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Transport**

**Informal Ad hoc Expert Group on Conceptual and
Technical Aspects of Computerization of the TIR Procedure**

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Reference Model of the TIR Procedure

Version 4.2 of the eTIR conceptual, functional and technical documentation

eTIR concepts - Version 4.2a

(formerly e-Business requirements)

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1. High-level description of the eTIR project

As elaborated in the introduction to the eTIR conceptual, functional and technical documentation, the final objective of the computerization of the TIR procedure encompasses the computerization of the whole TIR Carnet life cycle from distribution, issuance and via the TIR transport to return and repository and it should, ultimately, be aimed at replacing the current paper TIR Carnet without changing the basic philosophy of the TIR Convention. In order to streamline the work towards this challenging objective, the Working Party agreed (and later confirmed) that the approach of the computerization process should be focused on the establishment of an international, centralized database, whose aim it is to allow the management by Customs of data on guarantees and the exchange of information between Customs authorities, being two elements of the TIR Carnet life cycle not computerized so far.

Holders will be required to send their advance cargo information / declaration only to countries of departure of the TIR Transports. The holder can send his declaration directly to the country of departure using the national declaration mechanisms. Alternatively, the holder can use the national Customs system in his country of residence to send declarations to third countries (this functionally is optional for Customs system), use the declaration web service in the eTIR international system or use other private services. . Moreover, the eTIR project defines a standard declaration message. Other elements falling outside the scope of the eTIR project concern the approval of international organizations, national associations, transport operators and vehicles, the organization and functioning of the guarantee system, the management of a control system under Annex 2 and the administration of the TIR Convention.

The first part of this document aims at providing a high level description of the international, centralized database, the eTIR international system, whose aim it is to complement developments and achievements at the national and private level relating to the computerization of the TIR Carnet life cycle. It also provides general guidelines for the smooth transition from the current paper based system to full computerization. The second part of this documenter describes the functioning of the eTIR international system by means of use cases and activity diagrams.

1.1 Actors and roles

This section describes the different tasks and obligations related to the actors and their roles.

1.1.1 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)
- Customs office of discharge.

1.1.2 eTIR international system

The eTIR international system interfaces with the Guarantee Chain and will ensure the management by Customs of data on guarantees at international level. 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.¹

1.1.3 *Holder*

The holder performs the TIR transport and is responsible for providing the related declaration data electronically and for presenting the goods to the relevant Custom offices referred to in Chapter 1.1.1 above.

1.1.4 *Guarantee Chain*

The Guarantee Chain as described in this document is composed of an international organization, authorized by AC.2 to take on responsibility for the effective organization and functioning of an international guarantee system in accordance with the provisions of Article 6.2bis of the Convention and national associations, approved by Contracting Parties in accordance with the provisions of Article 6 and Annex 9, Part II of the Convention to act as guarantors. The Guarantee Chain provides the holder with an international guarantee i.e. a guarantee recognized by each of the Contracting Parties involved in the TIR transport.

1.2 **Fundamental principles**

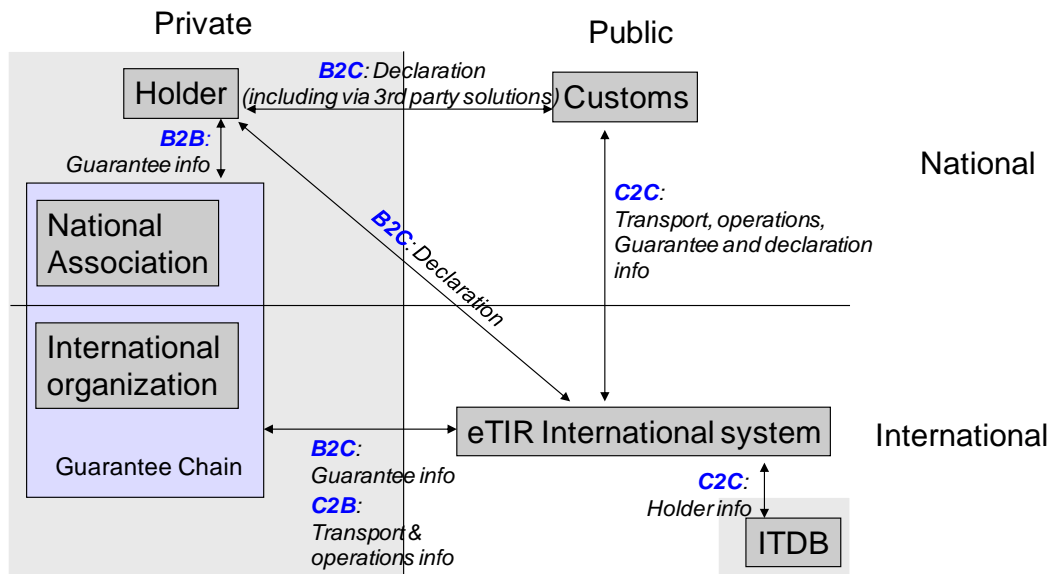
1.2.1 *eTIR International System brief*

The eTIR international system is devised to allow the management by Customs of data on guarantees by Customs and the secure exchange of data between national Customs systems 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 international system does not communicate with the holder. It is important to recall that the management of claims and the information to be provided by Customs authorities to authorized associations (under Article 42ter and an international organization (under Article 6.2bis) as provided for by Annex 2 of the TIR Convention are outside the scope of the eTIR project (see figure below).

¹ In accordance with the instructions by the WP.30 at its 106th 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).

Figure 1
The new public private partnership



On the one hand, the Guarantee Chain transmits to the eTIR international system information on the guarantees it has issued to the holders so that they can be registered in the eTIR international system. The Guarantee Chain can also query at any time the status of guarantees it has issued and obtain related TIR transport information. On the other hand, Customs authorities use the eTIR international system to check the status of guarantees and to exchange information related to the TIR transport and to TIR operations.

The management by Customs of the data on guarantees and the secure exchange of data between national Customs systems in relation to TIR transport information are therefore the two fundamental features of the eTIR international system. Guidelines will also be provided to promote harmonization, especially in the context of the dialogue between the holder and Customs authorities.

Communication, security and fallback solutions constitute other key features of the system.

1.2.2 Management by Customs of data on guarantees

The management by Customs of data on guarantees requires a strong relationship between the Guarantee Chain and the eTIR international system. The Guarantee Chain sends information on each issued guarantee to the eTIR international system. The recording of this information in the eTIR international system is conditional on checks made against the International TIR database (ITDB) concerning authorized holders.

1.2.2.1 Registration of the guarantee

After having issued a guarantee to the holder, the Guarantee Chain shall register it in the eTIR international system by sending a standard electronic message.

- a. Elements comprising the registration of the guarantee

i) *Holder (M)*²

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

ii) *Guarantee Chain (M)*

Information on the Guarantee Chain.

iii) *Guarantee (M)*

Information on the guarantee (guarantee reference number, validity date, guarantee type, ...)

1.2.2.2 *Cancellation of a guarantee*

Once a guarantee has been registered in the eTIR international system, the Guarantee Chain may cancel any guarantee which has not yet been used. It may also cancel the validity of a guarantee which is in use but only for the TIR operations which have not yet started. Such cancellation will, however, only become effective at the start of the first consecutive TIR operation.

1.2.2.3 *Verification of the guarantee*

The data on guarantees will be accessible to all Customs offices. If a holder presents to Customs a declaration covered by a guarantee which is not recorded in the eTIR international system or has been cancelled by the Guarantee Chain, then Customs authorities shall not accept it.

1.2.2.4 *Querying guarantee status*

Once a guarantee has been registered in the eTIR international system, the Guarantee Chain can query at any time the status of guarantees it has issued.

1.2.2.5 *Transmission of TIR transport and TIR operation data*

The eTIR international system notifies the Guarantee Chain of new information on TIR transports and TIR operations related to the guarantees it has issued, other than information which is restricted to Customs.

1.2.3 *Exchange of TIR transport and TIR operation information*

1.2.3.1 *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 sent to all Customs authorities involved in the TIR transport..

a. Recording of the elements comprising 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 1.2.3.2.a(i)) plus all the elements provided in the declaration(s) (see 1.2.4.2.a).

² M: Mandatory; O: Optional; C: Conditional.

1.2.3.2 *Data handling related to TIR operations*

a. Elements composing the TIR operation registration

i) *TIR operation start information*

The Customs office of departure/entry provides the following information:

- Operation Reference Number and date of start (M)
- Seals (C)

Information on the seal(s) affixed to the vehicle(s) and/or container(s) if seals are affixed, changed or removed.

- Results of checks
- Time limit for transit (O)

Time limit for the TIR operation.

- National itinerary (O)

Customs office(s) at which the road vehicle, the combination of vehicles or the container together with the load have to be produced.

- Customs office (M)

ii) *TIR operation termination information*

The Customs office of destination/exit provides the following information:

- Date of termination (M)
- Seals (C)

Information on the seal(s) affixed to the vehicle(s) and/or container(s) if seals are affixed, changed or removed.

- Results of checks
- Reservations (M)

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

- Customs office (M)

iii) *TIR operation discharge information*

The Customs office of discharge is responsible for discharging the TIR operation and providing the following information:

- Date of discharge (M)
- Customs office (M)

1.2.4 *Other aspects*

1.2.4.1 *Issuance of guarantees*

The holder requests a guarantee from the Guarantee Chain, which will, on the basis of international, national and internal rules, decide if the guarantee can be issued to the holder. The Guarantee Chain will then provide the holder with a guarantee reference

number for that specific guarantee. This procedure is outside the scope of the development of the eTIR international system but is a prerequisite for its well functioning.

The Guarantee Chain registers the guarantee internationally as foreseen in point 1.2.2.1.

1.2.4.2 *Declaration/advance cargo information*³

The holder submits the advance cargo information by electronic means to the Customs office of departure, making reference to a guarantee issued by a Guarantee Chain, using authentication mechanisms. The declaration shall be submitted prior to the presentation of the goods at the Customs office of departure. Alternatively, the holder can make use of declaration mechanisms provided by the eTIR international system, the Customs system of his country of residence (if available) or third party solutions provided by the private sector (including by the guarantee chains). National Customs systems and authorized international private sector declaration systems can use the declaration web service of the eTIR international system to forward the declaration to the country of departure.

Customs authorities shall, if satisfied, validate and accept the Customs declaration and transmit it to the eTIR International system. The eTIR international system forwards this information to the following Customs authorities involved in the TIR transport.

The following elements shall be provided in the declaration since these elements are also part of the registration of the TIR transport information (see 1.2.3.1.a).

a. Elements comprising the declaration

i) *Holder (M)*

Information on the physical or legal person who is responsible for transporting the goods and submitting the declaration.

ii) *Guarantee (M)*

The guarantee reference number under which the TIR transport will be undertaken.

iii) *Goods (M)*

Information on the goods transported (e.g.: type, quantity, identifications, Customs office of departure, Customs office of destination, ...).

iv) *Mean of Transport/Containers (M)*

Information on the mean of transport and/or containers used to transport and /or carry the goods.

v) *Attached documents (O)*

Reference to all documents, paper or electronic, which are attached to the declaration/advance cargo information.

vi) *[Consignee (O)]*

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

³ For a detailed explanation see Annex I.

vii) *Intended itinerary (Country level) (M)*

Countries intended to be involved in the TIR transport.

viii) *[Consignor (M)*

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

ix) *[Subcontractors*

Information on the physical or legal person who performs the transport or a part of the transport on behalf of the holder.] under discussion

1.2.4.3 *Pre-arrival information*

One of the objectives of the eTIR international 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 forwards to Customs authorities all information as soon as it is received (push principle).

1.2.5 *Data exchange*

1.2.5.1 *Central platform*

The eTIR international system is built around a central platform, which is a composed of hardware and software, including databases and web services. The databases serve to store and make the information available and acts as repository for all information concerning the TIR system, whereas the web services allow for an efficient and secure interfacing between the Contracting parties, the Guarantee Chain and the central platform.

1.2.5.2 *Communication*

The eTIR international system may use secure Internet connections to exchange messages.

1.2.5.3 *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 international system are described in the functional specifications document.

1.2.6 *Security*

1.2.6.1 *The elements of security from the TIR Convention*

1.2.6.2 *Controlled access (Annex 9, Part II)*

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

1.2.6.3 *Security data elements*

Data elements concerning supply chain security are contained in the functional specifications document.

1.2.6.4 *eTIR international system security*

The eTIR international system is secured with security methods applicable to systems communicating via the Internet. Messages are encrypted and access is restricted to authorize users. The system is available 24/7.

1.2.7 *Accompanying document / Certified report*

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 accidents and incidents and replaces the certified report.

1.2.8 *Fallback solutions*

If Customs offices or the Guarantee chain are not in a position to use the standard communication links between their systems and the eTIR international system (web services), the information will be securely exchanged by means of the eTIR website (see 1.3.2.3.). Alternatively, if the Customs offices electronic system or the communication channels are not functioning, they will rely on the accompanying document to obtain or provide the required information.

Detailed fallback solutions for individual use cases are contained in the functional specifications document.

1.3 Deliverables

1.3.1 *National deliverables*

1.3.1.1 *National management of data*

The national computer systems of the countries 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.

1.3.1.2 *Bridges to the eTIR international system*

National computer systems communicate with the eTIR international system using a predefined set of standard messages and technology.

1.3.1.3 *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 international system. They can also provide documentation for holders.

1.3.2 *International deliverables*

1.3.2.1 *Central databases*

The central platform is based on a central database system, which stores the data and contains the functional rules that allow the functioning of the eTIR international system⁴.

⁴ The eTIR international system, as introduced in 1.1.2, is composed of the central databases, the web services as well as the eTIR website.

The databases contain information on the data on guarantees and their coverage, and link the issued guarantees with the holder. Moreover, they contain all data regarding the TIR transports linking them to the guarantee information.

1.3.2.2 Web services

Web services implemented on the central platform allow authorized computer systems to interact securely with the eTIR international system. The web services provide, in a standard format, the functions which allow querying and updating the central database, as well as the centralized submission of advance cargo information.

1.3.2.3 eTIR website

The eTIR website is an alternative secure interface to the eTIR international system. It provides authorized customs officers with the same functionalities as the web services (except for the centralized declaration mechanism) for the cases where the eTIR international system can't be reached by the national ICT system using web services.

1.3.2.4 Definitions of standard messages

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

1.3.2.5 Technical documentation

The technical documentation will ensure that the Customs authorities and the Guarantee Chain can develop their specific applications connected to the eTIR international system.

1.3.2.6 User manuals and training for trainers

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

1.3.2.7 Helpdesk

A helpdesk is available to Customs authorities and the Guarantee Chain to help in the implementation of the eTIR international system.

1.3.2.8 Customs offices database

A database in which information on all Customs offices which allow the use of the TIR and the eTIR procedure.

1.3.2.9 Countries database

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

1.3.2.10 Authentication database

In order to technically restrict access to the eTIR international system to those users who have been authorized, an authorization database is used. This database is used to secure the web services as well as the website (for the fall-back scenarios). Consequently, it will contain the credentials of guarantee chains' IT systems and users as well as Customs central systems and specific Customs offices/officers. Furthermore, holders credentials will also be

included to enable the use of the centralized declaration mechanism by means of web services.

1.3.3 *Other required systems*

1.3.3.1 *Authorized access database*

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

1.3.4 *Languages and character sets*

The eTIR international 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 international system is Unicode.

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 sometimes required.

2 Step-by step implementation

The eTIR international system as defined in Chapter 1 is subdivided in two major modules: management by Customs of data on guarantees and data exchange, which should be developed simultaneously in order to obtain maximum benefits.

The full computerization of the TIR procedure depends on the complete implementation of both modules by all parties involved. Transitional steps will be required before all Contracting Parties of the Convention will exchange electronic information. In view of the wide geographical coverage of the TIR Convention and the different levels of technological development of the countries concerned, the duration of the transition may vary from country to country.

2.1 Management by Customs of data on guarantees module

The management by Customs of data on guarantees module, as described in Chapter 1.2.2, allows the Guarantee Chain to electronically register in the eTIR international system all guarantees issued to the holders. Moreover, it enables Customs authorities to check the validity of the guarantee in the course of a TIR transport and before each TIR operation.

Introducing the management by Customs of data on guarantees into the eTIR international system will increase the security of the TIR system by making available, at any time, information on the validity of the guarantees. Moreover, by linking the consultation of the status of the guarantee to the ITDB, it will further secure the system by ensuring that unauthorized holders will not be allowed to perform TIR transports. Logically, it will also further discourage attempts to falsify the TIR Carnet.

The corner stone of the management by Customs of data on guarantees module is the registration of the guarantee by the Guarantee Chain. It implies the development of the eTIR international system with all related functionalities and the development or the amendment of a tool allowing for real-time transmission by the Guarantee Chain of guarantee data to the eTIR international system

2.2 Data exchange module

The second module of the eTIR project focuses on developing the TIR transport and TIR operations information exchange combining them with the guarantee information provided by the Guarantee Chain.

In view of the fact that not all Customs offices will immediately have access to the eTIR international system, the use of present paper TIR Carnet will be maintained and remains mandatory. Nevertheless, all eTIR compatible Customs offices will already be in a position to have access to and update the central system with TIR transport/TIR operation information.

It can be envisaged that one or more pilot projects concerning the exchange of data between Contracting Parties can be initiated, in line with the mandate provided by WP.30 (TRANS/WP.30/212, para. 21).

2.3 Abolition of the present TIR Carnet: a geographical expansion

Before being able to completely abandon the present paper TIR Carnet, all parties involved in a TIR transport will have to be able to securely exchange electronic information on the TIR transport, the TIR operations and on the guarantee. To enable a smooth transition towards a fully computerized TIR system, the use of the present paper TIR Carnet will be discontinued for itineraries where all Customs offices will be linked to the eTIR international system.

As a result, for those TIR transports where the TIR Carnet will no longer be required, the full implementation of the second phase of the eTIR project will become mandatory for all Customs offices involved. Issues with regard to rerouting are addressed in the functional and technical specifications documents.

2.4 Parallel projects

2.4.1 Declaration mechanisms

In parallel to the development and implementation of the eTIR international system (including a web service for submitting advance cargo information/declarations), national and international electronic declaration mechanisms will also have to be developed, aided by guidelines established in this Reference Model.

2.5 Schedule

The eTIR sub-projects imply developments at public and private level. Moreover, the public developments will be of both an international and national nature.⁵

The following schedule does not provide any timeframe; it only aims at showing the dependencies between the various projects in their different phases of development. The national implementations of the projects by Contracting Parties will certainly not be achieved simultaneously. Therefore, the schedule below considers three different timeframes, covering the possibilities for countries to develop their projects at their own speed.

⁵ The same might apply to the private sector development but it is not the aim of this project to provide the private sector with instructions on how their systems will have to be developed or updated in order to meet the requirements of the eTIR project.

Table 1
Step-by-step implantation schedule

<i>Sub-projects</i>	<i>Steps⁶</i>			
<i>eTIR project</i>				
Public international	I	E	C	T
Public national				
Contracting Party 1	<i>E</i>	<i>C</i>	<i>T</i>	
Contracting Party 2		<i>E</i>	<i>C</i>	T
Contracting Party 3			<i>E</i>	C
Private ^{7,8}	<i>E</i>	<i>C</i>	<i>T</i>	
<i>Parallel projects</i>				
National declaration mechanism				
Contracting Party 1	<i>E</i>	<i>C</i>	<i>T</i>	
Contracting Party 2		<i>E</i>	<i>C</i>	T
Contracting Party 3			<i>E</i>	C
Private ⁹	<i>E</i>	<i>C</i>	<i>T</i>	
<i>Paper to electronic step-by-step transition</i>	1	2	3	4

2.5.1 Paper to electronic step-by-step transition

The transition from the paper TIR Carnet to the eTIR system will be achieved progressively, with the completion and implementation of the projects at the national and international level. In the schedule above, four major steps are identified:

1: Before the eTIR international system will be in place, allowing the exchange of information between the Guarantee Chain and the eTIR international system as well as allowing countries to exchange data, the paper TIR Carnet and the actual private or public systems will remain the only possible tool for the management of the TIR procedure.

2: Once the eTIR international system is available and the Guarantee Chain interoperates with the system in order to provide the guarantee information, countries will start linking up to the eTIR international system, in order to obtain validation of the guarantees submitted by the holders.

3: When all Contracting Parties along a specific itinerary will have been computerized (the guarantee and data exchange modules as well as the declaration mechanisms), there will be no more need to use the present paper TIR Carnet for TIR transports along this itinerary. During this step, some TIR transports will continue to use paper TIR Carnets whereas others will be performed under cover of eTIR.

⁶ The letters in the cells represent the different phases as identified in table 0.1 of the Reference Model (I: Inception, E: Elaboration, C: Construction, T: Transition). Steps in italics are performed at national level or at private sector level. Steps in bold need to be finalized before reaching the milestone (indicated by vertical lines).

⁷ The well functioning of the private/public partnership is essential to successfully implement this project.

⁸ The IRU emphasised that this part of the computerization has already been largely accomplished.

⁹ It is envisaged that the private sector will provide declaration mechanisms, in particular to authorize holders submitting declarations in a country other than their country of registration.

4: When all Contracting Parties of the TIR Convention will have implemented both modules as well as the appropriate declaration mechanisms, the present TIR Carnet will be completely abandoned.

3 Use cases analysis

The elaboration of the use case analysis is based on the instruction by the WP.30 that the eTIR project should evolve around the establishment of an international centralized database in order to facilitate the secure exchange of data between national Customs systems and that the management of the data on guarantees, once the Guarantee Chain had issued a guarantee to an holder, should lie with Customs (ECE/TRANS/WP.30/226, para. 41).

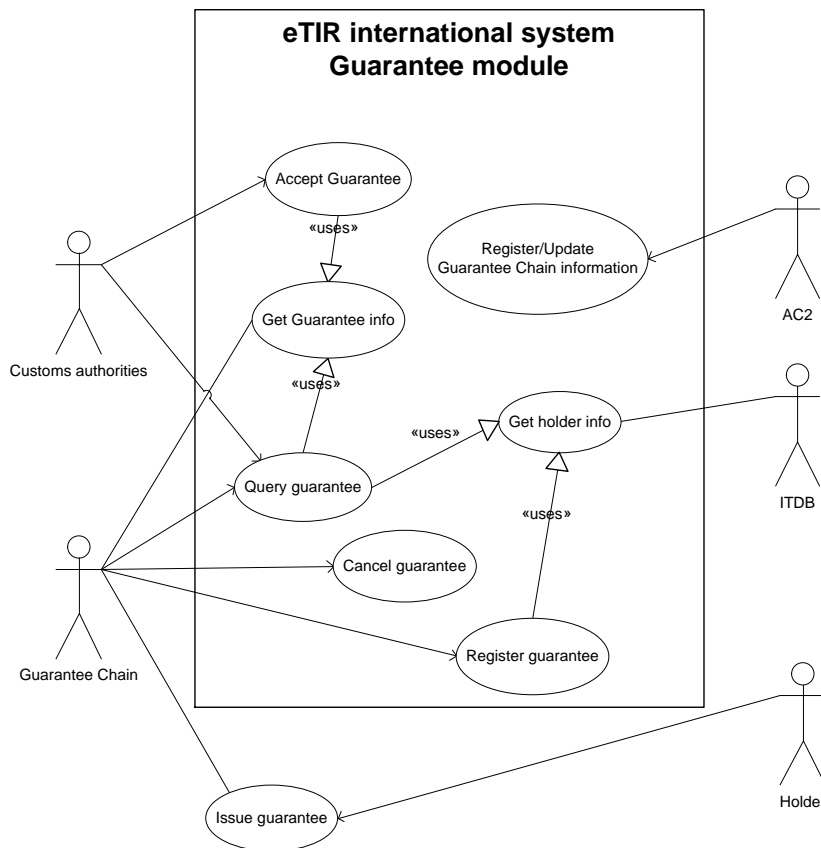
3.1 Management by Customs of data on guarantees use case

The management by Customs of data on guarantees requires that the Guarantee Chain updates the guarantees directly in the eTIR international system right after having issued them to holders.

3.1.1 Management by Customs of data on guarantees use case diagram

Figure 2

Customs management of guarantees use case diagram



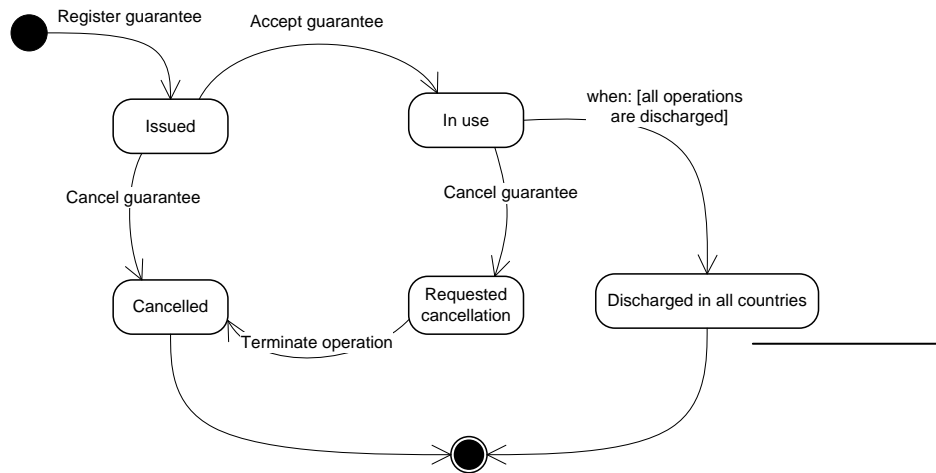
3.1.2 *Guarantee state chart diagram*

The guarantees registered in the eTIR international system will have their status updated all along the TIR transport. The following state chart diagram shows the various statuses as well as the transition even between them.

The guarantee status can be:

- Issued
- In use
- Proposed cancellation
- Cancelled
- Discharged in all countries

Figure 3
Guarantee state chart diagram



3.1.3 *Register Guarantee Chain use case description*

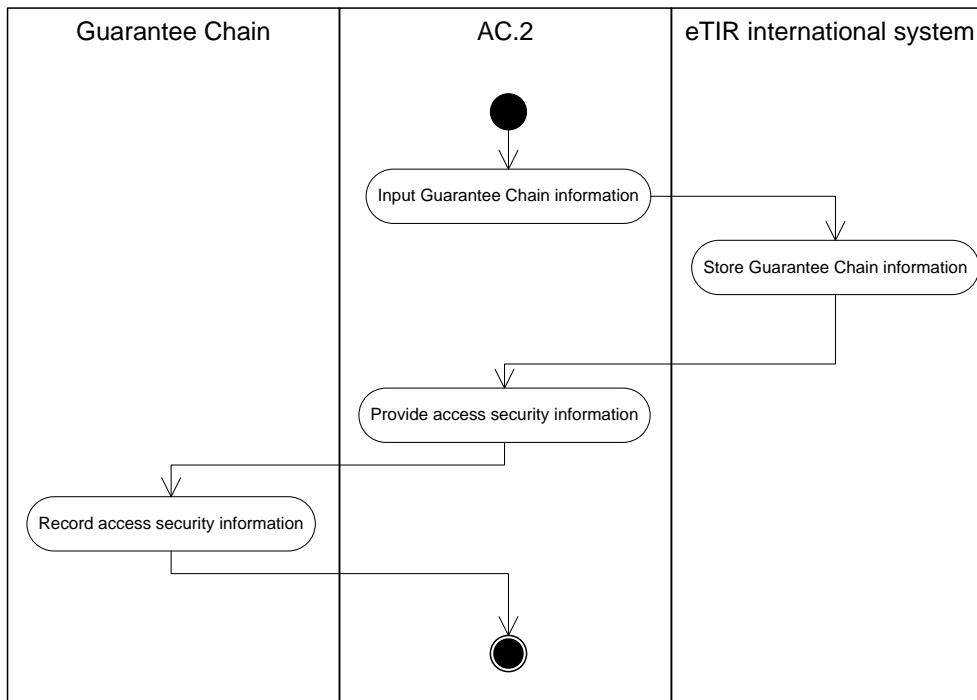
Table 2
Register/Update Guarantee Chain information use case description

Name	Register/Update Guarantee Chain information use case
Description	Once the Guarantee Chain has been authorized, it is registered in the eTIR international system.
Actors	AC.2
Performance Goals	Only authorized Guarantee Chains can register guarantees in the eTIR international system.
Preconditions	-
Postconditions	-
Scenario	Registration The AC.2 authorizes an international organization to manage the Guarantee Chain in accordance with article 6.2bis of the TIR Convention. It records the Guarantee Chain in the eTIR international system and inserts the information on the type of guarantees it is

Name	Register/Update Guarantee Chain information use case allowed to register (including the geographical coverage of its guarantees). It also provides the necessary security information to the Guarantee Chain in order to allow it to access the system.
Alternative Scenario	-
Special requirements	-
Extension Points	-
Requirements Covered	-

3.1.4 Register/Update Guarantee Chain information activity diagram

Figure 4
Register/Update Guarantee Chain information activity diagram



3.1.5 Register guarantee use case description

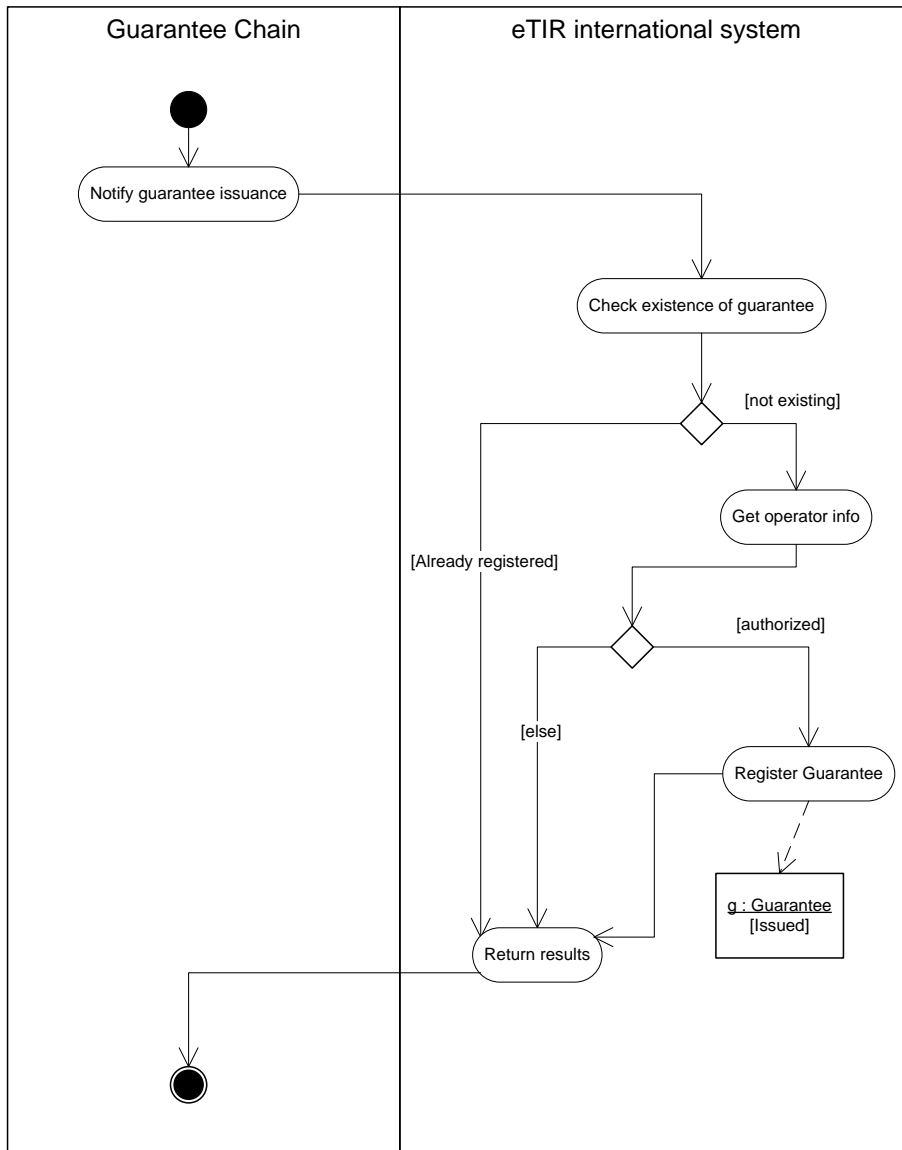
Table 3

Register guarantee use case description

Name	Register guarantee use case
Description	The Guarantee Chain registers each guarantee issued to a holder in the eTIR international system by sending an electronic message.
Actors	Guarantee Chain
Performance Goals	Any guarantee, issued to a holder, shall be registered in the eTIR international system before it can be used by a holder to accompany a declaration.
Preconditions	The holder, to whom the Guarantee Chain has issued a guarantee, must be authorized and registered in the ITDB and the eTIR international system should not contain a prior registration of the guarantee.
Postconditions	The guarantee information is stored in the eTIR international system with status “issued”.
Scenario	<p>Registration</p> <p>The Guarantee Chain issues a guarantee to a holder and sends a secure electronic message with all information regarding the guarantee to the eTIR international system. The eTIR international system checks if the guarantee has not yet been registered. Then it gets holder information, including its current status. In case the guarantee has not yet been registered and the holder is authorized, the system registers the guarantee and notifies the results of the registration of the guarantee to the Guarantee Chain. If the registration fails for any reason, the Guarantee Chain is informed accordingly.</p>
Alternative Scenario	<p>Fallback scenario</p> <p>If electronic messages cannot be sent to the eTIR international system by means of the web services, the eTIR website should be used.</p>
Special requirements	The Guarantee Chain cannot update any information it has registered in the eTIR international system. Only the cancellation of the guarantee is possible.
Extension Points	-
Requirements Covered	-

3.1.6 Register guarantee activity diagram

Figure 5
Register guarantee activity diagram



3.1.7 *Cancel guarantee use case description*

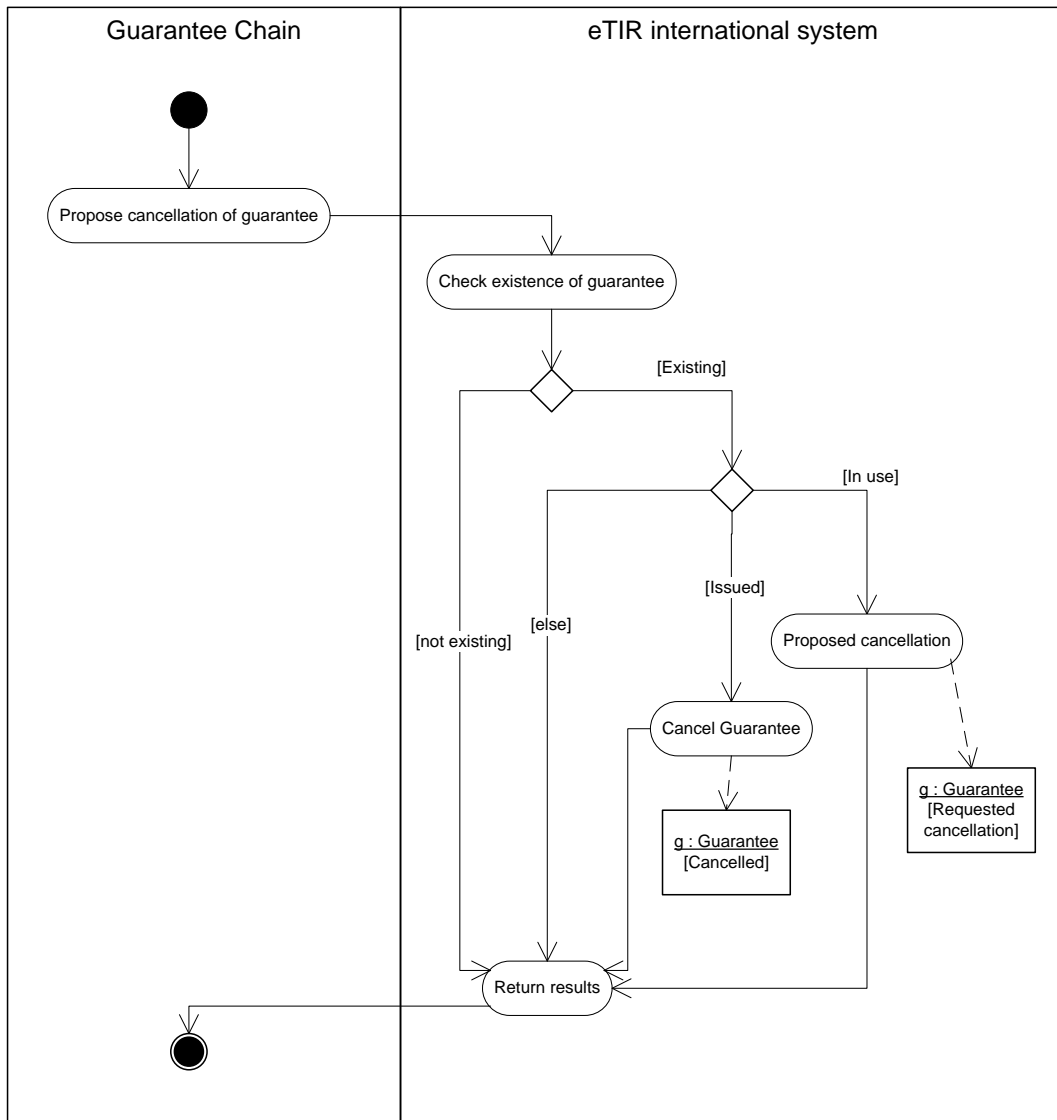
Table 4

Cancel guarantee use case description

Name	Cancel guarantee use case
Description	The Guarantee Chain cancels a guarantee after it has been issued to a holder by sending an electronic message to the eTIR international system.
Actors	Guarantee Chain
Performance Goals	-
Preconditions	The guarantee must have been registered and have the status “issued”. The guarantee can also have the status “in use”.
Postconditions	The guarantee status is changed to “cancelled”, “requested cancellation” or remains in its current status.
Scenario	<p>Cancellation</p> <p>The Guarantee Chain sends a secure electronic message to the eTIR international system to request the cancellation of a guarantee. First the eTIR international system checks that the guarantee is registered. Then in case the guarantee status is “issued”, the eTIR international system changes the guarantee status to “cancelled”. If the guarantee status is “in use”, its status is turned to “requested cancellation”.</p>
Alternative Scenario	<p>Fallback scenario</p> <p>If electronic messages cannot be sent to the eTIR international system by means of the web services, the eTIR website should be used.</p>
Special requirements	
Extension Points	-
Requirements Covered	-

3.1.8 Cancel guarantee activity diagram

Figure 6
Cancel guarantee activity diagram



3.1.9 *Accept guarantee use case description*

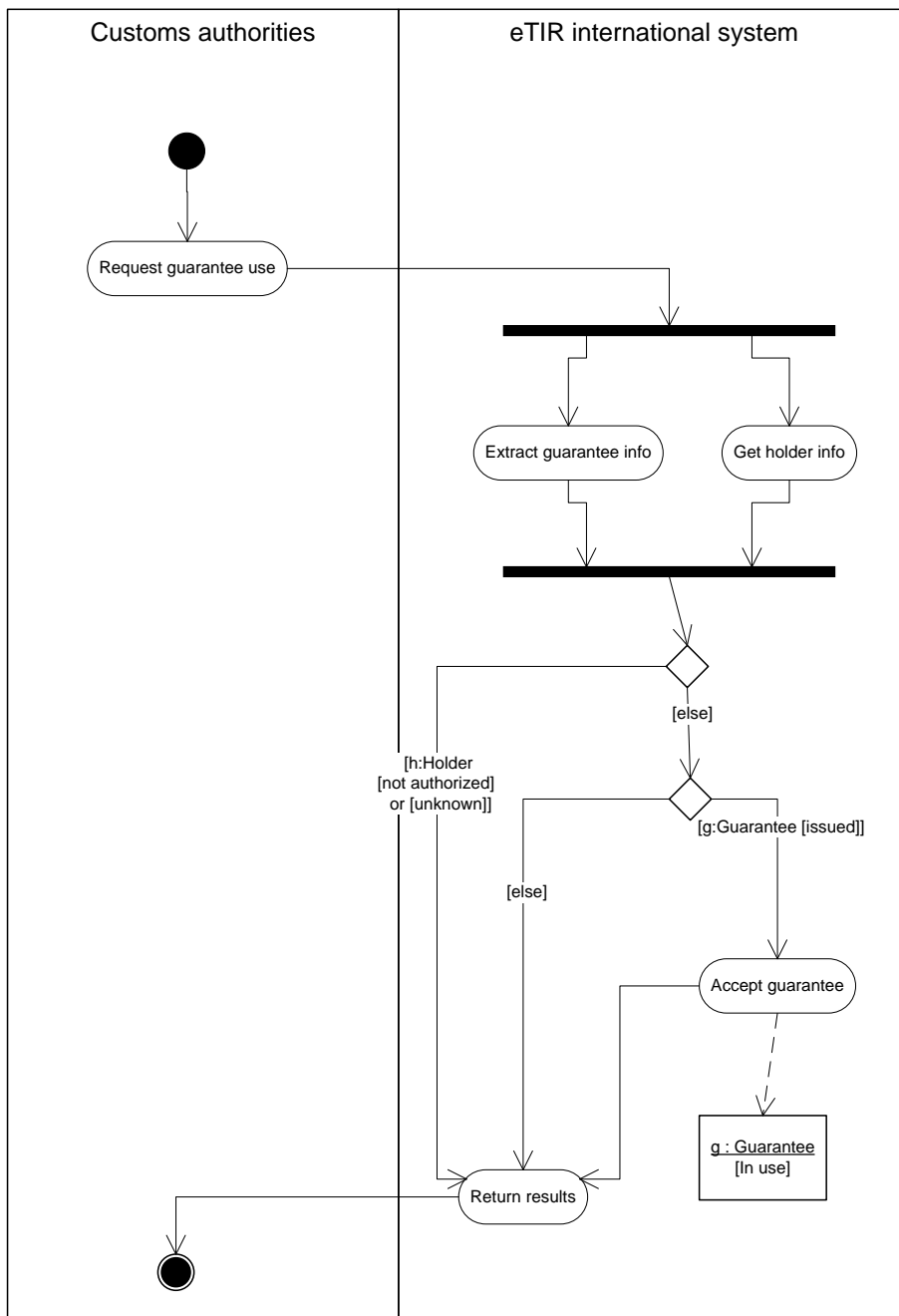
Table 5

Accept guarantee use case description

Name	Accept guarantee use case
Description	The Customs authorities notify the eTIR international system that the guarantee has been accepted.
Actors	Customs authorities
Performance Goals	-
Preconditions	The guarantee must be registered and its status must be “issued”. The Customs authorities at departure must also have received a TIR declaration. The holder must be registered in the database and authorized.
Postconditions	The guarantee status is changed to “in use” or remains at its current status.
Scenario	Accept guarantee Customs authorities send a secure electronic message to the eTIR international system informing that the guarantee has been accepted for a TIR transport.
Alternative Scenario	Fallback scenario If electronic messages cannot be sent to the eTIR international system by means of the web services, the eTIR website should be used.
Special requirements	-
Extension Points	-
Requirements Covered	-

3.1.10 Accept guarantee activity diagram

Figure 7
Accept guarantee activity diagram



3.1.11 *Get holder info use case description*

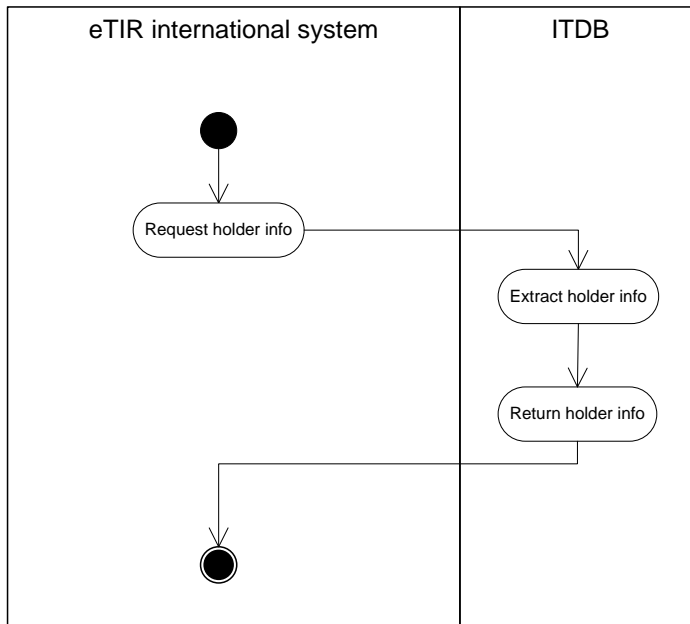
Table 6

Get holder info use case description

Name	Get holder info use case
Description	The eTIR international system queries the ITDB and receives data on a holder.
Actors	ITDB
Performance Goals	-
Preconditions	-
Postconditions	-
Scenario	The eTIR international system sends a query to the ITDB about a holder. The ITDB returns the data about this holder or sends a message indicating that the holder is unknown.
Alternative Scenario	Fallback scenario The holder status is returned as “not available”.
Special requirements	This use case is internal to the system and is used in the following use cases: <ul style="list-style-type: none"> • Register guarantee • Query guarantee • Accept guarantee The holder status can be: <ul style="list-style-type: none"> - “unknown” - “authorized” <ul style="list-style-type: none"> ▪ Withdrawn from date x to date y ▪ Excluded from date x to date y in country z - “not authorized” <ul style="list-style-type: none"> ▪ Permanently withdrawn ▪ End of activity - “not available”
Extension Points	-
Requirements Covered	-

3.1.12 Get holder info activity diagram

Figure 8
Get holder info activity diagram



3.1.13 Query guarantee use case description

Table 7
Query guarantee use case description

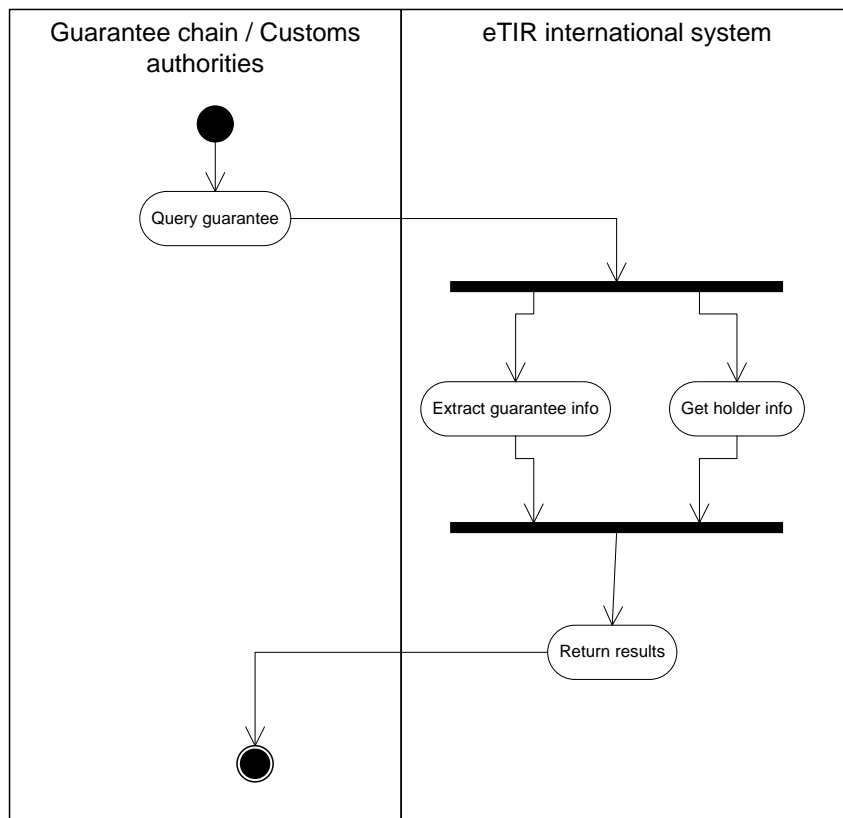
Name	Query guarantee use case
Description	Customs authorities or a Guarantee Chain request the eTIR international system information on issued guarantees.
Actors	Guarantee Chain, Customs authorities
Performance Goals	-
Preconditions	-
Postconditions	-
Scenario	<p>Query the guarantee</p> <p>A Guarantee Chain or Customs authorities send a secure electronic query to the eTIR international system. The eTIR international system extracts all data from the database concerning the guarantee and combines them with data on the holder (get holder info) and sends all information to Customs authorities or to the Guarantee Chain. If the guarantee has not yet been registered, the Customs authorities or the Guarantee Chain are informed accordingly.</p>
Alternative Scenario	<p>Fallback scenario</p> <p>Customs authorities and the Guarantee Chain can use the eTIR website.</p>
Special	A Guarantee Chain can only query information on those guarantees

requirements	which he has issued and which have been registered by the eTIR international system. The eTIR international system also provides him with information on TIR transports attached to the guarantees issued by him.
Extension Points	-
Requirements Covered	-

3.1.14 Query guarantee activity diagram

Figure 9

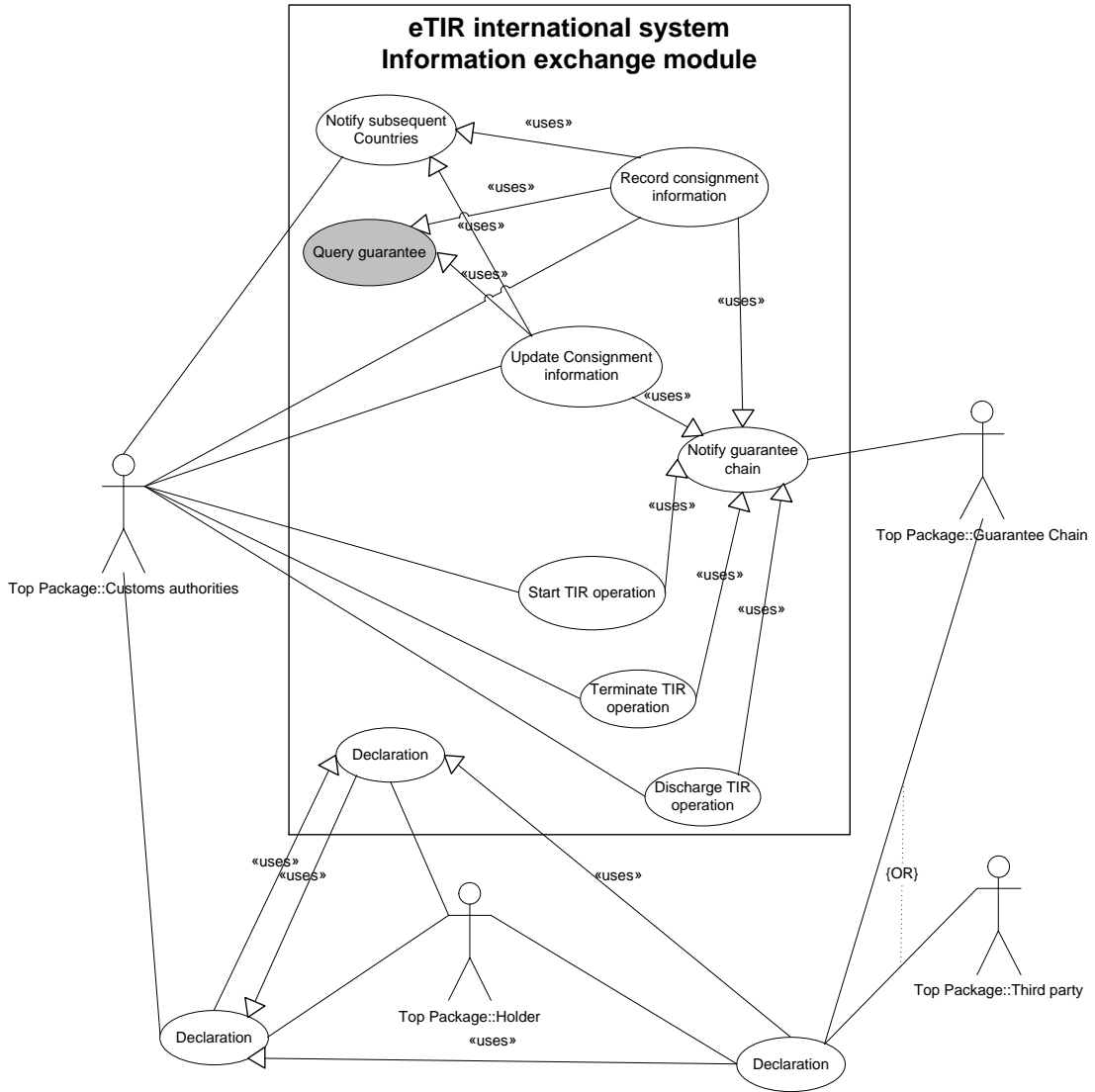
Query guarantee activity diagram



3.2 Data exchange use case

3.2.1 Data exchange use case diagram

Figure 10
Data exchange use case diagram¹⁰



¹⁰ Use cases in grey are defined in chapter 3.1.

3.2.2 *Record consignment information use case description*

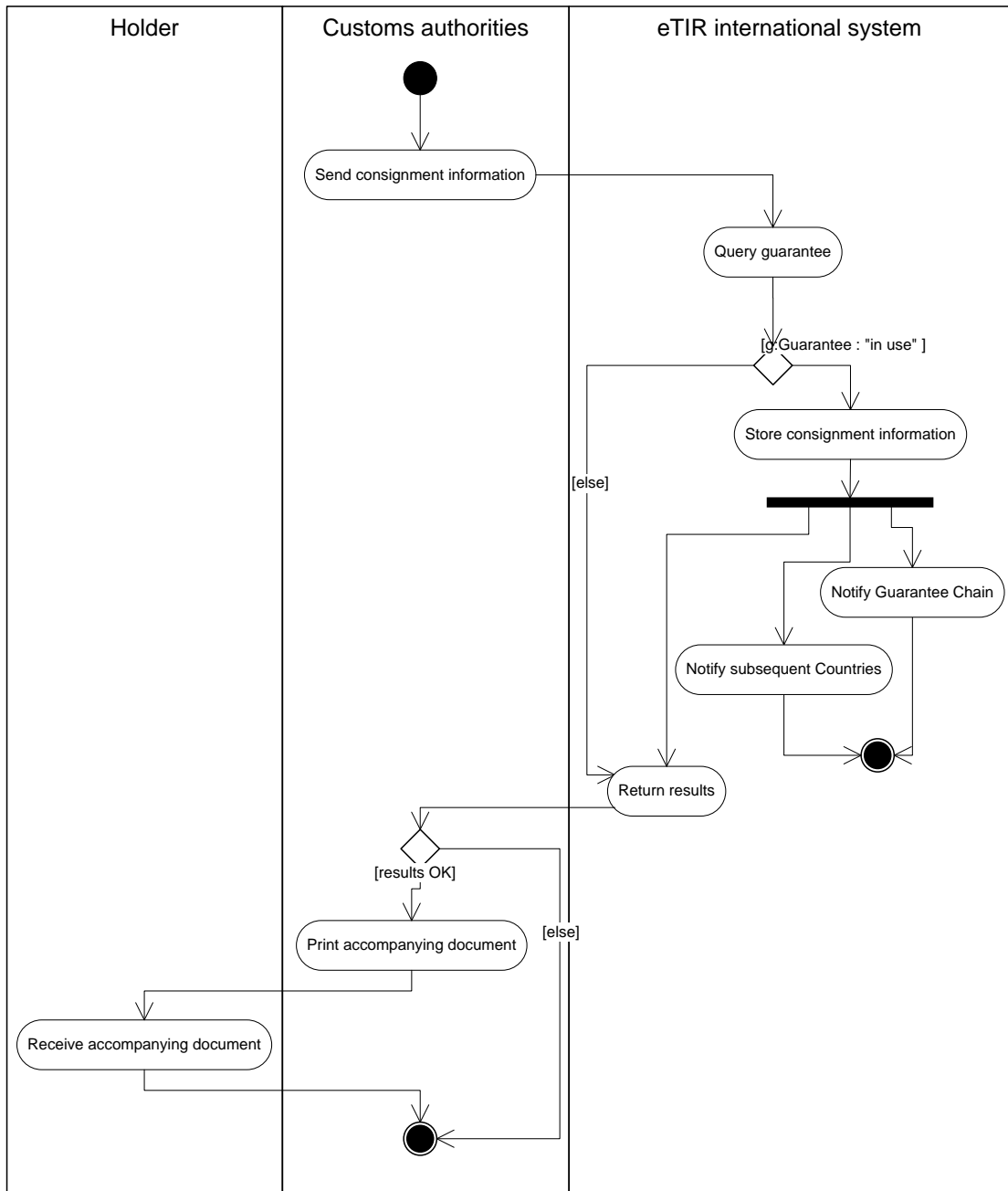
Table 8

Record consignment information use case description

Name	Record consignment information use case
Description	Information about the consignment is centrally stored.
Actors	Customs authorities
Performance Goals	
Preconditions	The guarantee must have been accepted (status “in use”). The holder should be authorized and not currently excluded from any country along the itinerary. The declaration has been accepted by Customs Authorities.
Postconditions	-
Scenario	The first Customs office of departure will send all data contained in the electronic declaration together with the information on seals affixed to the eTIR international system after having accepted the declaration and sealed the loading unit. The eTIR international system provides all subsequent countries indicated in the itinerary and the Guarantee Chain with the information. Customs authorities will provide the holder with an accompanying paper document.
Alternative Scenario	Fallback scenario In case the transmission of information to the eTIR international system fails, the Customs authorities nevertheless accept the holder to start the TIR transport. Customs authorities will transmit the electronic data to the eTIR international system at the first opportunity or by means of the eTIR website. In the meantime, other Customs authorities will obtain the required information from the accompanying document.
Special requirements	
Extension Points	-
Requirements Covered	-

3.2.3 Record consignment information activity diagram

Figure 11
Record consignment information activity diagram



3.2.4 Update consignment information use case description

Table 9

Update consignment information use case description

Name	Update consignment information use case
Description	The information related to a declaration is updated after subsequent loading or partial unloading, after the truck and/or the goods have been submitted to checks, after the itinerary has been changed or after the vehicle has been changed.
Actors	Customs authorities, holder
Performance Goals	
Preconditions	The declaration updates have been accepted by Customs Authorities. The holder should be authorized and not currently excluded from any country along the itinerary.
Postconditions	-
Scenario	<p>Intermediate loading points</p> <p>The intermediate Customs office of departure will send all data contained in the declaration to the eTIR international system together with the information on the new seals, after having accepted the declaration and resealed the vehicle or container. The eTIR international system provides all subsequent countries indicated in the itinerary and the Guarantee Chain with the updated information.</p>
Alternative Scenario	<p>Intermediate Unloading points</p> <p>After having sent a termination message and unloaded the goods concerned, the intermediate Customs office of destination will send information on the new seals affixed. The eTIR international system provides all subsequent countries indicated in the itinerary and the Guarantee Chain with the updated information. Customs authorities provide the holder with an updated accompanying paper document.</p> <p>Customs checks</p> <p>Having removed the seals from the vehicle or container, performed the necessary checks and resealed the vehicle or container, Customs authorities send a message to provide the eTIR international system with information on the new seals affixed. The eTIR international system provides all subsequent countries indicated in the itinerary and the Guarantee Chain with the updated information. Customs authorities provide the holder with an updated accompanying paper document.</p> <p>Change of itinerary</p> <p>After having been informed by the holder that the routing of the transport has changed, Customs authorities send a message to provide the eTIR international system with information on the new itinerary. The eTIR international system provides all subsequent countries indicated in the itinerary and the Guarantee Chain with the updated information. It also informs the countries removed from the itinerary that the TIR transport will not transit their country. Customs authorities provide the holder with an updated accompanying paper document.</p>

Vehicles change

After having been informed by the holder that a new vehicle (usually the tractor unit) will be used, Customs authorities send a message to provide the eTIR international system with information on the new vehicle. The eTIR international system provides all subsequent countries indicated in the itinerary and the Guarantee Chain with the updated information.

Fallback scenario

In case the transmission of information to the eTIR international system fails, the Customs authorities nevertheless accept the holder to continue the TIR transport. Customs authorities will transmit the electronic data to the eTIR international system at the first opportunity or by means of the eTIR website. In the meantime, other Customs authorities will obtain the required information from the accompanying document.

Special requirements

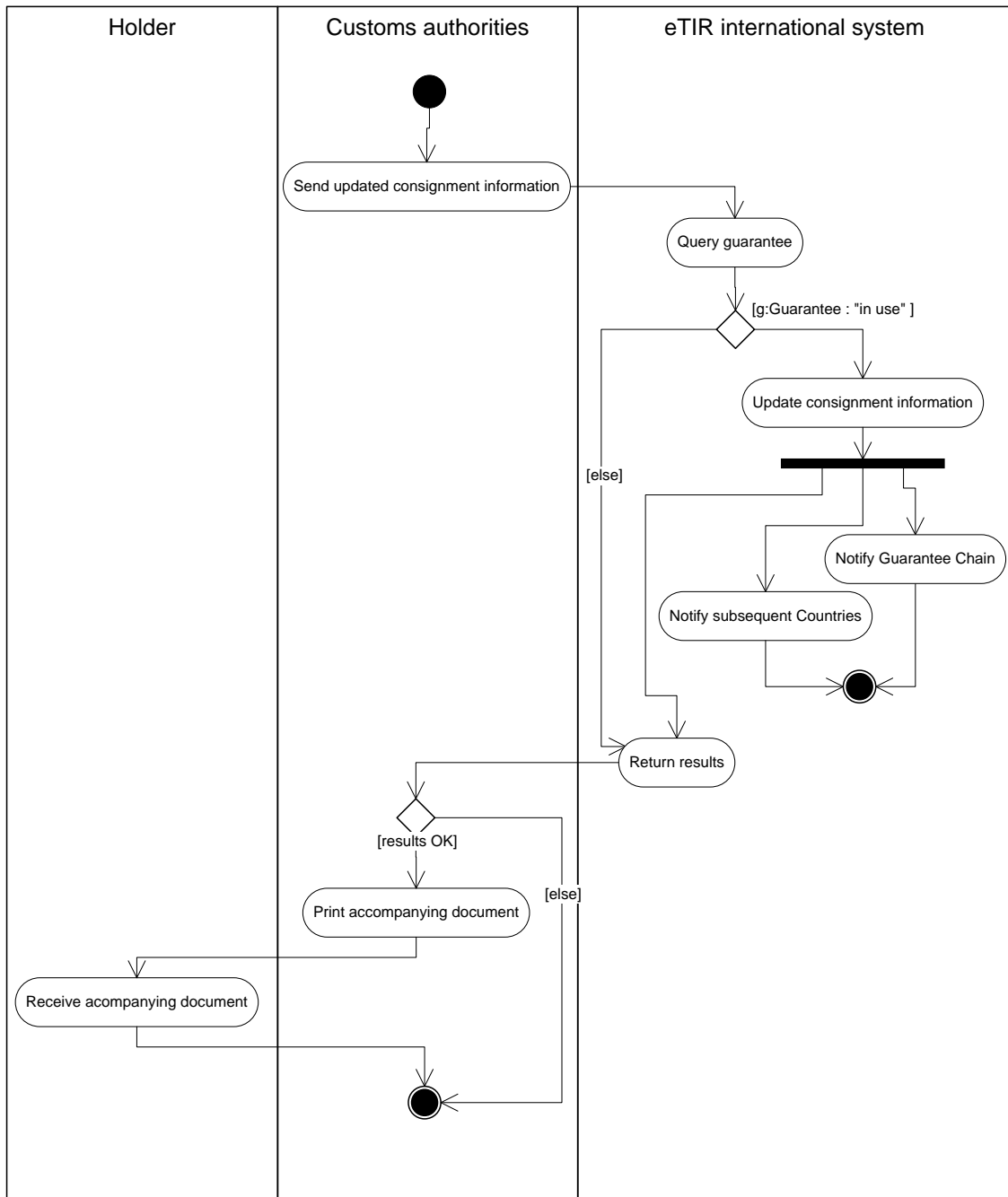
Extension Points -

Requirements Covered -

3.2.5 Update consignment information activity diagram

Figure 12

Update consignment information activity diagram



3.2.6 *Starting of TIR operation use case description*

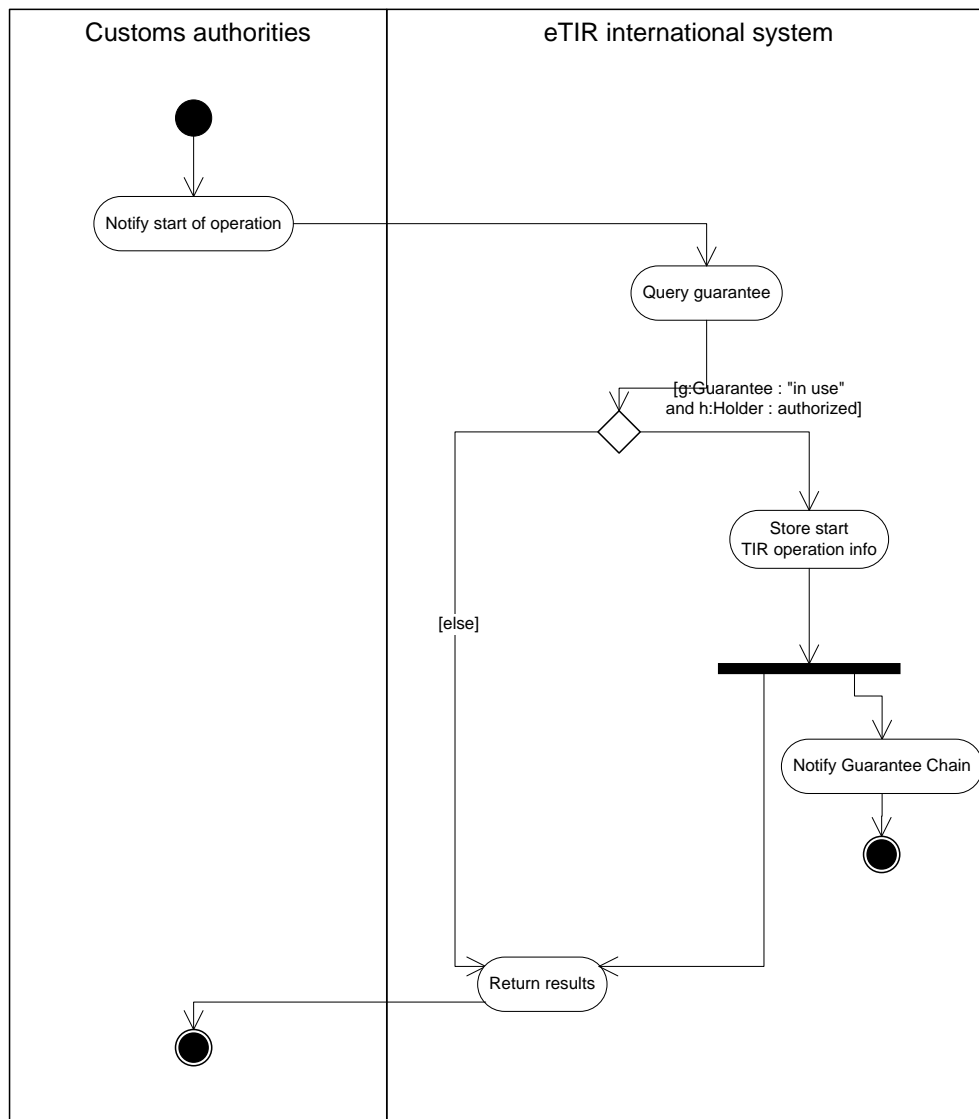
Table 10

Starting of TIR operation use case description

Name	Starting of TIR operation use case
Description	Customs authorities provide the eTIR international system with information regarding the start of a TIR operation.
Actors	Customs authorities
Performance Goals	-
Preconditions	Ensure the validity of the guarantee and the authorization for the holder.
Postconditions	-
Scenario	Customs authorities send a message to the eTIR international system notifying that a TIR operation has started. If the holder is authorized and the guarantee status is “in use”, the eTIR system saves the information and notifies the Guarantee Chain of the start of a TIR operation.
Alternative Scenario	Fallback scenario If electronic messages cannot be exchanged with the eTIR international system, the information regarding the start should be provided on the accompanying document. The status of the guarantee can be queried on the eTIR website.. Customs authorities will nevertheless send the start message at a later stage by means of the eTIR website..
Special requirements	-
Extension Points	-
Requirements Covered	-

3.2.7 Starting of TIR operation activity diagram

Figure 13
Starting of TIR operation activity diagram



3.2.8 *Terminate TIR operation use case description*

Table 11

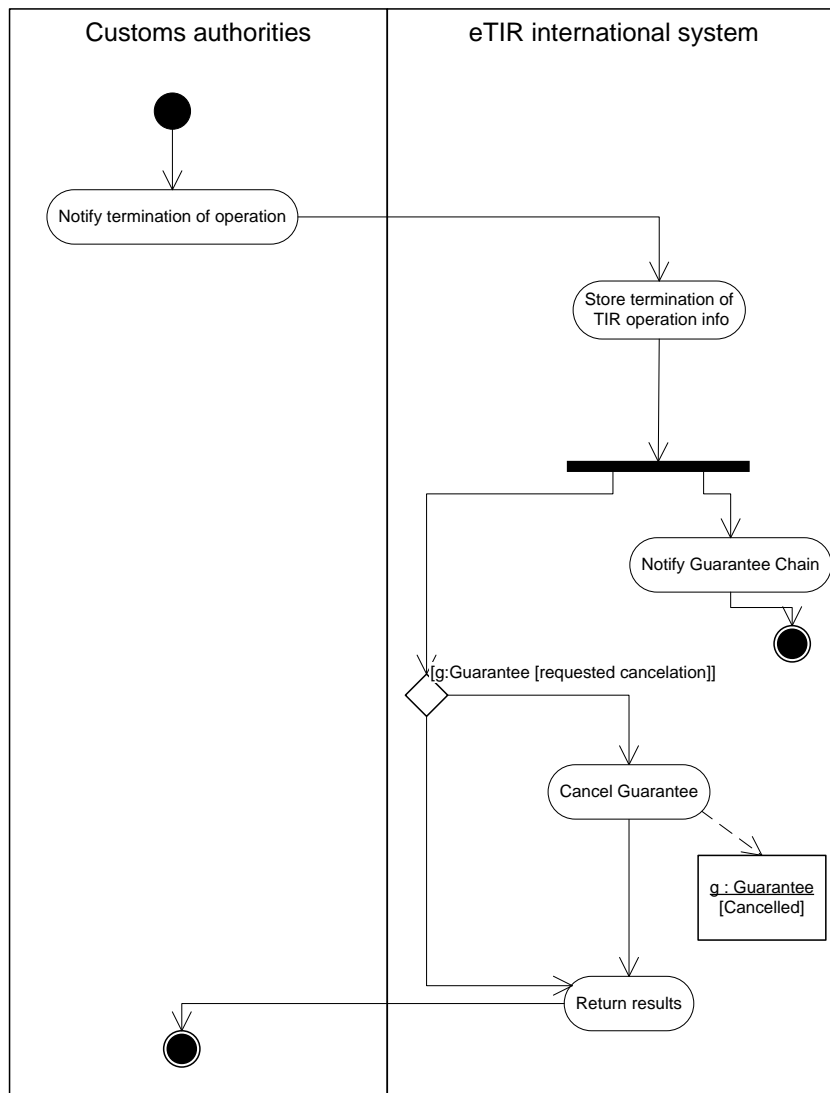
TIR operation use case description

Name	Terminate TIR operation use case
Description	Customs authorities provide the eTIR international system with information regarding the termination of a TIR operation.
Actors	Customs authorities
Performance Goals	-
Preconditions	-
Postconditions	-
Scenario	Customs authorities send a message to the eTIR international system notifying that a TIR operation has terminated. The eTIR system stores the information, changes the status of the guarantee to cancelled in case the Guarantee Chain has requested cancellation and notifies the Guarantee Chain of the termination of all TIR operations, including the final termination, providing the data as required by Annex 2 of the TIR Convention.
Alternative Scenario	Fallback scenario If electronic messages cannot be exchanged with the eTIR international system, the information regarding the termination should be provided on the accompanying document. Customs authorities will nevertheless send the termination message at a later stage or by means of the eTIR website..
Special requirements	Termination can be made with reservations.
Extension Points	-
Requirements Covered	-

3.2.9 Terminate TIR operation activity diagram

Figure 14

Terminate TIR operation activity diagram



3.2.10 Discharge TIR operation use case description

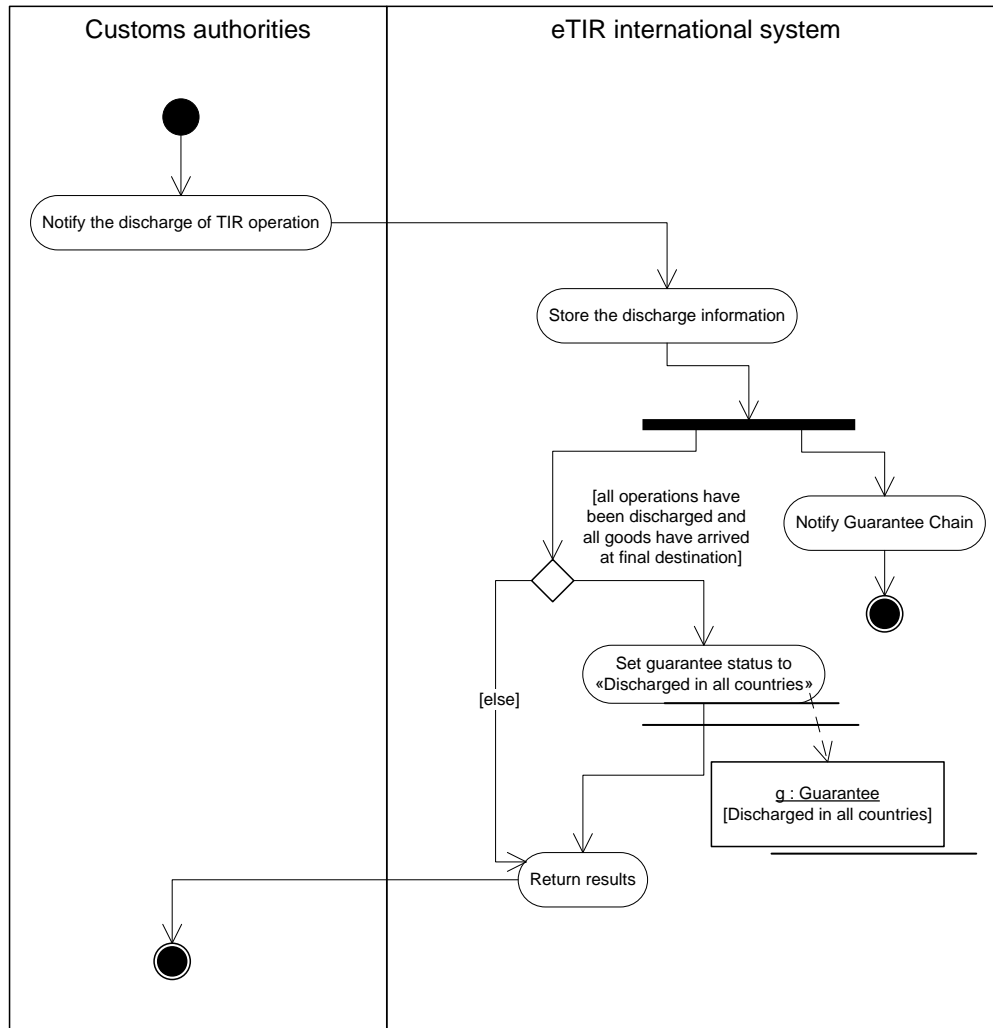
Table 12

Discharge TIR operation use case description

Name	Discharge TIR operation use case
Description	Customs authorities provide the eTIR international system with information regarding the discharge of a TIR operation.
Actors	Customs authorities
Performance Goals	
Preconditions	-
Postconditions	-
Scenario	Customs authorities send a message to the eTIR international system notifying that a TIR operation has been discharged. The eTIR international system stores the information and notifies the Guarantee Chain of the discharge of the TIR operations constituting a single TIR Transport. When all goods have reached their final destination and all TIR operations covered by the guarantee have been discharged, the status of the guarantee is changed to “discharged in all countries”.
Alternative Scenario	Fallback scenario If electronic messages cannot be exchanged with the eTIR international system, the information can be provided at a later stage or by means of the the eTIR website.
Special requirements	-
Extension Points	-
Requirements Covered	-

3.2.11 Discharge TIR operation activity diagram

Figure 15
Discharge TIR operation activity diagram



3.2.12 *Notify Guarantee Chain use case description*

Table 13

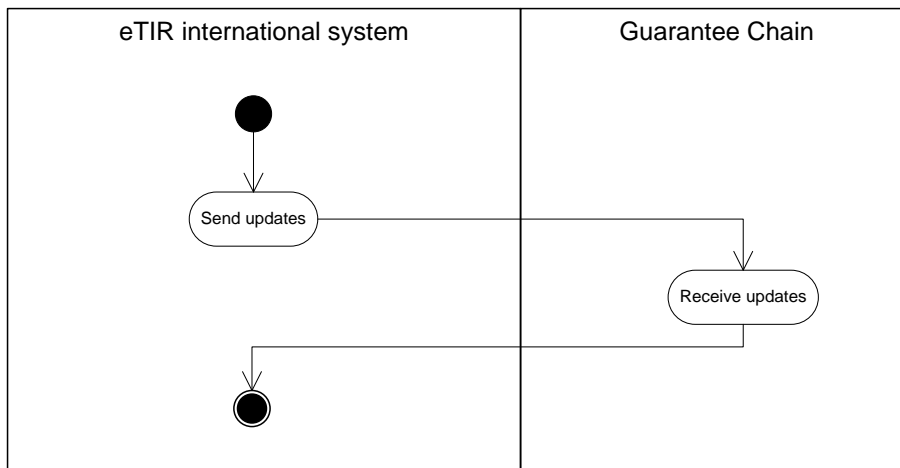
Notify Guarantee Chain use case description

Name	Notify Guarantee Chain use case
Description	The eTIR international systems notifies the Guarantee Chain of changes in the information related to a guarantee it has issued.
Actors	Guarantee Chain
Performance Goals	
Preconditions	-
Postconditions	-
Scenario	The eTIR international system notifies the Guarantee Chain of changes in the information related to a guarantee it has issued by sending an electronic message.
Alternative Scenario	Fallback scenario In case any Guarantee Chain's computer system cannot be reached, the eTIR international system will continue to try sending the information. A monitoring system will detect problems and trigger prompt and appropriate reactions.
Special requirements	-
Extension Points	-
Requirements Covered	-

3.2.13 *Notify Guarantee Chain activity diagram*

Figure 16

Notify Guarantee Chain activity diagram



3.2.14 *Notify subsequent Countries use case description*

Table 14

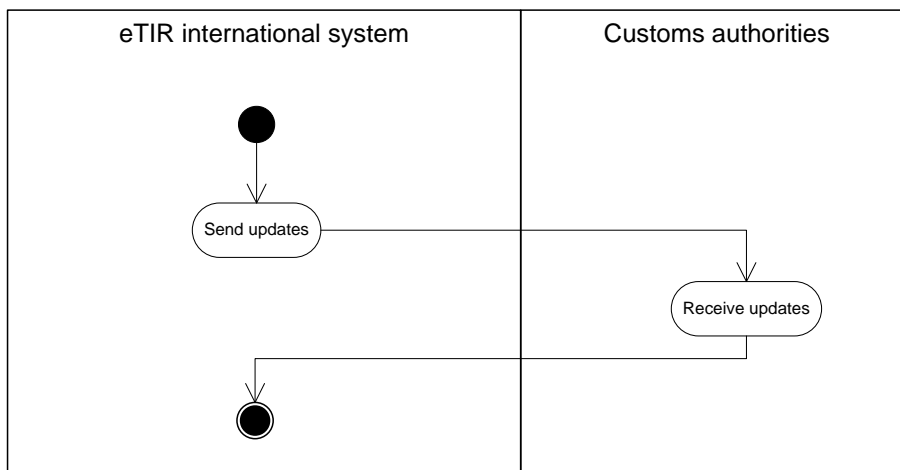
Notify subsequent Countries use case description

Name	Notify subsequent Countries use case
Description	The eTIR international system notifies Customs authorities of information related to a consignment that will transit their territory.
Actors	Customs authorities
Performance Goals	
Preconditions	-
Postconditions	-
Scenario	The eTIR international system notifies Customs authorities of information related to consignments that will transit their territory by sending them electronic messages.
Alternative Scenario	Fallback scenario In case a national system is not available, the eTIR international system will continue to try sending the information. A monitoring system will detect problems and trigger prompt and appropriate reactions.
Special requirements	-
Extension Points	-
Requirements Covered	-

3.2.15 *Notify subsequent Countries activity diagram*

Figure 17

Notify subsequent Countries activity diagram



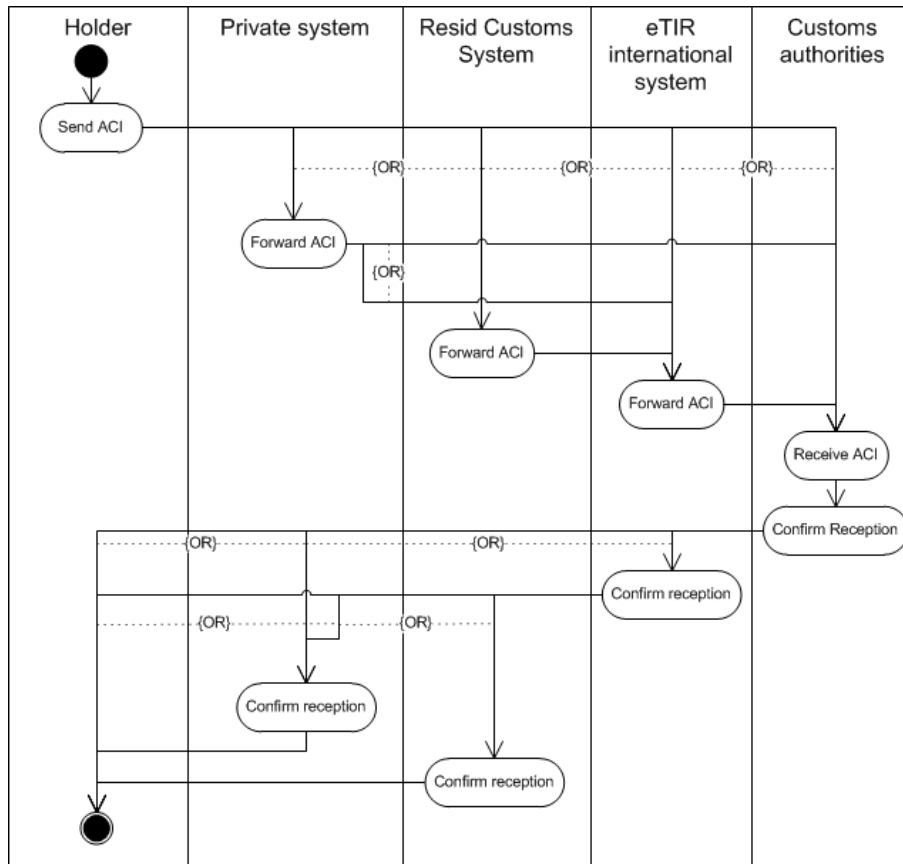
1.3.2.16 *Advance cargo information use case description*

Table 15
Advance cargo information use case description

Name	Declaration use case
Description	holder transmits an advance cargo declaration to the eTIR international system, either directly or via a declaration mechanism provided by the Customs authorities of its country of residence or a private international declaration mechanism, that will then forward it to the Customs authorities of the country of first Customs office of departure.
Actors	Holder, Customs authorities, private provider of an international declaration services (e.g. guarantee chain)
Performance Goals	
Preconditions	The holder, the Customs system of the country of residence of the holder or the private provider of an international declaration services is registered in the authentication database (see 1.3.2.10)
Postconditions	-
Scenario	.
Alternative Scenario	Fallback scenario In case transmission by means of web services is not available, the holder can use other available declaration mechanisms.
Special requirements	-
Extension Points	-
Requirements Covered	-

3.2.17 Advance cargo information activity diagram

Figure 18
Advance cargo information activity diagram

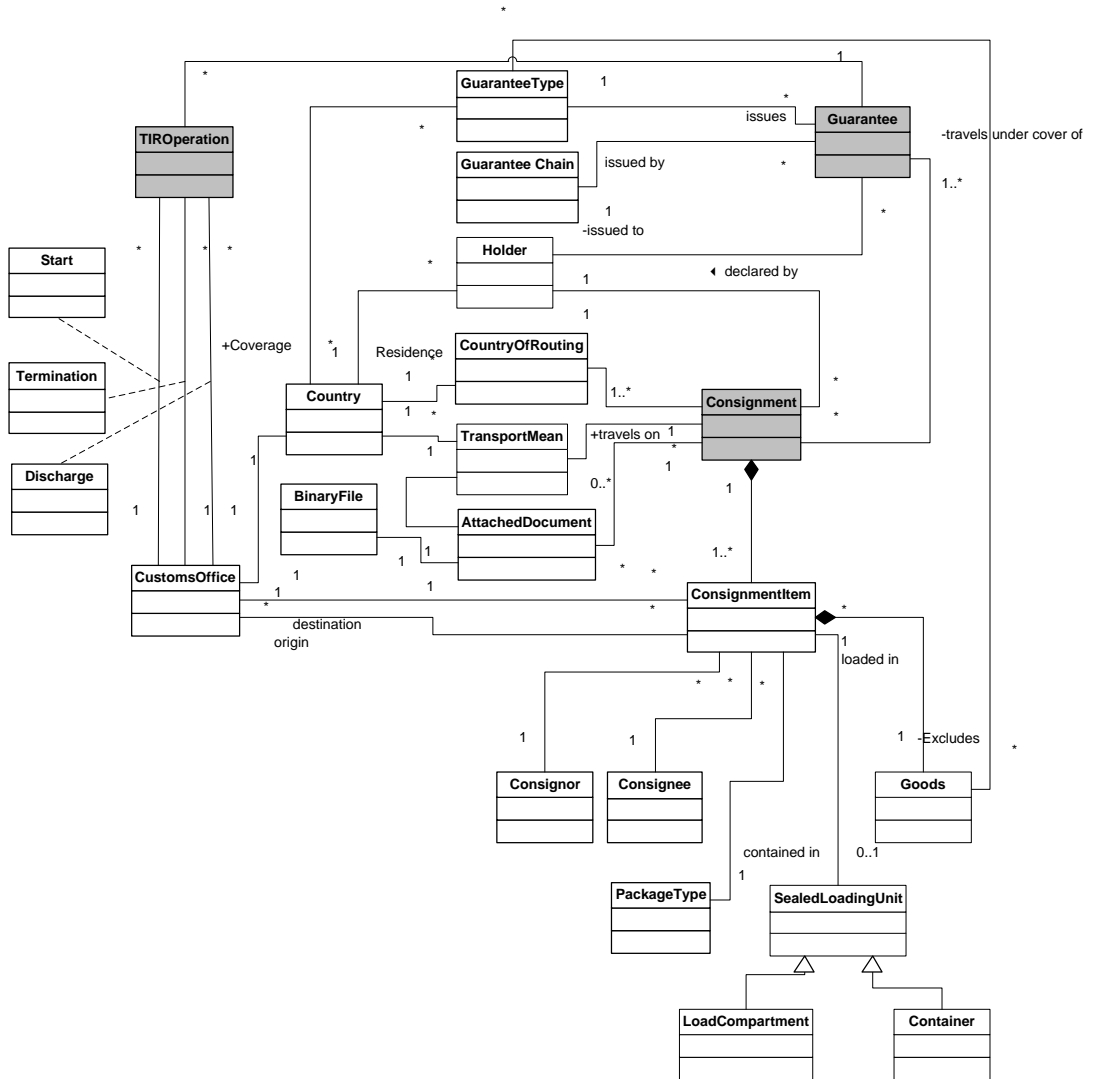


4 Class diagram

The class diagram in Figure 2.17 is articulated around 3 main classes (in grey): the guarantee, the consignment and the TIR operation.

- The guarantee class, because the majority of information exchanged with the eTIR international system will be referenced by means of the GRN.
- The consignment class, because it links all information regarding the goods in transit.
- The TIR operation class, because it allows the exchange of information previously contained in the counterfoils.

Figure 19
General eTIR class diagram



Annex I

eTIR declaration mechanism

Chapter 1.2.4.2, stipulates “that the holder submits the declaration by electronic means to the Customs office of departure, making reference to a guarantee issued by a guarantee chain, using authentication mechanisms. The declaration shall be submitted prior to the presentation of the goods at the Customs office of departure. Alternatively, the holder can make use of declaration mechanisms provided by the eTIR international system, the Customs system of his country of residence (if available) or third party solutions provided by the private sector (including by the guarantee chains). National Customs system will use the declaration web service of the eTIR international system to forward the declaration to the country of departure. Authorized international private sector declaration systems can use the declaration web service of the eTIR international system to forward the declaration to the country of departure. Customs authorities shall, if satisfied, validate and accept the declaration and transmit it to the eTIR international system. The eTIR international system forwards this information to the following Customs authorities involved in the transport.”^{11/}

The declaration mechanism envisages that the holder sends his advance cargo information^{12/} only to the Customs office of departure of the TIR transport. The Customs office of departure uses this information when the holder lodges his Customs declaration. The holder actually lodges the Customs declaration by presenting Customs with the reference to the guarantee which he has obtained from the guarantee chain and which he has included in the advance cargo information. The Customs office of departure after having accepted the Customs declaration, registers the information contained in the declaration together with other TIR transport information (e.g. the information on seals) as advance cargo information in the eTIR international system. The eTIR international system forwards the advance cargo information to all Customs authorities declared by the holder as part of his itinerary. This mechanism is devised to facilitate the submission procedure by the holder, without further complicating the procedure for Customs authorities that would in any case have to exchange information concerning TIR transports. This mechanism is similar to the current paper based procedure, where the TIR Carnet becomes a Customs document from the moment the first Customs office of departure stamps each and every page of the TIR carnet. The difference lies in the transportation of the information, which is performed by the truck driver today and will be performed by the eTIR international system tomorrow.

The fact that the holder is obliged to provide Customs with advance cargo information does not relieve him from his responsibility to lodge his declaration by presenting himself, together with the goods vehicle and the reference to the guarantee, in accordance with Article 21 of the TIR Convention. It is then the responsibility of Customs to accept the declaration.

^{11/} The eTIR system maintains the principle that a TIR transport consists of a set of TIR operations. See Annex 1 of the introduction to the eTIR conceptual, functional and technical documentation, Requirement 10.

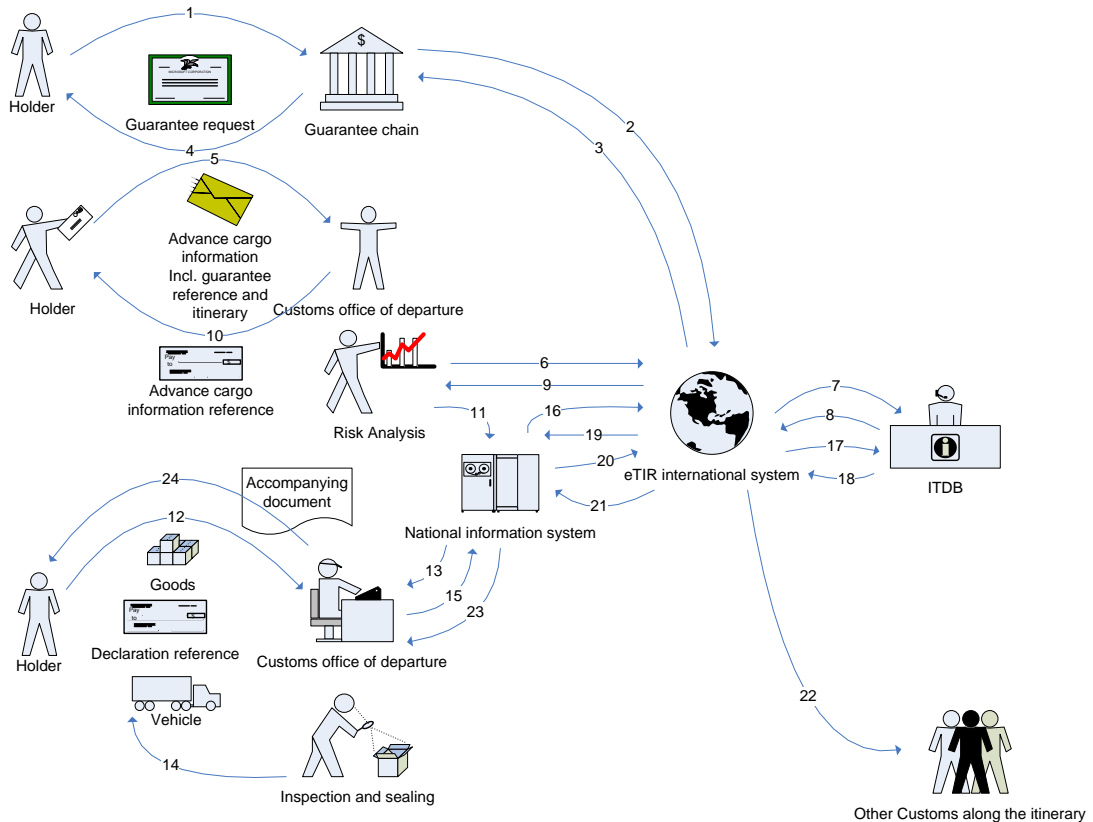
^{12/} The holder, at any time, can verify the integrity of the advance cargo information by means of a ‘key’ which has been generated on the basis of these data.

I.1. The eTIR declaration at the first Customs office of departure

Figure 1 describes all steps related to the declaration submission process at the first Customs office of departure. Steps are numbered and described in the text following the figure.

Figure I.1

Declaration at the first Customs office of departure



1. The holder requests a guarantee from the guarantee chain;
2. The guarantee chain accepts the request and registers the guarantee with the eTIR international system;
3. The eTIR international system acknowledges registration of the guarantee;
4. The guarantee chain provides the holder with a unique reference to the guarantee;
5. After having generated the “key” to ensure the integrity of the advance cargo information, the holder sends the advance cargo information to the central Customs system in the country of departure, using a national declaration mechanism of the country of departure (if he has the required credentials) , the declaration mechanism of his country of residence (if available for declarations made in other countries), the web service made available in the eTIR international system or a declaration mechanism provided by the private sector;
6. As part of their risk analysis, Customs authorities check the validity of the guarantee in the eTIR international system;
7. The eTIR international system queries the ITDB to check that the holder is authorized;

8. The ITDB provides information on the holder to the eTIR international system;
9. The eTIR international system provides the information on holder and guarantee to Customs;
10. Customs confirm the reception and the validity of the advance cargo information to the holder and provide him with a unique reference;
11. Customs store the advance cargo information in their internal system, possibly together with the results of their risk assessment;
12. The holder presents the vehicle, the goods and the reference to the guarantee (or the reference provided by Customs) to the Customs office of departure to lodge the declaration;
13. The Customs office of departure retrieves from the national Customs system the data contained in the advance cargo information message to become the Customs declaration, allowing the holder to verify the integrity of the data by comparing the “key” of the declaration with the one originally generated. Then, Customs check the vehicle and goods against the Customs declaration in accordance with the appropriate risk assessment information;
14. The Customs office of departure inspects and seals the vehicle;
15. The results of the checks and the seals numbers are stored in the Customs system;
16. The Customs office of departure (national system) informs the eTIR international system that it accepts the guarantee;
17. The eTIR international system queries the ITDB on the status^{13/} of the holder to whom the guarantee has been issued;
18. The ITDB returns the status of the holder to the eTIR international system;
19. The eTIR international system confirms the acceptance of the guarantee to the national Customs system;
20. After having accepted the declaration, the national system forwards the relevant TIR transport data (Customs declaration and the seals numbers) to the eTIR international system by means of the “Record Consignment” message;^{14/}
21. The eTIR international system confirms the reception of the information;
22. The eTIR international system provides all Customs administrations involved in the TIR transport with the TIR transport information. This information, exchanged in a Customs secure environment, will serve as the advance cargo information for the subsequent Customs authorities;
23. The Customs officer sees the results on his/her screen and prints the accompanying document;
24. The Customs officer hands out the paper accompanying document to the holder.

^{13/} The status of the holder refers to his status as contained in the ITDB, i.e. authorized, withdrawn, excluded (art. 38), end of activity.

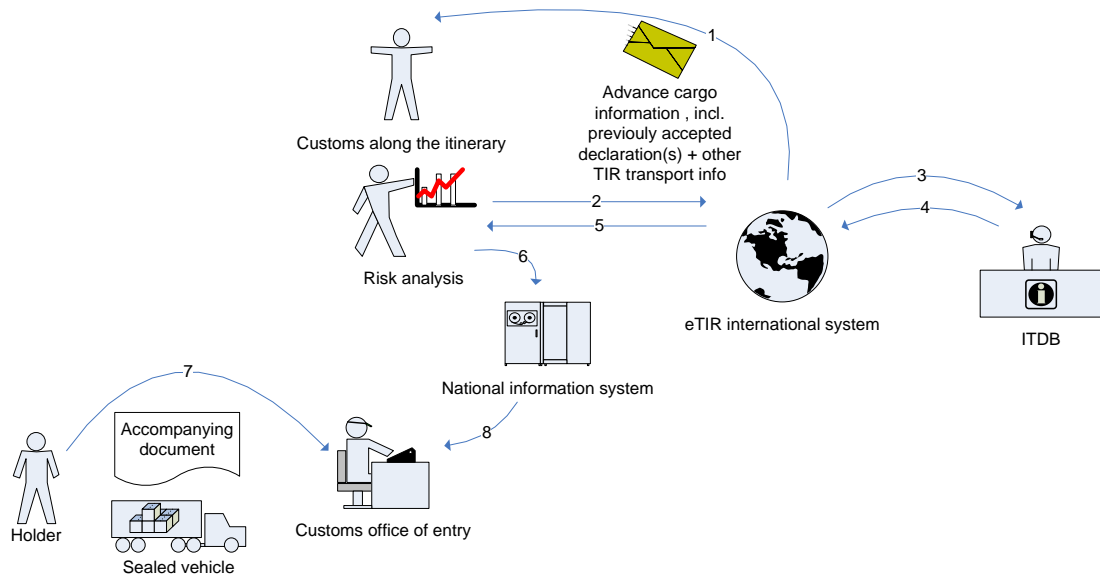
^{14/} Customs perform other activities in line with national or international requirements, such as sending a “Start TIR operation” message (which triggers a checking of the guarantee before the TIR operation can be started). However, as this is not part of the declaration submission mechanism but rather follows the acceptance of the declaration by Customs, it is not further described in this document.

I.2. The eTIR declaration at the Customs office of entry

Figure 2 describes all steps related to the declaration submission process at the Customs office of entry. Steps are numbered and described in the text following the figure.

Figure I.2

Declaration at the Customs office of entry



1. Customs authorities along the itinerary receive the advance cargo information from the eTIR international system, indicating that a holder is performing a TIR transport which will enter their territory (see step 22 of the Customs office of departure; such information might be just a message, inviting Customs to query the eTIR international system or the TIR transport information);
2. As part of their risk analysis, Customs authorities check the validity of the guarantee with the eTIR international system;
3. The eTIR international system queries the ITDB to check that the holder is authorized;
4. The ITDB provides information on the holder to the eTIR international system;
5. The eTIR international system provides the information on holder and guarantee to Customs;
6. Customs store the advance cargo information in their national system, possibly together with the results of their risk assessment;
7. The holder presents the sealed vehicle (containing the goods) together with the accompanying document and the guarantee reference at the Customs office of entry en route;
8. The Customs office of entry en route retrieves from the national Customs system the data contained in the advance cargo information message to become the Customs

declaration, allowing the holder to verify the integrity of the data by comparing the “key” of the declaration with the one originally generated.^{15/}

In case the geographical distance between the Customs office of departure and the Customs office of entry en route is too close to meet deadlines^{16/} for the submission of advance cargo information, Customs authorities at the Customs office of entry en route should accept the advance cargo information forwarded through the eTIR international system. In a computerized environment, even short time lags are sufficient to perform automatic risk assessment and should allow for adequate channelling of the holder upon his arrival at the border.

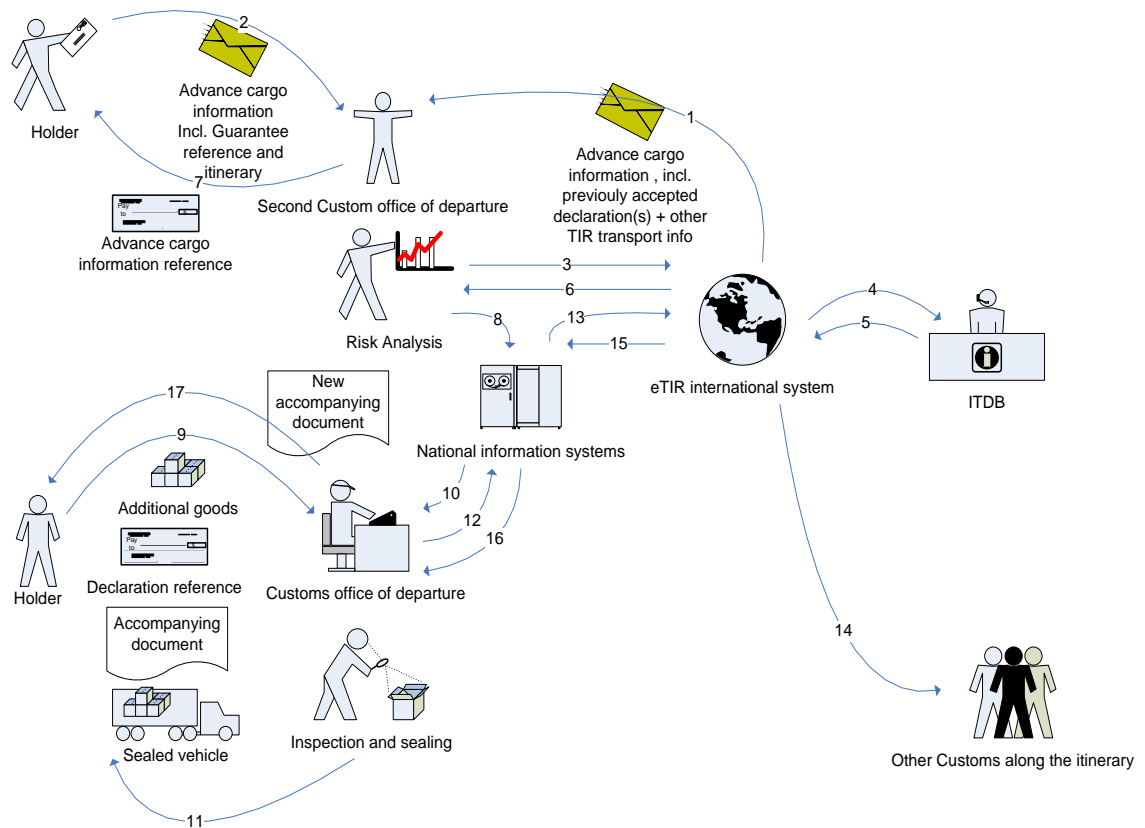
I.3. The eTIR declaration at the following Customs offices of departure

Figure 3 describes all steps related to of the declaration submission process at a Customs office of departure, other than the first Customs office of departure, in case of multiple loading places. Steps are numbered and described in the text following the figure.

^{15/} After accepting the declaration, Customs perform other activities in line with national or international requirements, such as sending a “Start TIR operation” message (which triggers a checking of the guarantee before the TIR operation can be started). However, as this is not part of the declaration submission mechanism but rather follows the acceptance of the declaration by Customs, it is not further described in this document.

^{16/} Specific deadlines regarding the arrival of advance information will be defined in the legal provisions allowing for the implementation of the eTIR system.

Figure I.3
Declaration at the following Customs offices of departure



1. The eTIR international system sends the advance cargo information to the Customs authorities along the itinerary (see step 22 at the first Customs office of departure);
2. After having generated the “key” to ensure the integrity of the advance cargo information, the holder sends the advance cargo information, regarding the totality of the goods, to the central Customs system in the country of departure, using a national declaration mechanism of the country of departure (if he has the required credentials) , the declaration mechanism of his country of residence (if available for declarations made in other countries), the web service made available in the eTIR international system or a declaration mechanism provided by the private sector;
3. As part of their risk analysis, Customs authorities check the validity of the guarantee with the eTIR international system;
4. The eTIR international system queries the ITDB to check that the holder is authorized;
5. The ITDB provides information on the holder to the eTIR international system;
6. The eTIR international system provides the information on holder and guarantee to Customs;

7. Customs confirm the reception and the validity^{17/} of the advance cargo information regarding the additional goods to be loaded to the holder and provide him with a unique reference;
8. Customs store the advance cargo information in their internal system, possibly together with the results of their risk assessment;
9. The holder presents the sealed vehicle (containing goods loaded at previous loading points), together with the accompanying document. Moreover, he presents the additional goods to be loaded, together with the reference to the guarantee (or the reference provided by Customs) to the Customs office of departure to lodge the declaration;
10. The Customs office of departure retrieves from the national Customs system the data contained in the advance cargo information message to become the Customs declaration, allowing the holder to verify the integrity of the data by comparing the “key” of the declaration with the one originally generated. Then, Customs check the vehicle and goods against the Customs declaration in accordance with the appropriate risk assessment information;
11. Customs retrieves the advance cargo information from the Customs system, possibly together with the results of their risk assessment;
12. Customs remove the seals, inspect the goods and the vehicle according to the results of the risk analysis and, after the additional good are loaded, seal the vehicle;
13. The results of the checks and the seals numbers are stored in the Customs system;
14. After having accepted the declaration, the national system forwards the relevant TIR transport data (Customs declaration and the seals numbers) to the eTIR international system by means of the “Update Consignment” message;^{18/}
15. The eTIR international system confirms the reception of the information;
16. The eTIR international system provides all Customs administrations involved in the TIR transport with the TIR transport information. This information, exchanged in a Customs secure environment, will serve as the advance cargo information for the subsequent Customs authorities;
17. The Customs officer sees the results on his/her screen and prints the accompanying document;
18. The Customs officer hands out the paper accompanying document to the holder.

In case the geographical distance between the first and the second Customs office of departure is too close to meet deadlines^{19/} for the submission of advance cargo information, Customs authorities at the second Customs office of departure should accept the advance cargo information forwarded through the eTIR international system. In a computerized

^{17/} As part of the verification procedure, Customs also verify that the information provided at the first loading point (received through the eTIR international system) is contained in the new advance cargo information message.

^{18/} Customs perform other activities in line with national or international requirements, such as sending a “Start TIR operation” message (which triggers a checking of the guarantee before the TIR operation can be started). However, as this is not part of the declaration submission mechanism but rather follows the acceptance of the declaration by Customs, it is not further described in this document.

^{19/} Specific deadlines regarding the arrival of advance information will be defined in the legal provisions allowing for the implementation of the eTIR system.

environment, even short time lags are sufficient to perform automatic risk assessment and should allow for adequate channelling of the holder upon his arrival at the border.

I.4. Remarks

I.4.1. Submission of the declaration in foreign countries

A major issue with regard to the declaration submission procedure as contained in the eTIR Project seems to be the requirement for the holder to send advance cargo information to Customs administrations in other countries than the holder's country of residence. The responsibility to provide an adequate submission procedure lies at the national level and is a matter between the holder and the Customs authorities, falling outside the scope of the eTIR Project. Nevertheless, further to defining a standard set of elements to be contained in the advance cargo information message, the eTIR international system will also provide a declaration web service that will be made available to authorized holders, third party service providers and Customs.

There is general agreement that the requirement of a national electronic declaration system does not pose a problem in the relationship between holder and Customs authorities of the country in which he is established or resident. However, there seems to be a potential problem with regard as to how the holder can establish secure electronic communications with Customs authorities in other countries where the beginning of the TIR transport could take place, without having to call upon the paid services of a Customs broker or any other third party. In order to achieve this, Customs administrations will have to ensure not only that their national declaration submission system is accessible by all holders (in particular when considering authentication requirements), but that it is also available in, at least, one of the three official languages of the TIR Convention (English, French or Russian). A generalized use of standard codes will also further simplify this issue. In order to provide holders with additional options to submit their declaration to Customs, a declaration web service is also available in the eTIR international system and made available to authorized holders, Customs systems and authorized third party declaration mechanisms. This web service allows to forward advance cargo information to the Customs system of the country of departure. Furthermore, Customs administrations may wish to extend the scope of their national declaration mechanism to allow their national holders to send advance cargo information to other Customs systems when the TIR transport starts abroad (making use of the eTIR international system declaration web service). Finally, third party solutions (like TIR-EPD or Customs brokers services) may also be used to transmit the advance cargo information directly to Customs or via the eTIR international system declaration web service.

I.4.2. Comparison with the current paper environment

The declaration mechanism contained in the eTIR Project only differs slightly from the current paper-based procedure. The declaration continues to be formally lodged by the holder at the time he presents himself at the Customs office of departure or entry en route, together with the vehicle and the goods. However, the eTIR system introduces, as new requirement, that Customs should receive advance cargo information prior to the physical presentation of the vehicle and goods at the Customs office of departure or entry en route. In line with the objectives of the eTIR Project, the purpose of this is to allow Customs to perform certain checks (including the validity of the guarantee) and to determine the risk profile of the TIR transport prior to its arrival at the Customs office concerned. In continuation, the eTIR system is designed in such a way that the holder only needs to submit his advance cargo information once, thus avoiding the multiple, unsolicited and, possibly even erroneous, submission to various national Customs systems. The Customs

office of departure, by registering all relevant TIR transport information in the eTIR international system, ensures that the data required for lodging the declaration, as well as other TIR transport information (e.g. seals), are provided to all consecutive countries involved in the TIR transport prior to the arrival of the vehicle so that Customs can perform advance risk assessment. As it is the case today, the holder remains responsible for the presentation of the vehicle, load and guarantee reference in accordance with the principles set out in Article 21 of the TIR Convention at each Customs office. The change in the procedure regards only the information required to lodge the declaration, which is currently provided by means of the TIR Carnet and which will be provided electronically in the future by means of the mechanisms described above.

I.4.3. Legal implications of the eTIR declaration submission mechanism

In the course of the discussions of the WP.30 at its 119th session, issues have been raised of a legal nature, which go beyond the scope of the mandate of the GE.1, but which deserve the Working Party's full attention. In the following paragraphs, the secretariat provides its preliminary assessment of the issues at stake for consideration by WP.30.

a. Legal basis for Customs to receive/send/use advance declaration data through the eTIR international system

It goes without saying that the introduction of the eTIR system will require a revision of the legal provisions of the TIR Convention. In the framework of this revision, it will be necessary to include provisions ensuring that the eTIR international system is adequately defined as the cornerstone of the information exchange between Customs authorities and providing a legal basis for a secure electronic exchange of TIR data, which would replace the current exchange of information based on the paper TIR Carnet.

b. Liability of the holder if an error occurs in the course of the transmission of data from Customs to Customs through the eTIR international system

First of all, it should be stressed that the holder is and will remain responsible, and thus liable, for the accuracy and the completeness of the information he provides. The eTIR system nevertheless provides the holder with means to ensure the authenticity of the information. The eTIR system foresees that the holder generates a "key" using his advance cargo information.^{20/} The Customs authorities will also calculate the "key", from the information they received directly from the holder or through the eTIR international system, and therefore provide the holder with a quick mean to ensuring that the correct information has been considered. With that in mind, it is the responsibility of the holder to ensure there is no divergence between data he submitted, data transmitted via the eTIR international system and data received by Customs authorities in the course of a TIR transport, and request a correction, if need be.

^{20/} In more technical terms this key is also known as hash code. A "hash" function takes information as an input and provides the hash code as an output. Whenever the information, e.g. the advance cargo information, is changed the resulting hash code will also change. Therefore, the hash code can ensure that the information provided by the holder is not changed in the course of the TIR transport.

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