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**ECONOMIC COMMISSION FOR EUROPE**

**INLAND TRANSPORT COMMITTEE**

Working Party on Customs Questions affecting Transport

Informal Ad hoc Expert Group on Conceptual and  
Technical aspects of Computerization of the TIR Procedure  
(Eighth session, 10 and 11 November 2005, agenda item 3 (c))

**ACTIVITIES OF THE INFORMAL AD HOC EXPERT GROUP**

**Reference Model of the TIR Procedure**

**Future projects for the Reference Model of the TIR Procedure**

**Note by the secretariat\***

**A. BACKGROUND**

1. At its fourth session, the Expert Group held first considerations with regard to preparing a high-level description of the eTIR Project (ExG/COMP/2004/10, paras. 15-17). At its seventh session, the group continued its consideration on the basis of document ExG/COMP/2004/23 drafted by the secretariat and of a presentation made by the European Commission. The Expert Group requested the secretariat to collaborate with the Commission to prepare a new document for its next session combining the ideas from the Commission's presentation and elements of document ExG/COMP/2004/23.

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\* This note has been prepared with the assistance of the European Commission (EC).

2. At their first meeting, the European Commission and the secretariat were of the view that it would be more effective to devise not one but two separate documents. The first document should present the general ideas on how the eTIR system would replace all functionalities integrated in the TIR Carnet with the aim of presenting it for endorsement to the WP.30 at its October 2005 session. The second document, intended for the Expert Group, should elaborate the ideas, contained in the first document, in the form of high-level functional specifications.

3. The annex to this document contains the proposed high-level functional specifications of the eTIR system. These specifications are fully compliant with the general ideas contained in WP.30 Informal document No. 9 (2005) prepared jointly by the secretariat and the European Commission. The key elements contained in the informal document and agreed upon by the WP.30 are the international management of the guarantee and the exchange of information regarding TIR transports among Customs authorities. At its one-hundred-and-eleventh session, the Working Party supported that that Expert Group should follow the guidelines contained in Informal document No. 9 (2005) for its future discussions (TRANS/WP.30/222, para. 33). It also took note of the concerns and diverging views expressed by the IRU (TRANS/WP.30/222, para. 34).

4. This document has been prepared by the secretariat with the assistance of the European Commission (EC).

## **B. HIGH LEVEL REQUIREMENTS OF THE eTIR SYSTEM**

5. The high level functional specifications of the eTIR system provide an overview of the system on which the future functional and technical specifications of the project will be based. They provide not only a general view, but also establish guidelines allowing for a smooth transition from the paper-based system to a computerized system.

6. Before addressing the steps which will guide the transition between the two systems, the general principles of the fully implemented eTIR System should be identified. It is not the aim of this document to describe the transition period and all steps necessary to achieve the full implementation of the project. These, and other related issues, will be addressed at a later stage, once the description of the full implementation of the eTIR project has been approved.

### C. FINAL CONSIDERATIONS

7. The Expert Group may also wish to note that a review of the UNECE has been conducted in the first half of 2005. The outcome of the review, which was carried out by a group of consultants mandated by the UNECE member States, is contained in the report “the State of the UNECE - External Evaluation Report”. This report was published on 30 June 2005. The report stresses the importance of the TIR Convention and specifically mentions the “needs to have at least some of its procedures computerized.” This stresses the relevance of the eTIR project and the importance to establish quickly an efficient and reliable eTIR system.

8. The Expert Group may wish to have a first discussion on the annex and possibly request its inclusion into the Reference Model as an introduction to the eBusiness requirements Chapter. Furthermore, it may request the secretariat to further study the step-by-step implementation of the eTIR system.

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# 1. Actors and roles

## 1.1. CUSTOMS AUTHORITIES

Customs authorities can perform the following roles:

- Customs office of departure
- Customs office of destination
- Customs office of entry (en route)
- Customs office of exit (en route)

The different tasks and obligations related to these roles are described in the various fundamental principles in Chapter 2.

## 1.2. ETIR INTERNATIONAL SYSTEM

The eTIR international system interfaces with the guarantor and will ensure the proper management of the guarantee system at international level by the competent customs authorities. Moreover, in view of the fact that, within the eTIR system, electronic direct exchange of information between the Customs administrations located in the different Contracting parties is neither currently feasible nor enforceable, it will facilitate the secure circulation of standardized information between Customs administrations.<sup>1</sup>

## 1.3. OPERATOR

The operator<sup>2</sup> performs the TIR transport<sup>3</sup> and is responsible for providing the related declaration data electronically and for presenting the goods to the relevant Custom offices referred to in Chapter 1.1 above.

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<sup>1</sup> In accordance with the instructions by the WP.30 at its 106<sup>th</sup> session, the eTIR system administration shall be established on the basis of an international, centralized database whose aim it is to facilitate the secure exchange of data between national Customs systems (TRANS/WP.30/212, para. 26).

<sup>2</sup> The role of the operator is comparable to the one of the TIR Carnet holder in the paper-based system.

<sup>3</sup> The TIR transport is the transport of goods from a Customs office of departure to a Customs office of destination under a procedure, called the TIR procedure, laid down in the TIR Convention.

## 1.4. GUARANTOR

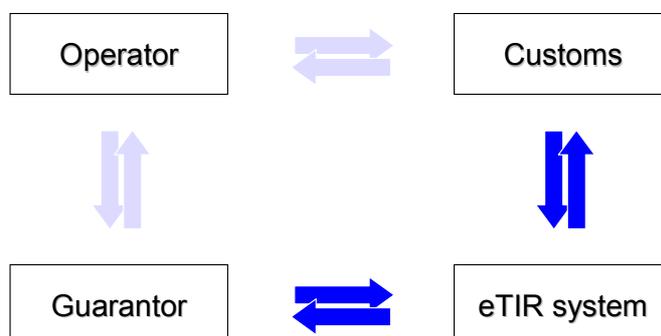
The guarantor<sup>1</sup> provides the operator with a valid international guarantee i.e. a guarantee recognized by each of the Contracting Parties involved in the TIR transport. Moreover, the guarantor must have a legal representative in each country involved in the TIR transports it guaranties. Therefore, the guarantor constitutes de facto a guarantee chain.

## 2. Fundamental principles

### 2.1. ETIR INTERNATIONAL SYSTEM BRIEF

The eTIR international system is devised primarily for allowing the management of the guarantee by Customs and the exchange of Customs information related to the international transit of goods, vehicles and/or containers according to the provisions of the TIR Convention.

Therefore, only a part of the information flow required for the functioning of the TIR procedure is managed by the eTIR international system. The following picture graphically represents the information exchange between the actors. It also shows that the eTIR system does not communicate with the operator, and that Customs do not communicate directly with the guarantor. It is important to recall, at this stage, that the management of claims is outside the scope of the eTIR project. Dark arrows show the interactions with the eTIR systems, light ones depict interactions which will be dealt with at national or private sector level.



<sup>1</sup> At present the IRU and the national guaranteeing associations are authorized as performing the role as international guaranteeing chain. It is envisaged that this role as a whole is equivalent to the role of the guarantor as described in this document.

On the one hand, the guarantor interacts with the eTIR system to ensure that the guarantees he has issued to the operators are properly registered in the eTIR system. On the other hand, Customs authorities use the eTIR systems to check the guarantees but also to exchange information related to the TIR transport and to TIR operations.

The guarantee management and the exchange of TIR transport information are therefore the two major fundamental principles. For the time being, guidelines will be also provided to promote harmonization, especially in the context of the dialogue between the operator and Customs authorities. Other aspects might be dealt with at a later stage.

Agreement on communication, security and fallback solution will be other pillars of the system.

## **2.2. ETIR GUARANTEE MANAGEMENT**

The Guarantee management implies a strong relationship between the guarantor and the eTIR international system. The guarantor, or the guarantee chain, is composed of national affiliates, authorized by Customs administrations, and of an international organization authorized by the AC.2 to manage the guarantee chain. The international organization receives from its national affiliates information on the guarantees issued to the operators and sends this information to the Guarantee database, managed by the eTIR international system. The recording of this information in the Guarantee database is conditional on checks made against the International TIR database (ITDB) concerning authorized holders.

### **2.2.1. Registration of the guarantee**

After having issued a guarantee to the operator, the guarantor shall register it in the eTIR international system by sending an appropriate agreed EDI message.

#### **2.2.1.1. Elements composing the registration of the guarantee<sup>1</sup>**

##### **2.2.1.1.1. Operator**

Information on the physical or legal person to whom the guarantee has been issued.

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<sup>1</sup> The mandatory or optional status of the information contained in the messages in this document will be discussed at a later stage.

#### 2.2.1.1.2. Guarantor

Information on the guarantor.

#### 2.2.1.1.3. Guarantee

Information on the guarantee (GRN, validity, max. n° of operations, ...)

### 2.2.2. Cancellation of a guarantee

Once a guarantee has been registered in the eTIR international system, the guarantor can invalidate any guarantee which has not yet been used. It can also cancel the validity of a guarantee currently in use but only for the TIR operations which have not yet started.

### 2.2.3. Verification of the guarantee

The information about the guarantee will be accessible to all Customs offices. If an operator presents to Customs a declaration covered by a guarantee, which is not recorded in the guarantee database or invalid, then the Customs authorities shall not accept it.

### 2.2.4. Querying guarantee status

Once a guarantee has been registered in the eTIR international system, the guarantor can query at any time the status of the guarantee and obtain the TIR transport information attached to it. An automated notification system could also be established once the system would have proven its robustness.

## 2.3. EXCHANGE OF TIR TRANSPORT INFORMATION

### 2.3.1. Data handling at the beginning of the TIR transport

Once the Customs office of departure accepts the declaration, according to national procedures, it will send a message containing that information, together with additional Customs data, to the eTIR international system, in line with agreed requirements. The latter will then store the declaration information and link it with the guarantee information. This information is then available, upon request, to all Customs offices.

### **2.3.1.1. Recording of the elements composing the TIR transport (and its subsequent updates)**

The elements required for the TIR transport recording are those of the TIR operation 'start information' (see point 2.3.2.1.1) plus all the elements provided in the declaration(s) (see 2.4.2.1). In addition, the Customs office of departure provides the following elements:

#### **2.3.1.1.1. Seals**

Information in the seal(s) affixed to the vehicle(s) and/or container(s).

### **2.3.2. Data handling related to TIR operations**

#### **2.3.2.1. Elements composing the TIR operation registration**

##### **2.3.2.1.1. TIR operation start information**

The Customs office of departure/entry provides a number of information:

##### **Operation Reference Number and date of start**

##### **Time limit for transit**

Time limit for the TIR operation.

##### **National itinerary**

Customs office(s) at which the cargo has to be produced.

##### **Electronic signature**

Element ensuring the identity of the Customs office registering the start of the TIR operation and certifying its contents has not been updated since the signature has been created.

##### **2.3.2.1.2. TIR operation termination information**

The Customs office of destination/exit provides a number of information:

### **Date of termination**

#### **Reservations**

In case of doubts with regard to TIR operation, the Customs office of destination or exit can indicate that it has terminated the TIR operation with reservations.

#### **Electronic signature**

Element ensuring the identity of the Customs office registering the termination of the TIR operation and certifying its contents has not been updated since the signature has been created.

#### 2.3.2.1.3. TIR operation discharge information

The Customs office discharging the TIR operation provides a number of information:

#### **Date of discharge**

#### **Electronic signature**

Element ensuring the identity of the Customs office registering the discharge of the TIR operation and certifying its contents has not been updated since the signature has been created.

## **2.4. OTHER ASPECTS**

### **2.4.1. Issuance of guarantees**

The operator requests the guarantee from the guarantor, who will, on the basis of international, national and internal rules, decide if the guarantee can be issued to the operator. The guarantor will then complete the guarantee reference number (GRN) for that specific guarantee, associate an access code to it, and provide them to the operator. This procedure is outside the scope of the development of the eTIR international system but is a prerequisite for the functioning of the eTIR procedure.

The guarantor registers the guarantee internationally as foreseen in point 2.2.1.

## **2.4.2. Declaration**

The operator submits the eTIR declaration by electronic means to the Customs office of departure, making reference to a guarantee issued by a guarantor. At the same time, he may inform all following Customs offices of entry that he will perform one or more TIR operations under cover of the above-mentioned guarantee. The declaration may be submitted prior to the presentation of the goods at the Customs office of departure.

The declaration is dealt with at national level between the operator and the Customs Authorities. Nevertheless, it is advised that the following elements are provided in the declaration since these elements are also part of the registration of the TIR transport information (see 2.3.1.1).

### **2.4.2.1. Elements composing the declaration (*to be discussed*)**

#### **2.4.2.1.1. Operator**

Information on the physical or legal person which is responsible for transporting the goods and submitting the declaration, together with an electronic signature.

#### **2.4.2.1.2. Guarantee**

The GRN of the guarantee under which the TIR transport will be undertaken.

#### **2.4.2.1.3. Goods**

Information on the goods transported (e.g.: type, quantity, identifications, ...) as well as other accompanying data. Optionally the value of the goods can also be provided.

#### **2.4.2.1.4. Vehicles/Containers**

Information on the vehicles and/or containers used to carry the goods.

#### **2.4.2.1.5. Accompanying documents**

Reference to all documents, paper or electronic, which are accompanying the declaration.

#### **2.4.2.1.6. Consignee**

Information on the physical or legal persons to whom goods are shipped.

#### 2.4.2.1.7. Itinerary

Countries involved in the TIR transport.

#### 2.4.2.1.8. Electronic signature

Element ensuring the identity of the operator submitting the advance declaration and certifying its contents has not been updated since the signature has been created.

#### 2.4.2.1.9. Consignor

Information on the physical or legal persons from whom goods are shipped.

#### 2.4.2.1.10. [Subcontractors

Information on the physical or legal person which performs the transport or a part of the transport on behalf of the operator. ] *under discussion*

### 2.4.3. Pre-arrival information

One of the objectives of the eTIR system, as defined by the Contracting Parties, is to provide Customs authorities with information prior to the arrival of cargos. This applies to information provided by the private sector as well as to information exchanged between Customs authorities. Therefore, the eTIR international system makes all information available to all authorized Customs offices concerned. If requested, automated messages could be sent from the eTIR international system to Customs authorities as soon as information is received.

## 2.5. DATA EXCHANGE

### 2.5.1. Central database

The eTIR international system is built around a central database. The database serves to store and, at request, makes the information available and acts as repository for all information concerning eTIR.

### 2.5.2. Communication

The eTIR system may use the Internet to exchange messages.

### **2.5.3. Standard messages**

The exchange of data with the eTIR international system is achieved by means of a set of predefined standard messages. All messages needed to ensure the functioning of the eTIR system are described in the functional and technical specifications.

## **2.6. SECURITY**

### **2.6.1. The elements of security from the TIR Convention**

#### **2.6.1.1. Controlled access**

Controlled access is a major principle of the TIR system. The ITDB will be fully used to ensure that only authorized operators use the TIR system.

### **2.6.2. Security data elements**

In line with international recommendations concerning supply chain security, a number of data elements may have to be added to increase the security of the eTIR system.

### **2.6.3. eTIR system security**

The eTIR international system is secured with the latest security methods applicable to systems communicating via the Internet. All messages are encrypted and the access is restricted to authorized users. The system is set up to function 24/7.

## **2.7. FALLBACK SOLUTIONS AND CERTIFIED REPORT**

In case of problems in the course of a TIR transport, an accompanying document, printed by the Customs office of departure, provides all information regarding the TIR transport. This document also covers the need in case of accident and incidents and replaces the certified report.

In the future, the access to the TIR transport information by other authorities like police will be made available by means of portable technologies such as those embarked in modern cell phones or PDAs.

## **3. Deliverables**

### **3.1. NATIONAL DELIVERABLES**

#### **3.1.1. National management of eTIR data**

The national computer systems of the countries connected to the eTIR system process electronically the data from and to the eTIR international system. The national applications are primarily focused on reception and validation of the electronic declaration as well as on the management of the TIR operations.

#### **3.1.2. Bridges to the international eTIR system**

National computer systems communicate with the eTIR international system via the Internet using a predefined set of standard messages and technology such as web services.

#### **3.1.3. User manuals and training**

Customs administrations provide their Customs officers with the necessary documentation and training to ensure the proper use of the national parts of the eTIR system.

### **3.2. INTERNATIONAL DELIVERABLES**

#### **3.2.1. Central database**

The eTIR platform is based on a central database system. The database stores the data and contains the functional rules that allow the proper functioning of the eTIR international system.

The database stores information on the data on guarantees and their coverage, and links the issued guarantees with the operator. Moreover it stores all data regarding the TIR transports linking them to the guarantee information.

### **3.2.2. Web services**

The eTIR web services allow authorized computer systems to interact securely with the eTIR system. The web services provide, in a standard format, the functions which allow querying and updating the eTIR database.

### **3.2.3. Definitions of standard exchange messages**

All messages sent to or received from the eTIR international system are defined and listed in the functional and technical specifications.

### **3.2.4. Technical documentation**

The technical documentation will help Customs authorities and the private sector to develop their specific applications connected to the eTIR international system. It mainly describes the web services and the standard messages.

### **3.2.5. User manuals and training for trainers**

The user manuals and the training for trainers serve as basis for the development of national user manual and national training program. They describe the procedures, the best practices as well as all tools available in eTIR international system.

### **3.2.6. Helpdesk**

The helpdesk is available to Customs authorities and the private sector to help in the implementation of specific parts of the eTIR system.

## **3.3. OTHER DELIVERABLES**

Other elements which may be necessary for the functioning of the eTIR system are not necessarily integrated into the eTIR international system.

### **3.3.1. Customs offices database**

A database in which information on all Customs offices involved in the eTIR system is stored.

### **3.3.2. Countries database**

A database containing information on all Countries involved in the eTIR system.

### **3.3.3. Authorized access database**

To ensure that guarantees are only issued to authorized TIR operators, the eTIR system links to the ITDB.

### **3.3.4. eTIR security database**

In order to technically restrict access to the eTIR international system to those users who have been authorized, the eTIR systems uses a security database.

## **3.4. LANGUAGES AND CHARACTER SETS**

The eTIR system will allow for the translation of all coded information in order to ensure the maximum transparency. In order to allow the transmission and display of all languages, the character set used by the eTIR system is Unicode (UTF-16).

In case of textual descriptions, the language of the country where the information has been provided shall be used. Nevertheless, translations in other languages can also be provided and are sometime required.

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