ERROR	Error	D	0..*			C006	
⊥ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
⊥ Location	Error/Pointer/Location	R	1..1	an..512			
⊥ GUARANTEE	ObligationGuarantee	R	1..1				
⊥ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			

Table 73
I18 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message, the value should be "27" (Not accepted)
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I17)
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "I18"
⊥ ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
⊥ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
⊥ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
⊥ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
⊥ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport

(c) How to use response data in the national customs system

449. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “I18 – Refusal to start results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

450. If there was no error, and the response message content is as expected, then the TIR transport stops and instructions should be given by the customs authorities to the holder on how to proceed with its journey.

11. I19/I20 message pair

451. This section describes the technical specifications of the “I19 – Check customs offices” request message sent by the customs authorities to the eTIR international system to retrieve information about one or more customs offices; and the “I20 – Customs offices validation” response message sent back by the eTIR international system.

452. The “I19 – Check customs offices” and the “I20 – Customs offices validation” form the customs office validation system available for the customs authorities to verify the validity (existence and TIR roles) of the customs offices mentioned in the various eTIR messages based on the data recorded in the ITDB. These messages are optional for the customs authorities to implement. Although this web service is available directly in ITDB, the national customs systems can choose to access it via the eTIR international system using the “I19 – Check customs offices” and “I20 – Customs offices validation” messages.

453. It should be noted that the “I19 – Check customs offices” message is used internally by the eTIR international system for any inbound eTIR message where a customs office identifier is mentioned to check its validity during the course of the TIR transport. In the context of the eTIR specification v4.3, no “304 - Customs office not found” error will be returned if the customs office identifier could not be found in these cases. However, if customs directly use this pair of messages (“I19 – Check customs offices” / “I20 – Customs offices validation”) to validate a customs office, this error code will be returned if the customs office is not found in ITDB.

(a) I19 – Check customs offices

Table 74

I19 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ CUSTOMSOFFICE	MasterDataOffice	R	1..*				
┆ Identifier	MasterDataOffice/ID	R	1..1	an..17			

Table 75

I19 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to “9” (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "I19"
┆ CUSTOMSOFFICE	MasterDataOffice	Class representing the list of customs offices	
┆ Identifier	MasterDataOffice/ID	Unique identifier of the customs office	The value should be the unique identifier of the customs office requested, as recorded in the International TIR Data Bank (ITDB), and prefixed with the ISO code 2 of the customs office country, unless the identifier is already starting with the country ISO Code 2

(b) I20 – Customs offices validation

Table 76

I20 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
ERROR	Error	D	0..*			C006	
Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
Location	Error/Pointer/Location	R	1..1	an..512			
CUSTOMSOFFICE	MasterDataOffice	O	0..*				
Identifier	MasterDataOffice/ID	R	1..1	an..17			
Country, coded	MasterDataOffice/CountryCode	R	1..1	a2	CL04		
Validity end date	MasterDataOffice/ValidityDateTime	O	0..1	an..35			
ROLE	MasterDataOffice/Role	O	0..*				
Role, coded	MasterDataOffice/Role/RoleTypeCode	R	1..1	an..3	CL31		

Table 77
120 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "11" if the request was processed correctly. If at least one error is described in this message, the value should be "10"
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (I19)
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "I20"
ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
CUSTOMSOFFICE	MasterDataOffice	Class representing the list of customs offices	
Identifier	MasterDataOffice/ID	Identifier of the customs office	The value should be the unique identifier of the customs office requested, whether it is valid or not
Country, coded	MasterDataOffice/CountryCode	Code of the country of the customs office	The value should be the code of the country of the customs office from the code list Country name code (ISO 3166-1-alpha-2)
Validity end date	MasterDataOffice/ValidityDateTime	Date of the last open day of the customs office	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020
ROLE	MasterDataOffice/Role	Class representing the list of TIR roles assumed by the customs office	
Role, coded	MasterDataOffice/Role/RoleTypeCode	Code of the customs office TIR role	The value should be the code of the customs office TIR role from the list Customs office role

(c) How to use response data in the national customs system

454. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “I20 – Customs offices validation” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section. In the context of this response message, it is important to note that an error will be returned even if only one customs office is not valid.

455. If there are no errors listed in the response message, it means that all the requested customs office identifiers correspond to valid customs offices. If a requested identifier is not listed in the response message, please contact the eTIR service desk to report this issue so that it can be investigated as soon as possible. If everything is correct, then customs authorities may use the data returned for each of the requested customs office, including the TIR roles, to be used in their national customs system in the context of TIR transports.

12. E1/E2 message pair

456. This section describes the technical specifications of the “E1 – Register guarantee” request message sent by the guarantee chain system to register a guarantee for a TIR transport in the eTIR international system, which is a prerequisite to start any TIR operation; and the “E2 – Registration results” response message sent back by the eTIR international system.

(a) E1 – Register guarantee

Table 78

E1 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ GUARANTEE	ObligationGuarantee	R	1..1				
┆ Validity date	ObligationGuarantee/ExpirationDateTime	R	1..1	an..35			
┆ Issuing date time	ObligationGuarantee/IssueDateTime	R	1..1	an..35			
┆ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
┆ Guarantee type	ObligationGuarantee/SecurityDetailsCode	R	1..1	an..3	CL12		
┆ GUARANTEECHAIN	ObligationGuarantee/Surety	R	1..1				
┆ Code	ObligationGuarantee/Surety/ID	R	1..1	an..35			
┆ HOLDER	ObligationGuarantee/Principal	R	1..1				
┆ Identifier	ObligationGuarantee/Principal/ID	R	1..1	an..35			

Table 79

E1 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to '9' (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "E1"

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
└ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
└ Validity date	ObligationGuarantee/ExpirationDateTime	Date of the last day of validity of the guarantee	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
└ Issuing date time	ObligationGuarantee/IssueDateTime	Date of issuance of the eGuarantee by the guarantee chain	The value should be the "Issuing date" of the eGuarantee as recorded by the guarantee chain. The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
└ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee to register
└ Guarantee type	ObligationGuarantee/SecurityDetailsCode	Code of the guarantee type	This value should be the code of the guarantee type from the code list Guarantee type (eTIR)
└└ GUARANTEECHAIN	ObligationGuarantee/Surety	Class representing the information related to the issuing guarantee chain (providing guarantee for the TIR transport)	
└└ Code	ObligationGuarantee/Surety/ID	Unique identifier of the guarantee chain which issued the guarantee	The value should be 'IRU' for guarantees issued by the International Road transport Union
└└ HOLDER	ObligationGuarantee/Principal	Class representing the holder (transporter) of this transport	
└└ Identifier	ObligationGuarantee/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)

(b) E2 – Registration results

Table 80

E2 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
└ Message function, coded	Function	R	1..1	n..2	CL16		
└ Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
└ Message identifier	ID	R	1..1	an..70			
└ Type, coded	TypeCode	R	1..1	an..3	CL26		
└└ ERROR	Error	D	0..*			C006	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
┆┆ POINTER	Error/Pointer	R	1..*				
┆ Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
┆ Location	Error/Pointer/Location	R	1..1	an..512			

Table 81
E2 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message or if the content could not be accepted, the value should be "27" (Not accepted)
┆ Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (E1)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "E2"
┆┆ ERROR	Error	Class representing the list of errors, if any	
┆ Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
┆┆ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
┆ Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
┆ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors

(c) How to use response data in the guarantee chain system

457. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “E2 – Registration results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

458. If there was no error, and the response message content is as expected, the guarantee was properly registered in the eTIR international system and a TIR transport can be planned to use it. The next step will be for the holder to send advance TIR data (for instance by sending an “E9 – Advance TIR data”) to the initial country of departure.

13. E3/E4 message pair

459. This section describes the technical specifications of the “E3 – Cancel guarantee” request message sent by the guarantee chain system to request the cancellation of a guarantee that it had previously registered in the eTIR international system; and the “E4 – Cancellation results” response message sent back by the eTIR international system.

(a) E3 – Cancel guarantee

Table 82

E3 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ GUARANTEE	ObligationGuarantee	R	1..1				
┆ Cancellation date time	ObligationGuarantee/CancellationDateTime	R	1..1	an..35			
┆ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
┆ Guarantee type, coded	ObligationGuarantee/SecurityDetailsCode	R	1..1	an..3	CL12		
┆ GUARANTEECHAIN	ObligationGuarantee/Surety	R	1..1				
┆ Code	ObligationGuarantee/Surety/ID	R	1..1	an..35			
┆ HOLDER	ObligationGuarantee/Principal	R	1..1				
┆ Identifier	ObligationGuarantee/Principal/ID	R	1..1	an..35			

Table 83

E3 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to '9' (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "E3"
┆ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Cancellation date time	ObligationGuarantee/CancellationDateTime	Date and time of the request to cancel the guarantee	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
┆ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee to cancel
┆ Guarantee type, coded	ObligationGuarantee/SecurityDetailsCode	Code of the guarantee type	This value should be the code of the guarantee type from the Guarantee type (eTIR) code list
┆┆ GUARANTEECHAIN	ObligationGuarantee/Surety	Class representing the information related to the issuing guarantee chain (providing guarantee for the TIR transport)	
┆┆┆ Code	ObligationGuarantee/Surety/ID	Unique identifier of the guarantee chain which issued the guarantee	The value should be 'IRU' for guarantees issued by the International Road transport Union
┆┆┆ HOLDER	ObligationGuarantee/Principal	Class representing the holder (transporter) of this transport	
┆┆┆ Identifier	ObligationGuarantee/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)

(b) E4 – Cancellation results

Table 84
E4 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆┆ ERROR	Error	D	0..*			C006	
┆┆ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
┆┆ POINTER	Error/Pointer	R	1..*				
┆┆ Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
└ Location	Error/Pointer/Location	R	1..1	an..512			

Table 85
E4 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message or if the content could not be accepted, the value should be "27" (Not accepted)
└ Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (E3)
└ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
└ Type, coded	TypeCode	Code of the message type	The value should be set to "E4"
└ ERROR	Error	Class representing the list of errors, if any	
└ Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
└ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
└ Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
└ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors

(c) How to use response data in the guarantee chain system

460. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “E4 – Cancellation results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

461. If there was no error, and the response message content is as expected, the request to cancel the guarantee was properly recorded in the eTIR international system. The guarantee chain system can then query the information about this guarantee (by using the “E5 – Query guarantee/E6 – Query results” message pairs) to check if the status of the guarantee has switched to “Cancelled”. If a TIR transport has already been started with this guarantee, the TIR operation in progress will first need to be terminated before the status of the guarantee can switch from “Requested cancellation” to “Cancelled”.

14. E5/E6 message pair

462. This section describes the technical specifications of the “E5 – Query guarantee” request message, sent by the guarantee chain system to query information on a guarantee that it had previously registered in the eTIR international system; and the “E6 – Query results” response message, sent back by the eTIR international system. This pair of messages form the query mechanism, available for guarantee chains, to retrieve information recorded in the eTIR international system regarding one of their guarantees, and related TIR transport and TIR operations.

463. The guarantee chain system can choose to retrieve more or less information in the “E6 – Query results” message depending on the parameters of the “E5 – Query guarantee” message. Guarantee chains can only retrieve information about guarantees they have registered. As the guarantee can have different statuses, it is important to have them in mind as they are detailed in the guarantee state chart diagram in the eTIR concepts. The level of details of the “E6 – Query results” response message depends on the value of the "Reply type, coded" field.

(a) E5 – Query guarantee

Table 86

E5 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ Reply type, coded	ReplyTypeCode	R	1..1	an..3	CL09		
┆ GUARANTEE	ObligationGuarantee	R	1..1				
┆ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			

Table 87

E5 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to “9” (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "E5"
┆ Reply type, coded	ReplyTypeCode	Code used to specify the expected contents of the reply	The value should be the code of the type of reply from the Reply type (eTIR) code list
┆ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
┆ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport

(b) E6 – Query results

Table 88

E6 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
Message identifier	ID	R	1..1	an..70			
Type, coded	TypeCode	R	1..1	an..3	CL26		
ERROR	Error	D	0..*			C006	
Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
Location	Error/Pointer/Location	R	1..1	an..512			
LPCO	LPCO	R	1..1				
GUARANTEE	LPCO/ObligationGuarantee	R	1..1				
Acceptance date time	LPCO/ObligationGuarantee/AcceptanceDateTime	O	0..1	an..35			
Cancellation date time	LPCO/ObligationGuarantee/CancellationDateTime	O	0..1	an..35			
Validity date	LPCO/ObligationGuarantee/ExpirationDateTime	R	1..1	an..35			
Issuing date time	LPCO/ObligationGuarantee/IssueDateTime	R	1..1	an..35			
Status, coded	LPCO/ObligationGuarantee/StatusCode	R	1..1	an..3	CL22		
Reference	LPCO/ObligationGuarantee/ReferenceID	R	1..1	an..35			
Guarantee type, coded	LPCO/ObligationGuarantee/SecurityDetailsCode	R	1..1	an..3	CL12		
DECLARATIONDATA	LPCO/ObligationGuarantee/Declaration	O	0..*				
Issuing date time	LPCO/ObligationGuarantee/Declaration/IssueDateTime	R	1..1	an..35			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Total gross weight	LPCO/ObligationGuarantee/Declaration/TotalGrossMassMeasure	O	0..1	n..16,6			
ADDITIONALINFORMATION	LPCO/ObligationGuarantee/Declaration/AdditionalInformation	O	0..1				
L Remarks	LPCO/ObligationGuarantee/Declaration/AdditionalInformation/Content	R	0..1	an..512			
AGENT	LPCO/ObligationGuarantee/Declaration/Agent	O	0..1				
Name	LPCO/ObligationGuarantee/Declaration/Agent/Name	O	0..1	an..70			
Identifier	LPCO/ObligationGuarantee/Declaration/Agent/ID	O	0..1	an..35			
L Role, coded	LPCO/ObligationGuarantee/Declaration/Agent/RoleCode	R	1..1	an..3	CL02		
AMENDMENT	LPCO/ObligationGuarantee/Declaration/Amendment	O	0..*				
Type, coded	LPCO/ObligationGuarantee/Declaration/Amendment/ChangeReasonCode	R	1..1	an..3	CL17		
L POINTER	LPCO/ObligationGuarantee/Declaration/Amendment/Pointer	R	1..1				
Sequence number	LPCO/ObligationGuarantee/Declaration/Amendment/Pointer/SequenceNumber	R	1..1	n..5			
L Location	LPCO/ObligationGuarantee/Declaration/Amendment/Pointer/Location	R	1..1	an..512			
SUBCONTRACTOR	LPCO/ObligationGuarantee/Declaration/Carrier	O	0..*				
Name	LPCO/ObligationGuarantee/Declaration/Carrier/Name	D	0..1	an..70		C001	
Identifier	LPCO/ObligationGuarantee/Declaration/Carrier/ID	D	0..1	an..35		C001	
L ADDRESS	LPCO/ObligationGuarantee/Declaration/Carrier/Address	D	0..1			C001	
City name	LPCO/ObligationGuarantee/Declaration/Carrier/Address/CityName	R	1..1	an..35			
Country, coded	LPCO/ObligationGuarantee/Declaration/Carrier/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Carrier/Address/Line	R	1..1	an..256			
L Postcode identification	LPCO/ObligationGuarantee/Declaration/Carrier/Address/PostcodeID	O	0..1	an..17			
CONSIGNMENT	LPCO/ObligationGuarantee/Declaration/Consignment	O	0..*				
Container transport indicator	LPCO/ObligationGuarantee/Declaration/Consignment/ContainerCode	R	1..1	an..3			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/SequenceNumeric	R	1..1	n..5			
Heavy or bulky goods indicator	LPCO/ObligationGuarantee/Declaration/Consignment/HeavyOrBulkyGoodsIndicator	R	1..1	n..1			
ATTACHEDDOCUMENTS	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument	O	0..*				
Number	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/ID	R	1..1	an..70			
Issuing date time	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
Type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
BINARYFILE	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile	O	0..1				
Identification	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
Title	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
Author name	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/AuthorName	O	0..1	an..70			
Version	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			
File name	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/FileNameText	O	0..1	an..256			
URI	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..2048			
MIME	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Character set	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	O	0..1	N/A			
Access	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			
Description	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Description	O	0..1	an..256			
Size	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
CONSIGNMENTITEM	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem	R	1..*				
Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/SequenceNumeric	R	1..1	n..5			
ADDITIONALINFORMATION	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/AdditionalInformation	O	0..*				
Remarks	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/AdditionalInformation/Content	R	1..1	an..512			
GOODS	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity	R	1..1				
Description	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/CargoDescription	D	0..1	an..256		C004	
CLASSIFICATION	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification	O	0..*				R008

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Code	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification/ID	R	1..1	an..18			
L Type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	R	1..1	an..3	CL03		
CONSIGNEE	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee	O	0..1				
Name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Name	D	0..1	an..70		C001	
Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/ID	D	0..1	an..35		C001	
ADDRESS	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address	D	0..1			C001	
City name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/CityName	R	1..1	an..35			
Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/Line	R	1..1	an..256			
L Postcode identification	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/PostcodeID	O	0..1	an..17			
CONSIGNOR	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor	O	0..1				
Name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Name	D	0..1	an..70		C001	
Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/ID	D	0..1	an..35		C001	
ADDRESS	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address	D	0..1			C001	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
City name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/CityName	R	1..1	an..35			
Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/Line	R	1..1	an..256			
Postcode identification	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/PostcodeID	O	0..1	an..17			
DELIVERYDESTINATION	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination	O	0..1				
Name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Name	R	1..1	an..70			
ADDRESS	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address	R	1..1				
City name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	R	1..1	an..35			
Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/Line	R	1..1	an..256			
Postcode identification	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	O	0..1	an..17			
GOODSMEASURE	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/GoodsMeasure	R	1..1				
Gross weight	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	R	1..1	n..16,6			
PACKAGING	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/SequenceNumeric	R	1..1	n..5			
Marks and numbers	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/MarksNumbersID	D	0..1	an..512		C002	
Number of packages	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/QuantityQuantity	D	0..1	n..8		C002	
L Type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Packaging/TypeCode	R	1..1	an..2			
TRANSPORTEQUIPMENT	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/TransportEquipment	D	0..1			C003	
L Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/TransportEquipment/ID	R	1..1	an..17			
L UCR	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/UCR	O	0..1				
L Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/UCR/ID	R	1..1	an..35			
TRANSPORTLOCATION	LPCO/ObligationGuarantee/Declaration/Consignment/LoadingLocation	O	0..1				
L Name	LPCO/ObligationGuarantee/Declaration/Consignment/LoadingLocation/Name	R	1..1	an..256			
TRANSPORTNOTIFYPARTY	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty	O	0..1				
Name	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Name	D	0..1	an..70		C001	
Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/ID	D	0..1	an..35		C001	
ADDRESS	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address	D	0..1			C001	
City name	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/CityName	R	1..1	an..35			
Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/CountryCode	R	1..1	a2	CL04		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/Line	R	1..1	an..256			
L Postcode identification	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/PostcodeID	O	0..1	an..17			
CUSTOMSOFFICEOFDEPARTURE	LPCO/ObligationGuarantee/Declaration/Consignment/TransitDeparture	R	1..1				
L Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/TransitDeparture/ID	R	1..1	an..35			
CUSTOMSOFFICEOFDESTINATION	LPCO/ObligationGuarantee/Declaration/Consignment/TransitDestination	R	1..1				
L Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/TransitDestination/ID	R	1..1	an..35			
TRANSPORTMEANS	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans	R	1..*				R002
Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/ID	R	1..1	an..25			
Type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/TypeCode	R	1..1	an..4	CL05		
Nationality, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/RegistrationNationalityCode	R	1..1	a2	CL04		
Conveyance reference number	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/JourneyID	O	0..1	an..17			
Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/SequenceNumeric	R	1..1	n..5			
COUNTRYOFROUTING	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary	R	1..*				R001
Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	R	1..1	n..5			
L Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	R	1..1	a2	CL04		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ TRANSPORTEQUIPMENT	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment	D	0..*			C003	
⊢ Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/SequenceNumeric	R	1..1	n..5			
⊢ Size and type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/CharacteristicCode	R	1..1	an..4	CL01		
⊢ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/ID	R	1..1	an..17			
⊥ CERTIFICATEOFAPPROVAL	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument	D	0..1			C005	
⊢ Number	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/ID	R	1..1	an..70			
⊢ Issuing date time	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
⊢ Type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
⊥ BINARYFILE	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile	O	0..1				
⊢ Identification	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
⊢ Title	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
⊢ Author name	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/AuthorName	O	0..1	an..70			
⊢ Version	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			
⊢ File name	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNametext	O	0..1	an..256			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
URI	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..2048			
MIME	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			
Character set	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	O	0..1	N/A			
Access	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			
Description	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Description	O	0..1	an..256			
Size	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
SEAL	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal	O	0..*				
Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
Seal number	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
Seal type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊢ GUARANTEE	LPCO/ObligationGuarantee/Declaration/DeclarationGuarantee	R	1..1				
⊢ Validity date	LPCO/ObligationGuarantee/Declaration/DeclarationGuarantee/ExpirationDateTime	R	1..1	an..35			
⊢ Reference	LPCO/ObligationGuarantee/Declaration/DeclarationGuarantee/ReferenceID	R	1..1	an..35			
⊣ Guarantee type, coded	LPCO/ObligationGuarantee/Declaration/DeclarationGuarantee/SecurityDetailsCode	R	1..1	an..3	CL12		
⊢ NATIONALREFERENCE	LPCO/ObligationGuarantee/Declaration/NationalReference	O	0..*				
⊢ Reference	LPCO/ObligationGuarantee/Declaration/NationalReference/ID	R	1..1	an..35			
⊣ Country, coded	LPCO/ObligationGuarantee/Declaration/NationalReference/IssuingCountryCode	R	1..1	a2	CL04		
⊣ HOLDER	LPCO/ObligationGuarantee/Declaration/Principal	O	0..1				
⊢ Name	LPCO/ObligationGuarantee/Declaration/Principal/Name	O	0..1	an..70			
⊢ Identifier	LPCO/ObligationGuarantee/Declaration/Principal/ID	R	1..1	an..35			
⊣ ADDRESS	LPCO/ObligationGuarantee/Declaration/Principal/Address	O	0..1				
⊢ City name	LPCO/ObligationGuarantee/Declaration/Principal/Address/CityName	R	1..1	an..35			
⊢ Country, coded	LPCO/ObligationGuarantee/Declaration/Principal/Address/CountryCode	R	1..1	a2	CL04		
⊢ Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Principal/Address/Line	R	1..1	an..256			
⊣ Postcode identification	LPCO/ObligationGuarantee/Declaration/Principal/Address/PostcodeID	O	0..1	an..17			
⊢ GUARANTEECHAIN	LPCO/ObligationGuarantee/Surety	R	1..1				
⊣ Code	LPCO/ObligationGuarantee/Surety/ID	R	1..1	an..35			
⊢ TIROPERATION	LPCO/ObligationGuarantee/TransitOperation	O	0..*				
⊢ Sequence number	LPCO/ObligationGuarantee/TransitOperation/SequenceNumeric	R	1..1	n..5			
⊢ Registration number	LPCO/ObligationGuarantee/TransitOperation/RegistrationID	R	1..1	an..35			
⊢ START	LPCO/ObligationGuarantee/TransitOperation/OperationStart	O	0..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
End date time	LPCO/ObligationGuarantee/TransitOperation/OperationStart/InspectionEnd DateTime	R	1..1	an..35			
Time limit date time	LPCO/ObligationGuarantee/TransitOperation/OperationStart/LimitDateTim e	O	0..1	an..35			
ADDITIONALINFORMATION	LPCO/ObligationGuarantee/TransitOperation/OperationStart/AdditionalInfo rmation	O	0..1				
Remarks	LPCO/ObligationGuarantee/TransitOperation/OperationStart/AdditionalInfo rmation/Content	R	1..1	an..512			
CONSIGNMENT	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment	O	0..1				R007, R006
TRANSPORTEQUIPMENT	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/ TransportEquipment	R	1..*				
Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/ TransportEquipment/ID	R	1..1	an..17			
SEAL	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/ TransportEquipment/Seal	R	1..*				
Sequence number	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/ TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
Seal number	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/ TransportEquipment/Seal/ID	R	1..1	an..35			R005
Seal type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/ TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
CONTROL	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Control	R	1..1				
Type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Control/TypeC ode	R	1..1	an..3	CL25		
CONTROLRESULT	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Control/Contr olResult	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊥ Result, coded	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult/ID	R	1..1	an..3	CL24		
⊥ NATIONALITINERARY	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Itinerary	O	0..*				
⊥ NATIONALITINERARYCUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice	R	1..1				
⊥ Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice/ID	R	1..1	an..17			
⊥ CUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice	R	1..1				
⊥ Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice/ID	R	1..1	an..17			
⊥ TERMINATION	LPCO/ObligationGuarantee/TransitOperation/OperationTermination	O	0..1				
⊥ End date time	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/InspectionEndDateTime	R	1..1	an..35			
⊥ Number of packages	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/PackageQuantityQuantity	R	1..1	n..8			
⊥ Termination type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/TypeCode	R	1..1	an..3	CL27		
⊥ ADDITIONALINFORMATION	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation	O	0..1				
⊥ Reservations	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation/Content	R	1..1	an..512			
⊥ CONSIGNMENT	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment	O	0..1				R007, R006
⊥ TRANSPORTEQUIPMENT	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment	R	1..*				
⊥ Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/ID	R	1..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊣ SEAL	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal	R	1..*				
⊣ Sequence number	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
⊣ Seal number	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
⊣ Seal type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
⊣ CONTROL	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Control	R	1..1				
⊣ Type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Control/TypeCode	R	1..1	an..3	CL25		
⊣ CONTROLRESULT	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult	R	1..1				
⊣ Result, coded	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult/ID	R	1..1	an..3	CL24		
⊣ CUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice	R	1..1				
⊣ Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice/ID	R	1..1	an..17			
⊣ DISCHARGE	LPCO/ObligationGuarantee/TransitOperation/OperationDischarge	O	0..1				
⊣ End date time	LPCO/ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndDateTime	R	1..1	an..35			
⊣ CUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice	R	1..1				
⊣ Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice/ID	R	1..1	an..17			
⊣ REFUSALTOSTART	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart	O	0..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
End date time	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/InspectionEnd DateTime	R	1..1	an..35			
ADDITIONALINFORMATION	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInf ormation	R	1..1				
Reason	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInf ormation/Content	R	1..1	an..512			
CONTROL	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/Control	O	0..1				
Type, coded	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/Control/Type Code	R	1..1	an..3	CL25		
CONTROLRESULT	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/Control/Contr olResult	R	1..1				
Result, coded	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/Control/Contr olResult/ID	R	1..1	an..3	CL24		
CUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperati onStartOffice	R	1..1				
Identifier	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperati onStartOffice/ID	R	1..1	an..17			
HOLDER	LPCO/ObligationGuarantee/Principal	R	1..1				
Name	LPCO/ObligationGuarantee/Principal/Name	R	1..1	an..70			
Identifier	LPCO/ObligationGuarantee/Principal/ID	R	1..1	an..35			
ADDRESS	LPCO/ObligationGuarantee/Principal/Address	R	1..1				
City name	LPCO/ObligationGuarantee/Principal/Address/CityName	R	1..1	an..35			
Country, coded	LPCO/ObligationGuarantee/Principal/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	LPCO/ObligationGuarantee/Principal/Address/Line	R	1..1	an..256			
Postcode identification	LPCO/ObligationGuarantee/Principal/Address/PostcodeID	O	0..1	an..17			
AUTHORIZATION	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Status, coded	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/StatusCode	R	1..1	an..3	CL23		
ACTIVEWITHDRAWAL	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal	O	0..1				
Start date	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	R	1..1	an..35			
End date	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	O	0..1	an..35			
ACTIVEEXCLUSION	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion	O	0..*				
Start date	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	R	1..1	an..35			
End date	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	O	0..1	an..35			
Country, coded	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/CountryCode	R	1..1	a2	CL04		

Table 89

E6 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "11" if the request was processed correctly. If at least one error is described in this message, the value should be "10"
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (E5)
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "E6"
ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊥ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors
⊥ LPCO	LPCO	Class representing Licenses, Permits, Certificates and Others (LPCO) information	
⊥ GUARANTEE	LPCO/ObligationGuarantee	Class representing the guarantee of this TIR transport	
Acceptance date time	LPCO/ObligationGuarantee/AcceptanceDateTim e	Date and time of the acceptance of the guarantee by the country of departure	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Cancellation date time	LPCO/ObligationGuarantee/CancellationDateTi me	Date and time of the cancellation of the guarantee	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Validity date	LPCO/ObligationGuarantee/ExpirationDateTim e	Date of the last day of validity of the guarantee	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
Issuing date time	LPCO/ObligationGuarantee/IssueDateTim e	Date of issuance of the guarantee by the guarantee chain	The value should be the one from the "Issuing date" attribute of the I9 - Start TIR operation message received by the customs
Status, coded	LPCO/ObligationGuarantee/StatusCode	Current status of the guarantee	The value should be the code of the status of the guarantee from the Guarantee status (eTIR) code list
Reference	LPCO/ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
Guarantee type, coded	LPCO/ObligationGuarantee/SecurityDetailsCode	Code of the guarantee type	This value should be the code of the guarantee type from the Guarantee type (eTIR) code list
⊥ DECLARATIONDATA	LPCO/ObligationGuarantee/Declaration	Class representing the declaration data as accepted by customs	
Issuing date time	LPCO/ObligationGuarantee/Declaration/IssueDa teTime	Date at which the message E9 (or E11) received by the customs, was issued	The value should be the one from the "Issuing date" attribute of the message E9 received by the customs
Total gross weight	LPCO/ObligationGuarantee/Declaration/TotalGr ossMassMeasure	Total gross weight of goods (including packaging) of the declaration	The value should be the total gross weight as a decimal number. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
ADDITIONALINFORMATION	LPCO/ObligationGuarantee/Declaration/AdditionalInformation	Class containing potential additional information at the declaration level	in the Measurement unit (UNECE Recommendation 20) code list
Remarks	LPCO/ObligationGuarantee/Declaration/AdditionalInformation/Content	Text used to allow for remarks to the declaration from the holder	The value should be containing the remarks to the declaration from the transporter, or should remain blank if there are none
AGENT	LPCO/ObligationGuarantee/Declaration/Agent	Class representing the potential agent which would declare the goods on behalf of the holder	
Name	LPCO/ObligationGuarantee/Declaration/Agent/Name	Name of the agent	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	LPCO/ObligationGuarantee/Declaration/Agent/ID	Unique identifier of the agent	The value should be the unique identifier of the agent
Role, coded	LPCO/ObligationGuarantee/Declaration/Agent/RoleCode	Code of the role of the agent	The value should be the code matching the role of the agent from the Party role (UN/EDIFACT 3035) code list
AMENDMENT	LPCO/ObligationGuarantee/Declaration/Amendment	Class representing the list of potential amendments to the declaration	
Type, coded	LPCO/ObligationGuarantee/Declaration/Amendment/ChangeReasonCode	Code describing the type of amendment	The value should be the code matching the type of amendment from the Amendment type (eTIR) code list
POINTER	LPCO/ObligationGuarantee/Declaration/Amendment/Pointer	Class representing the pointer to the part of the declaration to be amended	
Sequence number	LPCO/ObligationGuarantee/Declaration/Amendment/Pointer/SequenceNumeric	Index of the pointer in the list	The value should be the 1-based index of the pointer in the list
Location	LPCO/ObligationGuarantee/Declaration/Amendment/Pointer/Location	Location of the class or attribute to be amended	The value should be the location of the class or attribute following the XPath syntax
SUBCONTRACTOR	LPCO/ObligationGuarantee/Declaration/Carrier	Class representing the potential agent which undertakes or arranges transport of goods between named points	
Name	LPCO/ObligationGuarantee/Declaration/Carrier/Name	Name of the subcontractor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Identifier	LPCO/ObligationGuarantee/Declaration/Carrier/ID	Unique identifier of the subcontractor	The value should be the unique identifier of the subcontractor
ADDRESS	LPCO/ObligationGuarantee/Declaration/Carrier/Address	Class representing the physical address of the subcontractor	
City name	LPCO/ObligationGuarantee/Declaration/Carrier/Address/CityName	City name of the physical address of the subcontractor	The value should be the city name of the physical address of the subcontractor
Country, coded	LPCO/ObligationGuarantee/Declaration/Carrier/Address/CountryCode	Code of the country of the physical address of the subcontractor	The value should be the code of the country of the physical address of the subcontractor from the Country name code (ISO 3166-1-alpha-2) list
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Carrier/Address/Line	Street name of the physical address of the subcontractor	The value should be the street name and number (or equivalent) of the physical address of the subcontractor
Postcode identification	LPCO/ObligationGuarantee/Declaration/Carrier/Address/PostcodeID	Postal/Zip code of the physical address of the subcontractor	The value should be the postal/ZIP code of the physical address of the subcontractor
CONSIGNMENT	LPCO/ObligationGuarantee/Declaration/Consignment	Class representing the list of details on the transport of goods between a loading point and an unloading point	
Container transport indicator	LPCO/ObligationGuarantee/Declaration/Consignment/ContainerCode	Code describing whether the goods are transported in a container or not	The value should be "1" if the goods are transported in a container or "0" otherwise
Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/SequenceNumeric	Index of the consignment in the list	The value should be the 1-based index of the consignment in the list
Heavy or bulky goods indicator	LPCO/ObligationGuarantee/Declaration/Consignment/HeavyOrBulkyGoodsIndicator	Code describing whether the goods are considered (according to article 29) as "heavy or bulky", as defined article 1 (p) of the TIR Convention.	The value should be "1" if the goods are considered by the customs as "heavy or bulky" or "0" otherwise
ATTACHEDDOCUMENTS	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument	Class representing the list of potential additional documents supplied as part of the declaration and related to the consignment	
Number	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/ID	Identifier of the document	The value should be an ID identifying the document and it should be unique among all other attached documents of the declaration
Issuing date time	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Type, coded	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/TypeCode	Code of the type of the document	If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00. The value should be the code of the type of the document from the Document name (UN/EDIFACT 1001) code list
⊥ BINARYFILE	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile	Class representing the content of the document	
Identification	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
Author name	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document
Version	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
File name	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/FileName ext	File name of the document	The value should be the name of the file representing the document, including the extension
URI	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
MIME	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/Encoding Code	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	LPCO/ObligationGuarantee/Declaration/Consign ment/AdditionalDocument/BinaryFile/Character SetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊢ Include binary object	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)
⊢ Access	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
⊢ Description	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
⊢ Size	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
⊢ Hash code	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
⊣ Hash code algorithm id	LPCO/ObligationGuarantee/Declaration/Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
⊢ CONSIGNMENTITEM	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem	Class representing the list of details on the items in the consignment	
⊢ Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/SequenceNumeric	Index of the consignment item in the list	The value should be the 1-based index of the consignment item in the list, allowing for quick physical identification upon inspection
⊢ ADDITIONALINFORMATION	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/AdditionalInformation	Class representing the list of potential additional information at the consignment item level	
⊣ Remarks	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/AdditionalInformation/Content	Remarks on the consignment item	The value should be a text allowing for additional remarks on the consignment item
⊢ GOODS	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity	Class representing the details on the goods	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Description	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/CargoDescription	Description of the goods	The value should be a text describing the goods
CLASSIFICATION	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification	Class representing the list of classification details of the goods	
Code	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification/ID	Identifier of the classification of the goods	The value should be the identifier of the non-commercial classification of the goods
Type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	Code of the classification	The value should be the code of the classification from the Item type identification (UN/EDIFACT 7143) code list
CONSIGNEE	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee	Class representing the potential consignee of the goods	
Name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Name	Name of the consignee	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/ID	Unique identifier of the consignee	The value should be the unique identifier of the consignee
ADDRESS	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address	Class representing the physical address of the consignee	
City name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/CityName	City name of the physical address of the consignee	The value should be the city name of the physical address of the consignee
Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/CountryCode	Code of the country of the physical address of the consignee	The value should be the code of the country of the physical address of the consignee from the list Country name (ISO 3166-1-alpha-2) code list
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/Line	Street name of the physical address of the consignee	The value should be the street name and number (or equivalent) of the physical address of the consignee

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊣ Postcode identification	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignee/Address/PostcodeID	Postal/Zip code of the physical address of the consignee	The value should be the postal/ZIP code of the physical address of the consignee
⊣ CONSIGNOR	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor	Class representing the potential consignor of the goods	
⊣ Name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Name	Name of the consignor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
⊣ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/ID	Unique identifier of the consignor	The value should be the unique identifier of the consignor
⊣ ADDRESS	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address	Class representing the physical address of the consignor	
⊣ City name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/CityName	City name of the physical address of the consignor	The value should be the city name of the physical address of the consignor
⊣ Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/CountryCode	Code of the country of the physical address of the consignor	The value should be the code of the country of the physical address of the consignor from the Country name (ISO 3166-1-alpha-2) code list
⊣ Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/Line	Street name of the physical address of the consignor	The value should be the street name and number (or equivalent) of the physical address of the consignor
⊣ Postcode identification	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/Consignor/Address/PostcodeID	Postal/Zip code of the physical address of the consignor	The value should be the postal/ZIP code of the physical address of the consignor
⊣ DELIVERYDESTINATION	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination	Class representing the potential party to which the goods should be delivered	
⊣ Name	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Name	Name of the delivery destination	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification.
⊣ ADDRESS	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/DeliveryDestination/Address	Class representing the physical address of the delivery destination	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
City name	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/DeliveryDestination/Add ress/CityName	City name of the physical address of the delivery destination	The value should be the city name of the physical address of the delivery destination
Country, coded	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/DeliveryDestination/Add ress/CountryCode	Code of the country of the physical address of the delivery destination	The value should be the code of the country of the physical address of the delivery destination from the Country name (ISO 3166-1-alpha-2) code list
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/DeliveryDestination/Add ress/Line	Street name of the physical address of the delivery destination	The value should be the street name and number (or equivalent) of the physical address of the delivery destination
L Postcode identification	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/DeliveryDestination/Add ress/PostcodeID	Postal/Zip code of the physical address of the delivery destination	The value should be the postal/ZIP code of the physical address of the delivery destination
GOODSMESURE	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/GoodsMeasure	Class representing the details on the measures of the goods	
L Gross weight	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/GoodsMeasure/GrossMa ssMeasure	Total gross weight of the goods	The value should be the total gross weight as a decimal number. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit code (UNECE Recommendation 20) list
PACKAGING	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/Packaging	Class representing the list of details on the packaging of the goods	
Sequence number	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/Packaging/SequenceNu meric	Index of the packaging in the list	The value should be the 1-based index of the packaging in the list, allowing for quick physical identification upon inspection
Marks and numbers	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/Packaging/MarksNumbe rsID	Packaging marks and numbers	The value should be a text describing the marks and numbers on a transport unit or package.
Number of packages	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/Packaging/QuantityQuan tity	Number of packages	The value should be the number of individual items packaged in such a way that they cannot be divided without first undoing the packing
L Type, coded	LPCO/ObligationGuarantee/Declaration/Consign ment/ConsignmentItem/Packaging/TypeCode	Code of the packaging type	The value should be the code of the type of packaging from the code list Package type description code (UNECE Recommendation 21 Annex VI)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊢ TRANSPORTEQUIPMENT	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/TransportEquipment	Class representing the transport equipment used for the consignment item	
⊢ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
⊢ UCR	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/UCR	Class representing the Unique Trader Reference	
⊢ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/ConsignmentItem/UCR/ID	Unique identifier of the goods	The value should be the unique identifier assigned to goods being subject to cross border transactions
⊢ LOADINGLOCATION	LPCO/ObligationGuarantee/Declaration/Consignment/LoadingLocation	Class representing the place of loading of the goods	
⊢ Name	LPCO/ObligationGuarantee/Declaration/Consignment/LoadingLocation/Name	Name of the loading location	The value should be the name of a seaport, airport, freight terminal, rail station or other place at which goods are loaded onto the means of transport being used for their carriage
⊢ NOTIFYPARTY	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty	Class representing a potential party to be notified	
⊢ Name	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Name	Name of the party to be notified	The value should be the name (first and last name or company) of the party to be notified
⊢ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/ID	Unique identifier of the party to be notified	The value should be the unique identifier of the party to be notified
⊢ ADDRESS	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address	Class representing the physical address of the party to be notified	
⊢ City name	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/CityName	City name of the physical address of the party to be notified	The value should be the city name of the physical address of the party to be notified
⊢ Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/CountryCode	Code of the country of the physical address of the party to be notified	The value should be the code of the country of the physical address of the party to be notified from the Country name code (ISO 3166-1-alpha-2) list
⊢ Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/Line	Street name of the physical address of the party to be notified	The value should be the street name and number (or equivalent) of the physical address of the party to be notified
⊢ Postcode identification	LPCO/ObligationGuarantee/Declaration/Consignment/NotifyParty/Address/PostcodeID	Postal/Zip code of the physical address of the party to be notified	The value should be the postal/ZIP code of the physical address of the party to be notified

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┐ CUSTOMSOFFICEOFDEPARTURE	LPCO/ObligationGuarantee/Declaration/Consignment/TransitDeparture	Class representing the customs office where the goods are loaded	
┐ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/TransitDeparture/ID	Unique identifier of the customs office of departure	The value should be the unique identifier used of the customs of departure, where the goods are loaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
┐ CUSTOMSOFFICEOFDESTINATION	LPCO/ObligationGuarantee/Declaration/Consignment/TransitDestination	Class representing the customs office where the goods are unloaded	
┐ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/TransitDestination/ID	Unique identifier of the customs office of destination	The value should be the unique identifier used of the customs of destination, where the goods are unloaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
┐ TRANSPORTMEANS	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans	Class representing the list of the means of transport for the consignment	
┐ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/ID	Unique identifier of the transport means	The value should be the unique identifier of the means of transport used for the transit
┐ Type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/TypeCode	Code of the means of transport	The value should be the code of the means of transport from the code list Transport means description code (UNECE Recommendation 28)
┐ Nationality, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/RegistrationNationalityCode	Nationality of the means of transport	The value should be the code of the country for the nationality of the means of transport from the Country name code (ISO 3166-1-alpha-2) list
┐ Conveyance reference number	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/JourneyID	External identifier/reference identifying a journey of a means of transport	The value should be an identifier referencing a journey of a means of transport (e.g. vessel, train or plane), like voyage number, flight number, or trip number.
┐ Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/SequenceNumeric	Index of the transport means in the list	The value should be the 1-based index of the transport means in the list
┐ COUNTRYOFROUTING	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary	Class representing the list of countries of the itinerary of the consignment	
┐ Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	Index of the country in the list	The value should be the 1-based index of the country in the list representing the itinerary of the consignment

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊣ Country, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	Code of the country	The value should be the code of the country from the Country name code (ISO 3166-1-alpha-2) list
⊣ TRANSPORTEQUIPMENT	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment	Class representing the list of the transport equipment used for the consignment	
⊣ Sequence number	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/SequenceNumeric	Index of the transport equipment in the list	The value should be the 1-based index of the transport equipment in the list
⊣ Size and type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/CharacteristicCode	Code of the transport equipment	The value should be the code of the transport equipment (specifying its characteristics) from the Equipment size and type description code (UN/EDIFACT 8155) list
⊣ Identifier	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
⊣ CERTIFICATEOFAPPROVAL	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument	Class representing the details of the certificate of approval of the transport equipment	
⊣ Number	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/ID	Unique identifier of the certificate of approval	The value should be the unique identifier of the certificate of approval
⊣ Issuing date time	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	Issuing date of the certificate of approval	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
⊣ Type, coded	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/TypeCode	Code of the type of the certificate of approval	The value should be the code of the type of the certificate of approval from the list Document name code (UN/EDIFACT 1001) list
⊣ BINARYFILE	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile	Class representing the contents of the certificate of approval	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Identification	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	Title of the certificate of approval	The value should be the title of the certificate of approval
Author name	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the certificate of approval	The value should be the first and last name of the author (or the issuing organization) of the certificate of approval
Version	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	Version number of the certificate of approval	The value should be the version of the certificate of approval
File name	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNametext	File name of the certificate of approval	The value should be the name of the file representing the certificate of approval, including the extension
URI	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	URI of the certificate of approval	The value should be the Unique Resource Identifier (URI) allowing to access the certificate of approval instead of relying on a inary object representation
MIME	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	LPCO/ObligationGuarantee/Declaration/Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the contents of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Access	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/AdditionalDocument/ BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
Description	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/AdditionalDocument/ BinaryFile/Description	Description of the certificate of approval	The value should be the description of the certificate of approval and explain what it contains
Size	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/AdditionalDocument/ BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
Hash code	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/AdditionalDocument/ BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/AdditionalDocument/ BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
SEAL	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
Sequence number	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/Seal/SequenceNumeri c	Index of the seal in the list	The value should be the 1-based index of the seal in the list
Seal number	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
Seal type, coded	LPCO/ObligationGuarantee/Declaration/Consign ment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the Seal type (eTIR) code list
GUARANTEE	LPCO/ObligationGuarantee/Declaration/Declarat ionGuarantee	Class representing the guarantee of this TIR transport	
Validity date	LPCO/ObligationGuarantee/Declaration/Declarat ionGuarantee/ExpirationDateTime	Expiration date of the guarantee	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Reference	LPCO/ObligationGuarantee/Declaration/DeclarationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
Guarantee type, coded	LPCO/ObligationGuarantee/Declaration/DeclarationGuarantee/SecurityDetailsCode	Code of the type of guarantee	The value should be the unique identifier of the guarantee for this TIR transport
NATIONALREFERENCE	LPCO/ObligationGuarantee/Declaration/NationalReference	Class representing the list of national references under which the declaration data has been saved in the countries along the itinerary of the transport	
Reference	LPCO/ObligationGuarantee/Declaration/NationalReference/ID	Identifier of the national reference of the declaration	The value should be the identifier of the national reference under which the declaration has been saved in the country along the itinerary of the transport
Country, coded	LPCO/ObligationGuarantee/Declaration/NationalReference/IssuingCountryCode	Code of the country along the itinerary	The value should be the code of the country along the itinerary from the Country name code (ISO 3166-1-alpha-2) code list
HOLDER	LPCO/ObligationGuarantee/Declaration/Principal	Class representing the holder (transporter) of this transport	
Name	LPCO/ObligationGuarantee/Declaration/Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
Identifier	LPCO/ObligationGuarantee/Declaration/Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
ADDRESS	LPCO/ObligationGuarantee/Declaration/Principal/Address	Class representing the physical address of the holder	
City name	LPCO/ObligationGuarantee/Declaration/Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
Country, coded	LPCO/ObligationGuarantee/Declaration/Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the Country name code (ISO 3166-1-alpha-2) list
Street and number/P.O. Box	LPCO/ObligationGuarantee/Declaration/Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
Postcode identification	LPCO/ObligationGuarantee/Declaration/Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder
GUARANTEECHAIN	LPCO/ObligationGuarantee/Surety	Class representing the information related to the issuing guarantee chain	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
L Code	LPCO/ObligationGuarantee/Surety/ID	(providing guarantee for the TIR transport) Unique identifier of the guarantee chain which issued the guarantee	The value should be 'IRU' for guarantees issued by the International Road transport Union
T TIROPERATION	LPCO/ObligationGuarantee/TransitOperation	Class representing the list of potential TIR operations that have already been carried out with the guarantee	
Sequence number	LPCO/ObligationGuarantee/TransitOperation/SequenceNumeric	Index of the TIR operation in the list	The value should be the 1-based index of the TIR operation in the list
Registration number	LPCO/ObligationGuarantee/TransitOperation/RegistrationID	Identifier of the TIR operation	The value should be the unique identifier under which the TIR operation is nationally registered
T START	LPCO/ObligationGuarantee/TransitOperation/OperationStart	Class representing the details related to the start of the TIR operation	
End date time	LPCO/ObligationGuarantee/TransitOperation/OperationStart/InspectionEndTime	Date and time when the TIR operation has been started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Time limit date time	LPCO/ObligationGuarantee/TransitOperation/OperationStart/LimitDateTime	Date (with or without the time) by when the TIR operation should be completed	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
T ADDITIONALINFORMATION	LPCO/ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation	Class representing the potential additional information regarding the start of the TIR operation	
L Remarks	LPCO/ObligationGuarantee/TransitOperation/OperationStart/AdditionalInformation/Content	Remarks added when starting the TIR operation	The value should be the remark text a customs officer would record when starting the TIR operation
T CONSIGNMENT	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment	Class representing potential parent object grouping all transport equipments and related seals information	
L T TRANSPORTEQUIPMENT	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment	Class representing the list of all transport equipments used for all consignments in the TIR operation	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
⊥ SEAL	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
Sequence number	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list
Seal number	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
⊥ Seal type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the Seal type (eTIR) code list
⊥ CONTROL	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Control	Class representing the details of the control performed by the customs officer before starting the TIR operation	
Type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the Control type (eTIR) code list
⊥ CONTROLRESULT	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
⊥ Result, coded	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the Control result (eTIR) code list
⊥ NATIONALITINERARY	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Itinerary	Class representing the potential national itinerary that has to be followed by the TIR transport, mentioning one or more customs offices to be visited	
⊥ NATIONALITINERARYCUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice	Class representing the details identifying a customs office that has to be visited by the TIR transport during its itinerary	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
L Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationStart/Itinerary/ItineraryGovernmentOffice/ID	Unique identifier of the customs office of the itinerary	The value should be the unique identifier of the customs office of the itinerary. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
L└ CUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice	Class representing the details of the customs office where the TIR operation started	
L Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationStart/TransitOperationStartOffice/ID	Unique identifier of the customs office where the TIR operation is started	The value should be the unique identifier of the customs office where the TIR operation is started. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
└ TERMINATION	LPCO/ObligationGuarantee/TransitOperation/OperationTermination	Class representing the details related to the termination of the TIR operation	
└ End date time	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/InspectionEndTime	Date and time when the TIR operation has been terminated	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
└ Number of packages	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/PackageQuantityQuantity	Number of packages unloaded	The value should be the number of packages potentially unloaded during the termination of the TIR operation
└ Termination type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/TypeCode	Code of the type of termination of the TIR operation	The value should be the type of termination code of the TIR operation from the Termination type (eTIR) code list
└└ ADDITIONALINFORMATION	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation	Class representing potential additional information regarding the termination of the TIR operation	
L Reservations	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/AdditionalInformation/Content	Reservations/remarks added when terminating the TIR operation	The value should be the reservations a customs officer would have added when terminating the TIR operation
└└ CONSIGNMENT	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment	Class representing potential parent object grouping details about all transport equipments and related seals information	
L└ TRANSPORTEQUIPMENT	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment	Class representing the list of all transport equipments used for all consignments in the TIR operation	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be the marks (letters and/or numbers) which identify the transport equipment
⊥ SEAL	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	
Sequence number	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	The value should be the 1-based index of the seal in the list
Seal number	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	The value should be the unique identifier of the seal affixed to the transport equipment
⊥ Seal type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	The value should be the code of the type of seal from the Seal type (eTIR) code list
⊥ CONTROL	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Control	Class representing the details of the control performed by the customs officer while terminating the TIR operation	
Type, coded	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the Control type (eTIR) code list
⊥ CONTROLRESULT	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
⊥ Result, coded	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the Control result (eTIR) code list
⊥ CUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice	Class representing the details of the customs office where the TIR operation is terminated	
⊥ Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationTermination/TransitOperationTerminationOffice/ID	Unique identifier of the customs office where the TIR operation is terminated	The value should be the unique identifier of the customs office where the TIR operation is terminated. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
DISCHARGE	LPCO/ObligationGuarantee/TransitOperation/OperationDischarge	Class representing the details related to the discharge of the TIR operation	
End date time	LPCO/ObligationGuarantee/TransitOperation/OperationDischarge/InspectionEndTime	Date and time when the TIR operation has just been discharged	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
CUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice	Class representing the details of the customs office where the TIR operation is discharged	
Identifier	LPCO/ObligationGuarantee/TransitOperation/OperationDischarge/TransitOperationDischargeOffice/ID	Unique identifier of the customs office where the TIR operation is discharged	The value should be the unique identifier of the customs office where the TIR operation is discharged. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
REFUSALTOSTART	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart	Class representing the details related to the refusal to start the TIR operation	
End date time	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/InspectionEndTime	Date and time when the TIR operation has been refused to be started	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
ADDITIONALINFORMATION	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation	Class representing additional information regarding the refusal to start the TIR operation	
Reason	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/AdditionalInformation/Content	Reason for refusing to start the TIR operation	The value should be the reason(s) a customs officer would have refused to start a TIR operation
CONTROL	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/Control	Class representing the details of the control performed by the customs officer before refusing to start the TIR operation	
Type, coded	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/Control/TypeCode	Code of the type of control	The value should be the code of the type of control from the Control type (eTIR) code list
CONTROLRESULT	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult	Class representing the details of the outcome of the control performed by the customs officer	
Result, coded	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/Control/ControlResult/ID	Code of the result of the control	The value should be the code of the result of the control from the Control result (eTIR) code list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊣ CUSTOMSOFFICE	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice	Class representing the details of the customs office where the TIR operation is refused to be started	
Identifier	LPCO/ObligationGuarantee/TransitOperation/RefusalToStart/TransitOperationStartOffice/ID	Unique identifier of the customs office where the TIR operation is refused to be started	The value should be the unique identifier of the customs office where the TIR operation is refused to be started. This identifier is the one recorded in the International TIR Data Bank (ITDB) for the customs office
⊣ HOLDER	LPCO/ObligationGuarantee/Principal	Class representing the holder (transporter) of this transport	
Name	LPCO/ObligationGuarantee/Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
Identifier	LPCO/ObligationGuarantee/Principal/ID	Unique identifier of the holder	This value matches the holder's identifier in ITDB. This value is retrieved from the I7 - Record declaration data previously received
⊣ ADDRESS	LPCO/ObligationGuarantee/Principal/Address	Class representing the physical address of the holder	
City name	LPCO/ObligationGuarantee/Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
Country, coded	LPCO/ObligationGuarantee/Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the Country name code (ISO 3166-1-alpha-2) list
Street and number/P.O. Box	LPCO/ObligationGuarantee/Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
Postcode identification	LPCO/ObligationGuarantee/Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder
⊣ AUTHORIZATION	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate	Class representing the details related to the authorization of the holder in the TIR system	
Status, coded	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/StatusCode	Code of the current authorization status of the holder	The value should be the code of the current authorization status of the holder from the Holder status (eTIR) code list
⊣ ACTIVEWITHDRAWAL	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal	Class representing the details related to a potential withdrawal of the holder from the TIR system	
Start date	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/EffectiveDateTime	Start date of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format. For Example: 20200820 represents 20 August 2020.

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
L End date	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/AuthorizationWithdrawal/ExpirationDateTime	End date of the withdrawal of the holder from the TIR system	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
└ ACTIVEEXCLUSION	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion	Class representing the list of potential exclusions of the holder in specific countries, as per Article 38 of the TIR Convention	
Start date	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/EffectiveDateTime	Start date of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
End date	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/ExpirationDateTime	End date of the exclusion of the holder from the TIR system in the country detailed in the related field below	The value should be a date to be provided following the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020.
L Country, coded	LPCO/ObligationGuarantee/Principal/AuthorizationCertificate/Exclusion/CountryCode	Code of the country in which the holder is excluded	The value should be the code of the country in which the holder is excluded from the Country name code (ISO 3166-1-alpha-2) list

(c) How to use response data in the guarantee chain system

464. The eTIR international system will return whether there were errors while processing the request message by filling in the Error list. Therefore, and as for all response messages expected from the eTIR international system, the first step when parsing the “E6 – Query results” response message should always be to look for potential error elements in the response message and address them accordingly as mentioned in the Error management section.

465. If there was no error, and the response message content is as expected, the next step for the guarantee chain system is to find, in the response, the information needed. Depending on the case in which the query mechanism was used, the guarantee chain system may need to store, in its database, all information contained in the “E6 – Query results”, or, on the contrary, the guarantee chain system may need to retrieve only a few fields from the response and process them.

18. E7/E8 message pair

466. This section describes the technical specifications of the “E7 – Notify guarantee chain” request message sent by the eTIR international system to the guarantee chain system to notify them about information related to the TIR transport; and the “E8 – Notification confirmation” response message sent back by the guarantee chain system. Guarantee chains should be ready to receive and process this notification at any time. In addition, it is important to note that these notifications can be sent for several reasons and in different contexts.

467. In the eTIR specifications v4.3, the “E7 – Notify guarantee chain” message can be sent by the eTIR international system in the following six cases:

- New declaration data: when the declaration of a TIR transport is received for the first time by the eTIR international system;
- Amended declaration data: when the amendment to the declaration of a TIR transport is received by the eTIR international system;
- New start of TIR operation: when the start of a TIR operation is received by the eTIR international system;
- New termination of TIR operation: when the termination of a TIR operation is received by the eTIR international system;
- New discharge of TIR operation: when the discharge of a TIR operation is received by the eTIR international system;
- New refusal to start of TIR operation: when the refusal to start a TIR operation is received by the eTIR international system.

(a) **E7 – Notify guarantee chain**

Table 90

E7 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ GUARANTEE	ObligationGuarantee	R	1..1				
┆ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			

Table 91

E7 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be, depending on the type of notification, either: "69" (New declaration data), "T2" (Amended declaration data), "68" (New start of TIR operation), "67" (New termination of TIR operation), "66" (New discharge of TIR operation) or "T6" (New refusal to start TIR operation). Those codes will soon be included in the CL16 - Message function code (UN/EDIFACT 1225) code list.
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "E7"
┆ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
┆ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport

(b) **E8 – Notification confirmation**

Table 92

E8 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ ERROR	Error	D	0..*			C006	
┆ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
┆ POINTER	Error/Pointer	R	1..*				
┆ Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
┆ Location	Error/Pointer/Location	R	1..1	an..512			

Table 93

E8 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be "6" (Confirmation) if the request was processed correctly. If at least one error is described in this message, the value should be "27" (Not accepted)
┆ Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (E7)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "E8"
┆ ERROR	Error	Class representing the list of errors, if any	
┆ Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
┆ POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
┆ Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
┆ Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
			the location of the fields per error code are available on the page dedicated to errors

(c) **How to use response data in the guarantee chain system**

468. Upon reception, the “E7 – Notify guarantee chain” message should be validated and any error found should be returned in the “E8 – Notification confirmation” message. If no error was found, the guarantee chain system will generate the “E8 – Notification confirmation” message and send it to the eTIR international system to acknowledge receipt of the notification.

16. **E9/E10 message pair**

469. This section describes the technical specifications of the “E9 – Advance TIR data” request message, sent by the holder to the national customs system of the country of departure (via the eTIR international system) to send the advance TIR data related to a future TIR transport; and the “E10 – Advance TIR data results” response message, sent back by the national customs system (via the eTIR international system).

470. It is mandatory for the holder to send the advance TIR data to customs authorities of the country of departure, to be able to start a TIR transport. It should be communicated as early as possible to customs authorities, once the cargo information of the transport has been confirmed.

(a) **Message forwarding mechanism in the eTIR international system**

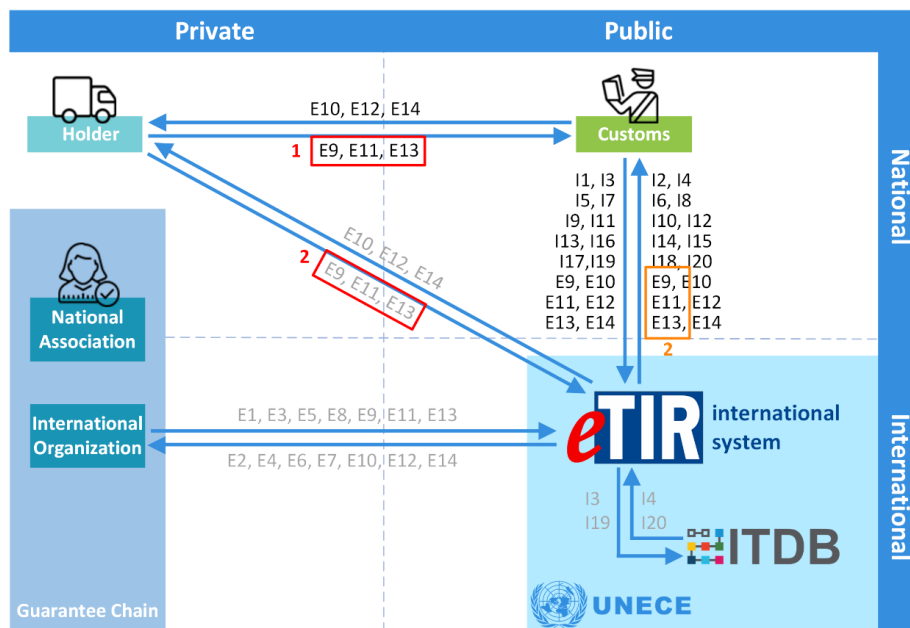
471. All eTIR messages sent by the holder to customs authorities can be communicated either:

1. Directly to the relevant national customs system using the electronic means published by the competent authorities;
2. Via the eTIR international system that will then forward the messages to the relevant national customs system, using its internal "forwarding mechanism".

472. The following diagram illustrates both options, shown as (1) and (2).

Figure 41

How the holder can send advance TIR data using the E9 message



473. It is important to note that the choice of the electronic means, for the holder, to send the advance TIR data to the national customs system is defined in Annex 11 of the TIR Convention. In Article 6, it is described that option (2) (to send it via the eTIR international system) should always exist, whereas option (1) (to communicate it using other electronic means) depends on the relevant customs authorities, as each of them publishes a list of

authorized mechanisms. It is also important to note that, in the case of a holder to national customs system direct communication (or using a third party tool), the format of the messages does not have to be exactly as described in the eTIR specifications, but the content must, at least, contain all the fields and values described in it, to ensure all relevant information is available for the subsequent eTIR messages to be generated, in particular the “I7 – Record declaration data” message.

474. The eTIR international system forwarding mechanism performs the following two functions:

- Validation of inbound request eTIR messages from holders, and possibly return errors, if any;
- Forward of inbound request/response eTIR messages to the relevant recipient (the holder or the national customs system).

(b) Update of the Advance TIR/amendment data

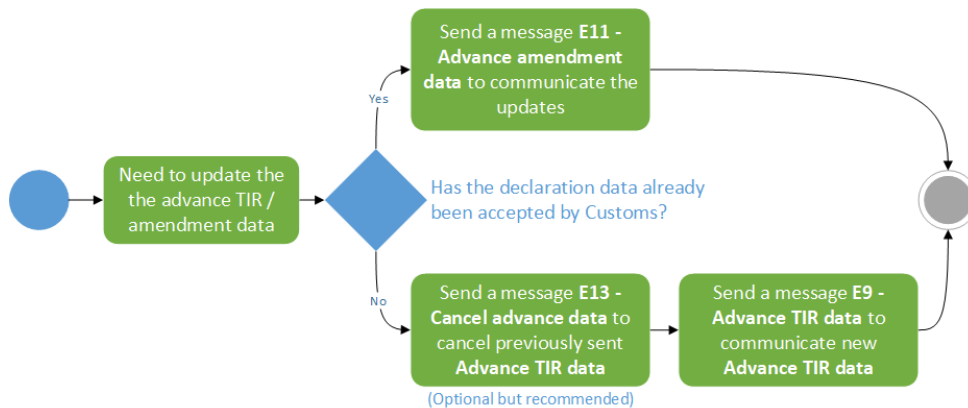
475. In case a holder has already sent an “E9 – Advance TIR data” message and needs to update its content, he or she is required to send either:

- Another “E9 – Advance TIR data” message if the TIR transport has not started yet. It is recommended to send an “E13 – Cancel advance data” message to cancel the previously sent advance TIR data;
- Or an “E11 – Advance amendment data” message if the TIR transport has started already.

476. The following diagram summarizes this logic, that must be implemented in the holder system, for any need to update the advance data or the declaration data, in order to be properly processed by the national customs system:

Figure 42

Update the advance TIR data or the declaration data



(c) Communication of advance TIR data for a TIR Transport with multiple loading points

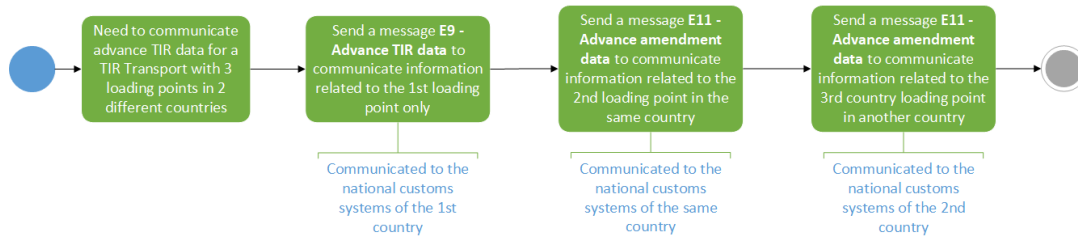
477. In case a holder plans to execute a TIR transport with multiple loading points, possibly in multiple customs territories (countries), advance TIR data must be communicated using an eTIR message (or any other electronic means authorized by the relevant customs authorities) to each and every of the customs authorities of the countries where goods will be loaded.

478. It is important to note that the “E9 – Advance TIR data” message is only intended for the initial customs office of departure and that this message should only contain consignments loaded at that first loading point. Consequently, the holder must then send an “E11 – Advance amendment data” message to each customs authority where additional loading points are located, to communicate the advance TIR data related to the consignments to be loaded at the corresponding additional loading points.

479. The following diagram illustrates the example of a TIR transport with three loading points happening in two different customs territories and the “E9 – Advance TIR data” and “E11 – Advance amendment data” messages required:

Figure 43

Advance TIR data for multiple loading points



480. In such case, the “E9 – Advance TIR data” and “E11 – Advance amendment data” messages can all be sent before presenting the goods, along with the road vehicle, the combination of vehicles or the container to the first customs office of departure.

(d) E9 – Advance TIR data

Table 94

E9 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Message identifier	ID	R	1..1	an..70			
Issuing date time	IssueDateTime	R	1..1	an..35			
Type, coded	TypeCode	R	1..1	an..3	CL26		
Total gross weight	TotalGrossMassMeasure	O	0..1	n..16,6			
┐ ADDITIONALINFORMATION	AdditionalInformation	O	0..1				
┐┐ Remarks	AdditionalInformation/Content	O	0..1	an..512			
┐ AGENT	Agent	O	0..1				
┐┐ Name	Agent/Name	D	0..1	an..70		C001	
┐┐ Identifier	Agent/ID	D	0..1	an..35		C001	
┐┐ Role, coded	Agent/RoleCode	R	1..1	an..3	CL02		
┐┐ ADDRESS	Agent/Address	D	0..1			C001	
┐┐┐ City name	Agent/Address/CityName	R	1..1	an..35			
┐┐┐ Country, coded	Agent/Address/CountryCode	R	1..1	a2	CL04		
┐┐┐ Street and number/P.O. Box	Agent/Address/Line	R	1..1	an..256			
┐┐┐┐ Postcode identification	Agent/Address/PostcodeID	O	0..1	an..17			
┐ SUBCONTRACTOR	Carrier	O	0..*				
┐┐ Name	Carrier/Name	D	0..1	an..70		C001	
┐┐ Identifier	Carrier/ID	D	0..1	an..35		C001	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊣ ADDRESS	Carrier/Address	D	0..1			C001	
⊣ City name	Carrier/Address/CityName	R	1..1	an..35			
⊣ Country, coded	Carrier/Address/CountryCode	R	1..1	a2	CL04		
⊣ Street and number/P.O. Box	Carrier/Address/Line	R	1..1	an..256			
⊣ Postcode identification	Carrier/Address/PostcodeID	O	0..1	an..17			
⊣ CONSIGNMENT	Consignment	R	1..*				
⊣ Container transport indicator	Consignment/ContainerCode	R	1..1	an..3			
⊣ Sequence number	Consignment/SequenceNumeric	R	1..1	n..5			
⊣ Heavy or bulky goods indicator	Consignment/HeavyOrBulkyGoodsIndicator	R	1..1	n..1			
⊣ ATTACHEDDOCUMENTS	Consignment/AdditionalDocument	O	0..*				
⊣ Number	Consignment/AdditionalDocument/ID	R	1..1	an..70			
⊣ Issuing date time	Consignment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
⊣ Type, coded	Consignment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
⊣ BINARYFILE	Consignment/AdditionalDocument/BinaryFile	O	0..1				
⊣ Identifier	Consignment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
⊣ Title	Consignment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
⊣ Author name	Consignment/AdditionalDocument/BinaryFile/AuthorName	O	0..1	an..70			
⊣ Version	Consignment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			
⊣ File name	Consignment/AdditionalDocument/BinaryFile/FileNameText	O	0..1	an..256			
⊣ URI	Consignment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..2048			
⊣ MIME	Consignment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
⊣ Encoding	Consignment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Character set	Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	O	0..1	N/A			
Access	Consignment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			
Description	Consignment/AdditionalDocument/BinaryFile/Description	O	0..1	an..256			
Size	Consignment/AdditionalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	Consignment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
CONSIGNMENTITEM	Consignment/ConsignmentItem	R	1..*				
Sequence number	Consignment/ConsignmentItem/SequenceNumeric	R	1..1	n..5			
ADDITIONALINFORMATION	Consignment/ConsignmentItem/AdditionalInformation	O	0..*				
Remarks	Consignment/ConsignmentItem/AdditionalInformation/Content	R	1..1	an..512			
GOODS	Consignment/ConsignmentItem/Commodity	R	1..1				
Description	Consignment/ConsignmentItem/Commodity/CargoDescription	D	0..1	an..256		C004	
CLASSIFICATION	Consignment/ConsignmentItem/Commodity/Classification	O	0..*				R008
Code	Consignment/ConsignmentItem/Commodity/Classification/ID	R	1..1	an..18			
Type, coded	Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	R	1..1	an..3	CL03		
CONSIGNEE	Consignment/ConsignmentItem/Consignee	O	0..1				
Name	Consignment/ConsignmentItem/Consignee/Name	D	0..1	an..70		C001	
Identifier	Consignment/ConsignmentItem/Consignee/ID	D	0..1	an..35		C001	
ADDRESS	Consignment/ConsignmentItem/Consignee/Address	D	0..1			C001	
City name	Consignment/ConsignmentItem/Consignee/Address/CityName	R	1..1	an..35			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Country, coded	Consignment/ConsignmentItem/Consignee/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Consignment/ConsignmentItem/Consignee/Address/Line	R	1..1	an..256			
L Postcode identification	Consignment/ConsignmentItem/Consignee/Address/PostcodeID	O	0..1	an..17			
T CONSIGNOR	Consignment/ConsignmentItem/Consignor	O	0..1				
Name	Consignment/ConsignmentItem/Consignor/Name	D	0..1	an..70		C001	
Identifier	Consignment/ConsignmentItem/Consignor/ID	D	0..1	an..35		C001	
L T ADDRESS	Consignment/ConsignmentItem/Consignor/Address	D	0..1			C001	
City name	Consignment/ConsignmentItem/Consignor/Address/CityName	R	1..1	an..35			
Country, coded	Consignment/ConsignmentItem/Consignor/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Consignment/ConsignmentItem/Consignor/Address/Line	R	1..1	an..256			
L Postcode identification	Consignment/ConsignmentItem/Consignor/Address/PostcodeID	O	0..1	an..17			
T DELIVERYDESTINATION	Consignment/ConsignmentItem/DeliveryDestination	O	0..1				
Name	Consignment/ConsignmentItem/DeliveryDestination/Name	R	1..1	an..70			
L T ADDRESS	Consignment/ConsignmentItem/DeliveryDestination/Address	R	1..1				
City name	Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	R	1..1	an..35			
Country, coded	Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Consignment/ConsignmentItem/DeliveryDestination/Address/Line	R	1..1	an..256			
L Postcode identification	Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	O	0..1	an..17			
T GOODSMEASURE	Consignment/ConsignmentItem/GoodsMeasure	R	1..1				
L Gross weight	Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	R	1..1	n..16,6			
T PACKAGING	Consignment/ConsignmentItem/Packaging	R	1..*				
Sequence number	Consignment/ConsignmentItem/Packaging/SequenceNumeric	R	1..1	n..5			
Marks and numbers	Consignment/ConsignmentItem/Packaging/MarksNumbersID	D	0..1	an..512		C002	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊢ Number of packages	Consignment/ConsignmentItem/Packaging/QuantityQuantity	D	0..1	n..8		C002	
⊣ Type, coded	Consignment/ConsignmentItem/Packaging/TypeCode	R	1..1	an..2	CL07		
⊢ TRANSPORTEQUIPMENT	Consignment/ConsignmentItem/TransportEquipment	D	0..1			C003	
⊣ Identification	Consignment/ConsignmentItem/TransportEquipment/ID	R	1..1	an..17			
⊣ UCR	Consignment/ConsignmentItem/UCR	O	0..1				
⊣ Identifier	Consignment/ConsignmentItem/UCR/ID	O	0..1	an..35			
⊢ LOADINGLOCATION	Consignment/LoadingLocation	O	0..1				
⊣ Name	Consignment/LoadingLocation/Name	O	0..1	an..256			
⊢ NOTIFYPARTY	Consignment/NotifyParty	O	0..1				
⊢ Name	Consignment/NotifyParty/Name	D	0..1	an..70		C001	
⊢ Identifier	Consignment/NotifyParty/ID	D	0..1	an..35		C001	
⊣ ADDRESS	Consignment/NotifyParty/Address	D	0..1			C001	
⊢ City name	Consignment/NotifyParty/Address/CityName	R	1..1	an..35			
⊢ Country, coded	Consignment/NotifyParty/Address/CountryCode	R	1..1	a2	CL04		
⊢ Street and number/P.O. Box	Consignment/NotifyParty/Address/Line	R	1..1	an..256			
⊣ Postcode identification	Consignment/NotifyParty/Address/PostcodeID	R	1..1	an..17			
⊢ CUSTOMSOFFICEOFDEPARTURE	Consignment/TransitDeparture	R	1..1				
⊣ Identifier	Consignment/TransitDeparture/ID	R	1..1	an..35			
⊢ CUSTOMSOFFICEOFDESTINATION	Consignment/TransitDestination	R	1..1				
⊣ Identifier	Consignment/TransitDestination/ID	R	1..1	an..35			
⊢ TRANSPORTMEANS	Consignment/TransitTransportMeans	R	1..*				R002
⊢ Identifier	Consignment/TransitTransportMeans/ID	R	1..1	an..25			
⊢ Type, coded	Consignment/TransitTransportMeans/TypeCode	R	1..1	an..4	CL05		

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Nationality, coded	Consignment/TransitTransportMeans/RegistrationNationalityCode	R	1..1	a2	CL04		
Conveyance reference number	Consignment/TransitTransportMeans/JourneyID	O	0..1	an..17			
Sequence number	Consignment/TransitTransportMeans/SequenceNumeric	R	1..1	n..5			
COUNTRYOFROUTING	Consignment/TransitTransportMeans/Itinerary	R	1..*				R001
Sequence number	Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	R	1..1	n..5			
Country, coded	Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	R	1..1	a2	CL04		
TRANSPORTEQUIPMENT	Consignment/TransportEquipment	D	0..*			C003	
Sequence number	Consignment/TransportEquipment/SequenceNumeric	R	1..1	n..5			
Size and type, coded	Consignment/TransportEquipment/CharacteristicCode	R	1..1	an..4	CL01		
Identifier	Consignment/TransportEquipment/ID	R	1..1	an..17			
CERTIFICATEOFAPPROVAL	Consignment/TransportEquipment/AdditionalDocument	D	0..1			C005	
Number	Consignment/TransportEquipment/AdditionalDocument/ID	R	1..1	an..70			
Issuing date time	Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
Type, coded	Consignment/TransportEquipment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
BINARYFILE	Consignment/TransportEquipment/AdditionalDocument/BinaryFile	O	0..1				
Identifier	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
Title	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
Author name	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Author Name	O	0..1	an..70			
Version	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Version ID	O	0..1	an..17			
File name	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileName metext	O	0..1	an..256			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
URI	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..2048			
MIME	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			
Character set	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludeBinaryObjectBinaryObject	O	0..1	N/A			
Access	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			
Description	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Description	O	0..1	an..256			
Size	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
⊥ SEAL	Consignment/TransportEquipment/Seal	O	0..*				
Sequence number	Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
Seal number	Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005
Seal type, coded	Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
⊥ GUARANTEE	ObligationGuarantee	R	1..1				
Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
⊥ HOLDER	Principal	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Name	Principal/Name	O	0..1	an..70			
┆ Identifier	Principal/ID	R	1..1	an..35			
┆ ADDRESS	Principal/Address	O	0..1				
┆ City name	Principal/Address/CityName	R	1..1	an..35			
┆ Country, coded	Principal/Address/CountryCode	R	1..1	a2	CL04		
┆ Street and number/P.O. Box	Principal/Address/Line	R	1..1	an..256			
┆ Postcode identification	Principal/Address/PostcodeID	O	0..1	an..17			

Table 95
E9 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to “9” (Original)
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Issuing date time	IssueDateTime	Date at which the message E9 was issued by the holder	The value should be the one from the "Issuing date" attribute of the message E9 received by the customs. The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "E9"
┆ Total gross weight	TotalGrossMassMeasure	Total gross weight of goods (including packaging) of the declaration	The value should be the total gross weight as a decimal number. The unit should be defined in the Measure Unit. Code attribute and should match one of the

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
			values listed in the Measurement unit (UNECE Recommendation 20) code list
┌ ADDITIONALINFORMATION	AdditionalInformation	Class containing potential additional information at the declaration level	
└ Remarks	AdditionalInformation/Content	Text used to allow for remarks to the declaration from the holder	The value should be containing the remarks to the declaration from the transporter, or should remain blank if there are none
┌ AGENT	Agent	Class representing the potential agent which would declare the goods on behalf of the holder	
┌ Name	Agent/Name	Name of the agent	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
┌ Identifier	Agent/ID	Unique identifier of the agent	The value should be the unique identifier of the agent
┌ Role, coded	Agent/RoleCode	Code of the role of the agent	The value should be the code matching the role of the agent from the Party role (UN/EDIFACT 3035) code list
┌ ADDRESS	Agent/Address	Class representing the physical address of the Agent	
┌ City name	Agent/Address/CityName	City name of the physical address of the agent	The value should be the city name of the physical address of the agent
┌ Country, coded	Agent/Address/CountryCode	Code of the country of the physical address of the agent	The value should be the code of the country of the physical address of the agent from the Country name (ISO 3166-1-alpha-2) code list
┌ Street and number/P.O. Box	Agent/Address/Line	Street name of the physical address of the agent	The value should be the street name and number (or equivalent) of the physical address of the agent
┌ Postcode identification	Agent/Address/PostcodeID	Postal/Zip code of the physical address of the agent	The value should be the postal/ZIP code of the physical address of the agent

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
┌ SUBCONTRACTOR	Carrier	Class representing the potential agent which undertakes or arranges transport of goods between named points	
┌ Name	Carrier/Name	Name of the subcontractor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
┌ Identifier	Carrier/ID	Unique identifier of the subcontractor	The value should be the unique identifier of the subcontractor
┌ ADDRESS	Carrier/Address	Class representing the physical address of the subcontractor	
┌ City name	Carrier/Address/CityName	City name of the physical address of the subcontractor	The value should be the city name of the physical address of the subcontractor
┌ Country, coded	Carrier/Address/CountryCode	Code of the country of the physical address of the subcontractor	The value should be the code of the country of the physical address of the subcontractor from the Country name (ISO 3166-1-alpha-2) code list
┌ Street and number/P.O. Box	Carrier/Address/Line	Street name of the physical address of the subcontractor	The value should be the street name and number (or equivalent) of the physical address of the subcontractor
┌ Postcode identification	Carrier/Address/PostcodeID	Postal/Zip code of the physical address of the subcontractor	The value should be the postal/ZIP code of the physical address of the subcontractor
┌ CONSIGNMENT	Consignment	Class representing the list of details on the transport of goods between a loading point and an unloading point	
┌ Container transport indicator	Consignment/ContainerCode	Code describing whether the goods are transported in a container or not	The value should be "1" if the goods are transported in a container or "0" otherwise
┌ Sequence number	Consignment/SequenceNumeric	Index of the consignment in the list	The value should be the 1-based index of the consignment in the list
┌ Heavy or bulky goods indicator	Consignment/HeavyOrBulkyGoodsIndicator	Code describing whether the goods are considered (according to article 29) as "heavy or bulky", as defined article 1 (p) of the TIR Convention.	The value should be "1" if the goods are considered by the customs as "heavy or bulky" or "0" otherwise

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
⊥ ATTACHEDDOCUMENTS	Consignment/AdditionalDocument	Class representing the list of potential additional documents supplied as part of the declaration and related to the consignment	
Number	Consignment/AdditionalDocument/ID	Identifier of the document	The value should be an ID identifying the document and it should be unique among all other attached documents of the declaration
Issuing date time	Consignment/AdditionalDocument/IssueDateTi me	Issuing date of the document	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	Consignment/AdditionalDocument/TypeCode	Code of the type of the document	The value should be the code of the type of the document from the Document name code (UN/EDIFACT 1001) list
⊥ BINARYFILE	Consignment/AdditionalDocument/BinaryFile	The content of the document	
Identifier	Consignment/AdditionalDocument/BinaryFile/I D	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	Consignment/AdditionalDocument/BinaryFile/Ti tle	Title of the document	The value should be the title of the document
Author name	Consignment/AdditionalDocument/BinaryFile/A uthorName	Name of the author of the document	The value should be the first and last name of the author of the document
Version	Consignment/AdditionalDocument/BinaryFile/V ersionID	Version number of the document	The value should be the version of the document
File name	Consignment/AdditionalDocument/BinaryFile/Fi leNametext	File name of the document	The value should be the name of the file representing the document, including the extension
URI	Consignment/AdditionalDocument/BinaryFile/U RIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
MIME	Consignment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	Consignment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)
Access	Consignment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
Description	Consignment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
Size	Consignment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
Hash code	Consignment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
CONSIGNMENTITEM	Consignment/ConsignmentItem	Class representing the list of details on the items in the consignment	
Sequence number	Consignment/ConsignmentItem/SequenceNumber	Index of the consignment item in the list	The value should be the 1-based index of the consignment item in the list, allowing for quick physical identification upon inspection

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┐ ADDITIONALINFORMATION	Consignment/ConsignmentItem/AdditionalInformation	Class representing the list of potential additional information at the consignment item level	
┐┐┐ Remarks	Consignment/ConsignmentItem/AdditionalInformation/Content	Remarks on the consignment item	The value should be a text allowing for additional remarks on the consignment item
┐┐ GOODS	Consignment/ConsignmentItem/Commodity	Class representing the details on the goods	
┐┐┐ Description	Consignment/ConsignmentItem/Commodity/CargoDescription	Description of the goods	The value should be a text describing the goods
┐┐┐┐ CLASSIFICATION	Consignment/ConsignmentItem/Commodity/Classification	Class representing the list of classification details of the goods	
┐┐┐┐ Code	Consignment/ConsignmentItem/Commodity/Classification/ID	Identifier of the classification of the goods	The value should be the identifier of the non-commercial classification of the goods
┐┐┐┐┐ Type, coded	Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	Code of the classification	The value should be the code of the classification from the Item type identification (UN/EDIFACT 7143) code list
┐┐┐ CONSIGNEE	Consignment/ConsignmentItem/Consignee	Class representing the potential consignee of the goods	
┐┐┐┐ Name	Consignment/ConsignmentItem/Consignee/Name	Name of the consignee	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
┐┐┐┐ Identifier	Consignment/ConsignmentItem/Consignee/ID	Unique identifier of the consignee	The value should be the unique identifier of the consignee
┐┐┐┐┐ ADDRESS	Consignment/ConsignmentItem/Consignee/Address	Class representing the physical address of the consignee	
┐┐┐┐┐┐ City name	Consignment/ConsignmentItem/Consignee/Address/CityName	City name of the physical address of the consignee	The value should be the city name of the physical address of the consignee

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Country, coded	Consignment/ConsignmentItem/Consignee/Address/CountryCode	Code of the country of the physical address of the consignee	The value should be the code of the country of the physical address of the consignee from the Country name code (ISO 3166-1-alpha-2) list
Street and number/P.O. Box	Consignment/ConsignmentItem/Consignee/Address/Line	Street name of the physical address of the consignee	The value should be the street name and number (or equivalent) of the physical address of the consignee
Postcode identification	Consignment/ConsignmentItem/Consignee/Address/PostcodeID	Postal/Zip code of the physical address of the consignee	The value should be the postal/ZIP code of the physical address of the consignee
CONSIGNOR	Consignment/ConsignmentItem/Consignor	Class representing the potential consignor of the goods	
Name	Consignment/ConsignmentItem/Consignor/Name	Name of the consignor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Consignment/ConsignmentItem/Consignor/ID	Unique identifier of the consignor	The value should be the unique identifier of the consignor
ADDRESS	Consignment/ConsignmentItem/Consignor/Address	Class representing the physical address of the consignor	
City name	Consignment/ConsignmentItem/Consignor/Address/CityName	City name of the physical address of the consignor	The value should be the city name of the physical address of the consignor
Country, coded	Consignment/ConsignmentItem/Consignor/Address/CountryCode	Code of the country of the physical address of the consignor	The value should be the code of the country of the physical address of the consignor from the Country name (ISO 3166-1-alpha-2) code list
Street and number/P.O. Box	Consignment/ConsignmentItem/Consignor/Address/Line	Street name of the physical address of the consignor	The value should be the street name and number (or equivalent) of the physical address of the consignor
Postcode identification	Consignment/ConsignmentItem/Consignor/Address/PostcodeID	Postal/Zip code of the physical address of the consignor	The value should be the postal/ZIP code of the physical address of the consignor
DELIVERYDESTINATION	Consignment/ConsignmentItem/DeliveryDestination	Class representing the potential party to which the goods should be delivered	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Name	Consignment/ConsignmentItem/DeliveryDestination/Name	Name of the delivery destination	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification.
ADDRESS	Consignment/ConsignmentItem/DeliveryDestination/Address	Class representing the physical address of the delivery destination	
City name	Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	City name of the physical address of the delivery destination	The value should be the city name of the physical address of the delivery destination
Country, coded	Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	Code of the country of the physical address of the delivery destination	The value should be the code of the country of the physical address of the delivery destination from the Country name code (ISO 3166-1-alpha-2) list
Street and number/P.O. Box	Consignment/ConsignmentItem/DeliveryDestination/Address/Line	Street name of the physical address of the delivery destination	The value should be the street name and number (or equivalent) of the physical address of the delivery destination
Postcode identification	Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	Postal/Zip code of the physical address of the delivery destination	The value should be the postal/ZIP code of the physical address of the delivery destination
GOODSMEASURE	Consignment/ConsignmentItem/GoodsMeasure	Class representing the details on the measures of the goods	
Gross weight	Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	Total gross weight of the goods	The value should be the weight (mass) of goods including packaging but excluding the transport equipment. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
PACKAGING	Consignment/ConsignmentItem/Packaging	Class representing the list of details on the packaging of the goods	
Sequence number	Consignment/ConsignmentItem/Packaging/SequenceNumeric	Index of the packaging in the list	The value should be the 1-based index of the packaging in the list, allowing for quick physical identification upon inspection
Marks and numbers	Consignment/ConsignmentItem/Packaging/MarksNumbersID	Packaging marks and numbers	The value should be a text describing the marks and numbers on a transport unit or package

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└─ Number of packages	Consignment/ConsignmentItem/Packaging/QuantityQuantity	Number of packages	The value should be the number of individual items packaged in such a way that they cannot be divided without first undoing the packing
└─ Type, coded	Consignment/ConsignmentItem/Packaging/Type Code	Code of the packaging type	The value should be the code of the type of packaging from the Package type description (UNECE Recommendation 21 Annex VI) code list
└─ TRANSPORTEQUIPMENT	Consignment/ConsignmentItem/TransportEquipment	Class representing the transport equipment used for the consignment item	
└─ Identification	Consignment/ConsignmentItem/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
└─ UCR	Consignment/ConsignmentItem/UCR	Class representing the Unique Trader Reference	
└─ Identifier	Consignment/ConsignmentItem/UCR/ID	Unique identifier of the goods	The value should be the unique identifier assigned to goods being subject to cross border transactions
└─ LOADINGLOCATION	Consignment/LoadingLocation	Class representing the place of loading of the goods	
└─ Name	Consignment/LoadingLocation/Name	Name of the loading location	The value should be the name of a seaport, airport, freight terminal, rail station or other place at which goods are loaded onto the means of transport being used for their carriage
└─ NOTIFYPARTY	Consignment/NotifyParty	Class representing a potential party to be notified	
└─ Name	Consignment/NotifyParty/Name	Name of the party to be notified	The value should be the name (first and last name or company) of the party to be notified
└─ Identifier	Consignment/NotifyParty/ID	Unique identifier of the party to be notified	The value should be the unique identifier of the party to be notified
└─ ADDRESS	Consignment/NotifyParty/Address	Class representing the physical address of the party to be notified	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
City name	Consignment/NotifyParty/Address/CityName	City name of the physical address of the party to be notified	The value should be the city name of the physical address of the party to be notified
Country, coded	Consignment/NotifyParty/Address/CountryCode	Code of the country of the physical address of the party to be notified	The value should be the code of the country of the physical address of the party to be notified from the Country name code (ISO 3166-1-alpha-2) list
Street and number/P.O. Box	Consignment/NotifyParty/Address/Line	Street name of the physical address of the party to be notified	The value should be the street name and number (or equivalent) of the physical address of the party to be notified
Postcode identification	Consignment/NotifyParty/Address/PostcodeID	Postal/Zip code of the physical address of the party to be notified	The value should be the postal/ZIP code of the physical address of the party to be notified
CUSTOMSOFFICEOFDEPARTURE	Consignment/TransitDeparture	Class representing the customs office where the goods are loaded	
Identifier	Consignment/TransitDeparture/ID	Unique identifier of the customs office of departure	The value should be the unique identifier used of the customs of departure, where the goods are loaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
CUSTOMSOFFICEOFDESTINATION	Consignment/TransitDestination	Class representing the customs office where the goods are unloaded	
Identifier	Consignment/TransitDestination/ID	Unique identifier of the customs office of destination	The value should be the unique identifier used of the customs of destination, where the goods are unloaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
TRANSPORTMEANS	Consignment/TransitTransportMeans	Class representing the list of the means of transport for the consignment	
Identifier	Consignment/TransitTransportMeans/ID	Unique identifier of the transport means	The value should be the unique identifier of the means of transport used for the transit
Type, coded	Consignment/TransitTransportMeans/TypeCode	Code of the means of transport	The value should be the code of the means of transport from the Transport means description (UNECE Recommendation 28) code list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Nationality, coded	Consignment/TransitTransportMeans/RegistrationNationalityCode	Nationality of the means of transport	The value should be the code of the country for the nationality of the means of transport from the Country name (ISO 3166-1-alpha-2) code list
Conveyance reference number	Consignment/TransitTransportMeans/JourneyID	Unique identifier of the journey	The value should be the unique identifier of the journey of a means of transport (for example voyage number, flight number or trip number)
Sequence number	Consignment/TransitTransportMeans/SequenceNumeric	Index of the transport means in the list	The value should be the 1-based index of the transport means in the list
⊥ COUNTRYOFROUTING	Consignment/TransitTransportMeans/Itinerary	Class representing the list of countries of the itinerary of the consignment	
Sequence number	Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	Index of the country in the list	The value should be the 1-based index of the country in the list representing the itinerary of the consignment
⊥ Country, coded	Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	Code of the country	The value should be the code of the country from the Country name (ISO 3166-1-alpha-2) code list
⊥ TRANSPORTEQUIPMENT	Consignment/TransportEquipment	Class representing the list of the transport equipment used for the consignment	
Sequence number	Consignment/TransportEquipment/SequenceNumeric	Index of the transport equipment in the list	The value should be the 1-based index of the transport equipment in the list
Size and type, coded	Consignment/TransportEquipment/CharacteristicCode	Code of the transport equipment	The value should be the code of the transport equipment (specifying its characteristics) from the Equipment size and type description code (UN/EDIFACT 8155) list
Identifier	Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
⊥ CERTIFICATEOFAPPROVAL	Consignment/TransportEquipment/AdditionalDocument	Class representing the details of the certificate of approval of the transport equipment	
Number	Consignment/TransportEquipment/AdditionalDocument/ID	Unique identifier of the certificate of approval	The value should be the unique identifier of the certificate of approval

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Issuing date time	Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	Consignment/TransportEquipment/AdditionalDocument/TypeCode	Code of the type of file	The value should be the code of the type of the document from the Document name (UN/EDIFACT 1001) code list
BINARYFILE	Consignment/TransportEquipment/AdditionalDocument/BinaryFile	The content of the document	
Identifier	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
Author name	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document
Version	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
File name	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNametext	File name of the document	The value should be the name of the file representing the document, including the extension
URI	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
MIME	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Encoding	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentions in the other attributes (EncodingCode and CharacterSetCode)
Access	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
Description	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
Size	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
Hash code	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
⊥ SEAL	Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	/! In the context of the eTIR specifications v4.3, this element shall not be provided !/
Sequence number	Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	/! In the context of the eTIR specifications v4.3, this element shall not be provided !/
Seal number	Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	/! In the context of the eTIR specifications v4.3, this element shall not be provided !/

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
└ Seal type, coded	Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
└ GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
└ Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
└ HOLDER	Principal	Class representing the holder (transporter) of this transport	
└ Name	Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
└ Identifier	Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
└ ADDRESS	Principal/Address	Class representing the physical address of the holder	
└ City name	Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
└ Country, coded	Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the Country name code (ISO 3166-1-alpha-2) list
└ Street and number/P.O. Box	Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
└ Postcode identification	Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder

(e) **E10 – Advance TIR data results**

Table 96

E10 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ ADVANCETIRDATA	Declaration	R	1..1				
┆ Acceptance date time	Declaration/AcceptanceDateTime	D	0..1	an..35		C007	
┆ National reference	Declaration/ID	R	1..1	an..70			
┆ Rejection date time	Declaration/RejectionDateTime	D	0..1	an..35		C007	
┆ ERROR	Error	D	0..*			C006	
┆ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
┆ POINTER	Error/Pointer	R	1..*				
┆ Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
┆ Location	Error/Pointer/Location	R	1..1	an..512			

Table 97

E10 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message or if the content could not be accepted, the value should be "27" (Not accepted)
┆ Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (E9)

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "E10"
ADVANCETIRDATA	Declaration	Class representing the declaration data as accepted by customs	
Acceptance date time	Declaration/AcceptanceDateTime	Date of acceptance of the advance TIR data by Customs Authorities	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
National reference	Declaration/ID	National reference of the advance TIR data	The value should be the national reference (stored in the national customs system) of the advance TIR data sent by the holder. This reference will be used by the holder when presenting the goods and the vehicle to the first customs office of departure.
Rejection date time	Declaration/RejectionDateTime	Date of rejection of the advance TIR data by Customs Authorities	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
			regarding the location of the fields per error code are available on the page dedicated to errors

(f) How the national customs system should process the information received in the advance TIR data

481. Upon reception, the “E9 – Advance TIR data” message should be validated and any error found should be returned in the “E10 – Advance TIR data results” message.

482. If no error was found, the information of the advance TIR data should be assessed by the customs authorities. If it is refused, the “Rejection date time” of the “E10 – Advance TIR data results” results message should be filled in, and the error code 501 should be sent back. If the information of the advance TIR data is accepted for now, it should be stored in the national customs system and a national reference should be issued to represent it. In the “E10 – Advance TIR data results” results message, the “Acceptance date time” should be filled, as well as the national reference.

483. This national reference will be requested by the customs officer from the holder when he or she presents the goods along with the road vehicle, the combination of vehicles or the container at the customs office of departure in order to start the TIR transport (See the “I1 – Accept guarantee” message).

(g) How to use response data in the holder system

484. If one or more errors are reported in the “E10 – Advance TIR data results” message, the advance TIR data has not been registered in the national customs system and this issue should be investigated and corrected before a new tentative can be tried.

485. If there are no errors returned in the “E10 – Advance TIR data results” message, the national reference of the advance TIR data should be stored in the holder system, to be presented at the customs office of departure, along with the goods and the road vehicle, the combination of vehicles or the container, to start the TIR transport.

17. E11/E12 message pair

486. This section describes the technical specifications of the “E11 – Advance amendment data” request message, sent by the holder to the relevant national customs system (via the eTIR international system) to send the advance amendment data related to a TIR transport; and the “E12 – Advance amendment data results” response message, sent back by the national customs system (via the eTIR international system).

487. The same explanations from the E9/E10 message pair section, describing the message forwarding mechanism, the update of advance TIR data and the communication of advance TIR data for a TIR transport with multiple loading points, also apply to the technical specifications of the “E11 – Advance amendment data” and “E12 – Advance amendment data results” messages.

(a) How to generate the “E11 – Advance amendment data” message

488. In the “E11 – Advance amendment data” message, the amendment list represents all the amendments that the holder wants to perform, aggregated by type of amendment (addition, update, deletion). For each of these types, the holder needs to specify a list of pointers referring to each of the elements to be amended.

489. For example: if the holder wishes to perform an amendment of type "update" on both the “Agent” class and the “Heavy or bulky goods indicator” attribute, it can be done through a single “E11 – Advance amendment data” data message. This message shall have one amendment element containing the two pointers “/Declaration/Agent” and “/Declaration/Consignment”.

490. An “E11 – Advance amendment data” message may contain more than one amendment. However, when communicating multiple amendments of different types (addition, update, deletion), it is recommended to use separate “E11 – Advance amendment data” messages for each amendment type.

491. The same guidelines regarding amendments, as described for the “I7 – Record declaration data” message, also apply when generating the “E11 – Advance amendment data” message.

(b) Special case: change of itinerary amendment

492. As for the other types of amendments, in case of a change of itinerary, the holder should send an “E11 – Advance amendment data” message before customs authorities can actually change the itinerary by sending an (amendment) “I7 – Record declaration data” message to the eTIR international system. Therefore, when entering the country newly added to the itinerary, the competent customs authorities will be capable of querying the eTIR international system to get information about this TIR transport (using the “I5 – Query guarantee” message). In case of a change of itinerary during the TIR transport, and before entering the country newly added to the itinerary, the holder should send the “E11 – Advance amendment data” to the customs authorities of the country he or she is currently in. This will allow the itinerary to be amended, just before exiting the current country, by the national customs system, sending an (amendment) “I7 – Record declaration data” to the eTIR international system.

(c) E11 – Advance amendment data

Table 98

E11 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Message function, coded	Function	R	1..1	n..2	CL16		
Message identifier	ID	R	1..1	an..70			
Issuing date time	IssueDateTime	R	1..1	an..35			
Type, coded	TypeCode	R	1..1	an..3	CL26		
Total gross weight	TotalGrossMassMeasure	O	0..1	n..16,6			
┐ ADDITIONALINFORMATION	AdditionalInformation	O	0..1				
┐┐ Remarks	AdditionalInformation/Content	O	0..1	an..512			
┐ AGENT	Agent	O	0..1				
┐┐ Name	Agent/Name	D	0..1	an..70		C001	
┐┐ Identifier	Agent/ID	D	0..1	an..35		C001	
┐┐ Role, coded	Agent/RoleCode	R	1..1	an..3	CL02		
┐┐ ADDRESS	Agent/Address	D	0..1			C001	
┐┐┐ City name	Agent/Address/CityName	R	1..1	an..35			
┐┐┐ Country, coded	Agent/Address/CountryCode	R	1..1	a2	CL04		
┐┐┐ Street and number/P.O. Box	Agent/Address/Line	R	1..1	an..256			
┐┐┐┐ Postcode identification	Agent/Address/PostcodeID	O	0..1	an..17			
┐ AMENDMENT	Amendment	O	0..*				
┐┐ Type, coded	Amendment/ChangeReasonCode	R	1..1	an..3	CL17		
┐┐┐ POINTER	Amendment/Pointer	R	1..*				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Sequence number	Amendment/Pointer/SequenceNumeric	R	1..1	n..5			
Location	Amendment/Pointer/Location	R	1..1	an..512			
SUBCONTRACTOR	Carrier	O	0..*				
Name	Carrier/Name	D	0..1	an..70		C001	
Identifier	Carrier/ID	D	0..1	an..35		C001	
ADDRESS	Carrier/Address	D	0..1			C001	
City name	Carrier/Address/CityName	R	1..1	an..35			
Country, coded	Carrier/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Carrier/Address/Line	R	1..1	an..256			
Postcode identification	Carrier/Address/PostcodeID	O	0..1	an..17			
CONSIGNMENT	Consignment	O	0..*				
Container transport indicator	Consignment/ContainerCode	R	1..1	an..3			
Sequence number	Consignment/SequenceNumeric	R	1..1	n..5			
Heavy or bulky goods indicator	Consignment/HeavyOrBulkyGoodsIndicator	R	1..1	n..1			
ATTACHEDDOCUMENTS	Consignment/AdditionalDocument	O	0..*				
Number	Consignment/AdditionalDocument/ID	R	1..1	an..70			
Issuing date time	Consignment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
Type, coded	Consignment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
BINARYFILE	Consignment/AdditionalDocument/BinaryFile	O	0..1				
Identifier	Consignment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
Title	Consignment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
Author name	Consignment/AdditionalDocument/BinaryFile/AuthorName	O	0..1	an..70			
Version	Consignment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
File name	Consignment/AdditionalDocument/BinaryFile/FileNametext	O	0..1	an..256			
URI	Consignment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..2048			
MIME	Consignment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	Consignment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			
Character set	Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	O	0..1	N/A			
Access	Consignment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			
Description	Consignment/AdditionalDocument/BinaryFile/Description	O	0..1	an..256			
Size	Consignment/AdditionalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	Consignment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
CONSIGNMENTITEM	Consignment/ConsignmenItem	R	1..*				
Sequence number	Consignment/ConsignmenItem/SequenceNumeric	R	1..1	n..5			
ADDITIONALINFORMATION	Consignment/ConsignmenItem/AdditionalInformation	O	0..*				
Remarks	Consignment/ConsignmenItem/AdditionalInformation/Content	R	1..1	an..512			
GOODS	Consignment/ConsignmenItem/Commodity	R	1..1				
Description	Consignment/ConsignmenItem/Commodity/CargoDescription	D	0..1	an..256		C004	
CLASSIFICATION	Consignment/ConsignmenItem/Commodity/Classification	O	0..*				R008
Code	Consignment/ConsignmenItem/Commodity/Classification/ID	R	1..1	an..18			
Type, coded	Consignment/ConsignmenItem/Commodity/Classification/IdentificationTypeCode	R	1..1	an..3	CL03		
CONSIGNEE	Consignment/ConsignmenItem/Consignee	O	0..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Name	Consignment/ConsignmentItem/Consignee/Name	D	0..1	an..70		C001	
Identifier	Consignment/ConsignmentItem/Consignee/ID	D	0..1	an..35		C001	
ADDRESS	Consignment/ConsignmentItem/Consignee/Address	D	0..1			C001	
City name	Consignment/ConsignmentItem/Consignee/Address/CityName	R	1..1	an..35			
Country, coded	Consignment/ConsignmentItem/Consignee/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Consignment/ConsignmentItem/Consignee/Address/Line	R	1..1	an..256			
Postcode identification	Consignment/ConsignmentItem/Consignee/Address/PostcodeID	O	0..1	an..17			
CONSIGNOR	Consignment/ConsignmentItem/Consignor	O	0..1				
Name	Consignment/ConsignmentItem/Consignor/Name	D	0..1	an..70		C001	
Identifier	Consignment/ConsignmentItem/Consignor/ID	D	0..1	an..35		C001	
ADDRESS	Consignment/ConsignmentItem/Consignor/Address	D	0..1			C001	
City name	Consignment/ConsignmentItem/Consignor/Address/CityName	R	1..1	an..35			
Country, coded	Consignment/ConsignmentItem/Consignor/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Consignment/ConsignmentItem/Consignor/Address/Line	R	1..1	an..256			
Postcode identification	Consignment/ConsignmentItem/Consignor/Address/PostcodeID	O	0..1	an..17			
DELIVERYDESTINATION	Consignment/ConsignmentItem/DeliveryDestination	O	0..1				
Name	Consignment/ConsignmentItem/DeliveryDestination/Name	R	1..1	an..70			
ADDRESS	Consignment/ConsignmentItem/DeliveryDestination/Address	R	1..1				
City name	Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	R	1..1	an..35			
Country, coded	Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	R	1..1	a2	CL04		
Street and number/P.O. Box	Consignment/ConsignmentItem/DeliveryDestination/Address/Line	R	1..1	an..256			
Postcode identification	Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	O	0..1	an..17			
GOODSMEASURE	Consignment/ConsignmentItem/GoodsMeasure	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
└ Gross weight	Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	R	1..1	n..16,6			
└┐ PACKAGING	Consignment/ConsignmentItem/Packaging	R	1..*				
└ Sequence number	Consignment/ConsignmentItem/Packaging/SequenceNumeric	R	1..1	n..5			
└ Marks and numbers	Consignment/ConsignmentItem/Packaging/MarksNumbersID	D	0..1	an..512		C002	
└ Number of packages	Consignment/ConsignmentItem/Packaging/QuantityQuantity	D	0..1	n..8		C002	
└ Type, coded	Consignment/ConsignmentItem/Packaging/TypeCode	R	1..1	an..2	CL07		
└┐ TRANSPORTEQUIPMENT	Consignment/ConsignmentItem/TransportEquipment	D	0..1			C003	
└ Identification	Consignment/ConsignmentItem/TransportEquipment/ID	R	1..1	an..17			
└┐ UCR	Consignment/ConsignmentItem/UCR	O	0..1				
└ Identifier	Consignment/ConsignmentItem/UCR/ID	O	0..1	an..35			
└┐ LOADINGLOCATION	Consignment/LoadingLocation	O	0..1				
└ Name	Consignment/LoadingLocation/Name	O	0..1	an..256			
└┐ NOTIFYPARTY	Consignment/NotifyParty	O	0..1				
└ Name	Consignment/NotifyParty/Name	D	0..1	an..70		C001	
└ Identifier	Consignment/NotifyParty/ID	D	0..1	an..35		C001	
└┐ ADDRESS	Consignment/NotifyParty/Address	D	0..1			C001	
└ City name	Consignment/NotifyParty/Address/CityName	R	1..1	an..35			
└ Country, coded	Consignment/NotifyParty/Address/CountryCode	R	1..1	a2	CL04		
└ Street and number/P.O. Box	Consignment/NotifyParty/Address/Line	R	1..1	an..256			
└ Postcode identification	Consignment/NotifyParty/Address/PostcodeID	O	0..1	an..17			
└┐ CUSTOMSOFFICEOFDEPARTURE	Consignment/TransitDeparture	R	1..1				
└ Identifier	Consignment/TransitDeparture/ID	R	1..1	an..35			
└┐ CUSTOMSOFFICEOFDESTINATION	Consignment/TransitDestination	R	1..1				

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊣ Identifier	Consignment/TransitDestination/ID	R	1..1	an..35			
⊣ TRANSPORTMEANS	Consignment/TransitTransportMeans	R	1..*				R002
⊣ Identifier	Consignment/TransitTransportMeans/ID	R	1..1	an..25			
⊣ Type, coded	Consignment/TransitTransportMeans/TypeCode	R	1..1	an..4	CL05		
⊣ Nationality, coded	Consignment/TransitTransportMeans/RegistrationNationalityCode	R	1..1	a2	CL04		
⊣ Conveyance reference number	Consignment/TransitTransportMeans/JourneyID	O	0..1	an..17			
⊣ Sequence number	Consignment/TransitTransportMeans/SequenceNumeric	R	1..1	n..5			
⊣ COUNTRYOFROUTING	Consignment/TransitTransportMeans/Itinerary	R	1..*				R001
⊣ Sequence number	Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	R	1..1	n..5			
⊣ Country, coded	Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	R	1..1	a2	CL04		
⊣ TRANSPORTEQUIPMENT	Consignment/TransportEquipment	D	0..*				C003
⊣ Sequence number	Consignment/TransportEquipment/SequenceNumeric	R	1..1	n..5			
⊣ Size and type, coded	Consignment/TransportEquipment/CharacteristicCode	R	1..1	an..4	CL01		
⊣ Identifier	Consignment/TransportEquipment/ID	R	1..1	an..17			
⊣ CERTIFICATEOFAPPROVAL	Consignment/TransportEquipment/AdditionalDocument	D	0..1				C005
⊣ Number	Consignment/TransportEquipment/AdditionalDocument/ID	R	1..1	an..70			
⊣ Issuing date time	Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	R	1..1	an..35			
⊣ Type, coded	Consignment/TransportEquipment/AdditionalDocument/TypeCode	R	1..1	an..3	CL06		
⊣ BINARYFILE	Consignment/TransportEquipment/AdditionalDocument/BinaryFile	O	0..1				
⊣ Identifier	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	R	1..1	an..256			
⊣ Title	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	R	1..1	an..256			
⊣ Author name	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Author Name	O	0..1	an..70			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Version	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	O	0..1	an..17			
File name	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNameText	O	0..1	an..256			
URI	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	O	0..1	an..2048			
MIME	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	O	0..1	an..70			
Encoding	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	O	0..1	an..17			
Character set	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	O	0..1	n..17			
Include binary object	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludeBinaryObjectBinaryObject	O	0..1	N/A			
Access	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	O	0..1	an..256			
Description	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Description	O	0..1	an..256			
Size	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/SizeMeasure	O	0..1	n..16,6			
Hash code	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	O	0..1	an..256			
Hash code algorithm id	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	O	0..1	an..6			
SEAL	Consignment/TransportEquipment/Seal	O	0..*				
Sequence number	Consignment/TransportEquipment/Seal/SequenceNumeric	R	1..1	n..5			R003, R004
Seal number	Consignment/TransportEquipment/Seal/ID	R	1..1	an..35			R005

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
⊣ Seal type, coded	Consignment/TransportEquipment/Seal/TypeCode	O	0..1	an..3	CL08		
⊣ GUARANTEE	ObligationGuarantee	R	1..1				
⊣ Reference	ObligationGuarantee/ReferenceID	R	1..1	an..35			
⊣ HOLDER	Principal	R	1..1				
⊣ Name	Principal/Name	O	0..1	an..70			
⊣ Identifier	Principal/ID	R	1..1	an..35			
⊣ ADDRESS	Principal/Address	O	0..1				
⊣ City name	Principal/Address/CityName	R	1..1	an..35			
⊣ Country, coded	Principal/Address/CountryCode	R	1..1	a2	CL04		
⊣ Street and number/P.O. Box	Principal/Address/Line	R	1..1	an..256			
⊣ Postcode identification	Principal/Address/PostcodeID	O	0..1	an..17			

Table 99

E11 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
⊣ Message function, coded	Function	Code describing the function of the message	The value should be set to “9” (Original)
⊣ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
⊣ Issuing date time	IssueDateTime	Date at which the message E11 was issued by the holder	The value should be the one from the "Issuing date" attribute of the message E11 received by the customs. The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
⊣ Type, coded	TypeCode	Code of the message type	The value should be set to "E11"
⊣ Total gross weight	TotalGrossMassMeasure	Total gross weight of goods (including packaging) of the declaration	The value should be the total gross weight as a decimal number. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
			in the Measurement unit (UNECE Recommendation 20) code list
┌ ADDITIONALINFORMATION	AdditionalInformation	Class containing potential additional information at the declaration level	
└ Remarks	AdditionalInformation/Content	Text used to allow for remarks to the declaration from the holder	The value should be containing the remarks to the declaration from the transporter, or should remain blank if there are none
┌ AGENT	Agent	Class representing the potential agent which would declare the goods on behalf of the holder	
┌ Name	Agent/Name	Name of the agent	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
┌ Identifier	Agent/ID	Unique identifier of the agent	The value should be the unique identifier of the agent
┌ Role, coded	Agent/RoleCode	Code of the role of the agent	The value should be the code matching the role of the agent from the code list Party role code (UN/EDIFACT 3035)
┌ ADDRESS	Agent/Address	Class representing the physical address of the Agent	
┌ City name	Agent/Address/CityName	City name of the physical address of the agent	The value should be the city name of the physical address of the agent
┌ Country, coded	Agent/Address/CountryCode	Code of the country of the physical address of the agent	The value should be the code of the country of the physical address of the agent from the Country name (ISO 3166-1-alpha-2) code list
┌ Street and number/P.O. Box	Agent/Address/Line	Street name of the physical address of the agent	The value should be the street name and number (or equivalent) of the physical address of the agent
┌ Postcode identification	Agent/Address/PostcodeID	Postal/Zip code of the physical address of the agent	The value should be the postal/ZIP code of the physical address of the agent
┌ AMENDMENT	Amendment	Class representing the list of potential amendments to the declaration	
┌ Type, coded	Amendment/ChangeReasonCode	Code describing the type of amendment	The value should be the code matching the type of amendment from the Amendment type (eTIR) code list
┌ POINTER	Amendment/Pointer	Pointer to the part of the declaration to be amended	
┌ Sequence number	Amendment/Pointer/SequenceNumeric	Index of the pointer in the list	The value should be the 1-based index of the pointer in the list
┌ Location	Amendment/Pointer/Location	Location of the class or attribute to be amended	The value should be the location of the class or attribute following the XPath syntax
┌ SUBCONTRACTOR	Carrier	Class representing the potential agent which undertakes or arranges transport of goods between named points	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Name	Carrier/Name	Name of the subcontractor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Carrier/ID	Unique identifier of the subcontractor	The value should be the unique identifier of the subcontractor
ADDRESS	Carrier/Address	Class representing the physical address of the subcontractor	
City name	Carrier/Address/CityName	City name of the physical address of the subcontractor	The value should be the city name of the physical address of the subcontractor
Country, coded	Carrier/Address/CountryCode	Code of the country of the physical address of the subcontractor	The value should be the code of the country of the physical address of the subcontractor from the Country name (ISO 3166-1-alpha-2) code list
Street and number/P.O. Box	Carrier/Address/Line	Street name of the physical address of the subcontractor	The value should be the street name and number (or equivalent) of the physical address of the subcontractor
Postcode identification	Carrier/Address/PostcodeID	Postal/Zip code of the physical address of the subcontractor	The value should be the postal/ZIP code of the physical address of the subcontractor
CONSIGNMENT	Consignment	Class representing the list of details on the transport of goods between a loading point and an unloading point	
Container transport indicator	Consignment/ContainerCode	Code describing whether the goods are transported in a container or not	The value should be "1" if the goods are transported in a container or "0" otherwise
Sequence number	Consignment/SequenceNumeric	Index of the consignment in the list	The value should be the 1-based index of the consignment in the list
Heavy or bulky goods indicator	Consignment/HeavyOrBulkyGoodsIndicator	Code describing whether the goods are considered (according to article 29) as "heavy or bulky", as defined article 1 (p) of the TIR Convention.	The value should be "1" if the goods are considered by the customs as "heavy or bulky" or "0" otherwise
ATTACHEDDOCUMENTS	Consignment/AdditionalDocument	Class representing the list of potential additional documents supplied as part of the declaration and related to the consignment	
Number	Consignment/AdditionalDocument/ID	Identifier of the document	The value should be an ID identifying the document and it should be unique among all other attached documents of the declaration
Issuing date time	Consignment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
Type, coded	Consignment/AdditionalDocument/TypeCode	Code of the type of the document	The value should be the code of the type of the document from the Document name code (UN/EDIFACT 1001) list
BINARYFILE	Consignment/AdditionalDocument/BinaryFile	The content of the document	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Identifier	Consignment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	Consignment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
Author name	Consignment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document
Version	Consignment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
File name	Consignment/AdditionalDocument/BinaryFile/FileNameText	File name of the document	The value should be the name of the file representing the document, including the extension
URI	Consignment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
MIME	Consignment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	Consignment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	Consignment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	Consignment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentioned in the other attributes (EncodingCode and CharacterSetCode)
Access	Consignment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter
Description	Consignment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
Size	Consignment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Hash code	Consignment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	Consignment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
CONSIGNMENTITEM	Consignment/ConsignmentItem	Class representing the list of details on the items in the consignment	
Sequence number	Consignment/ConsignmentItem/SequenceNumber	Index of the consignment item in the list	The value should be the 1-based index of the consignment item in the list, allowing for quick physical identification upon inspection
ADDITIONALINFORMATION	Consignment/ConsignmentItem/AdditionalInformation	Class representing the list of potential additional information at the consignment item level	
Remarks	Consignment/ConsignmentItem/AdditionalInformation/Content	Remarks on the consignment item	The value should be a text allowing for additional remarks on the consignment item
GOODS	Consignment/ConsignmentItem/Commodity	Class representing the details on the goods	
Description	Consignment/ConsignmentItem/Commodity/CargoDescription	Description of the goods	The value should be a text describing the goods
CLASSIFICATION	Consignment/ConsignmentItem/Commodity/Classification	Class representing the list of classification details of the goods	
Code	Consignment/ConsignmentItem/Commodity/Classification/ID	Identifier of the classification of the goods	The value should be the identifier of the non-commercial classification of the goods
Type, coded	Consignment/ConsignmentItem/Commodity/Classification/IdentificationTypeCode	Code of the classification	The value should be the code of the classification from the Item type identification (UN/EDIFACT 7143) code list
CONSIGNEE	Consignment/ConsignmentItem/Consignee	Class representing the potential consignee of the goods	
Name	Consignment/ConsignmentItem/Consignee/Name	Name of the consignee	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Consignment/ConsignmentItem/Consignee/ID	Unique identifier of the consignee	The value should be the unique identifier of the consignee
ADDRESS	Consignment/ConsignmentItem/Consignee/Address	Class representing the physical address of the consignee	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
City name	Consignment/ConsignmentItem/Consignee/Address/CityName	City name of the physical address of the consignee	The value should be the city name of the physical address of the consignee
Country, coded	Consignment/ConsignmentItem/Consignee/Address/CountryCode	Code of the country of the physical address of the consignee	The value should be the code of the country of the physical address of the consignee from the Country name (ISO 3166-1-alpha-2) code list
Street and number/P.O. Box	Consignment/ConsignmentItem/Consignee/Address/Line	Street name of the physical address of the consignee	The value should be the street name and number (or equivalent) of the physical address of the consignee
Postcode identification	Consignment/ConsignmentItem/Consignee/Address/PostcodeID	Postal/Zip code of the physical address of the consignee	The value should be the postal/ZIP code of the physical address of the consignee
CONSIGNOR	Consignment/ConsignmentItem/Consignor	Class representing the potential consignor of the goods	
Name	Consignment/ConsignmentItem/Consignor/Name	Name of the consignor	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification
Identifier	Consignment/ConsignmentItem/Consignor/ID	Unique identifier of the consignor	The value should be the unique identifier of the consignor
ADDRESS	Consignment/ConsignmentItem/Consignor/Address	Class representing the physical address of the consignor	
City name	Consignment/ConsignmentItem/Consignor/Address/CityName	City name of the physical address of the consignor	The value should be the city name of the physical address of the consignor
Country, coded	Consignment/ConsignmentItem/Consignor/Address/CountryCode	Code of the country of the physical address of the consignor	The value should be the code of the country of the physical address of the consignor from the Country name (ISO 3166-1-alpha-2) code list
Street and number/P.O. Box	Consignment/ConsignmentItem/Consignor/Address/Line	Street name of the physical address of the consignor	The value should be the street name and number (or equivalent) of the physical address of the consignor
Postcode identification	Consignment/ConsignmentItem/Consignor/Address/PostcodeID	Postal/Zip code of the physical address of the consignor	The value should be the postal/ZIP code of the physical address of the consignor
DELIVERYDESTINATION	Consignment/ConsignmentItem/DeliveryDestination	Class representing the potential party to which the goods should be delivered	
Name	Consignment/ConsignmentItem/DeliveryDestination/Name	Name of the delivery destination	The value should be the official company name, or the first and last name of the person in case of physical person, to allow for quick identification.
ADDRESS	Consignment/ConsignmentItem/DeliveryDestination/Address	Class representing the physical address of the delivery destination	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
City name	Consignment/ConsignmentItem/DeliveryDestination/Address/CityName	City name of the physical address of the delivery destination	The value should be the city name of the physical address of the delivery destination
Country, coded	Consignment/ConsignmentItem/DeliveryDestination/Address/CountryCode	Code of the country of the physical address of the delivery destination	The value should be the code of the country of the physical address of the delivery destination from the Country name (ISO 3166-1-alpha-2) code list
Street and number/P.O. Box	Consignment/ConsignmentItem/DeliveryDestination/Address/Line	Street name of the physical address of the delivery destination	The value should be the street name and number (or equivalent) of the physical address of the delivery destination
Postcode identification	Consignment/ConsignmentItem/DeliveryDestination/Address/PostcodeID	Postal/Zip code of the physical address of the delivery destination	The value should be the postal/ZIP code of the physical address of the delivery destination
GOODSMEASURE	Consignment/ConsignmentItem/GoodsMeasure	Class representing the details on the measures of the goods	
Gross weight	Consignment/ConsignmentItem/GoodsMeasure/GrossMassMeasure	Total gross weight of the goods	The value should be the weight (mass) of goods including packaging but excluding the transport equipment. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
PACKAGING	Consignment/ConsignmentItem/Packaging	Class representing the list of details on the packaging of the goods	
Sequence number	Consignment/ConsignmentItem/Packaging/SequenceNumeric	Index of the packaging in the list	The value should be the 1-based index of the packaging in the list, allowing for quick physical identification upon inspection
Marks and numbers	Consignment/ConsignmentItem/Packaging/MarksNumbersID	Packaging marks and numbers	The value should be a text describing the marks and numbers on a transport unit or package
Number of packages	Consignment/ConsignmentItem/Packaging/QuantityQuantity	Number of packages	The value should be the number of individual items packaged in such a way that they cannot be divided without first undoing the packing
Type, coded	Consignment/ConsignmentItem/Packaging/TypeCode	Code of the packaging type	The value should be the code of the type of packaging from the Package type description (UNECE Recommendation 21 Annex VI) code list
TRANSPORTEQUIPMENT	Consignment/ConsignmentItem/TransportEquipment	Class representing the transport equipment used for the consignment item	
Identification	Consignment/ConsignmentItem/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
UCR	Consignment/ConsignmentItem/UCR	Class representing the Unique Trader Reference	

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
^L Identifier	Consignment/ConsignmentItem/UCR/ID	Unique identifier of the goods	The value should be the unique identifier assigned to goods being subject to cross border transactions
[└] LOADINGLOCATION	Consignment/LoadingLocation	Class representing the place of loading of the goods	
^L Name	Consignment/LoadingLocation/Name	Name of the loading location	The value should be the name of a seaport, airport, freight terminal, rail station or other place at which goods are loaded onto the means of transport being used for their carriage
[└] NOTIFYPARTY	Consignment/NotifyParty	Class representing a potential party to be notified	
[└] Name	Consignment/NotifyParty/Name	Name of the party to be notified	The value should be the name (first and last name or company) of the party to be notified
[└] Identifier	Consignment/NotifyParty/ID	Unique identifier of the party to be notified	The value should be the unique identifier of the party to be notified
[└] ADDRESS	Consignment/NotifyParty/Address	Class representing the physical address of the party to be notified	
[└] City name	Consignment/NotifyParty/Address/CityName	City name of the physical address of the party to be notified	The value should be the city name of the physical address of the party to be notified
[└] Country, coded	Consignment/NotifyParty/Address/CountryCode	Code of the country of the physical address of the party to be notified	The value should be the code of the country of the physical address of the party to be notified from the Country name (ISO 3166-1-alpha-2) code list
[└] Street and number/P.O. Box	Consignment/NotifyParty/Address/Line	Street name of the physical address of the party to be notified	The value should be the street name and number (or equivalent) of the physical address of the party to be notified
^L Postcode identification	Consignment/NotifyParty/Address/PostcodeID	Postal/Zip code of the physical address of the party to be notified	The value should be the postal/ZIP code of the physical address of the party to be notified
[└] CUSTOMSOFFICEOFDEPARTURE	Consignment/TransitDeparture	Class representing the customs office where the goods are loaded	
^L Identifier	Consignment/TransitDeparture/ID	Unique identifier of the customs office of departure	The value should be the unique identifier used of the customs of departure, where the goods are loaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
[└] CUSTOMSOFFICEOFDESTINATION	Consignment/TransitDestination	Class representing the customs office where the goods are unloaded	
^L Identifier	Consignment/TransitDestination/ID	Unique identifier of the customs office of destination	The value should be the unique identifier used of the customs of destination, where the goods are unloaded. This identifier is the one registered in the International TIR Data Bank (ITDB) for the customs office
[└] TRANSPORTMEANS	Consignment/TransitTransportMeans	Class representing the list of the means of transport for the consignment	
[└] Identifier	Consignment/TransitTransportMeans/ID	Unique identifier of the transport means	The value should be the unique identifier of the means of transport used for the transit

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Type, coded	Consignment/TransitTransportMeans/TypeCode	Code of the means of transport	The value should be the code of the means of transport from the Transport means description (UNECE Recommendation 28) code list
Nationality, coded	Consignment/TransitTransportMeans/RegistrationNationalityCode	Nationality of the means of transport	The value should be the code of the country for the nationality of the means of transport from the Country name (ISO 3166-1-alpha-2) code list
Conveyance reference number	Consignment/TransitTransportMeans/JourneyID	Unique identifier of the journey	The value should be the unique identifier of the journey of a means of transport (for example voyage number, flight number or trip number)
Sequence number	Consignment/TransitTransportMeans/SequenceNumeric	Index of the transport means in the list	The value should be the 1-based index of the transport means in the list
COUNTRYOFROUTING	Consignment/TransitTransportMeans/Itinerary	Class representing the list of countries of the itinerary of the consignment	
Sequence number	Consignment/TransitTransportMeans/Itinerary/SequenceNumeric	Index of the country in the list	The value should be the 1-based index of the country in the list representing the itinerary of the consignment
Country, coded	Consignment/TransitTransportMeans/Itinerary/RoutingCountryCode	Code of the country	The value should be the code of the country from the Country name (ISO 3166-1-alpha-2) code list
TRANSPORTEQUIPMENT	Consignment/TransportEquipment	Class representing the list of the transport equipment used for the consignment	
Sequence number	Consignment/TransportEquipment/SequenceNumeric	Index of the transport equipment in the list	The value should be the 1-based index of the transport equipment in the list
Size and type, coded	Consignment/TransportEquipment/CharacteristicCode	Code of the transport equipment	The value should be the code of the transport equipment (specifying its characteristics) from the Equipment size and type description (UN/EDIFACT 8155) code list
Identifier	Consignment/TransportEquipment/ID	Identifier of the transport equipment	The value should be marks (letters and/or numbers) which identify the transport equipment
CERTIFICATEOFAPPROVAL	Consignment/TransportEquipment/AdditionalDocument	Class representing the details of the certificate of approval of the transport equipment	
Number	Consignment/TransportEquipment/AdditionalDocument/ID	Unique identifier of the certificate of approval	The value should be the unique identifier of the certificate of approval
Issuing date time	Consignment/TransportEquipment/AdditionalDocument/IssueDateTime	Issuing date of the document	The value should be either a date only or a date and time. If it is a date only, it should follow the EDIFACT 102 format CCYYMMDD. For Example: 20200820 represents 20 August 2020. If it is a date and time, it should follow the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Type, coded	Consignment/TransportEquipment/AdditionalDocument/TypeCode	Code of the type of file	Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00. The value should be the code of the type of the document from the Document name (UN/EDIFACT 1001) code list
BINARYFILE	Consignment/TransportEquipment/AdditionalDocument/BinaryFile	The content of the document	
Identifier	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/ID	Unique identifier of the file representing the document	The value should be an ID identifying the file and it should be unique among all other binary files of the declaration
Title	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Title	Title of the document	The value should be the title of the document
Author name	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/AuthorName	Name of the author of the document	The value should be the first and last name of the author of the document
Version	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/VersionID	Version number of the document	The value should be the version of the document
File name	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/FileNameText	File name of the document	The value should be the name of the file representing the document, including the extension
URI	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/URIID	URI of the document	The value should be the Unique Resource Identifier (URI) allowing to access the document instead of relying on a binary object representation
MIME	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/MIMECode	Code of the MIME type of the file	The value should be one of the MIME types as listed by the IANA organization
Encoding	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/EncodingCode	Code of the encoding algorithm of the file	The value should be the type of encoding algorithm used to encode the file
Character set	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/CharacterSetCode	Code of the character set of the file	The value should be the character set used in case the file is a text file
Include binary object	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/IncludedBinaryObjectBinaryObject	Binary representation of the file	The value should be the content of the file represented using the characteristics mentions in the other attributes (EncodingCode and CharacterSetCode)
Access	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Access	Access information of the file	The value should be the information needed to access the file, such as security and download parameters. This is only useful when the file is accessible using the URIID parameter

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Description	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/Description	Description of the document	The value should be the description of the document and explain what it contains
Size	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/SizeMeasure	Size of the file	The value should be the size of the file. The unit should be defined in the Measure Unit. Code attribute and should match one of the values listed in the Measurement unit (UNECE Recommendation 20) code list
Hash code	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCode	Hash value of the file	The value should be the hash code string that resulted from hashing the attached file to be used for file reception validation
Hash code algorithm id	Consignment/TransportEquipment/AdditionalDocument/BinaryFile/HashCodeAlgorithmIDCode	Code of the hash algorithm	The value should be the short name of the algorithm used to compute the hash value of the file
SEAL	Consignment/TransportEquipment/Seal	Class representing the list of seals affixed to the transport equipment	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
Sequence number	Consignment/TransportEquipment/Seal/SequenceNumeric	Index of the seal in the list	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
Seal number	Consignment/TransportEquipment/Seal/ID	Unique identifier of the seal	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
Seal type, coded	Consignment/TransportEquipment/Seal/TypeCode	Code of the type of seal	/!\ In the context of the eTIR specifications v4.3, this element shall not be provided /!\
GUARANTEE	ObligationGuarantee	Class representing the guarantee of this TIR transport	
Reference	ObligationGuarantee/ReferenceID	Unique identifier of the guarantee	The value should be the unique identifier of the guarantee for this TIR transport
HOLDER	Principal	Class representing the holder (transporter) of this transport	
Name	Principal/Name	Name of the holder	The value should be the official company name, or the first and last name of the person in case of physical person as recorded in the International TIR Data Bank (ITDB), to allow for quick identification
Identifier	Principal/ID	Unique identifier of the holder	The value should be the unique identifier of the holder as recorded in the International TIR Data Bank (ITDB)
ADDRESS	Principal/Address	Class representing the physical address of the holder	
City name	Principal/Address/CityName	City name of the physical address of the holder	The value should be the city name of the physical address of the holder
Country, coded	Principal/Address/CountryCode	Code of the country of the physical address of the holder	The value should be the code of the country of the physical address of the holder from the Country name (ISO 3166-1-alpha-2) code list

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Street and number/P.O. Box	Principal/Address/Line	Street name of the physical address of the holder	The value should be the street name and number (or equivalent) of the physical address of the holder
┆ Postcode identification	Principal/Address/PostcodeID	Postal/Zip code of the physical address of the holder	The value should be the postal/ZIP code of the physical address of the holder

(d) E12 – Advance amendment data results

Table 100
E12 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		
┆ ADVANCEAMENDMENTDATA	Declaration	R	1..1				
┆ Acceptance date time	Declaration/AcceptanceDateTime	D	0..1	an..35		C009	R010
┆ National reference	Declaration/ID	R	1..1	an..70			
┆ Rejection date time	Declaration/RejectionDateTime	D	0..1	an..35		C009	
┆ ERROR	Error	D	0..*			C006	
┆ Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
┆ POINTER	Error/Pointer	R	1..*				
┆ Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
┆ Location	Error/Pointer/Location	R	1..1	an..512			

Table 101
E12 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
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<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message or if the content could not be accepted, the value should be "27" (Not accepted)
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (E11)
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "E12"
ADVANCEAMENDMENTDATA	Declaration	Class representing the declaration data as accepted by customs	
Acceptance date time	Declaration/AcceptanceDateTime	Date of acceptance of the advance TIR data by Customs Authorities	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
National reference	Declaration/ID		
Rejection date time	Declaration/RejectionDateTime	Date of rejection of the advance TIR data by Customs Authorities	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors

(e) How the national customs system should process the information received in the advance amendment data

493. Upon reception, the “E11 – Advance amendment data” message should be validated and any error found should be returned in the “E12 – Advance amendment data results” message.

494. If no error was found, the information of the advance amendment data should be assessed by the customs authorities. If it is refused, the “Rejection date” of the “E12 – Advance amendment data results” results message should be filled in, and the error code 502 should be sent back. If the information of the advance amendment data is accepted, for now, it should be stored in the national customs system and a national reference should be issued to represent it. In the “E12 – Advance amendment data results” results message, the “Acceptance date” should be filled, as well as the national reference.

495. This national reference will be requested by the customs officer from the holder when he or she presents the goods, along with the road vehicle, the combination of vehicles or the container at the relevant customs office in order to amend the declaration data (See the “I7 – Record declaration data” message).

(f) How to use response data in the holder’s system

496. If one or more errors are reported in the “E12 – Advance amendment data results” message, the advance amendment data has not been registered in the national customs system and this issue should be investigated and corrected before a new tentative can be tried.

497. If there are no errors returned in the “E12 – Advance amendment data results” message, the national reference of the advance amendment data should be stored in the holder system to be presented to the relevant customs office (depending on the kind of amendment) along with the goods and the road vehicle, the combination of vehicles or the container, to amend the declaration of the TIR transport.

18. E13/E14 message pair

498. This section describes the technical specifications of the “E13 – Cancel advance data” request message sent by the holder to the eTIR international system to cancel previously sent advance data related to a TIR transport; and the “E14 – Cancel advance data results” response message sent back by the eTIR international system.

499. This message allows for the holder to cancel a “E9 – Advance TIR data” or “E11 – Advance amendment data” message, previously sent to customs authorities. It is important to note that if the cancelled message is a “E11 – Advance amendment data”, only the content of the message referred to will be cancelled but that, in case more than one “E11 – Advance amendment data” messages were sent, the content of the others would still be valid.

500. The same explanations, from the E9/E10 message pair section, describing the message forwarding mechanism also apply to the technical specifications of the “E13 – Cancel advance data” and “E14 – Cancel advance data results” messages.

(a) E13 – Cancel advance data

Table 102

E13 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
┆ Message identifier	ID	R	1..1	an..70			
┆ Type, coded	TypeCode	R	1..1	an..3	CL26		

Table 103

E13 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
┆ Message function, coded	Function	Code describing the function of the message	The value should be set to "9" (Original)
┆ Original Message Identifier	FunctionalReferenceID	Unique identifier of the message to be cancelled	The value should be the Message Identifier of the previously sent "E9" or "E11" message to be cancelled.
┆ Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
┆ Type, coded	TypeCode	Code of the message type	The value should be set to "E13"

(b) E14 – Cancel advance data results

Table 104

E14 – field details

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
┆ Message function, coded	Function	R	1..1	n..2	CL16		
┆ Original Message Identifier	FunctionalReferenceID	R	1..1	an..70			
┆ Message identifier	ID	R	1..1	an..70			

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Status</i>	<i>Cardinality</i>	<i>Format</i>	<i>Code lists</i>	<i>Conditions</i>	<i>Rules</i>
Type, coded	TypeCode	R	1..1	an..3	CL26		
ADVANCEDATA	Declaration	R	1..1				
Acceptance date time	Declaration/AcceptanceDateTime	D	0..1	an..35		C007	
Message identifier	Declaration/ID	R	1..1	an..70			
Rejection date time	Declaration/RejectionDateTime	D	0..1	an..35		C007	
ERROR	Error	D	0..*			C006	
Error, coded	Error/ValidationCode	R	1..1	an..8	CL99		
POINTER	Error/Pointer	R	1..*				
Sequence number	Error/Pointer/SequenceNumeric	R	1..1	n..5			
Location	Error/Pointer/Location	R	1..1	an..512			

Table 105
E14 – field descriptions and usages

<i>eTIR field name</i>	<i>Mapping to the XML element (XPath)</i>	<i>Description</i>	<i>Usage</i>
Message function, coded	Function	Code describing the function of the message	The value should be "44" (Accepted without reserves) if the request was processed correctly. If at least one error is described in this message or if the content could not be accepted, the value should be "27" (Not accepted)
Original Message Identifier	FunctionalReferenceID	Unique identifier of the request message associated with this response	The value should be the one mentioned in the message identifier field of the request message (E13)
Message identifier	ID	Unique identifier of the message	The value should be a Globally Unique Identifier (GUID) as detailed in the dedicated section of the introduction document
Type, coded	TypeCode	Code of the message type	The value should be set to "E14"
ADVANCEDATA	Declaration	Class representing the declaration data as accepted by customs	
Acceptance date time	Declaration/AcceptanceDateTime	Date of acceptance of the cancel advance data by Customs Authorities	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.

<i>eTIR field name</i>	<i>Mapping to the XML element (XPATH)</i>	<i>Description</i>	<i>Usage</i>
Message identifier	Declaration/ID	National reference of the cancel advance data	The value should be the national reference (as recorded in the national customs system) of the cancel advance data sent by the holder.
Rejection date time	Declaration/RejectionDateTime	Date of rejection of the cancel advance data by Customs Authorities	The value should be a date and time to be provided following the EDIFACT 208 format CCYYMMDDHHMMSSZHHMM. For Example: 20200820145600+0100 represents 20 August 2020 at 14:56 UTC+01:00.
ERROR	Error	Class representing the list of errors, if any	
Error, coded	Error/ValidationCode	Code of the error type	The value should be the code of the error from the code list Error code (eTIR)
POINTER	Error/Pointer	Class representing the pointer to the erroneous field, if any	
Sequence number	Error/Pointer/SequenceNumeric	Index of the error in the list	The value should be the 1-based index of the error in the list
Location	Error/Pointer/Location	Location of the erroneous field	The value should be the location of the erroneous field following the XPath syntax. Additional details regarding the location of the fields per error code are available on the page dedicated to errors

(c) How to use response data in the holder system

501. If one or more errors are reported in the “E14 – Cancel advance data results” message, the cancel advance data has not been registered in the national customs system and this issue should be investigated and corrected before a new tentative can be tried.

502. If there are no errors returned in the “E14 – Cancel advance data” results message, then it means that the cancellation was accepted by the customs authorities. The national reference of the cancel advance data should be stored in the holder information systems for bookkeeping purposes.

F. Declaration mechanisms

503. Article 6 of Annex 11 of the TIR Convention details how the holder, or his or her representative, should submit advance TIR data and, possibly, advance amendment data, to the relevant competent authorities. Annex 1 of the eTIR concepts describes the procedure for submitting these data. The present section aims at describing the technical aspects of several of the declaration mechanisms of the eTIR system.

504. Since the competent authorities shall publish the list of all electronic means by which advance TIR data and advance amendment data can be submitted, the objective of this section is not to give a comprehensive list of these electronic means, but rather to provide details on the most common envisioned methods. The following sections use the term “advance data” to mention both advance TIR data and advance amendment data.

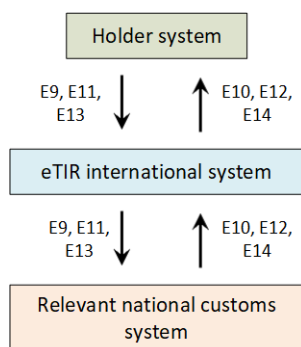
505. Only the normal processes are detailed in the sections below. The exceptional situations (like the impossibility to connect to the national customs system) that would require a fallback mechanism are not mentioned to avoid adding weight to the descriptions.

1. Submitting via the eTIR international system

506. The holder should be able to submit advance data to the relevant competent authorities via the eTIR international system. Several ways to do so can be envisioned (web portal, web services, etc.) and the solution involving web services is shown in the following figure.

Figure 44

Via the eTIR international system, using web services



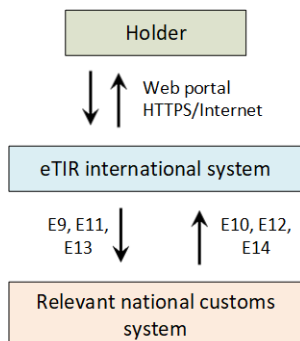
507. To use this approach, the holder must have previously connected its information system to the eTIR international system. Then, in order to submit advance data, the holder sends the relevant message (E9, E11 or E13) through its system to the eTIR international system.

508. The eTIR international system validates the message and immediately returns a response message to the holder if errors are found. If there are no errors, the eTIR international system forwards the message to the national customs system of the relevant customs authorities. The national customs system processes the message and returns a response (E10, E12 or E14) to the eTIR international system which forwards it to the holder system, which, in turn, processes it.

509. Another method using a web portal provided by the eTIR international system can be envisioned, as depicted in the following figure. The holder would connect to and authenticate with this web portal and submit advance data, for example by entering data into online forms, presented on web pages.

Figure 45

Via the eTIR international system, using a web portal

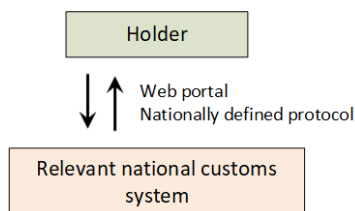


2. Directly to the customs authorities

510. In several countries, the holder may be able to submit advance data to the relevant competent authorities directly. Several ways to do so can be envisioned (web portal, web services, etc.) and the solution involving a web portal is shown in the following figure.

Figure 46

Directly to customs, using a web portal



511. In order to submit advance data, the holder connects to and authenticates with the web portal provided by the relevant customs authorities. The holder submits advance data, for example by entering data into online forms, presented on web pages.

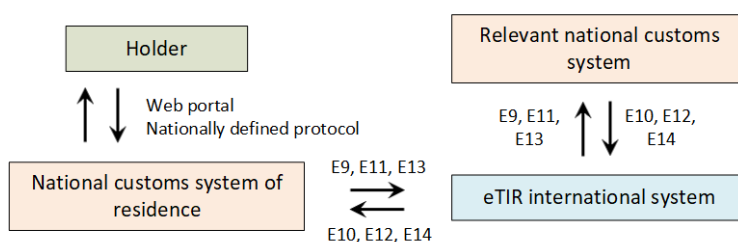
512. The data provided should be sufficient for the national customs system to fill in the “I7 – Record declaration data” message. This message should be sent to the eTIR international system later on, when the holder presents himself/herself with the goods and the road vehicle, the combination of vehicles or the container at the relevant customs office.

3. Via the customs authorities of the country residence of the holder

513. In several countries, the holder may be able to submit advance data to his or her customs authorities of residence, so that they can be forwarded to the relevant competent authorities. For example, in case the holder has completed a first TIR transport and has delivered goods from his or her country of residence A to a foreign country B, he or she may wish to initiate a second TIR transport and load goods in country B to deliver them in country A. In this case, if it is difficult for the holder to submit the advance TIR data to the customs authorities of country B (because of a different language, for instance), the holder may wish to submit the advance TIR data to the customs authorities of country B via the web portal of the customs authorities of country A as shown on the following figure.

Figure 47

Via the web portal of the customs authorities of the country residence



514. In order to submit advance data, the holder connects to and authenticates with the web portal provided by the customs authorities of his or her country of residence. The holder submits advance data, for example by entering data into online forms, presented on web pages. Then, this national customs system forwards the advance data submitted by the holder to the eTIR international system, using web services, in the form of E9, E11 or E13 messages.

515. The eTIR international system validates the message and immediately returns a response message to the national customs system, if errors are found. If this is the case, the national customs system presents the errors to the holder so he or she can correct them. If there are no errors, the eTIR international system forwards the message to the national customs system of the relevant customs authorities. This system processes the message and returns a response (E10, E12 or E14) to the eTIR international system, which then forwards it to the national customs system of the country of residence of the holder which, in turn, presents the results to the holder.

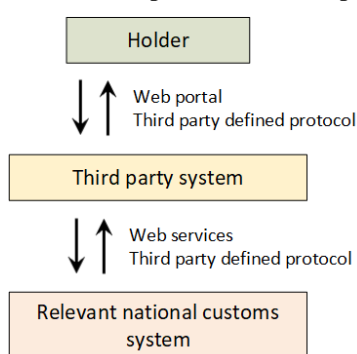
516. It is to be noted that this method requires, as a prerequisite, that the customs authorities of the country of residence have implemented the E9, E11 and E13 messages to be sent to the eTIR international system (which are considered as optional messages in this direction). This should not be confounded with the same messages (E9, E11 and E13) that all national customs systems should be able to receive and process (see the first method: submitting via the eTIR international system).

4. Via a third party declaration services

517. In several countries, the holder may be able to submit advance data to the relevant competent authorities via the declaration services of a third party. Several ways to do so can be envisioned (web portal, web services, etc.) and the solution involving a web portal for the holder is shown in the following figure.

Figure 48

Via the web portal of a third party



518. In order to submit advance data, the holder connects to and authenticates with the web portal provided by the third party. The holder submits advance data, for example by entering data into online forms, presented on web pages. These data are then sent to the national customs system of the relevant customs authorities using web services, the specifications of which are specific to the third party.

519. The data provided should be sufficient for the national customs system to fill in the "17 – Record declaration data" message. This message should be sent to the eTIR

international system, later on, when the holder presents himself/herself with the goods and the road vehicle, the combination of vehicles or the container at the relevant customs office.

520. It is to be noted that this method requires, as a prerequisite, a connection between the information systems of the third party and the national customs systems of the relevant customs authorities, using web services.

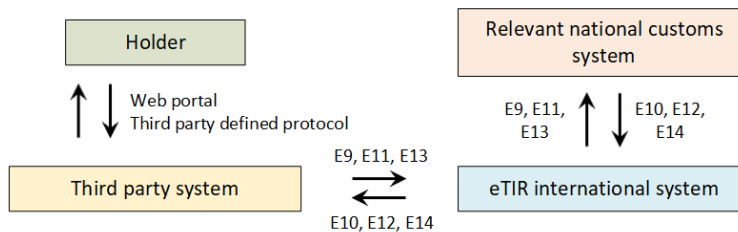
5. Via a third party and the eTIR international system

521. As the previous method requires a connection between the third party system and the national customs system of the relevant customs authorities, the third party may wish to connect its information system directly with the eTIR international system, to benefit from the connection that the latter should establish with the national customs systems of all contracting parties to the TIR Convention bound by Annex 11.

522. In this case, the same scenario for the holder as the one described above applies. The difference happens behind the scene, as the third party forwards the advance data to the eTIR international system which, in turn, forwards the same data to the relevant customs authorities, as shown in the following figure.

Figure 49

Via the web portal of a third party and the eTIR international system



523. As in the first and third method described, the communication between the third party system and the eTIR international system is performed, using web services and the eTIR messages dedicated to advance data (E9/E10, E11/E12 and E13/E14). Similarly, advance data is forwarded to the national customs system of the relevant customs authorities, using the same messages described in the eTIR specifications.

V. Technical fallback mechanisms

524. This part describes the various technical fallback mechanisms designed in the eTIR international system to ensure that it behaves as expected, despite potential issues happening in various components and layers of its architecture.

525. The technical fallback mechanisms are very different from the functional fallback procedures, as these mechanisms should not be visible nor actionable by the eTIR stakeholders. If an issue occurs in the eTIR international system that can be addressed by one of these mechanisms, it should be silently and transparently dealt with by the mechanism. On the other hand, the functional fallback procedures must always be initiated by the end-users.

526. The following aspects are described: fault tolerance and system resilience, data replication mechanism and message communication retry mechanism.

A. Fault tolerance and system resilience

527. Fault tolerance is the property that enables a system to continue operating properly in the event of the failure of (or one or more faults within) some of its components. Fault tolerance is often achieved by adding redundant components, such as additional disks, within a redundant array of independent disks (RAID) array, or additional servers within a failover clustered configuration. System resilience refers to the ability of a system to maintain an acceptable level of service during an adverse event.

528. A list of technical requirements related to fault tolerance (FT.1, FT.2, FT.3 and FT.4) described earlier in this document allows the eTIR international system to sustain usual hardware and utility (electricity, internet, etc.) faults.

529. In addition, the architecture of the eTIR international system, also described earlier in this document, is designed in such a way that it prevents having SPOF. Technical requirements AV.1, FT.1 and FT.2 specifically target this aspect.

B. Data replication mechanism

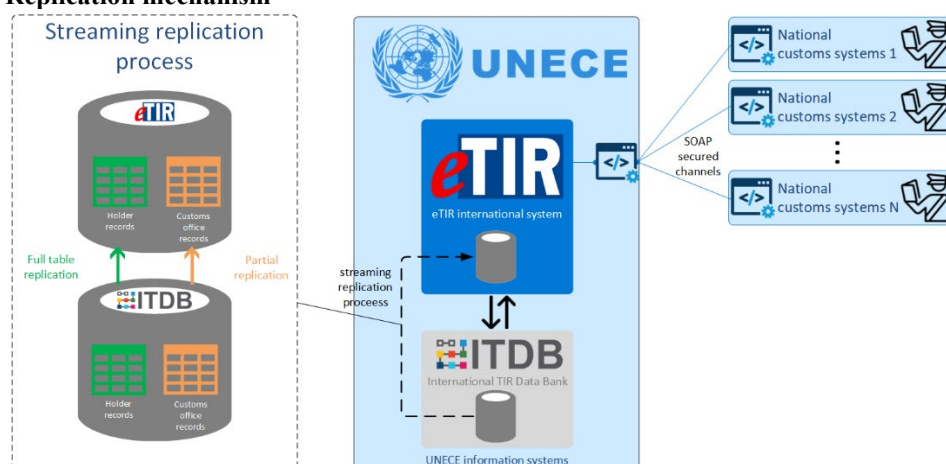
1. General principle

530. In the context of processing the eTIR messages in the eTIR international system, data managed in ITDB, is often queried and used for verification purposes. In particular, TIR Carnet holders and customs offices information have been identified as critical for the eTIR international system operations. Therefore, it is necessary to consider a fallback scenario for the messages that query ITDB for this information (message pairs I3/I4 and I19/I20). In order to mitigate the risk related to this external dependency, ECE should implement a “local replica” of ITDB critical data that should be automatically used as a technical fallback mechanism when ITDB is not available.

531. Beyond an initial database table copy, the replication should rely on a real-time replication mechanism (also referred to as “streaming replication”) to copy any update records of the database table, which contains the relevant TIR Carnet holder and customs office data, from ITDB to the eTIR international system. This mechanism should ensure that the database replica of ITDB, hosted in the eTIR database, is constantly up-to-date. The following figure provides a visual representation of the replication mechanism.

Figure 50

Replication mechanism



2. TIR Carnet holder and customs office data

532. The data replication method is “incremental”, as only the differences between the original database and the replica are applied. Such a process relies on the continuous communication between the Write-Ahead Logging (WAL) logs of both the master database (ITDB) and the replica one (eTIR international system local ITDB replica). However, the asynchronous replication approach is preferred in order to minimize impact on the performance of ITDB database upon each commit. This method will reduce the amount of data to be exchanged and ensure the least burden on both systems.

533. For TIR Carnet holder data, the replication scheme is configured as “full data” because most data stored in the columns of the “holder” table are used in the eTIR international system. The replication will also include other tables, such as the “Exclusions” and “Withdrawal” ones, since they also contain information required for the validation and the generation of eTIR messages.

534. For customs offices data, the replication scheme is configured as “partial data” as the “customs offices” table contains numerous information that is not used by the eTIR international system.

3. Practical use of the mechanism

535. The eTIR international system needs to query ITDB to generate the following six messages: “E6 – Query results”, “I4 – Holder information”, “I6 – Query results”, “I10 – Start results”, “I12 – Termination results” and “I20 – Customs offices validation”. If ITDB is not available, the local ITDB replica contained in the eTIR database is automatically used. Once ITDB is available again, the replica is no longer used.

536. When the replica is used by the eTIR international system for more than a period estimated as reasonable (currently set at twenty-four hours), an email notification should be sent to all TIR or eTIR focal points to inform them.

C. Message communication retry mechanism

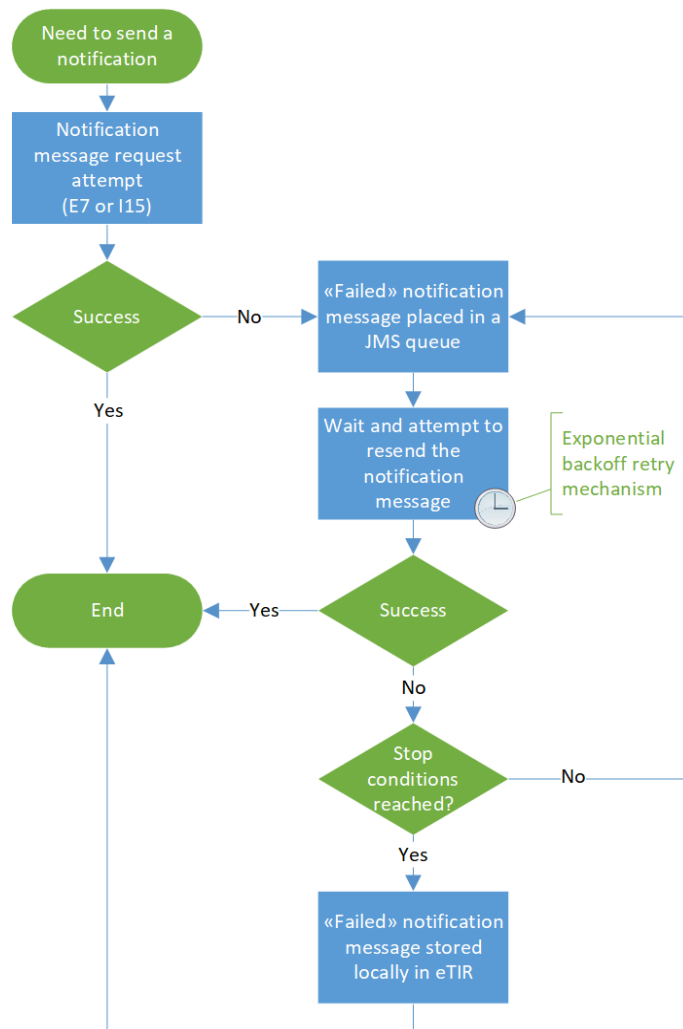
1. General principle

537. In the context of the notifications sent to customs authorities (with message pair I15/I16) and to guarantee chains (message pair E7/E8), the eTIR international system is the initial sender of the message. If a notification cannot be sent to its recipient for any reason, the retry mechanism is automatically activated. In order to ensure the best chances for all notifications to be communicated and acknowledged, and as described in the functional fallback procedures⁷³, this mechanism relies on a queuing system to retry sending

⁷³ See sections 1.2.2.7 and 1.2.2.8 of document ECE/TRANS/WP.30/GE.1/2021/22

notifications. It uses the “exponential back-off retry algorithm” allowing for progressively longer delays when retrying sending the notification message so as to decrease the load on the eTIR international system over time. The following figure illustrates this retry mechanism:

Figure 51
Retry mechanism for notifications

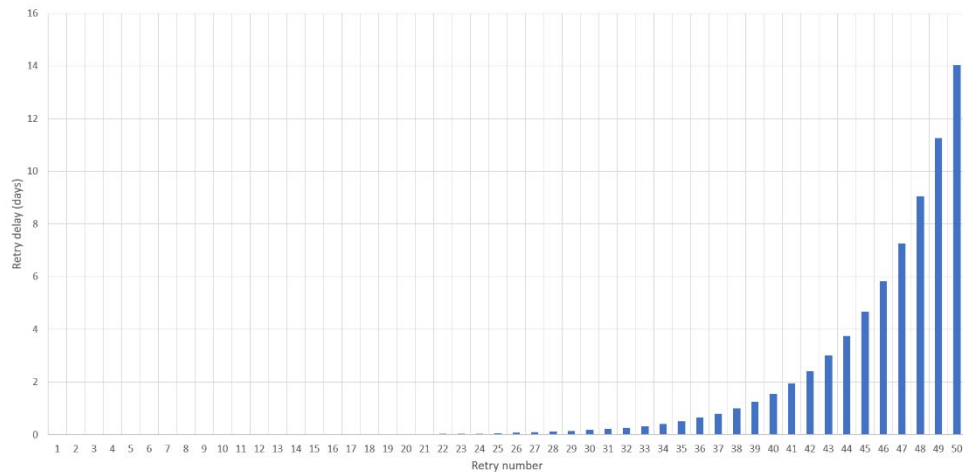


2. Retry mechanism configuration

538. The “exponential back-off retry algorithm” is configurable so that the retries are timed to be executed frequently at the beginning and then less frequently, following an exponential scale, as time passes. The figure below illustrates the number of retries per day after having unsuccessfully sent the notification (and if all retries are also unsuccessful). The figure is given for the following configuration parameters:

- Delay interval: 5
- Maximum retry attempts: 50
- Back-off rate: 1.246

Figure 52
Exponential back-off retry rate



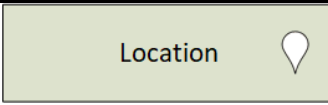

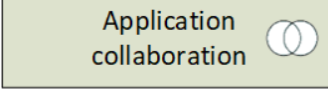
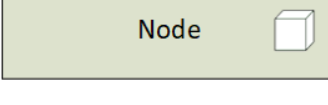
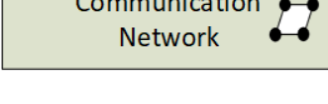
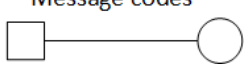
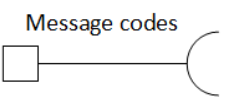
539. The eTIR international system will retry sending the notification message until it succeeds in communicating it or if one of the stop conditions is met. One of these conditions is when fifty retries are reached, which corresponds to fourteen days (two weeks) after having tried to send the notification message for the first time.

VI. Annexes

A. Diagram notation

540. The ArchiMate⁷⁴ notation is used to represent the various architectural viewpoints in the diagrams of this document. Only the ArchiMate concepts used in the diagrams are described in the table below. Note that the colours used in the background of the shapes represent different actors or systems, not a particular ArchiMate concept.

Table 106
ArchiMate diagram notation

<i>Concept</i>	<i>Description</i>	<i>Symbol</i>
Location	A location is used to model the places where other concepts are located.	
Application Component	A modular, deployable, and replaceable part of a software system that encapsulates its behaviour and data and exposes these through a set of interfaces.	
Application collaboration	An application collaboration represents an aggregate of two or more application components that work together to perform collective application behaviour.	
Node	A node represents a computational or physical resource that hosts, manipulates, or interacts with other computational or physical resources.	
Communication Network	A communication network represents a set of structures that connects computer systems or other electronic devices for transmission, routing, and reception of data.	
Interface provided	Represents a point of access where application services are made available to another application component. The codes of the messages provided by this interface can be listed on top of the symbol.	
Interface required	Represents a need to connect to application services that are made available by another application component. The codes of the messages sent back through this interface can be listed on top of the symbol.	

B. Technical glossary

541. This annex provides in the following table the definition of all technical terms that are used in the eTIR technical specifications.

⁷⁴ ArchiMate® 3.0.1 Specification. See: pubs.opengroup.org/architecture/archimate3-doc/

Table 107
Technical glossary

<i>Term</i>	<i>Definition</i>
Application programming interface	An application programming interface (API) is a software interface which is used for accessing an application or a service from a program.
Asymmetric encryption	A cryptographic system that uses two keys: a public key known to everyone and a private (or secret) key only known to the owner of the key pair. For example, when Alice wants to send a secured message to Bob, she uses Bob's public key to encrypt the message. Bob then uses his private key to decrypt it. RSA is an example of asymmetric algorithm.
Authentication	The process of verifying or testing that the claimed identity is valid. Authentication requires subjects to provide additional information that corresponds to the identity they are claiming. The most common form of authentication is using a password (this includes the password variations of personal identification numbers - PINs - and passphrases). Authentication verifies the identity of the subject by comparing one or more factors against the database of valid identities (that is, user accounts).
Certification authority	A certification authority (CA), is a recognized entity that holds a trusted position because the certificate that it issues binds the identity of a person or business to the public and private key pair (asymmetric cryptography) that are used to secure most transactions transmitted over the internet. For example, when a business or person wants to use these technologies, they request to a CA to issue them a certificate. The CA collects information about the person or business that it will certify before issuing the certificate.
Change advisory board	A Change Advisory Board (CAB) delivers support to a change-management team by advising on requested changes and assisting in the assessment and prioritization of changes. The CAB members should selectively be chosen to ensure that the requested changes are thoroughly checked and assessed from both a technical and business perspective.
Confidentiality	Confidentiality is the concept of the measures used to ensure the protection of the secrecy of data, objects, or resources. The goal of confidentiality protection is to prevent or minimize unauthorized access to data. Confidentiality focuses on security measures ensuring that no one other than the intended recipient of a message receives it or is able to read it. Confidentiality protection provides a means for authorized users to access and interact with resources, but it actively prevents unauthorized users from doing so.
Continuous integration	Continuous integration (CI) is the practice of automating the integration of code changes from multiple contributors into a single software project. It is a primary DevOps best practice, allowing developers to frequently merge code changes into a central repository where builds and tests then run. Automated tools are used to assert the correctness of the new code before integration.
Defect	The IT literature usually makes a distinction between the terms "bug" and "defect". Indeed, a "bug" is the result of a coding error and a "defect" is a deviation from the requirements. In the context of this document, only the term "defect" is used and encompasses both meanings.
Digital certificate	In cryptography, a digital certificate (or, simply, certificate in this document), is an electronic document used to prove the ownership of a public key. The certificate includes information about the key, information about the identity of its owner (called the subject), and the digital signature of an entity that has verified the certificate's contents (called the issuer). If the signature is valid, and the software examining the certificate trusts the issuer, then it can use that key to communicate securely with the certificate's subject.
Digital signature	A digital code (chain of characters) that can be attached to an electronically transmitted message and that has two distinct goals: 1) Digitally signed messages assure the recipient that the message truly came from the claimed sender. They enforce non-repudiation (that is, they preclude the sender from later claiming that the message is a forgery) and 2) Digitally signed messages assure the recipient that the message was not altered while in transit between the sender and recipient (its integrity was preserved). This protects against both malicious modification (a third party altering the meaning of the message) and unintentional modification (because of faults in the communications process, such as electrical interference).
Environments	During its lifecycle, a piece of software is developed and maintained on several environments that serve different purposes. Some of them are used for development, some others for testing and, finally, another one, the production environment, is used to operate the system when it is "live" and is available as a service to its end users
Error	An error is a severe validation failure, which will cause the message to be rejected.

<i>Term</i>	<i>Definition</i>
Front-end web servers	A web server that receives request messages from the web service endpoints of the eTIR international system (or sends request messages to web service endpoints of other eTIR stakeholders).
Git	Git is a version control system for tracking changes in any set of files, usually used for coordinating work among programmers collaboratively developing source code during software development. Its objectives include optimized performance, data integrity, and support for distributed, non-linear workflows.
Hash	A hash value (or simply hash), also called a message digest, is a value generated from a text. The hash is substantially smaller than the text itself, and is generated by a cryptographic hash function in such a way that it is extremely unlikely that any other text can produce the same hash value.
Integrated development environment	An integrated development environment (IDE) is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of at least a source code editor, build automation tools and a debugger.
Integrity	Integrity is the concept of protecting the reliability and correctness of data. Integrity protection prevents unauthorized alterations of data. It ensures that data remains correct, unaltered, and preserved. Properly implemented integrity protection provides a means for authorized changes while protecting against intended and malicious unauthorized activities (such as viruses and intrusions) as well as mistakes made by authorized users (such as mistakes or oversights).
Java	Java is a class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible. It is a general-purpose programming language intended to let application developers write once, run anywhere, meaning that compiled Java code can run on all platforms that support Java without the need for recompilation.
Keystore	A keystore is a database used to store the certificates of the information systems of the owner of the keystore, and may include the certificates of trusted parties (truststore), for use by a program. Through its keystore, an entity can authenticate itself to other parties and may authenticate other parties as well.
Load balancer	The load balancer is a software component that distributes a set of tasks over a set of resources (server nodes), with the aim of making their overall processing more efficient.
Malware	Malware is any software intentionally designed to cause damage to a computer, server, client, or computer network. A wide variety of malware types exist, including computer viruses, worms, Trojan horses, ransomware, spyware, adware, rogue software, wiper and scareware.
Multi-factor authentication	Multi-factor authentication is an electronic authentication method in which a user is granted access to a website or application only after successfully presenting two or more pieces of evidence (or factors) to an authentication mechanism: knowledge (something only the user knows), possession (something only the user has), and inherence (something only the user is).
Non-repudiation	Non-repudiation ensures that the subject of an activity or who caused an event cannot deny that the event occurred. Non-repudiation prevents a subject from claiming not to have sent a message, not to have performed an action, or not to have been the cause of an event. It is made possible through identification, authentication, authorization, accountability, and auditing. Non-repudiation can be established using digital certificates, session identifiers, transaction logs, and numerous other transactional and access control mechanisms.
OASIS	The Organization for the Advancement of Structured Information Standards (OASIS) is a non-profit, international consortium whose goal is to promote the adoption of product-independent standards.
Open-source software	Open-source software (OSS) is computer software that is released under a license in which the copyright holder grants users the rights to use, study, change, and distribute the software and its source code to anyone and for any purpose. Open-source software may be developed in a collaborative public manner. Open-source software is a prominent example of open collaboration.
Public key infrastructure	A public key infrastructure (PKI) is a set of roles, policies, hardware, software and procedures needed to create, manage, distribute, use, store and revoke digital certificates and manage asymmetric encryption.
Receiver	In the context of this document, the "receiver" is the information system of the eTIR stakeholder which receives an eTIR message sent by another stakeholder, and processes it.
Role-based access control	Role-based access control (RBAC) is a policy-neutral access-control mechanism defined around roles and privileges. The components of RBAC such as role-permissions, user-role and role-role relationships make it simple to perform user assignments. RBAC can be used to facilitate administration of security in large organizations with hundreds of users and thousands of permissions.
RSA	The RSA algorithm was invented by Ronald L. Rivest, Adi Shamir, and Leonard Adleman in 1977. It is an asymmetric encryption algorithm using two different keys with a mathematic relationship to

<i>Term</i>	<i>Definition</i>
	each other. The public key and private keys are carefully generated using the RSA algorithm; they can be used to encrypt information or sign it.
Sender	In the context of this document, the "sender" is the information system of the eTIR stakeholder which generates and sends an eTIR message to another eTIR stakeholder.
Service-level agreement	A service-level agreement (SLA) is a commitment between a service provider and a client. Particular aspects of the service – quality, availability, responsibilities – are agreed between the service provider and the client.
Single point of failure	A single point of failure (SPOF) is a part of a system that, if it fails, will stop the entire system from working. SPOFs are undesirable in any system with a goal of high availability or reliability, be it a business practice, software application, or other industrial system.
SOAP	Simple Object Access Protocol (SOAP) is a messaging protocol specification for exchanging information in the implementation of web services. It is an XML-based protocol consisting of three parts: <ul style="list-style-type: none">• an envelope, which defines the message structure (a header and a body) and how to process it;• a set of encoding rules for expressing instances of application-defined data types;• a convention for representing procedure calls and responses.
Software entropy	The second law of thermodynamics, in principle, states that a closed system's disorder cannot be reduced, it can only remain unchanged or increase. A measure of this disorder is entropy. According to studies, this law also seems plausible for software systems: as a system is modified, its disorder, or entropy, tends to increase. This is known as software entropy. The process of code refactoring can result in stepwise reductions in software entropy.
Standard operating procedure	A standard operating procedure (SOP) is a set of step-by-step instructions compiled by an organization to help staff members carrying out routine operations. SOPs aim at achieving efficiency, quality output and uniformity of performance, while reducing miscommunication and failure to comply with the organization's regulations.
Token	A token (sometimes called a security token) is an object that controls access to a digital asset. Traditionally, this term has been used to describe a hardware authenticator, a small device used to create a one-time password that the owner types in a login screen along with an ID and a PIN. However, in the context of web services and with the emerging need for devices and processes to authenticate to each other over open networks, the term token has been expanded to include software mechanisms too. A token may be an X.509 certificate, that associates an identity to a public key for example.
Total cost of ownership	The total cost of ownership (TCO) represents the total amount of money that the owner of an information system had to spend during the life cycle of the latter. All costs (direct and indirect) are taken into account.
Truststore	A truststore is a keystore file that contains the certificates from other parties that you expect to communicate with, or from Certificate Authorities that you trust, to identify other parties.
Virtual server farm	A virtual server farm is a networking environment that employs multiple application and infrastructure servers running on two or more physical servers using a server virtualization program. This architecture offers several benefits, including server consolidation, redundancy, failover, high availability and optimized resource utilization.
Web service	Virtual service/function exposed over a network (private or internet) allowing for system to system communication using messages following a strict format. Machine-to-machine is another term to define this type of communication.
Web Services Security	The Web Services Security (WS-Security) specification describes enhancements to SOAP 1.1 that increase the protection (integrity) and confidentiality of the messages. These enhancements include functionality to secure SOAP messages through XML digital signature, confidentiality through XML encryption, and credential propagation through security tokens (e.g. X.509 token).
Web Service Description Language	Web Service Description Language (WSDL) is an XML-based interface description language that is used for describing the functionality offered by a web service.
X.509 certificate	X.509 is a common format for digital certificates, that is widely used on internet with the TLS protocol. An X.509 certificate specifies a binding between a public key and a set of attributes that includes (at least) a subject name, issuer name, serial number and validity interval. It is defined in the request for comments (RFC) document 5280. ⁷⁵

⁷⁵ See tools.ietf.org/html/rfc5280

<i>Term</i>	<i>Definition</i>
X.509 token	The X.509 token represents the digital signature generated using the X.509 certificate of the sender, and which will be used to authenticate the entity sending the message. It is therefore part of the message itself, in the header section of the SOAP envelope.
XML	XML stands for eXtensible Markup Language which is a language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. It is used by SOAP to encode messages sent by web services.
XML signature	The XML signature specification is a joint effort between W3C and IETF. XML signatures provide integrity, message authentication and/or signer authentication services for data of any type, whether located within the XML that includes the signature or elsewhere.
XML Schema Definition	XML Schema Definition (XSD) is a W3C recommendation that describes how the elements in an XML document are structured and formatted.

C. Analysis to determine the needs in terms of capacity and scalability of the eTIR international system

1. Introduction

542. This annex analyses, based on existing data (February 2021) and on experience acquired during the development of the eTIR international system, the requirements in terms of throughput of messages and volume of data to be handled by the eTIR international system.

543. Since the eTIR international system is not yet in operation, this analysis cannot use real data and, therefore, takes a cautious approach by always considering worst case scenarios and providing estimates based on maxima rather than averages. When the eTIR international system starts to be used in production, ECE will revisit this analysis to provide better forecasts in terms of capacity requirements for the coming years and link them with the number of eGuarantees sold.

2. Analysis on the number of messages

544. Based on the most recent statistics on sales of TIR Carnets (and on the number of eGuarantees issued in the context of the eTIR pilot projects), the following table shows an aggregated view of the past statistics, combined with estimates of sales of TIR Carnets and eGuarantees for the next five years.

Table 108
Statistics and forecast of the sales of TIR Carnets and eGuarantees

<i>Year</i>	<i>Number of TIR Carnet sold</i>	<i>Number of eGuarantees sold</i>	<i>Increase of the number of eGuarantees sold per year</i>
2001	2 707 950	N/A	N/A
2002	3 095 200	N/A	N/A
2003	3 298 000	N/A	N/A
2004	3 211 050	N/A	N/A
2005	3 240 650	N/A	N/A
2006	3 599 850	N/A	N/A
2007	3 076 250	N/A	N/A
2008	3 253 800	N/A	N/A
2009	2 230 400	N/A	N/A
2010	2 822 200	N/A	N/A
2011	3 074 500	N/A	N/A
2012	3 158 300	N/A	N/A
2013	2 920 150	N/A	N/A
2014	1 945 050	N/A	N/A
2015	1 500 450	(eTIR pilot) 5	N/A

<i>Year</i>	<i>Number of TIR Carnet sold</i>	<i>Number of eGuarantees sold</i>	<i>Increase of the number of eGuarantees sold per year</i>
2016	1 223 400	(eTIR pilot) 59	N/A
2017	1 154 650	(eTIR pilot) 82	N/A
2018	1 020 650	(eTIR pilot) 81	N/A
2019	858 100	(eTIR pilot) 78	N/A
2020	679 300	(eTIR pilot) 2	N/A
2021	(estimate) 600 000	(eTIR pilot) 63, (estimate) 5 000	N/A
2022	(estimate) 550 000	(estimate) 15 000	200%
2023	(estimate) 500 000	(estimate) 60 000	300%
2024	(estimate) 450 000	(estimate) 200 000	233%
2025	(estimate) 400 000	(estimate) 400 000	100%
2026	(estimate) 300 000	(estimate) 700 000	75%

545. In order to calculate the estimates on eGuarantees sold, the following factors were taken into consideration:

- (a) The number of countries that have initiated interconnection projects between their national customs system and the eTIR international system during 2020;
- (b) The number of countries that have already expressed an interest to perform this interconnection for which projects should most likely start during 2021;
- (c) The numbers of TIR Carnets issued in recent years along the corridors involving those contracting parties that have launched interconnection projects or will soon do so;
- (d) The efforts undertaken or interest expressed by Regional Economic Organizations in order to prepare proofs of concept to interconnect their customs union system with the eTIR international system and the possible dates for these interconnections;
- (e) The results of the “study on the reasons for the decline in the number of TIR Carnets used” document (hereafter “the study”) prepared by TIRExB in 2020 and, especially, the trends related to the TIR Carnets sales;
- (f) The efforts that ECE and the international organization will make in the coming years in order to attract more countries and markets (intermodal, postal) and expand the TIR Convention to new regions as described in the study;
- (g) Neither any sensitivity analysis nor other scientific forecasting method was used, so far, to prepare such estimations.

546. The estimates on the increase in the sale of eGuarantees on a yearly basis show that, after the first years of adoption, the long term increase in percentage tends to become linear and could remain that way if the number of contracting parties to the TIR Convention connected to the eTIR international system continue to increase as well. We should, therefore, design the eTIR international system so that it can easily scale with a steady yearly increase of 100% of TIR transports following the eTIR procedure.

547. The number of messages sent and received per TIR transport depends on several criteria: the number of TIR operations, the number of pre-declaration messages (advance TIR data, advance amendment data and cancel advance data messages) sent by the holder, the number of uses of the query mechanism, the number of times that seals are changed, whether any incident or accident occurs during the TIR transport, etc. The following table shows several scenarios of TIR transports and details, for each of them, the maximum number of messages received and sent by the eTIR international system (if the holder sends the pre-declaration messages via the eTIR international system) as well as the number of request messages only.

Table 109
Messages received and sent by the eTIR international system by scenarios

<i>Number of TIR Operations</i>	<i>Messages received and sent for the TIR operations</i>	<i>Messages received and sent for the pre-declaration</i>	<i>Total number of messages per scenario</i>	<i>Number of request messages only, per scenario</i>
2	E1/E2, I1/I2, I7/I8, (I15/I16) x 2, (I9/I10, I11/I12, I13/I14) x 2, (E7/E8) x 9, (E5/E6) x 9, (I5/I6) x 2	E9/E10	64	21
3	E1/E2, I1/I2, I7/I8, (I15/I16) x 2, (I9/I10, I11/I12, I13/I14) x 3, (E7/E8) x 12, (E5/E6) x 12, (I5/I6) x 3	E9/E10	88	28
4	E1/E2, I1/I2, (I7/I8) x 2, (I15/I16) x 5, (I9/I10, I11/I12, I13/I14) x 4, (E7/E8) x 14, (E5/E6) x 14, (I5/I6) x 4	E9/E10, E11/E12	110	36
4	E1/E2, I1/I2, (I7/I8) x 2, (I15/I16) x 5, (I9/I10, I11/I12, I13/I14) x 4, (E7/E8) x 14, (E5/E6) x 14, (I5/I6) x 4	E9/E10, E11/E12, E13/E14, E11/E12	118	40
5	E1/E2, I1/I2, (I7/I8) x 2, (I15/I16) x 7, (I9/I10, I11/I12, I13/I14) x 5, (E7/E8) x 17, (E5/E6) x 17, (I5/I6) x 5	E9/E10, E11/E12, E11/E12	136	44
6	E1/E2, I1/I2, (I7/I8) x 2, (I15/I16) x 9, (I9/I10, I11/I12, I13/I14) x 6, (E7/E8) x 20, (E5/E6) x 20, (I5/I6) x 6	E9/E10, E11/E12, E11/E12	160	51
7	E1/E2, I1/I2, (I7/I8) x 3, (I15/I16) x 15, (I9/I10, I11/I12, I13/I14) x 7, (E7/E8) x 24, (E5/E6) x 24, (I5/I6) x 7	E9/E10, E11/E12, E11/E12, E11/E12	198	61
8	E1/E2, I1/I2, (I7/I8) x 3, (I15/I16) x 18, (I9/I10, I11/I12, I13/I14) x 8, (E7/E8) x 27, (E5/E6) x 27, (I5/I6) x 8	E9/E10, E11/E12, E11/E12, E11/E12	224	68
9	E1/E2, I1/I2, (I7/I8) x 3, (I15/I16) x 21, (I9/I10, I11/I12, I13/I14) x 9, (E7/E8) x 30, (E5/E6) x 30, (I5/I6) x 9	E9/E10, E11/E12, E11/E12, E11/E12	250	75
10	E1/E2, I1/I2, (I7/I8) x 4, (I15/I16) x 30, (I9/I10, I11/I12, I13/I14) x 10, (E7/E8) x 34, (E5/E6) x 34, (I5/I6) x 10	E9/E10, E11/E12, E11/E12, E11/E12	292	85

548. In 2020, IRU reported the following sales⁷⁶: 4,300 TIR Carnets of 4 vouchers (0.6%), 544,200 TIR Carnets of 6 vouchers (80%), 131,050 TIR Carnets of 14 vouchers (19.3%) and 0 TIR Carnets of 20 vouchers. Therefore, most of the TIR transports performed on that year had 3 TIR operations (6 vouchers). Given the previous table, and while taking a cautious approach with regard to the capacity of the eTIR international system, we will consider that the average total number of messages exchanged per TIR transport is 120 and that the average number of request messages is 40.

549. We will also assume that the average number of messages exchanged per TIR transport will also increase by 5% per year. This assumption is supported by the fact that more contracting parties will be connected to the eTIR international system over time, therefore increasing the possibilities for longer TIR transports following the eTIR procedure. Finally, new versions of the eTIR specifications could also contribute to this increase.

550. The following table gives estimates of the number of messages that the eTIR international system could send and receive, and should, therefore, be able to support, over the next years.

⁷⁶ See Informal document WP.30/AC.2 (2021) No.5

Table 110
Estimated number of messages to be supported by the eTIR international system

Year	A. Estimated number of eGuarantees sold	B. Estimated average number of all messages per TIR transport	C. Estimated average number of all messages per year in millions (A x B)	D. Estimated average number of requests messages per TIR transport	E. Estimated average number of request messages per year in millions (A x D)
2021	5 000	130	0.65	40	0.20
2022	15 000	137	2.06	42	0.63
2023	60 000	143	8.58	44	2.64
2024	200 000	150	30.00	46	9.20
2025	400 000	158	63.20	49	19.60
2026	700 000	166	116.20	51	35.70

551. We can then formulate, as a hypothesis, that the maximum number of messages would be between five and ten times the average number of messages. We can then produce the following two tables: one for the maximum number of messages received and sent by the eTIR international system and another for the maximum number of request messages received, both of them per minute.

Table 111
Estimated maximum number of messages received and sent

Year	A. Estimated average number of all messages per year in millions	B. Estimated average number of all messages per minute (A / (365 x 24 x 60))	Estimated lower bound of maximum number of all messages per minute (B x 5)	Estimated upper bound of maximum number of all messages per minute (B x 10)
2021	0.65	1.24	6.2	12.4
2022	2.06	3.92	20.0	39.2
2023	8.58	16.32	81.6	163.2
2024	30.00	57.23	286.2	572.3
2025	63.20	120.57	602.9	1 205.7
2026	116.20	221.69	1 108.5	2 216.9

Table 112
Estimated maximum number of request messages received

Year	A. Estimated average number of request messages per year in millions	B. Estimated average number of request messages per minute (A / (365 x 24 x 60))	Estimated lower bound of maximum number of request messages per minute (B x 5)	Estimated upper bound of maximum number of request messages per minute (B x 10)
2021	0.20	0.38	1.9	3.8
2022	0.63	1.20	6.0	12.0
2023	2.64	5.02	25.1	50.2
2024	9.20	17.50	87.5	175.0
2025	19.60	37.29	186.5	372.9
2026	35.70	67.92	339.6	679.2

3. Analysis on the throughput of messages

552. The throughput of messages to be supported by the eTIR international system is defined as the number of request messages to be received and processed for a given unit of time. Based on the previous analysis, the average and the upper bound of the maximum number of request messages per minute, are selected.

Table 113

Estimated average and maximum requirements for the throughput of messages

<i>Year</i>	<i>Estimated average number of request messages per minute</i>	<i>Estimated maximum number of request messages per minute</i>
2021	0.38	3.8
2022	1.20	12.0
2023	5.02	50.2
2024	17.50	175.0
2025	37.29	372.9
2026	67.92	679.2

4. Analysis on the volume of data

553. In addition to the estimates on the throughput of messages that would need to be supported by the eTIR international system, it is also important to take into consideration the factor of the size of these messages and the total volume of data that would need to be exchanged, processed and recorded by the eTIR international system.

554. Based on the experience acquired during the development of the eTIR international system, the size of 70% of the messages is under 10 KB, the size of 25% of the messages is between 11 KB and 50 KB and the size of the remaining 5% of the messages is between 51 KB and 20 MB (the maximum size allowed). We assume that 5% of the messages would embed additional documents (which significantly increases the size of the message).

555. Therefore, we can assume that the average size of a message would be $(90\% \times 5 \text{ KB}) + (9\% \times 25 \text{ KB}) + (1\% \times 5 \text{ MB}) = 57 \text{ KB}$. Building on previous results, we can deduce an estimate on the maximum total volume of data that would need to be handled by the eTIR international system and, in particular, to be stored in the eTIR logs.

Table 114

Estimated maximum volume of data to be stored in the eTIR logs

<i>Year</i>	<i>A. Estimated upper bound of maximum number of all messages per minute</i>	<i>B. Estimated maximum volume of data per minute in MB (A x 0.057)</i>	<i>C. Estimated maximum volume of data per year in TB (B x 60 x 24 x 365)</i>
2021	12.4	0.7	0.371
2022	39.2	2.2	1.174
2023	163.2	9.3	4.889
2024	572.3	32.6	17.146
2025	1 205.7	68.7	36.121
2026	2 216.9	126.4	66.417

556. Only a small subset of this volume is stored in the eTIR database. First, only the request messages are processed and recorded in this storage location. Then, the additional documents are not stored in the database, so we can remove the 1% largest messages, which gives the following new average size for a message: $(91\% \times 5 \text{ KB}) + (9\% \times 25 \text{ KB}) = 6.8 \text{ KB}$. Then, in each message, its header is not stored in the database and only the values of the body of the message are stored, which represent between 3% and 10% of the size of the message, therefore a maximum of 0.68 KB.

Table 115
Estimated maximum volume of data to be stored in the eTIR database

<i>Year</i>	<i>A. Estimated upper bound of maximum number of request messages per minute</i>	<i>B. Estimated maximum volume of data per minute in KB (A x 0.68)</i>	<i>C. Estimated maximum volume of data per year in GB (B x 60 x 24 x 365)</i>
2021	3.8	2.6	1.36
2022	12.0	8.2	4.29
2023	50.2	34.1	17.94
2024	175.0	119.0	62.55
2025	372.9	253.6	133.28
2026	679.2	461.9	242.75

557. Documents embedded in the messages are stored separately, in the eTIR documents system. As for the eTIR database, only the request messages are considered. Based on previous assumptions, we can, therefore, only keep the 1% largest messages holding embedded documents, which gives the following new average size for a message: 1% x 5 MB = 50 KB. Similarly, we can, therefore, infer an estimate on the maximum total volume of data that would need to be stored in the eTIR documents.

Table 116
Estimated maximum volume of data to be stored in the eTIR documents

<i>Year</i>	<i>A. Estimated upper bound of maximum number of request messages per minute</i>	<i>B. Estimated maximum volume of data per minute in MB (A x 0.05)</i>	<i>C. Estimated maximum volume of data per year in TB (B x 60 x 24 x 365)</i>
2021	3.8	0.2	0.100
2022	12.0	0.6	0.315
2023	50.2	2.5	1.319
2024	175.0	8.8	4.599
2025	372.9	18.6	9.800
2026	679.2	34.0	17.849

5. Conclusions

558. The estimations and forecasts in terms of throughput of messages and volume of data are only as good as the various assumptions are correct. Since the eTIR international system is not yet in operation, this analysis lacks actual data. For this reason, the eTIR international system should be designed while considering the capacity and scalability requirements for the first two years only, as there is a high probability that real data will adjust several assumptions, which will totally change the calculations and forecasts for the next years.

559. For this reason, it is strongly advised to perform this analysis again, six months after the eTIR international system is deployed in production in order to review the assumptions, redo the calculations and conclude with more reliable estimates and forecasts for the future needs in terms of capacity and scalability of the eTIR international system. Then, it will also be advised to review this analysis on a yearly basis to continuously refine it.

D. Information security threats and mitigation measures

560. The following table provides a list of common information security threats applicable to the eTIR international system, along with a set of security measures and controls put in place to mitigate the probability and/or the impact of these threats.

Table 117
Information security threats and mitigation measures

<i>Threat name</i>	<i>Threat description</i>	<i>Mitigation measures</i>
Advanced persistent threat	An advanced persistent threat (APT) is a stealthy threat actor, typically a nation state or state-sponsored group, which gains unauthorized access to a computer network and remains undetected for an extended period. In recent times, the term may also refer to non-state-sponsored groups conducting large-scale targeted intrusions for specific goals.	All measures described in the part dedicated to the Security of the eTIR system. Continuous improvement and reinforcement of the security measures and controls.
Arbitrary code execution	Arbitrary code execution (ACE) is an attacker's ability to execute arbitrary commands or code on a target machine or in a target process.	Prevent malware from being downloaded and executed on the eTIR international system using antiviruses on attached documents (in the eTIR messages).
Code injection	Code injection is the exploitation of a computer bug that is caused by processing invalid data. The injection is used by an attacker to introduce (or "inject") code into a vulnerable computer program and change the course of execution.	Multiple layers of validations applied on the eTIR messages to prevent any invalid data or unauthorized code injection.
Denial of service	A denial-of-service attack (DoS) is a cyber-attack in which the perpetrator seeks to make a server or network resource unavailable to its intended users by temporarily or indefinitely disrupting services of a host connected to the Internet.	IP whitelisting prevents all sources (except authorized ones) from accessing the web services of the eTIR international system. Functional fallback procedures reduce the impact of a lack of availability of the system.
Distributed Denial of Service	A distributed denial of service (DDoS) attack is a DoS attack originating from many different sources.	Same mitigation measures as for denial of service.
Network eavesdropping	Network eavesdropping is a network layer attack that focuses on capturing small packets from the network transmitted by other computers and reading the data content in search of any type of information.	Use of the latest version of the TLS protocol to prevent any unauthorized disclosure of information in the exchange of eTIR messages which would result as breach of confidentiality.
Privilege escalation	Privilege escalation is the act of exploiting a bug, design flaw or configuration oversight in an operating system, or software application to gain elevated access to resources that are normally protected from an application or user. The result is that an application with more privileges than intended by the application developer or system administrator can perform unauthorized actions.	Regular patching of operating systems, middleware and libraries used in the eTIR international system. Reduced attack surface by disabling unused services and proper configuration of the ones that are used.
Ransomware	Ransomware is malware that employs encryption to hold a victim's information at ransom. A user or organization's critical data is encrypted so that they cannot access files, databases, or applications. A ransom is then demanded to provide access.	Installation of the eTIR international system in a network zone separated from the local area network (LAN). Regular backup of the storage locations to reduce the impact of a successful attack.
Social engineering	Social engineering is the psychological manipulation of people into performing actions or divulging confidential information.	Mandatory training on information security for all ECE staff members and advanced training for IT experts and staff members in charge of secured systems.
Software bugs	A software bug is an error, flaw or fault in a computer program or system that causes it to produce an incorrect or unexpected result, or to behave in unintended ways.	Preventive activities taken during the SDLC to ensure a high quality and reliability of the eTIR international system (static code analysis, automated tests coverage, CI pipeline, etc.)
Unauthorized access	A person gains logical or physical access without permission to a network, system, application, data, or other resource.	Multi-layered approach to physical, network and software security. Restrict access to the servers to a limited number of ECE staff members.

<i>Threat name</i>	<i>Threat description</i>	<i>Mitigation measures</i>
Vulnerability	A vulnerability is a weakness which can be exploited by a threat actor, such as an attacker, to perform unauthorized actions within a computer system.	Use dependency checking tools to periodically assess known vulnerabilities in the software components of the eTIR international system. Regular patching of operating systems, middleware and libraries used in the eTIR international system to address known vulnerabilities.
Zero-day exploit	A zero-day exploit is an attack that uses a vulnerability that is either unknown to anyone but the attacker or known only to a limited group of people.	Removing or disabling unnecessary protocols and services to reduce the attack surface, proper configuration of network appliances (firewalls, intrusion detection system, intrusion prevention system) to prevent, detect and block potential attacks.

E. XML and XSD files

1. The eTIR messages as XML files

561. The eTIR messages are exchanged between the actors of eTIR system using the XML format and the implementation of the eTIR messages using XML follows the WCO Data Model XML Guidelines. As the messages can contain characters from more than one ISO-8859 character set, the use of Unicode is mandatory and, therefore, the encoding adopted is UTF-8.

562. Both the classes and attributes of the eTIR messages are mapped to XML elements. For all XML mappings, the XML tags come from the WCO Data Model to ensure compliancy and they follow the PascalCase naming convention⁷⁷, except for abbreviations which are in upper case (for example: AuthorName, RegistrationNationalityCode, ID, MIMECode).

2. The XML Schema Definitions (XSD) files

563. The structure of the eTIR messages is defined using XSD files and the latest versions of the XSD files are available on the eTIR web site on this page: <https://etir.org/documentation/xsd-files>.

564. XSD files can be used for two purposes:

- To automatically generate classes to easily implement the web service endpoint to communicate with the information systems that use the eTIR messages. For instance, in Java, the JAXB library can be used for this purpose;
- To automatically perform partial validation of incoming eTIR messages to verify the structure of the message and the format of the values⁷⁸. For instance, in Java, the javax.xml.validation.Validator library can be used for this purpose.

565. A short description of each types of XSD files is provided below:

- **Data sets XSD (eTIR_DataSets.xsd)**: shall contain the definition of the complex and simple XSD types used as data types for the XML elements representing the classes and attributes in message specific XSDs. Complex and simple XSD types that are identified to be used repeatedly in messages shall be grouped under a common definition in this file. This factorization of the common types prevent duplication of source code when generating the classes;
- **Message specific XSDs (eTIR_XXX.xsd)**: shall define only the structure of each message. Definition of simple or complex types that are common to other messages shall be defined in the data set XSD;

⁷⁷ See techterms.com/definition/pascalcase

⁷⁸ None of the rules and conditions are validated using the XSD files, so a specific validation layer needs to be implemented for those aspects.

- **Code lists XSD (eTIR_CodeLists.xsd):** shall contain the definition of the code lists used in the attributes of the eTIR messages as simple types. It shall provide an enumeration of the applicable values for each code list;
- **Metadata XSD (eTIR_Metadata.xsd):** shall define the set of metadata classes and attributes that are present at the beginning of each and every eTIR message.

566. The following conventions shall be respected by the XSDs:

- **Cardinality:** the cardinality of fields shall be defined using the “minOccurs” and “maxOccurs” XML attributes as detailed below, keeping in mind that their default value is 1:
 - **Classes repetitions:** shall be defined in the XSDs using the XML attribute “maxOccurs”;
 - **Optionality:** optional attributes or classes shall be defined in the XSDs by setting the “minOccurs” XML attribute of the corresponding element equal to zero. If this XML attribute is not used, the attribute or class is required;
- **Namespaces:** each XSD has to “import” the required namespaces and then reuse the necessary components by using its origin (i.e. the namespace) as a prefix.
- **Target namespace:** each XSD is associated with a distinct target namespace which is of the form “etir:xxx:vw.y” where xxx is the code of the eTIR message or DataSets or CodeLists or Metadata, and vw.y corresponds to the version of the eTIR specifications (like v4.3).
- **Version:** each XSD shall have a version number, based on the version of the eTIR specifications, using the form “w.y.z” where w.y.z corresponds to the version of the eTIR specifications (like v4.3) and .z corresponds to the specific version of the XSD (e.g. 4.3.6). This version number allows for proper versioning of the subsequent versions of the XSD in the same version of the eTIR specifications.
- **Types and formats:** the data type and format of the attributes are defined in the XSD simple types using restrictions⁷⁹. These restrictions can then be used by automated mechanisms to validate incoming messages against their corresponding XSD file.

3. The XML attributes used in the eTIR attributes

567. The following core data types’ attributes are only shown in the detailed reports on the eTIR messages from the eTIR functional specifications and are part of the XSDs as XML attributes that characterize the eTIR attributes:

- **Date time type:** the XML attribute “formatCode” is required on all date and date time XML elements. The codes are limited to 208 (CCYYMMDDHHMMSSZHHMM) and 102 (CCYYMMDD), depending on the XML elements;
- **Measure type:** the XML attribute “unitCode” is required on all measurement XML elements. The codes are taken from code list 21 (measurement unit – UNECE Recommendation 20) and may have restrictions depending on the XML element;
- **Text type:** the XML attribute “languageID” is optional on all free text XML elements. The codes are taken from code list 20 (language name – ISO 639-1) and in case the language identifier is not used, the text is considered to be in English.

F. Code lists

568. This annex provides the technical details of all code lists used in the eTIR specifications v4.3.0. The comprehensive lists of codes for all code lists are available in the dedicated appendix, available on the eTIR web site on this page: <https://etir.org/documentation/code-lists>.

⁷⁹ See www.w3schools.com/xml/schema_facets.asp

Table 118
List of code lists

<i>Code list</i>	<i>Name</i>	<i>Type and reference if external</i>	<i>Version number and date of issuance</i>
CL01	Equipment size and type description	UN/EDIFACT 8155	D.21A on 10/06/2021
CL02	Party role	UN/EDIFACT 3035	D.21A on 10/06/2021
CL03	Item type identification	UN/EDIFACT 7143	D.21A on 10/06/2021
CL04	Country name	ISO 3166-1 alpha-2	ISO 3166-1:2020
CL05	Transport means description	UNECE Recommendation 28	Revision 4.2 in 2018
CL06	Document name	UN/EDIFACT 1001	D.21A on 10/06/2021
CL07	Package type description	UNECE Recommendation 21	Revision 11 in 2020
CL08	Seal type	Internal	4.3.0 on 15/09/2021
CL09	Reply type	Internal	4.3.0 on 15/09/2021
CL10	<i>Removed</i>	<i>N/A</i>	<i>N/A</i>
CL11	<i>Removed</i>	<i>N/A</i>	<i>N/A</i>
CL12	Guarantee type	Internal	4.3.0 on 15/09/2021
CL13	<i>Removed</i>	<i>N/A</i>	<i>N/A</i>
CL14	<i>Removed</i>	<i>N/A</i>	<i>N/A</i>
CL15	<i>Removed</i>	<i>N/A</i>	<i>N/A</i>
CL16	Message function	UN/EDIFACT 1225	D.21A on 10/06/2021
CL17	Amendment type	Internal	4.3.0 on 15/09/2021
CL18	<i>Removed</i>	<i>N/A</i>	<i>N/A</i>
CL19	<i>Removed</i>	<i>N/A</i>	<i>N/A</i>
CL20	Language name	ISO 639-1	ISO 639-1:2002
CL21	Measurement unit	UNECE Recommendation 20	Revision 16 in 2020
CL22	Guarantee status	Internal	4.3.0 on 15/09/2021
CL23	Holder status	Internal	4.3.0 on 15/09/2021
CL24	Control result	Internal	4.3.0 on 15/09/2021
CL25	Control type	Internal	4.3.0 on 15/09/2021
CL26	Message type	Internal	4.3.0 on 15/09/2021
CL27	Termination type	Internal	4.3.0 on 15/09/2021
CL28	Controlling agency	UN/EDIFACT 0051	D.21A on 10/06/2021
CL29	Specifications name	Internal	4.3.0 on 15/09/2021
CL30	Specifications version	Internal	4.3.0 on 15/09/2021
CL31	Customs office role	Internal	4.3.0 on 15/09/2021
CL99	Error	Internal	4.3.0 on 15/09/2021

G. Error codes

569. This annex provides additional details on the error codes used in the context of the eTIR system.

570. The code list 99 defines all error codes that can be used in response messages to indicate problems that occurred while processing the corresponding request message. This code list is specific to the eTIR system and ECE has been continuously updating this list presented in the following table.

Table 119
Error code list (CL99)

<i>Code</i>	<i>Name</i>	<i>Description</i>
100	Invalid message	The message is invalid, and no additional details are available for this error
101	Missing field	A required field is missing in the message
102	Invalid domain for the value	A value is outside a defined list of acceptable values
103	Malformed date	A field containing a date value cannot be properly converted
104	Not an integer	A numeric field contains a value that is not numeric
105	Field value length exceeded	A String field contains a value with too many characters
106	Invalid pattern	A String field does not match the pattern for the field defined in the XML Schema Definition of the message
107	Invalid field	The specified field does not follow the order defined in the XML Schema Definition of the message
108	Missing XML attribute	The specified XML tag is missing a required attribute (e.g. formatCode for all date fields)
109	Invalid XML attribute	The specified XML tag has an invalid attribute value (e.g. formatCode for all date fields)
110	Too many digits	The number has too many digits
111	Too much precision	The number has a decimal part with too many digits
120	Invalid eTIR specifications version	The version specified in the metadata fields is not the one(s) approved to function in the eTIR system
151	Condition C001 failure	The condition C001 is not satisfied
152	Condition C002 failure	The condition C002 is not satisfied
153	Condition C003 failure	The condition C003 is not satisfied
154	Condition C004 failure	The condition C004 is not satisfied
155	Condition C005 failure	The condition C005 is not satisfied
156	Condition C006 failure	The condition C006 is not satisfied
157	Condition C007 failure	The condition C007 is not satisfied
158	Condition C008 failure	The condition C008 is not satisfied
159	Condition C009 failure	The condition C009 is not satisfied
160	Condition C010 failure	The condition C010 is not satisfied
181	Rule R001 failure	The rule R001 is not satisfied
182	Rule R002 failure	The rule R002 is not satisfied
188	Rule R008 failure	The rule R008 is not satisfied
190	Rule R010 failure	The rule R010 is not satisfied
200	Invalid state	The state of an internal object is invalid, and no additional details are available for this error
201	Invalid guarantee status	The guarantee is not in a state that allows to perform the required operation
203	Guarantee not cancellable	The guarantee is not in a state that allows to cancel it
204	Guarantee already registered	The guarantee has already been registered
205	Guarantee already cancelled	The guarantee is already cancelled or the request to cancel it has already been sent
210	Operation already started	The operation is already started
211	Operation already terminated	The operation has already been completed
212	Operation already discharged	The operation is already discharged
213	Operation not yet started	The operation is not yet started
214	Operation ID already registered	The “refusal to start” is an operation on its own and must have a unique operation ID
215	Operation sequence already registered	The “refusal to start” is an operation on its own and must have a unique operation sequence

<i>Code</i>	<i>Name</i>	<i>Description</i>
216	Refusal to start not authorized	The "refusal to start" cannot be performed because of the current guarantee status or because it is the first operation for this transport
220	Declaration not yet received	The operation cannot be started because the declaration was not received
299	Duplicate message	The same message was already received from the same source
300	Invalid operation	An invalid operation was performed, and no additional details are available for this error
301	Guarantee not found	The guarantee was not found in the database
302	Guarantee chain not found	The guarantee chain was not found in the database
303	Guarantee type not found	The guarantee type was not found in the database
304	Customs office not found	This error code is not used in the eTIR specifications v4.3
305	Country not found	The country was not found in the database
306	Control type not found	The control type was not found in the database
307	Declaration not found	The related declaration was not found in the database
308	Forward information not found	The eTIR international system could not find information on whom to forward the message to
309	Seals information already registered	The information received about the mentioned seal was already recorded in the database
310	Seals information should not be sent	The seal's information should not be sent in the record declaration data message
320	Holder/Guarantee mismatch	The holder id value and the guarantee reference value do not match what is recorded in the database
321	Holder not authorized	The holder is not authorized in the International TIR Data Bank (ITDB)
322	Holder not found	The holder is not found in the International TIR Data Bank (ITDB)
330	Guarantee chain not authorized	The guarantee chain is not authorized in the database
331	Guarantee chain/Guarantee mismatch	The guarantee chain code value and the guarantee reference value do not match what is recorded in the database
332	Guarantee type/Guarantee mismatch	The guarantee type parameter and the guarantee reference parameter do not match what is recorded in the database
333	Declaration reference not found	The FunctionalReferenceID value does not match what is already recorded in the database
334	Declaration already cancelled	The declaration could not be modified because it was already cancelled
400	eTIR internal error	An internal error in the eTIR international system occurred and no additional details are available for this error
500	Customs declaration processing error	The message was not accepted by customs and no additional details are available for this error
501	Advance TIR data not accepted	Customs did not accept the advance TIR data
502	Advance amendment data not accepted	Customs did not accept the advance amendment data

571. Not all error codes can be indicated in response messages and the following table displays which error codes can be referenced in response messages. This information is useful for the IT experts of the eTIR stakeholders to properly implement the follow-up actions when receiving specific error codes. This list is presented as it is at the time of the preparation of this document. Kindly check on the eTIR web site⁸⁰ to consult its latest version.

⁸⁰ See ctir.org/documentation/error-codes

Table 120
 List of possible error codes by response message

<i>Error code</i>	<i>I2</i>	<i>I4</i>	<i>I6</i>	<i>I8</i>	<i>I10</i>	<i>I12</i>	<i>I14</i>	<i>I16</i>	<i>I18</i>	<i>I20</i>	<i>E2</i>	<i>E4</i>	<i>E6</i>	<i>E8</i>	<i>E10</i>	<i>E12</i>	<i>E14</i>
100	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
101	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
102	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
103	X			X	X	X	X		X		X	X			X		
104				X											X	X	X
105	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
106	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
107	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
108	X			X	X	X	X		X		X	X			X	X	X
109	X			X	X	X	X		X		X	X			X	X	X
110				X											X		
111				X											X		
120	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
151				X				X							X	X	
152				X				X							X	X	
153				X				X							X	X	
154				X				X							X	X	
155				X				X							X	X	
156	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
157															X		X
158				X											X		
159																X	
160								X								X	
181				X				X							X		
182				X				X							X		
188				X				X							X	X	
190									X							X	
200	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
201	X				X	X	X										
203												X					
204										X							
205												X					

<i>Error code</i>	<i>I2</i>	<i>I4</i>	<i>I6</i>	<i>I8</i>	<i>I10</i>	<i>I12</i>	<i>I14</i>	<i>I16</i>	<i>I18</i>	<i>I20</i>	<i>E2</i>	<i>E4</i>	<i>E6</i>	<i>E8</i>	<i>E10</i>	<i>E12</i>	<i>E14</i>
210					X												
211						X											
212							X										
213						X	X										
214									X								
215									X								
216									X								
220					X												
299					X	X	X										
300	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
301	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
302					X	X	X		X		X	X					
303					X	X	X		X		X	X					
304										X							
305				X	X	X	X										
306					X	X	X										
307				X													
308															X	X	X
309					X	X											
310				X													
320	X			X								X					
321	X				X	X	X				X						
322	X	X	X		X	X	X				X		X				
330	X										X		X				
331	X											X					
332	X											X					
333																X	X
334																X	X
400	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
500															X	X	X
501															X		
502																X	

572. Finally, the following table gathers a set of recommended actions for consideration of the IT experts of the information system, when receiving a response message with one or more error codes.

Table 121
Recommended actions when receiving error codes

<i>Code</i>	<i>Name</i>	<i>Recommended actions</i>
100	Invalid message	Kindly check the message itself and its format as it is not recognized by the eTIR international system. Kindly contact the eTIR service desk to send the content of the message communicated, the timestamps and the steps to reproduce this issue in order to address it.
101	Missing field	Kindly check the message parameters, in particular the parameters marked as mandatory in the message description section of this document, and make sure that all mandatory parameters are part of the message.
102	Invalid domain for the value	Kindly check the coded parameter, its values and corresponding code lists. Make sure that each coded parameter is using one of the values of the corresponding code list.
103	Malformed date	Kindly check the date parameters and their format. Make sure that each date format has the format indicated, that the value follows the format/pattern and that the “formatCode” attribute is set to the correct value.
104	Not an integer	Kindly check the integer parameters. Make sure that each integer parameter has a value that can successfully be casted as an integer.
105	Field value length exceeded	Kindly check the parameter value lengths. Make sure that each parameter length does not exceed the max length as defined in the documentation in the Format column.
106	Invalid pattern	Kindly check the pattern of the parameter value as it does not match the requirements set for this attribute in XML Schema Definition of the message.
107	Invalid field	Kindly check the element specified as it may not follow the order defined in the XML Schema Definition of the message.
108	Missing XML attribute	Kindly check that all XML tags contain their required attribute, in particular all dates should contain the attribute formatCode to specify the format in which the date is sent.
109	Invalid XML attribute	Kindly check that all XML tag attribute values follow the specified code list, in particular the attribute formatCode for dates can only be either '102' or '208'.
110	Too many digits	Kindly check that the number of digits respects the specifications on the format of the relevant parameter holding a number value.
111	Too much precision	Kindly check that the number of digits of the decimal part respects the specifications on the format of the relevant parameter holding a number value.
120	Invalid eTIR specifications version	Kindly check that your information system, as well as the value of your message metadata fields, is in line with the latest version of the eTIR international system and the eTIR specifications.
151	Condition C001 failure	Kindly check the parameters constrained by the condition C001 and make sure their values respect the pseudo code of the condition.
152	Condition C002 failure	Kindly check the parameters constrained by the condition C002 and make sure their values respect the pseudo code of the condition.
153	Condition C003 failure	Kindly check the parameters constrained by the condition C003 and make sure their values respect the pseudo code of the condition.
154	Condition C004 failure	Kindly check the parameters constrained by the condition C004 and make sure their values respect the pseudo code of the condition.
155	Condition C005 failure	Kindly check the parameters constrained by the condition C005 and make sure their values respect the pseudo code of the condition.
156	Condition C006 failure	Kindly check the parameters constrained by the condition C006 and make sure their values respect the pseudo code of the condition.
157	Condition C007 failure	Kindly check the parameters constrained by the condition C007 and make sure their values respect the pseudo code of the condition.
158	Condition C008 failure	Kindly check the parameters constrained by the condition C008 and make sure their values respect the pseudo code of the condition.

<i>Code</i>	<i>Name</i>	<i>Recommended actions</i>
159	Condition C009 failure	Kindly check the parameters constrained by the condition C009 and make sure their values respect the pseudo code of the condition.
160	Condition C010 failure	Kindly check the parameters constrained by the condition C010 and make sure their values respect the pseudo code of the condition.
181	Rule R001 failure	Kindly check the parameters constrained by rule R001 and make sure their values respect the conditions set by the rule.
182	Rule R002 failure	Kindly check the parameters constrained by rule R002 and make sure their values respect the conditions set by the rule.
188	Rule R008 failure	Kindly check the parameters constrained by rule R008 and make sure their values respect the conditions set by the rule.
190	Rule R010 failure	Kindly check the parameters constrained by rule R010 and make sure their values respect the conditions set by the rule.
200	Invalid state	Kindly check the state of the referred object (transport, guarantee, ...) and make sure it is consistent with the eTIR international system requested web service called.
201	Guarantee not acceptable	Kindly check the state of the guarantee you tried to accept, and make sure it is correct according to the workflow described in the guarantee state diagram.
203	Guarantee not cancellable	Kindly check the state of the guarantee you tried to cancel, and make sure it is correct according to the workflow described in the guarantee state diagram.
204	Guarantee already registered	Kindly check the state of the guarantee you tried to register as it seems to be already registered. You may use Query guarantee web service to check its existence in the eTIR international system.
205	Guarantee already cancelled	Kindly check the state of the guarantee you tried to register as it seems to be already cancelled. You may use Query guarantee web service to check its existence in the eTIR international system.
210	Operation already started	This message tries to start a TIR operation which has already been started. Make sure that this message is not a duplicate of a previously sent message and verify the values set in its parameters.
211	Operation already terminated	This message tries to terminate a TIR operation which has already been terminated. Make sure that this message is not a duplicate of a previously sent message and verify the values set in its parameters.
212	Operation already discharged	This message tries to discharge a TIR operation which has already been discharged. Make sure that this message is not a duplicate of a previously sent message and verify the values set in its parameters.
213	Operation not yet started	This message tries to perform an operation on a TIR operation which should be started and that is not yet started. Make sure that this message is sent in the right order and verify the values set in its parameters.
214	Operation ID already registered	Kindly check the message ID and that it is not conflicting with another operation ID.
215	Operation sequence already registered	Kindly check the last operation's sequence number for this transport and increment it
216	Refusal to start not authorized	A refusal to start cannot take place if this the first operation registered or if the guarantee has not been accepted. Kindly check that your guarantee reference is also correct.
220	Declaration not yet received	This message tries to perform an operation whereas the Declaration has not yet been received. Make sure that this message is sent in the right order and verify the values set in its parameters.
299	Duplicate message	Kindly check the message already sent to this endpoint as this message has already been received by the eTIR international system.
300	Invalid operation	Kindly check the message content as it triggered a technical error in the eTIR international system but this one could not identify the source of the issue.
301	Guarantee not found	Kindly check the value of the guarantee reference ID in the message and make sure it matches the value received in previous messages.
302	Guarantee chain not found	Kindly check the value of the guarantee chain ID in the message and make sure it matches the value received in previous messages.

<i>Code</i>	<i>Name</i>	<i>Recommended actions</i>
303	Guarantee type not found	Kindly check the value of the guarantee type in the message and make sure it belongs to the code list "Guarantee type code (eTIR)" (CL12), and that it matches the value received in previous messages.
304	Customs office not found	This error code is not used in the eTIR specifications v4.3.
305	Country not found	Kindly check the value of the country code in the message and make sure it matches the value received in previous messages and that it belongs to the code list "Country name code (ISO 3166-1-alpha-2)" (CL04).
306	Control type not found	Kindly check the value of the control type in the message and make sure it matches the value received in previous messages and that it belongs to the code list "Control type code (eTIR)" (CL25).
307	Declaration not found	Kindly check the value of the guarantee reference ID in the message and make sure it matches the value received in previous messages.
308	Forward information not found	Kindly check that the advance data submitted is correct. If the error persists, please contact the eTIR service desk and send the content of the message communicated, the timestamps and the steps to reproduce this issue in order to address it.
309	Seals information already registered	Kindly remove any information related to seals not broken or affixed for the first time.
310	Seals information should not be sent	Kindly remove any information related to seals in the "Record declaration data" message.
320	Holder/Guarantee mismatch	Kindly check the format and value of the TIR Carnet holder in the message and make sure it matches the value received in previous messages. If it does, kindly check the existence of the TIR Carnet holder and its status using either "I3 - Get holder information" message, ITDB dedicated web services or ITDB web application.
321	Holder not authorized	Kindly check the value of the TIR Carnet holder in the message and make sure it matches the value received in previous messages. If it does, kindly check the status of the TIR Carnet holder using either eTIR I3 message, ITDB web service or ITDB web application.
322	Holder not found	Kindly check the value of the TIR Carnet holder in the message and make sure it matches the value received in previous messages. If it does, kindly double check the id of the TIR Carnet holder using either eTIR I3 message, ITDB web service or ITDB web application.
330	Guarantee chain not authorized	Kindly check the value of the guarantee chain ID in the message and make sure it matches the value received in previous messages.
331	Guarantee chain/Guarantee mismatch	Kindly check the value of the guarantee chain ID in the message and make sure it matches the value received in previous messages.
332	Guarantee type/Guarantee mismatch	Kindly check the value of the guarantee type ID in the message and make sure it matches the value received in previous messages.
333	Declaration reference not found	Kindly check the reference ID of the advance data message that you want to cancel. Note that if the previous message was sent directly to the national customs system, it cannot be cancelled using the eTIR international system forwarding mechanism.
334	Declaration already cancelled	Kindly check the reference ID of the advance data you want to cancel. The reference ID provided may have already been cancelled.
400	eTIR problem	Kindly contact the eTIR service desk to send the content of the message communicated, the timestamps and the steps to reproduce this issue in order to address it.
500	Customs declaration processing error	Kindly contact the related customs authorities to request additional information on the refusal of the advance data.
501	Advance TIR data not accepted	Kindly review the content of the advance TIR data as some information could not be accepted by the customs authorities. If you cannot find the cause of the refusal, please contact them to request additional information on the refusal of the advance TIR data.
502	Advance amendment data not accepted	Kindly review the content of the advance amendment data as some information could not be accepted by the customs authorities. If you cannot find the cause of the refusal, please contact them to request additional information on the refusal of the advance TIR data.

List of tables

	<i>Page</i>
Table 1 Applicable documents	4
Table 2 Definition of key terms	5
Table 3 Abbreviations	7
Table 4 Qualitative availability requirements	22
Table 5 Quantitative availability requirements	22
Table 6 Backup requirements.....	23
Table 7 Capacity and scalability requirements.....	23
Table 8 Configuration management requirements	24
Table 9 Data Retention requirements.....	25
Table 10 Disaster recovery requirements.....	26
Table 11 Fault tolerance requirements.....	26
Table 12 Internationalization and localization requirements.....	27
Table 13 Interoperability requirements	28
Table 14 Maintainability requirements	29
Table 15 Quantitative performance requirements	29
Table 16 Qualitative performance requirements	30
Table 17 Quantitative reliability requirements.....	31
Table 18 Qualitative reliability requirements.....	31
Table 19 Reusability requirement	32
Table 20 Auditing requirement	52
Table 21 Authentication requirements	52
Table 22 Authorization requirements.....	52
Table 23 Awareness and training requirements	53
Table 24 Confidentiality requirements.....	53
Table 25 Identification requirement.....	54
Table 26 Integrity requirements	54
Table 27 Nodes security requirements	55
Table 28 Non-repudiation requirements.....	55
Table 29 Physical security requirements.....	56
Table 30 Secure coding and application security requirements	56
Table 31 Vulnerability management requirements	56
Table 32 Correspondence of the version numbers	71
Table 33 Metadata - field list	78
Table 34 Metadata - field description.....	78
Table 35 Validation of numerical values for type “n..11,3”.....	80
Table 36 Characters to be replaced with predefined expressions.....	81
Table 37 Requirements and recommendations applicable to eTIR stakeholders’ information system.....	87
Table 38 I1 – field details.....	93
Table 39 I1 – field descriptions and usages.....	93
Table 40 I2 – field details.....	94
Table 41 I2 – field descriptions and usages.....	95
Table 42 I3 – field details.....	98
Table 43 I3 – field descriptions and usages.....	98
Table 44 I4 – field details.....	99
Table 45 I4 – field descriptions and usages.....	100

Table 46	I5 – field details.....	104
Table 47	I5 – field descriptions and usages.....	104
Table 48	I6 – field details.....	105
Table 49	I6 – field descriptions and usages.....	120
Table 50	I7 – field details.....	142
Table 51	I7 – field descriptions and usages.....	149
Table 52	I8 – field details.....	163
Table 53	I8 – field descriptions and usages.....	163
Table 54	I9 – field details.....	166
Table 55	I9 – field descriptions and usages.....	167
Table 56	I10 – field details.....	170
Table 57	I10 – field descriptions and usages.....	172
Table 58	I11 – field details.....	175
Table 59	I11 – field descriptions and usages.....	176
Table 60	I12 – field details.....	179
Table 61	I12 – field descriptions and usages.....	180
Table 62	I13 – field details.....	184
Table 63	I13 – field descriptions and usages.....	184
Table 64	I14 – field details.....	185
Table 65	I14 – field descriptions and usages.....	186
Table 66	I15 – field details.....	189
Table 67	I15 – field descriptions and usages.....	200
Table 68	I16 – field details.....	218
Table 69	I16 – field descriptions and usages.....	218
Table 70	I17 – field details.....	221
Table 71	I17 – field descriptions and usages.....	222
Table 72	I18 – field details.....	223
Table 73	I18 – field descriptions and usages.....	224
Table 74	I19 – field details.....	226
Table 75	I19 – field descriptions and usages.....	226
Table 76	I20 – field details.....	227
Table 77	I20 – field descriptions and usages.....	228
Table 78	E1 – field details.....	230
Table 79	E1 – field descriptions and usages	230
Table 80	E2 – field details.....	231
Table 81	E2 – field descriptions and usages	232
Table 82	E3 – field details.....	234
Table 83	E3 – field descriptions and usages	234
Table 84	E4 – field details.....	235
Table 85	E4 – field descriptions and usages	236
Table 86	E5 – field details.....	238
Table 87	E5 – field descriptions and usages	238
Table 88	E6 – field details.....	238
Table 89	E6 – field descriptions and usages	254
Table 90	E7 – field details.....	277
Table 91	E7 – field descriptions and usages	277
Table 92	E8 – field details.....	278

Table 93	E8 – field descriptions and usages	278
Table 94	E9 – field details.....	283
Table 95	E9 – field descriptions and usages	290
Table 96	E10 – field details.....	303
Table 97	E10 – field descriptions and usages	304
Table 98	E11 – field details.....	308
Table 99	E11 – field descriptions and usages	315
Table 100	E12 – field details.....	326
Table 101	E12 – field descriptions and usages	326
Table 102	E13 – field details.....	329
Table 103	E13 – field descriptions and usages	329
Table 104	E14 – field details.....	329
Table 105	E14 – field descriptions and usages	330
Table 106	ArchiMate diagram notation	340
Table 107	Technical glossary.....	341
Table 108	Statistics and forecast of the sales of TIR Carnets and eGuarantees	344
Table 109	Messages received and sent by the eTIR international system by scenarios.....	346
Table 110	Estimated number of messages to be supported by the eTIR international system.....	347
Table 111	Estimated maximum number of messages received and sent.....	347
Table 112	Estimated maximum number of request messages received	347
Table 113	Estimated average and maximum requirements for the throughput of messages.....	348
Table 114	Estimated maximum volume of data to be stored in the eTIR logs.....	348
Table 115	Estimated maximum volume of data to be stored in the eTIR database.....	349
Table 116	Estimated maximum volume of data to be stored in the eTIR documents.....	349
Table 117	Information security threats and mitigation measures.....	350
Table 118	List of code lists	353
Table 119	Error code list (CL99)	354
Table 120	List of possible error codes by response message	356
Table 121	Recommended actions when receiving error codes	358

List of Figures

	<i>Page</i>
Figure 1 Overall technical architecture of the eTIR system	11
Figure 2 Interactions between the national customs system and the customs offices.....	12
Figure 3 Interactions between the national customs system and the eTIR international system	13
Figure 4 Interactions between the customs union system and the national customs systems.....	14
Figure 5 Possible interactions between the holder system and the national customs system	15
Figure 6 Interactions between the holder system and the systems of a customs union	15
Figure 7 Interactions between the holder system and the national customs system via the eTIR international system	16
Figure 8 Interactions between the guarantee chain system and the eTIR international system.....	17
Figure 9 Interactions between the eTIR international system and the ITDB.....	17
Figure 10 Interfaces of the eTIR international system.....	18
Figure 11 Software architecture of the eTIR international system	19
Figure 12 Systems architecture of the eTIR international system	21
Figure 13 Development by iteration	34
Figure 14 Environments of the eTIR international system.....	38
Figure 15 Issue lifecycle.....	40
Figure 16 Release management process	42
Figure 17 Continuous improvement process	43
Figure 18 Types of maintenance issues	44
Figure 19 Incident management process	45
Figure 20 Fundamental objectives of information security	49
Figure 21 From identification to accountability	49
Figure 22 eTIR security model.....	62
Figure 23 An alternative security model.....	64
Figure 24 Stages proposed for interconnection projects.....	67
Figure 25 Aspects of the gap analysis for customs authorities	68
Figure 26 Structure of the eTIR data model	69
Figure 27 Update cycles in the versions of the eTIR specifications.....	71
Figure 28 Phases of an update cycle.....	72
Figure 29 Update cycles and code lists class diagram.....	73
Figure 30 Endpoints of the eTIR web services.....	74
Figure 31 Structure of SOAP messages in the eTIR system.....	75
Figure 32 Expiration of a guarantee on 01 August 2024	82
Figure 33 Acceptance of a guarantee on 01 July 2021 10:03:42 in Istanbul (Time offset +03:00).....	82
Figure 34 Generate a UUID in Java	83
Figure 35 Generate a UUID in C#.....	83
Figure 36 Single error returned: missing field.....	85
Figure 37 Two errors returned of the same type.....	85

Figure 38	Algorithm to determine the status of a holder	97
Figure 39	Sending the original declaration data	140
Figure 40	Sending the amended declaration data	141
Figure 41	How the holder can send advance TIR data using the E9 message.....	280
Figure 42	Update the advance TIR data or the declaration data.....	281
Figure 43	Advance TIR data for multiple loading points	282
Figure 44	Via the eTIR international system, using web services.....	332
Figure 45	Via the eTIR international system, using a web portal.....	333
Figure 46	Directly to customs, using a web portal	333
Figure 47	Via the web portal of the customs authorities of the country residence.....	334
Figure 48	Via the web portal of a third party	334
Figure 49	Via the web portal of a third party and the eTIR international system.....	335
Figure 50	Replication mechanism	337
Figure 51	Retry mechanism for notifications	338
Figure 52	Exponential back-off retry rate.....	339
