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**Economic Commission for Europe****Administrative Committee for the TIR Convention, 1975****Technical Implementation Body****Eighth session**

Geneva, 4 June 2024

Item 4 (b) of the provisional agenda

**eTIR international system:****Connection of national customs systems to the eTIR international system****Technical solution for the implementation of the eTIR  
procedure in the European Union proposed by the secretariat****Note by the secretariat****I. Background****A. Customs transit procedures currently used in European Union**

1. In the current context, in the customs territory of the European Union Customs Union, all TIR transports are being managed by the European Union Member States customs authorities following the (paper) TIR procedure described in the TIR Handbook as well as in the transit manual (European Union document TAXUD/A1/TRA/005/2020-1-EN).
2. It should be noted that in addition to the TIR procedure, all TIR transports also follow the procedures and requirements described in the Union Customs Code (European Union document 32022R2399).
3. Despite the entry into force of the Annex 11 to the TIR Convention on 25 May 2021, subject to a period of twelve months following the date of communication by the Secretary-General of the United Nations to the Contracting Parties, and the European Union Customs Union Member States have not yet implemented the eTIR procedure.

**B. Proof of Concept (2021)**

4. From June 2020 to June 2021, the secretariat and the European Commission Taxation and Customs Union (DGTAXUD) jointly developed a proof of concept aiming at confirming the compatibility of the European Union customs New Computerized Transit System (NCTS) with eTIR specifications, and eventually at identifying the eTIR specifications amendments that may be required to interconnect NCTS with the eTIR international system.
5. This proof of concept explored and documented complex scenarios representing the most relevant and challenging use cases identified by both teams. Each of these have been documented in detail in the document "Proof of Concept - NCTS - eTIR interconnection"



published to the European Union Member States as business case document for integration in a future phase of NCTS implementation.

6. The conclusive assessment of this proof-of-concept report, finalized in June 2021, was that the interconnection of NCTS with the eTIR international system would be a challenge at a technical level with the necessity to convert eTIR messages into NCTS messages, and vice versa, and would also require the adaptation of NCTS specifications as well as, possibly, the next version of the eTIR specifications. Nevertheless, this solution had several advantages:

(a) All European Union stakeholders could use the same IT systems as today, which means that the authentication of the holders, the business scenario and the exchange of message between traders and customs would be facilitated.

(b) A large part of the NCTS messages could be converted to be used by the eTIR international system, and the eTIR specifications may be adjusted for facilitating the dialogue with NCTS.

(c) The cost for European Union Contracting Parties would be reduced because this solution would be based on a well-known system, NCTS, with specifications centrally developed by the Commission. It would avoid the development of new ad hoc system by each European Union Member state.

(d) The use of NCTS would facilitate the continuation of traders interfaces (such as TIR-EPD or other TIR-EDI solutions) used for TIR, allowing traders to send TIR data together with safety and security data, thus facilitating border crossings.

(e) In that sense, the use of NCTS would allow a faster implementation of eTIR in European Union Member states as compared with the development of a completely new application from scratch.

(f) The proof of concept tended to highlight that even if gaps exist between the NCTS and eTIR specifications, those differences could be bridged with efforts from both sides.

### **C. Requirements of European Union member States concerning TIR / eTIR**

7. During the third session of the TIR Technical Implementation Body, the European Union presented the document ECE/TRANS/WP.30/AC.2/TIB/2022/19, containing amendment proposals, transmitted on behalf of its Member States, aiming at ensuring the compatibility of the NCTS with eTIR specifications.

8. TIB agreed with the proposal to make the issuing date of the attached document optional in all messages where it appears (i.e., E6, E9, E11, I6, I7 and I15) and mandated the secretariat, in collaboration with the European Union, to present a detailed proposal on the inclusion of the consignor (possibly also consignee) at consignment level at one of its next sessions. The latest has been completed and accepted by TIB at its fourth session and is now reflected in the document ECE/TRANS/WP.30/AC.2/TIB/2024/8 listing the eTIR specification amendment proposals accepted by TIB. Both amendments are currently being considered for the version 4.4 of the eTIR specifications.

9. Beyond these eTIR specification amendment proposals, the European Union Customs Union presents particularities to the TIR procedure that are to be considered as requirements in the context of the eTIR procedures and of the eTIR specifications, in particular:

(a) For TIR transit, the customs territory of the Union shall be considered as a single territory.

(b) Consequently, each TIR operation shall be started from the customs of departure/entry in European Union customs territory and shall be terminated at the customs of destination/exit in the European Union customs territory, without regard to the internal European Union borders it may cross.

(c) Each TIR operation, shall be assigned a Movement Reference Number (MRN).

(d) At the request of the TIR carnet holder, the customs office of departure shall provide a transit accompanying document, or a transit/security accompanying document.

(e) The customs office of departure/entry must notify the customs office of destination/exit (or eventually of intermediate loading/unloading).

10. Furthermore, the current situation in the European Union is that, despite an important use of the TIR procedure in the past, the number of TIR transports has significantly decreased and continue to decrease. The limited added value of eTIR due to the low volume of TIR transports in the European Union in combination to the important NCTS development effort, resulted in the fact that the implementation of the eTIR procedure in NCTS has been pushed back from phase 5 to phase 6 of the NCTS Work Programme (currently scheduled to start in Q2 2025).

11. Considering this delay, as well as the expected long period of interconnection implementation of NCTS with the eTIR international system, it is foreseen that the eTIR procedure will be operational for the European Union member States not earlier than 2028 and this under certain conditions. One of the major conditions being if the volumes of TIR carnets at that time justify the effort (resources, time, budget) to undertake such endeavour or not.

12. Against this background, the TIR secretariat, acknowledging the importance for TIR system's future and sustainability to have European Union member States being able to perform the eTIR procedure as soon as possible, proposes in this document, a new technical solution / approach for the implementation of the eTIR procedure in the European Union Customs Union. This solution would allow, in the short term, for European Union customs officers to perform the necessary eTIR procedures, connected to the eTIR international system, with none or close to none NCTS development effort required by the IT teams of the European Union and its Member States.

## **II. New proposed solution – architecture**

### **A. Concept note – requirements analysis**

13. Based on the current knowledge of the European Union Customs Union's requirements and, of the eTIR specifications, the secretariat would like to propose a dedicated technical solution inspired by the existing eTIR National Application for the European Union's (and its Member States) consideration. This new solution referred in this document to eTIR European Union (eTIR EU), would offer to European Union Member States customs officers access to a common online platform where the customs officers would be able to perform the eTIR procedure, adapted to the special needs of the European Union Customs Union, described in the Union Customs Code, in lieu of NCTS. This web application would be complemented by an API allowing direct data exchange between the eTIR European Union and the European Union Member States national customs systems, and eventually with NCTS. This solution would be aligned with the latest approved version of the eTIR specifications and compliant with the eTIR conformance tests.

14. In response to the main European Union customs requirements listed above, the following key features would be implemented in eTIR EU:

(a) To adapt to the particularity of the European Union customs territory, a single instance of eTIR EU would be deployed and would be commonly used by all European Union Member States customs officers allowing easy data sharing and transparency regarding the TIR transport going through European Union.

(b) As European Union territory (along with all the custom offices of its Member States) would be considered as a single customs territory by the technical solution. Therefore, all TIR operations would be considered at the European Union territory level, allowing for TIR operations to start in the customs office of an European Union Member State and to terminate in the customs office of a different European Union Member State. Note that for discharge, the only existing restriction in the eTIR procedure that this one must be performed

by a customs office of the same customs territory (this one can be of the start, terminate or even another customs office).

(c) In eTIR specifications, the field “Registration number” already allows the customs office starting a TIR operation to assign a “unique identifier under which the TIR operation is nationally registered”. This field shall be used to record the “Master Reference Number” (MRN). Once the algorithm communicated to the secretariat, eTIR NA would be able to generate the MRN required for “I9 - Start TIR operation” and for “I16 - Notification confirmation”.

(d) An additional feature shall be implemented allowing for the customs officer to generate a “transit accompanying document” PDF document to be shared with the TIR carnet holder (by email or a print-out handed over), stating of the MRN for any other intra-European Union customs procedure this one may have.

(e) In the context of eTIR EU, by default, all customs officers have visibility access to the TIR transport data related to transports crossing their customs territory, and can see the incoming TIR transport with started operation heading toward their customs office. Nevertheless, a new feature may be implemented to notify explicitly the customs office of termination (exit/destination/intermediary loading/unloading), when a TIR operation started, and is intended to be terminated in their customs office.

15. In addition to the features mentioned above, the following features are foreseen, and would be proposed for consideration by the European Union Customs Union:

(a) Implementation of user authentication and authorization based on a European/central authentication provider or on multiple national authentication provider (based on OAuth2 protocol). Alternatively, and by default, the customs users would authenticate using International TIR databank (ITDB) user accounts created for them.

(b) Improvement of the user access system granularity to increase control on user data visibility and user actions.

(c) Implementation of a Risk analysis data API and visualization in eTIR EU, allowing for National Customs Systems to “enrich” TIR operation data with risk analysis result and to visually display it in the User Interface to be used by customs officers. It should be noted that should the European Union Member State wish, other “additional information” can enrich the data available to the customs officers in eTIR EU to allow compliance with other specific UCC procedures.

(d) Improvement of the user interface to highlight the good categorization and all attached document of types that reflect the proof of customs status for better consideration by the European Union Member States customs officers.

(e) Improvement of the user interface to notify customs officers of the TIR operation start when the set maximum date-time of termination of the operation is expired.

(f) Improvement of the application to automatically invalidate advance TIR/amendment data that has been sent (and not used for declaration) after a defined period (30 days for European Union) as such a constraint does not exist in eTIR specification.

(g) Implementation of an extra European Union data repository allowing for economic operators (holders) to record extra European Union data as well as for European Union customs officers to record extra information or document in addition to the declaration. The detail of this mechanism would need to be refined after discussion with the European Union Customs Union team.

16. The secretariat foresees that additional features may be required for eTIR EU to satisfy the role of replacing NCTS in supporting the eTIR procedures for the customs officers of the European Union Member States. Identifying and evaluating these would require additional technical meetings with the European Union Customs Union team including if required experts from European Union member States.

## B. High level architecture

17. The proposed eTIR EU solution is a web platform composed of two frontend web user interfaces/applications and one backend/API application (in addition to the related database):

(a) The (main) customs officer application: accessible via web browser to customs officers to allow performing eTIR procedures related to TIR transports going through their customs office. This component relies on the backend application described in item c.

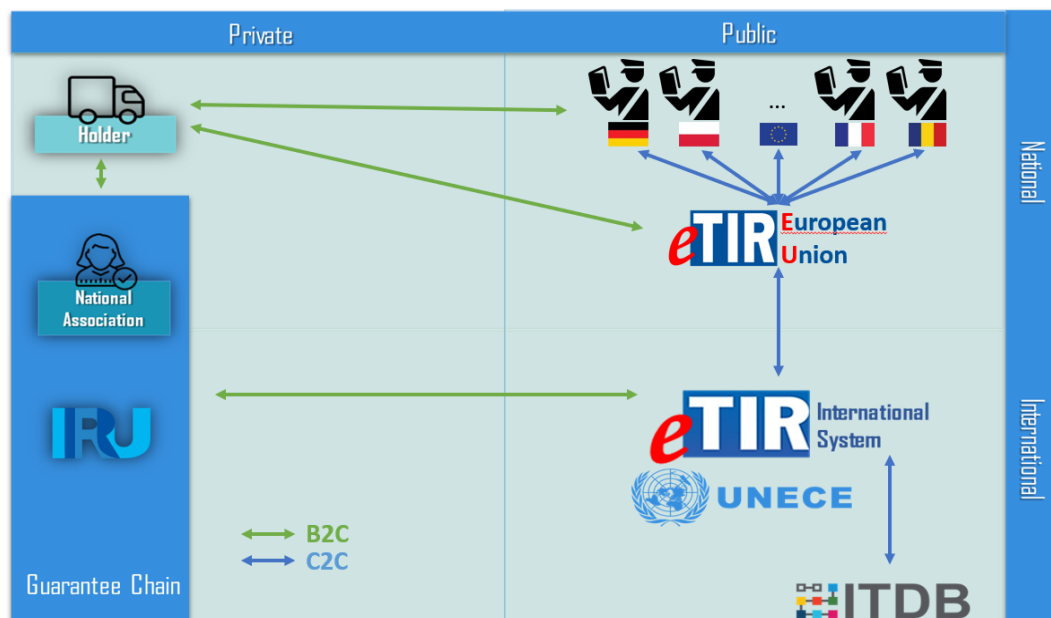
(b) The administrative application: also accessible via web browser to application administrators to allow managing key features of the application as well as user accesses. This component relies on the backend application described in item c.

(c) The backend/API application: is accessible via secured JSON based API as well as SOAP XML (for inbound E9, E11 and I15 eTIR messages), is interfaced by default with the eTIR international system and with the ITDB and can be interfaced with national or regional customs applications as well as with national declaration mechanisms/platforms.

18. The following figure below describes the high-level perspective of the application with regarding to the other TIR stakeholders and applications:

Figure I

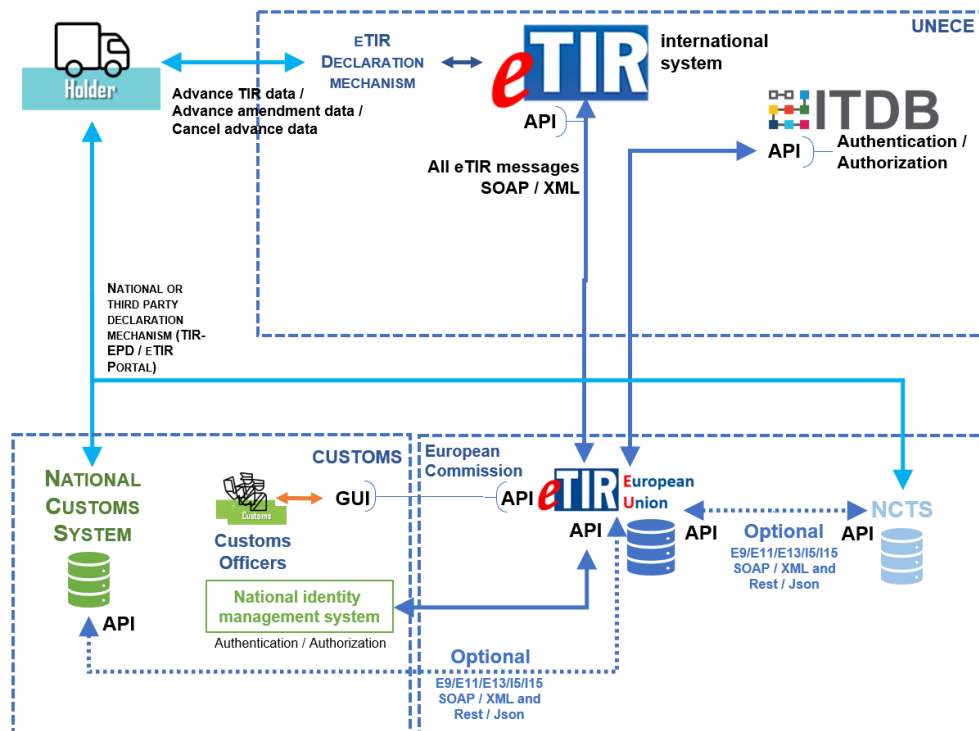
### High-level perspective of eTIR EU Application



19. The proposed technical solution would support sending and receiving all eTIR messages. It would be available by default in 9 languages but would be extended to support the 24 official languages of the European Union. It would be fully integrated with the eTIR international system, ITDB, TIR-EPD and possibly with the national/regional customs systems.

20. The technical solution would be proposed to be hosted in European Union data-centres alongside other central/regional applications such as NCTS, and would be made accessible to the national customs systems as well as to European Union Member States' customs officers as described in the figure below:

Figure II  
eTIR European Union hosting proposal



21. The installation and configuration of the technical solution would be ensured by ECE TIR secretariat on European Union Customs Union servers. It would be accompanied with a training of the IT operation and administrative team (additionally to the training to key customs officers) to ensure proper handover of the application support. After a hyper-care period (assisted by the secretariat) to be agreed, the support and maintenance of the solution would be ensured by the European Union IT team (though nothing excludes the drafting on an agreement with ECE for additional maintenance services).

22. The ownership of the intellectual property of the technical solution as well as its code would be transferred to the European Commission under an Agreement signed by both parties.

## C. Description of processes

### 1. Reception and recording of Advance TIR/amendment data

23. The reception of the advance TIR/Amendment data (E9/E11 eTIR messages) in eTIR EU would be possible via:

(a) National or regional declaration systems: the TIR carnet holder submits the advance TIR/amendment data via national or regional declaration systems managed by the EU and/or its Member States. This platform would communicate the E9/E11 messages either to the eTIR international system (that would forward them to eTIR EU or eventually to a non-EU customs systems if the transport starts out of EU) or directly to the eTIR EU. The ECE TIR Carnet holder platform that communicates the data to the eTIR international system and, upon receiving, would forward them to the customs system of the customs territory of departure (eTIR EU). This option would require further discussion with the European Union Customs Union team and with the European Union Members States before implementation.

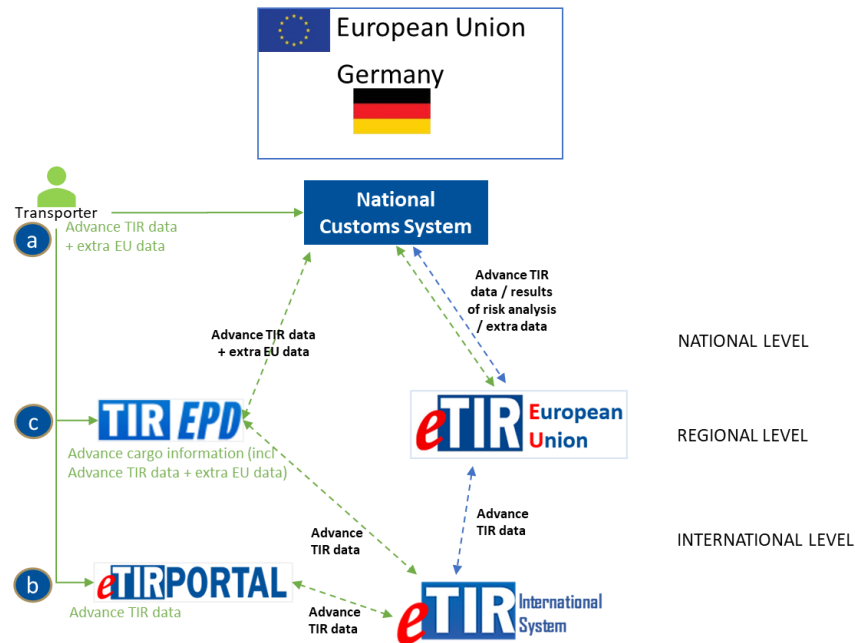
(b) eTIR Portal: the TIR carnet holder submits the advance TIR/amendment data via the ECE TIR Carnet holder platform that communicates the data to the eTIR international system and, upon receiving the E9/E11 messages, would forward them to the customs system of the customs territory of departure (eTIR EU).

(c) TIR-EPD or other third-party solutions: the TIR carnet holder submits the advance TIR/amendment data via the IRU TIR-EPD platform that communicates the data both to European Union customs systems (as of today, including extra European Union data out of eTIR specifications) on one hand, and on the other hand, to eTIR international system. This one, upon receiving the E9/E11 messages, would forward them to the customs systems of the customs territory of departure (eTIR EU).

24. The figure below summarizes the three options describes above:

Figure III

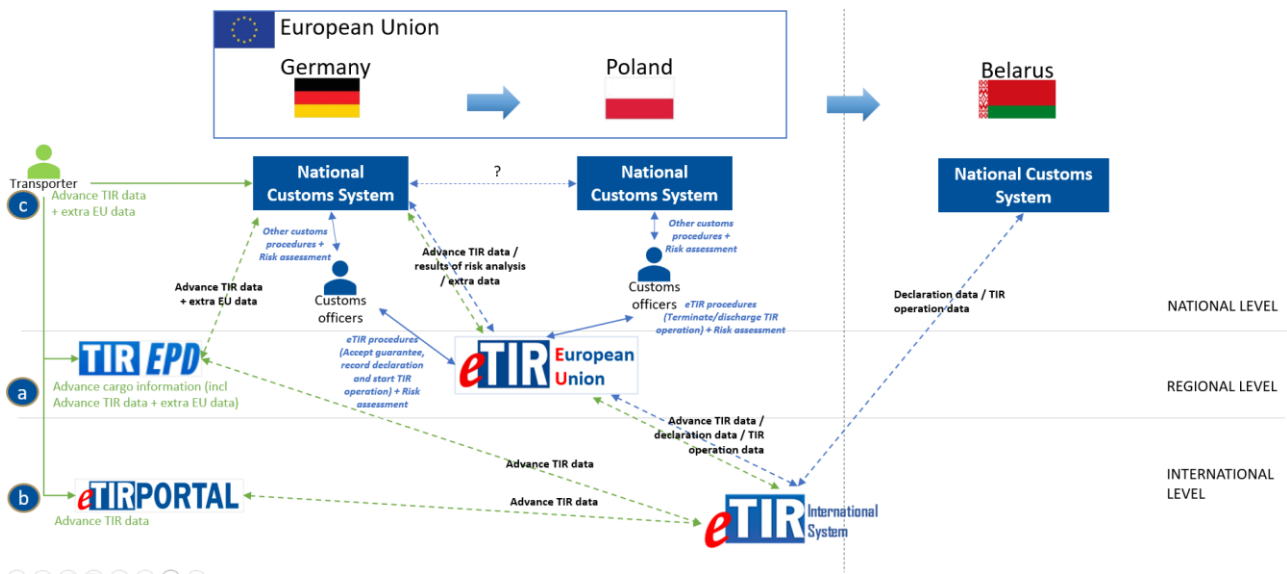
### Options to receive advance TIR data in eTIR EU



## 2. Export from European Union customs territory using eTIR procedures

25. In the context of a TIR transport starting from an European Union country and to finish outside of European Union customs territory, the TIR carnet holder would use one of the three options described above to submit the advance TIR data that would automatically be communicated to eTIR EU. After this, the holder will present itself at the customs office of departure to allow the customs authorities of the country of departure to perform the necessary eTIR procedures (accept guarantee, record declaration and start TIR operation) using eTIR EU application. Later, as the holder will present the TIR transport to the customs office of exit before leaving European Union territory, the customs authorities of the country of exit will perform the related eTIR procedures (terminate and eventually discharge) using the same eTIR EU application. The figure below illustrates the process described:

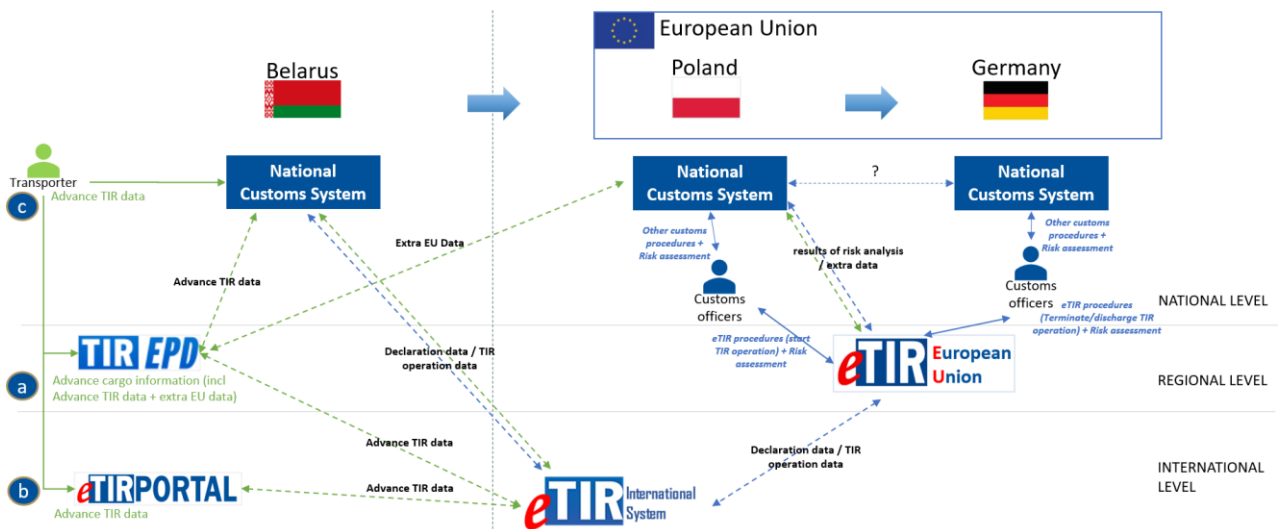
Figure IV  
Export from European Union customs territory using eTIR procedures



3. Import in European Union customs territory using eTIR procedures

26. In the context of a TIR transport starting outside of European Union customs territory to finish in an European Union country, the TIR carnet holder would use one of the three options described above to submit the advance TIR data, and upon recording of the declaration, this one would automatically be communicated to eTIR EU. At some point of the transport, the holder will present itself at the customs office of entry (into European Union territory) to allow the customs authorities of the country of entry to perform the necessary eTIR procedures (start TIR operation) using eTIR EU application. Later, as the holder will present the TIR transport to the customs office of destination before unloading, the customs authorities of the country of destination will perform the related eTIR procedures (terminate and eventually discharge TIR operation) using the same eTIR EU application. The figure below illustrates the process described:

Figure V  
Import in European Union customs territory using eTIR procedures



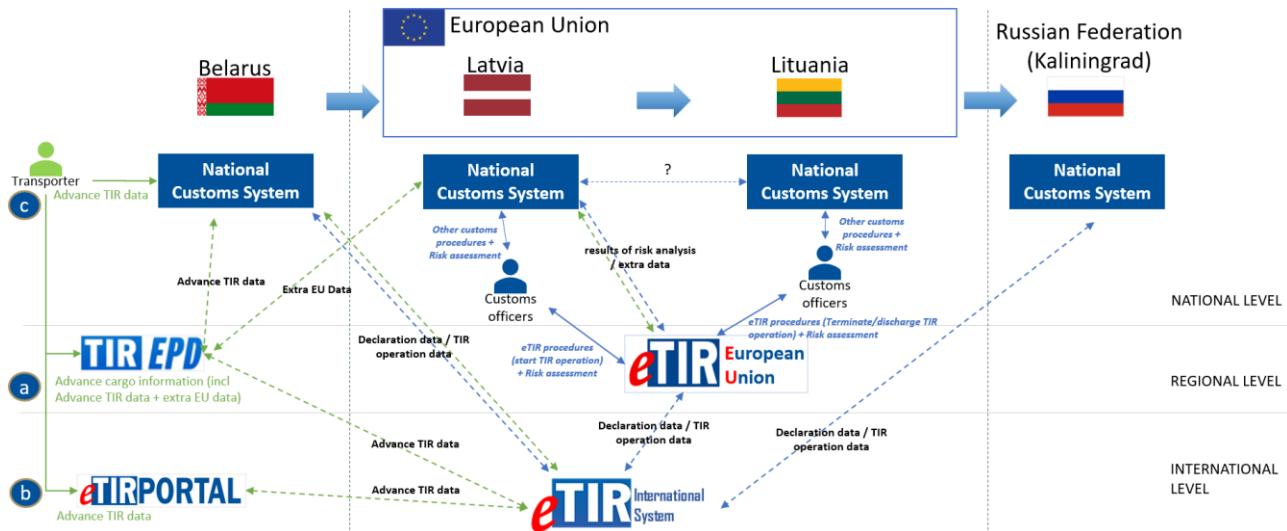
4. Transit via European Union customs territory using eTIR procedures

27. In the context of a TIR transport starting and ending outside of European Union but transiting via European Union customs territory, the TIR carnet holder would use one of the three options described above to submit the advance TIR data, and upon recording of the declaration, this one would automatically be communicated to eTIR EU. At some point of



the transport, the holder will present itself at the customs office of entry (into European Union territory) to allow the customs authorities of the country of entry to perform the necessary eTIR procedures (start TIR operation) using eTIR EU application. Later, as the holder will present the TIR transport to the customs office of exit before leaving the European Union customs territory, the customs authorities of the country of exit will perform the related eTIR procedures (terminate and eventually discharge TIR operation) using the same eTIR EU application. The figure below illustrates the process described:

Figure VI  
Transit via European Union customs territory using eTIR procedures



### III. Next steps

#### A. Advantages of the new solution for European Union member States

28. Considering the current situation of the European Union Customs Union vis-a-vis eTIR and the current NCTS Work Programme schedule, this new proposed technical solution offers the following advantages:

(a) The proposed solution funding and development would be the sole responsibility of the ECE TIR secretariat, therefore, offering a cost-effective and riskless technical solution for the European Union Customs Union to implement their provision vis-à-vis to Annex 11 to the TIR Convention in the short term.

(b) The proposed technical approach is guaranteed to respect the latest version of the eTIR specifications and to pass the eTIR conformance tests, therefore, offering the possibility to be immediately operational and interconnected with the eTIR international system.

(c) It would offer a chance for European Union Member States to start implementing the eTIR procedure and to dematerialize the TIR Carnet in the coming months instead of the current estimate of end of 2025 (as per NCTS Phase 6 current schedule), without depending on the implementation of version 4.4 of the eTIR specifications. It also offers an opportunity to anticipate on the (legal, procedure, communication and training) change management activities that would be in this case assisted by the ECE TIR secretariat team.

(d) The limited/zero impact on NCTS platform, that represents zero risk nor cost for the European Union customs platform, offers an opportunity to the European Union Customs Union team to make an educated decision upon the start of NCTS Phase 6, on whether to confirm the development of NCTS interconnection with the eTIR international system (with a better understanding on the changes to be made) or to continue using the proposed solution temporarily or for a longer/permanent period.

(e) It would represent a first step for the European Union Member States toward the use of a unified/common online platform to perform customs procedures, with limited risk (considering TIR transport current volumes in European Union), and in line with the reform aiming at establishing an European Union customs data hub. It could also represent a chance to benefit from this project lessons learned in the preparation of the data hub project in the future.

## **B. Implementation timeframe**

29. Should the technical solution proposed be considered favourably by TIB and the European Union Customs Union, the following iterative implementation timeframe would be proposed:

(a) PHASE 1 - Initial MVP implementation and deployment (Target: Q4 2024)

- Refinement of the technical solution description and identification of other “must have” features via a series of meetings and workshops with the European Union Customs Union team, and an agreement on the “must have” requirements for a Minimum Viable Product (MVP) for European Union Customs Union Member States.
- Development and testing of the MVP solution.
- Deployment of the solution in the European Union information systems, and training of the IT teams and key customs officers.
- Execution of trial TIR transport runs in selected European Union Member States in collaboration with other/neighbouring “eTIR interconnected” Contracting Parties.
- Assessment of the MVP viability, and current phase lessons learned.

(b) PHASE 2 - Product improvement and further deployment (Target: Q2 2025)

- Review of the technical solution and identification of missing “must have” features/adjustments based on MVP assessment, and agreement on the “must have” and other “Should have” requirements for the next version of the product for European Union Customs Union Member States.
- Development and testing of the updated solution.
- Deployment of the updated solution in the European Union information systems, and eventual training adjustments of the IT teams and key customs officers.
- Execution of additional TIR transport runs in an extended number of European Union Member States in collaboration with other/neighbouring “eTIR interconnected” Contracting Parties.
- Assessment of the improved product and current phase lessons learned (eventual production launch).

(c) PHASE 3 - Product finalization and final deployment (Target: Q4 2025)

- Review of the technical solution and identification of missing “Should have” features/adjustments based on the improved product assessment, and agreement on the “Should have” requirements for the final version of the product for European Union Customs Union Member States.
- Development and testing of the updated solution.
- Deployment of the updated solution in the European Union information systems, and eventual training adjustments of the IT teams and key customs officers.
- Execution of additional TIR transport runs including all European Union Member States in collaboration with other/neighbouring “eTIR interconnected” Contracting Parties.
- Assessment of Final product and final phase lessons learned (eventual production launch).

30. It should be noted that beyond the proposed phase 3 described above, additional phases may be defined in agreement with the European Union Customs Union based on the additional requirements that would be identified during phase 1.

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