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

Twenty-fifth session
Geneva, 19–20 September 2016
Item 6(a) of the provisional agenda
Reference Model of the TIR Procedure Amendments

Amendments to the eTIR Reference Model v.4.1a

Note by the secretariat

I. Introduction

1.   At its 140th session (June 2015), the Working Party on Customs Questions affecting Transport (WP.30) considered and supported document ECE/TRANS/WP.30/2011/4/Rev.1, containing version 4.1 of the eTIR Reference Model, as a basis for future work of Group of Experts on Legal Aspects of Computerization of the TIR Procedure (GE.2) as well as for pilot projects. At the same time, WP.30 recalled that the eTIR Reference Model is not "carved in stone". WP.30 agreed that the eTIR Reference Model might require further improvements, in particular, as a follow-up to pilot projects and the outcome of the work of the legal Expert Group.

II. Possible amendment for future version

(a) Turkish proposal to amend the eTIR Reference Model

2.   At its twenty-fourth session (September 2014), GE.1 considered a proposal by Turkey to amend the E9 message by: (a) making total gross weight, consignee (name), consignor (name) and Harmonized System (HS) code mandatory and (b) including driver information (first and last name, nationality) as optional. The Expert Group was of the view that, since the Turkish request partly changes the current TIR data requirements, it should be considered both from a technical and conceptual perspective. Therefore, it requested the

secretariat to circulate the proposals to eTIR focal points for the sake of seeking their technical opinion.

3.   The results of the consultation are presented in Informal document GE.1 No. 3 (2016). The focal points who responded had diverging views with regard to the proposal: (a), whereas the focal point from the United Kingdom generally supported the idea to make those data element mandatory, the focal point from the Netherlands stressed that only data requirements contained in the TIR Convention have a legal basis. The addition of the driver's information, i.e. proposal (b), did not get support from eTIR focal points.

4.   Considering that there is no opposition with regard to the substance of the proposal (a), GE.1 might want to request the assistance of GE.2, through WP.30, to assess the possibilities to include additional data requirements in the eTIR legal framework. With regard to the proposal (b), it is important to recall that Turkey is requesting it for safety and security purposes. Considering that safety and security data requirements have their own legal basis and in view of the difficulty in agreeing on common requirements, WP.30 had decided that, even though related to TIR transports, safety and security requirements should be left optional in the standard eTIR declaration (see ECE/TRANS/WP.30/274, para. 15). With that in mind, GE.1 might want to consider if such data elements could be included in the eTIR declaration as optional, thus allowing operators to include such information in declarations made in/for Turkey, or if operators would either need to send a separate message to provide Turkish customs with the required safety and security data or use a non-standard message that would combine the safety and security data and the eTIR declaration data.

(b)   Mutual recognition of electronic signatures

5.   At its 24th session (September 2014), GE.1 took note of Informal document GE.1 (2014) No. 7 as well as the presentation on the mutual recognition of electronic signatures delivered at distance by Mr. Aleksandr Sazonov (Deputy Director, Russian National Certification Authority). It noted that the use of trusted third party (TTP) services could allow circumventing the absence of recognition of certification authorities (CA) across borders.

6.   The results of the consultation presented in Informal document GE.1 No. 3 (2016) show that those focal points who responded have diverging opinions with regard to this issue.

7.   While assessing the potential introduction of TTP to ensure mutual recognition of electronic signatures, GE.1 might want to consider various options for authenticating a TIR Carnet holder as have been considered in the framework of the UNECE-IRU eTIR pilot project (see Annex) as well as the first deliberation on the subject by GE.2 (see Informal document GE.1 (2016) No. 2).

(c)   UN/EDIFACT message format

8.   At its twenty-third session (November 2013), GE.1 reconsidered if it was necessary to keep UN/EDIFACT message descriptions for a newly devised system such as eTIR, in particular considering that it could ultimately further complicate the process envisaged to ensure the integrity of the data submitted, i.e. the use of hash codes. Taking into account that some countries will use legacy systems based on UN/EDIFACT to allow for the submission of eTIR data (e.g. Belgium) the Expert Group decided to keep UN/EDIFACT as a possible option for communicating TIR data to customs administrations.

9.   At its twenty-fourth session (September 2014), GE.1 requested the secretariat to seek the advice of eTIR focal points on the various issues related to the declaration

mechanisms, inter alia, whether countries still need the UN/EDIFACT format for the E9 and E10 messages.

10.   The results of the consultation presented in Informal document GE.1 No. 3 (2016) show that those focal points who responded do not need the UN/EDIFACT format for the E9 and E10 messages. However, no reply was received from the focal point of Belgium, which is the country that had previously indicated that it might need the UN/EDIFACT message format in case it would use legacy systems to receive eTIR declarations. GE.1 might want to ask the secretariat to contact the Belgian customs administration directly to verify if the UN/EDIFACT format for eTIR is still required.

(d)   Metadata class

11.   At its twenty-fourth session, (September 2014) GE.1 discussed the inclusion of a metadata class for the XML messages that would encompass all the required message routing information, equivalent to the UN/EDIFACT UNB (Interchange header) and UNH (Message header) segments. GE.1 requested the secretariat to make a proposal for a sub-set of the attributes contained in the WCO Data Model Metadata class and circulate it among eTIR focal points for comments.

12.   The results of the consultation are presented in Informal document GE.1 No. 3 (2016). The eTIR focal points who responded supported the proposal prepared by the secretariat with the assistance of Dutch customs. The following metadata could be added to all eTIR messages for routing purposes.

Metadata
  - preparation date-time
  - AgencyAssignedCustomization
  - AgencyAssignedCustomizationVersion (used to provide the version of the eTIR messages/ XSDs)
  CommunicationMetadata
    - Application Reference
    - test indicator (indicating if the messages is a test message)
   Recipient
      - Recipient identification
   Sender
      - Sender identification

(e)   Core data types

13.   At its twenty-fourth session (September 2014), GE.1 considered the need to select which attributes should be used from the core data types used in the eTIR data model. It mandated the secretariat to prepare a proposal to that extent and circulate it among eTIR focal points for comments.

14.   The results of the consultation are presented in Informal document GE.1 No. 3 (2016). The eTIR focal points who responded supported the proposal prepared by the secretariat with the assistance of Dutch customs. The following CDT attributes could be added to the XSDs and could be also mentioned in the messages descriptions in the documentation. The code lists for most of these attributes are already included in the eTIR Reference Model.

•   AMOUNT. TYPE
        Amount. Currency. Identifier

•   DATE TIME. TYPE
        Date Time. Format. Code

codes limited to 304 (CCYYMMDDHHMMSSZZZ) and 102 (CCYYMMDD)

- MEASURE. TYPE
  Measure Unit. Code

- QUANTITY. TYPE
  Quantity Unit. Code

- TEXT. TYPE
  Language. Identifier

(f)   Changes to Table 0.3

15.   Further to the validation and support of version 4.1a of the eTIR Reference Model by GE.1 and WP.30., table 0.3 should be amended as follows:

Table 0.3
Review and validation status

	Version	Validated by ... on ...[1]		
		COMP/GE.1[2]	**WP.30**[3]	**AC.2**[4]
REFERENCE MODEL				
1. BUSINESS DOMAIN MODELLING	1.5a	27/5/2005	31/5/2006	
	1.6a	29/1/2007	13/6/2007	
	3.0a	10/3/2011		
	4.0a	21/11/2013		
	4.1a	26/9/2014	12/6/2015[5]	
1.1 Vision	*1.2*	*2/3/2004*		
	1.5a	*27/5/2005*		
1.2 TIR procedure domain	*1.2*	*2/3/2004*		
	1.4a	*27/10/2004*		
1.3 TIR Carnet life cycle use cases	*1.2*	*2/3/2004*		
	1.4a	*27/10/2004*		
1.4 Elaboration the use cases	*1.4a*	*27/10/2004*		
1.5 Entity classes	*1.0*	*2/9/2003*		
	1.4a	*27/10/2004*		
1.6 High-level class diagram	*1.4a*	*27/10/2004*		
2. E-BUSINESS REQUIREMENTS	2.0a	12/6/2007	26/9/2007	27/9/2007
	2.1a	11/4/2008		

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[1]   This table contains the dates on which the various versions of parts of the reference model have been validated (endorsed) by the different groups. The cells in grey indicate that endorsement by that specific group is not required.

[2]   Informal ad hoc Expert Group on Conceptual and Technical Aspects of Computerization of the TIR Procedure.

[3]   Working Party on Customs Questions affecting Transport.

[4]   Administrative Committee for the TIR Convention, 1975.

[5]   WP.30 supported document version 4.1a of the eTIR Reference Model as a basis for future work of GE.2 as well as for pilot projects. At the same time WP.30 recalled that the eTIR Reference Model is not "carved in stone".

	Version	Validated by ... on ...[1]		
		COMP/GE.1[2]	**WP.30**[3]	**AC.2**[4]
	3.0a	10/3/2011		
	4.0a			
	4.1a	26/9/2014	12/6/2015[5]	
3. ANALYSIS WORKFLOW	3.0a	10/3/2011		
	4.0a			
	4.1a	26/9/2014	12/6/2015[5]	
4. DESIGN WORKFLOW	4.0a			
	4.1a	26/9/2014	12/6/2015[5]	

(g) Code lists

16. Most of the code lists contained in the eTIR Reference Model are international standards maintained by other international bodies, such as UN/CEFACT or ISO. Therefore, when those code lists are amended by those organizations the eTIR Reference Model requires to be amended accordingly. To avoid such unnecessary updates, it could be preferable to remove those code lists from the eTIR Reference Model and only publish the eTIR specific code lists together with an indication if only a subset of an outside managed code list is used.

17. At its twenty-fourth session (September 2014), GE.1 decided that only the code lists that are specific to eTIR will be made available online for direct validation and that the responsibility regarding other code lists, such as those from UN/EDIFACT, would remain with the responsible agencies. GE.1 may wish to extend this decision and instruct the secretariat to only provide reference to the non eTIR specific code lists in the next version of the eTIR Reference Model.

(h) Sequence of messages

18. In the course of the pilot projects, IT developers pointed at the fact that the eTIR Reference Model is not very specific with regard to the possible sequences of eTIR messages, in particular with regard to the possibility to amend or cancel the declaration by means of an E9 message at various stages of a TIR operation (before start, started, terminated or discharged).

19. With that in mind, GE.1 might want to request the secretariat to include a description of the possible sequences of eTIR messages in the eTIR Reference Model.

(j) Holder and guarantee information in TIR operation related messages

20. In the course of the pilot projects, questions were raised with regard to the usefulness of the inclusion of TIR Carnet holder or guarantee information in the I9 (start), I11 (termination) and I13 (discharge) messages, i.e. the validity, type, guarantee chain, holder ID. Considering that this information has already been transmitted at the moment of registration of the guarantee and that it cannot be changed, those data elements could be removed from those messages without changing the functioning of the system and avoiding potential errors if there would be discrepancies.

(h) Minor Changes

21. On page 40, the reference to chapter 1.1.5 should be changed to 1.1.6.

(k)   Latest versions of WCO data model

22.   Currently the eTIR Reference Model is based on the WCO data model version 3.5. However, the WCO data model is constantly evolving and newer versions are adopted regularly. GE.1 might want to consider how to ensure the compatibility eTIR system with customs systems developed on the latest versions of the WCO data model and possibly how to benefit from features introduced in those versions, such as safety and security data elements related to transit.

III.   Further considerations

23.   GE.1 is invited to consider the comments and the suggested amendments presented in this document in combination with those presented in Informal document GE.1 No. 4 (2016) and to provide the secretariat with detailed instructions on how to proceed.

Annex
Authentication of TIR Carnet holders

From the perspective of customs administrations, the authentication of TIR Carnet holders for the purpose of submitting a customs declaration can be a requirement. However, this can be ensured in different ways, with or without electronic signatures. The following parts introduce various options and present some of their advantages and drawbacks.

Authentication by means of an electronic signature

The following options are based on direct communications between TIR Carnet holders and customs administrations. The same mechanisms can be applied in case the messages are signed within and sent by a third party system.

Option 1 - Use of nationally recognized electronic certificates

Each country allowing the use of electronic signatures for legally binding documents also recognizes one or a number of certifications authorities (CA) that issue electronic certificates containing the keys required to electronically sign official documents. Therefore, as a first option, TIR Carnet holders could request and use electronics certificates from the countries where they want to submit electronic declarations.
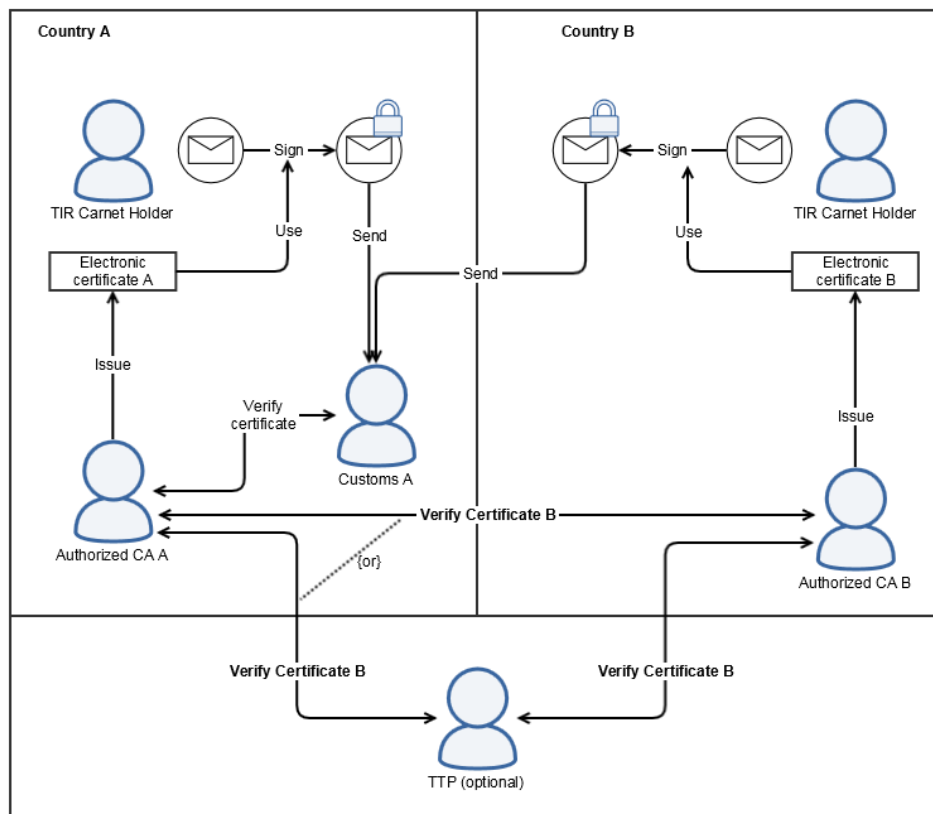

Advantages

- No need to establish new CAs or ensure communication between existing ones.

- Relatively easy to implement in the framework of a pilot project involving only 2 countries.

Drawbacks

- Some countries might only issue certificates to natural or legal persons resident in that country.

- TIR Carnet holders would need to obtain and use a different certificate for each country where they would like to submit electronic declarations. They would need to follow the different national procedures and comply with all different national requirements to obtain all the necessary electronic certificates. Theoretically, each TIR Carnet holder could need 58 different certificates.

Option 2 - Mutual recognition of electronic certificates

Each country would issue electronic certificates to TIR Carnet holders in their own country. TIR Carnet holders would use their national certificates to sign messages to any country and customs would rely on their national CA to verify the validity of foreign certificates. This could either be done directly between CAs or via a Trusted Third Party (TTP) that would redirect any verification request to the adequate CA. This option was explained in detail at the 24th session of GE.1.

Advantages

- TIR Carnet holders would only need one electronic certificate to electronically sign messages to any customs administration.
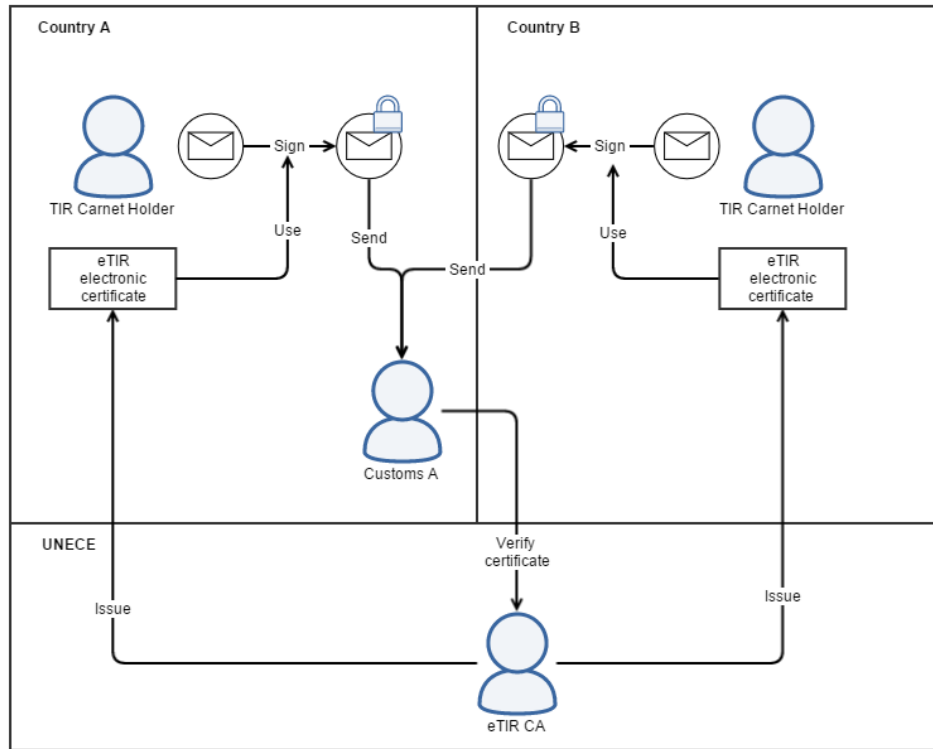
Drawbacks

- Direct communication between CA might not be realistic in some political contexts.

- The establishment of a TTP could be costly and take a long time to set up.

- The procedures to obtain electronic certificates vary from country to country. This might be an issue for the mutual recognition of those certificates. Possibly minimum requirements would have to be defined internationally.

Option 3 - Creation of an eTIR certification authority

A central certification authority could be created for the sake of signing electronic TIR messages. The procedure to issue those certificates could be part of the registration of authorized TIR Carnet holders in the ITDB.
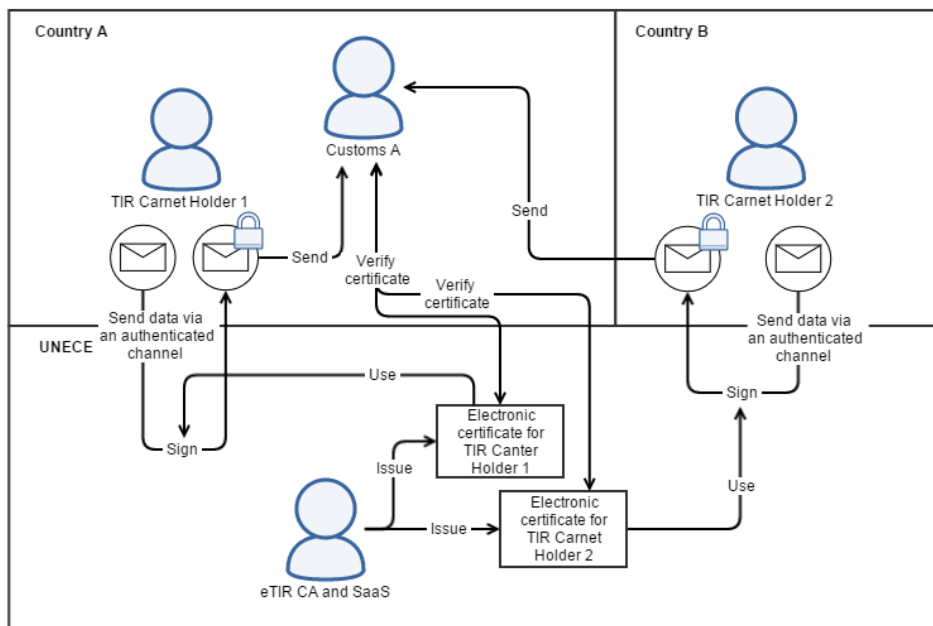

Advantages

- TIR Carnet holders only require one electronic certificate to electronically sign messages to any customs administration.

- The procedure to obtain certificates would be identical for all TIR Carnet holders.

Drawbacks

- The formal establishment of the eTIR CA for all contracting parties could be costly and take a considerable time.

Option 4 - Signature as a service by the eTIR CA

This option is built on top of the infrastructure put in place for option 3. In addition, the eTIR CA also has the responsibility to sign the messages, thus providing Signature as a service (SaaS) functionalities.

Advantages

• No requirement for TIR Carnet holders to store the certificates (private key part): no risk of loss or copy, usable from anywhere.
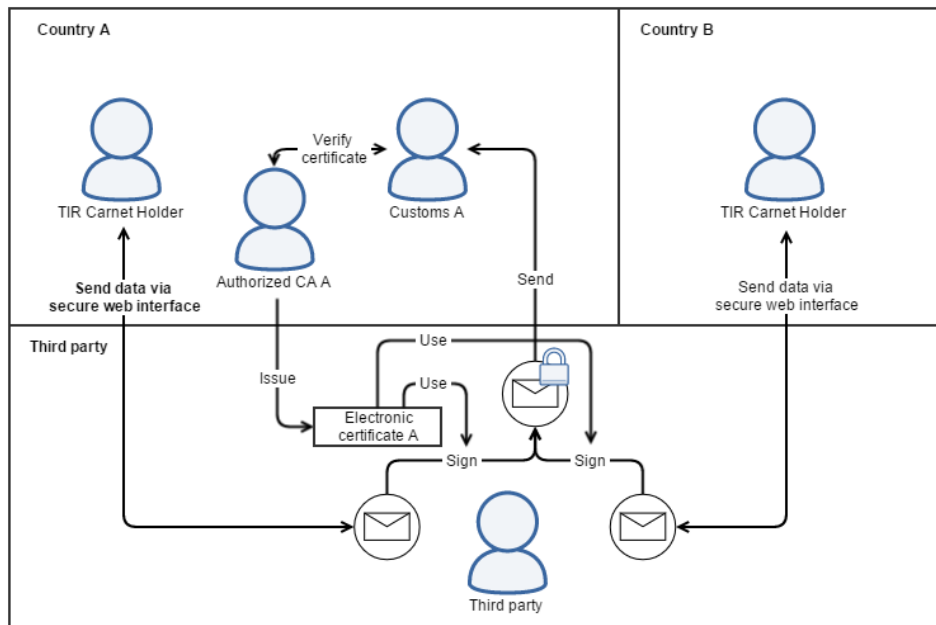
Drawbacks

• Same as for option 3;

• The Signature-as-a-Service must be highly available for signature process;

• The authentication of the TIR Carnet Holder by the SaaS provider needs to be defined and developed.

Other authentication methods

While electronic signatures using recognized electronic certificates would ensure the authentication of TIR Carnet holders submitting their declarations by means of electronic messages, other alternative methods can also be considered.

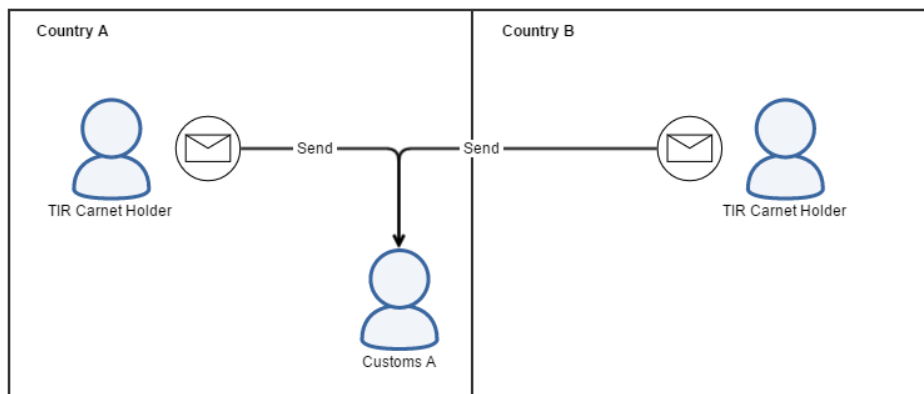**Option 5 - Delegation of authentication**

Advantages

• This procedure was used for step 1 and proved to be successful.

• Such procedure is already in place in many countries to allow customs brokers to send data on behalf of TIR Carnet holders.

Drawbacks

• Electronic certificates are used but only to authenticate the third party that is responsible for sending the messages to customs.

• Customs need to trust that the third party has performed the authentication correctly. If the third party is IRU, this might require a provision to be included in the agreement between customs and the association (or a new agreement between customs and IRU) as well as in the contract (declaration of engagement) that binds the TIR Carnet holder with the association.

Option 6 - Authentication in person

In some countries the use of any authentication mechanism is not required at the moment of sending electronic messages. Instead, the TIR Carnet holder is deemed to have been authenticated when he, or his representative, provides a reference to the electronic message that he submitted when he presented himself at the customs office of departure with the goods and the vehicle.

Advantages

•   This option does not require dealing with any electronic authentication mechanism.

Drawbacks

•   Customs do not have an electronically signed document that proves the integrity of the message (another feature provided by the use of electronic signatures).