Economic and Social Council

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

Fourteenth session
Geneva, 10-11 April 2008
Item 3 (c) of the provisional agenda

REFERENCE MODEL OF THE TIR PROCEDURE

Chapter 3 - Analysis

Note by the secretariat

A.   **BACKGROUND**

1.   At its one-hundred-and-sixteenth session, the Working Party requested the Expert Group to
start working on Chapter 3 of the Reference Model, dedicated to the analysis of the e-Business-
Requirements as contained in Chapter 2 (see ECE/TRANS/WP.30/232, paragraph 32).

2.   At its thirteenth session, the Expert Group welcomed a first draft of Chapter 3 of the
Reference Model as contained in document ECE/TRANS/WP.30/GE.1/2007/13. After indepth
discussion, the Expert Group mandated the secretariat to align draft Chapter 3 with its findings,
to propose data elements and a structure for the identified electronic messages and to draft the

GE.08-

fallback scenarios sequence diagram, for consideration at its next meeting
(ECE/TRANS/WP.30/GE.1/2007/16, paras. 7-9).

B.   ANALYSIS

3.   The purpose of the analysis chapter is to translate the requirements identified in Chapter 2
(eBusiness requirements) into specifications that enable software developers and message
designers to further design the eTIR system.

4.   Analysis goals are:

–   To build a set of business objects from the requirements contained in
Chapter 2;
–   To transform the requirements set out in Chapter 2 into precise, object
oriented specifications;
–   To provide a foundation for the design of electronic messages;
–   To provide all actors of the eTIR system with interfaces to hook on to their
existing information systems;
–   To explicitly specify the dynamics of the eTIR system.

5.   In order to achieve those goals, Chapter 3 provides further detail on the dynamic aspects of
the eTIR system and completes the more general description provided by the activity diagrams in
Chapter 2. It does so by means of sequence diagrams that describe the detailed interactions
between actors and objects in the eTIR system. The identification of all these interactions is the
basis for the elaboration of the electronic messages.

6.   Furthermore, the class diagram in Chapter 2 is further developed and is now divided into
three separated class diagrams, which include attributes and operations. The class diagrams will
be used to design the messages and provide the structure of databases. They will also provide the
basis for the development of the objects' methods.

C.   FURTHER CONSIDERATIONS

7.   The Expert Group may wish to discuss and further elaborate the revised draft Chapter 3 of
the Reference Model, in particular, the code lists.

Annex
Chapter 3 – Analysis

TABLE OF CONTENT

3.   ANALYSIS

The analysis chapter is subdivided into two parts, starting with the activity analysis, which depicts the dynamics of the eTIR international system, and followed by a data analysis, which presents the attributes and the methods of the objects used and exchanged by the eTIR international system in the form of class diagrams.

3.1.   ACTIVITY ANALYSIS

The following sequence diagrams are devised on the basis of the activity diagrams presented in Chapter 2.3. They describe in details all interactions between the actors and the objects of the system.

3.1.1. *Management by Customs of data on guarantees*

3.1.1.1. Register guarantee chain
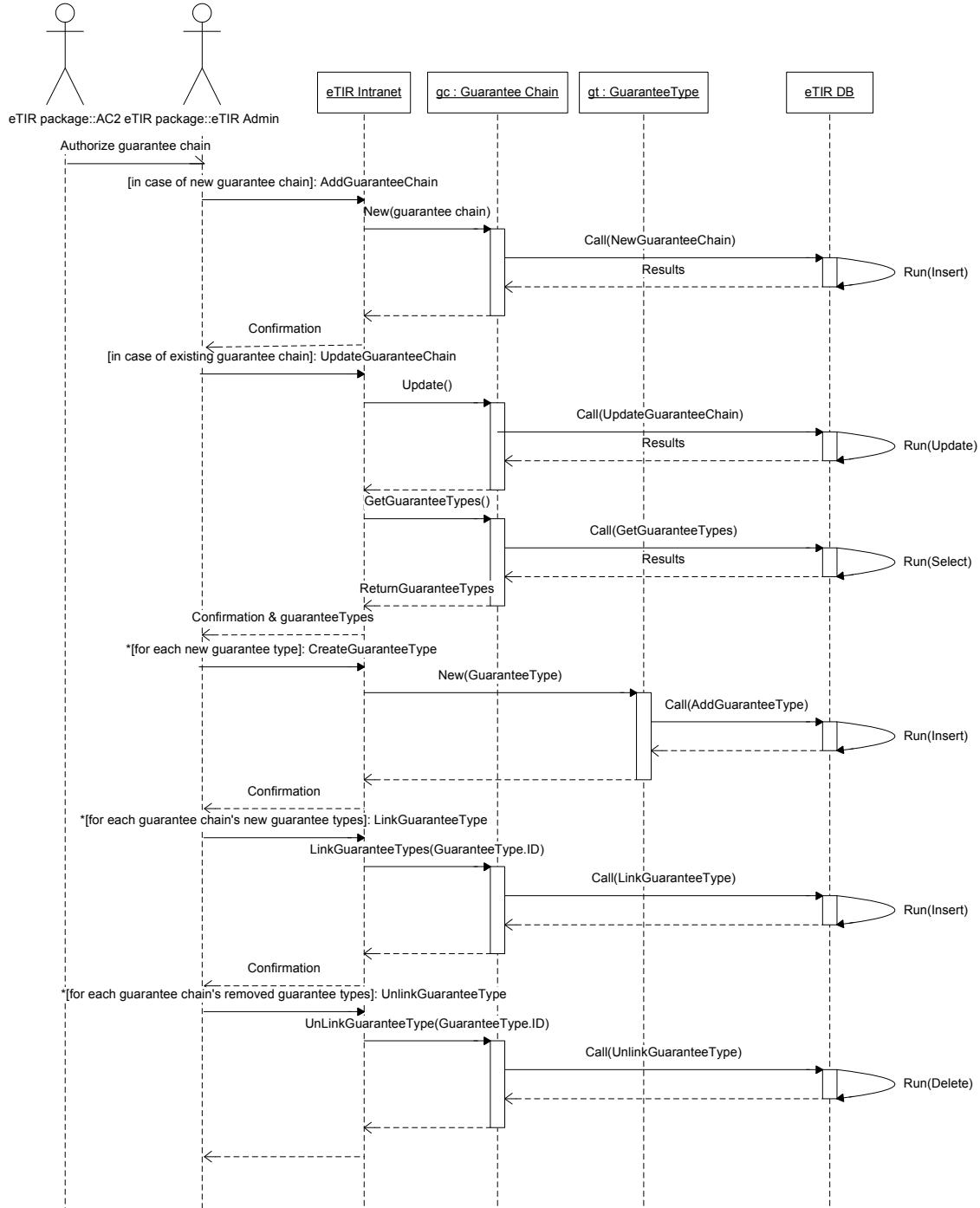
Figure 3.1: Register guarantee chain sequence diagram

3.1.1.2.   Register guarantee
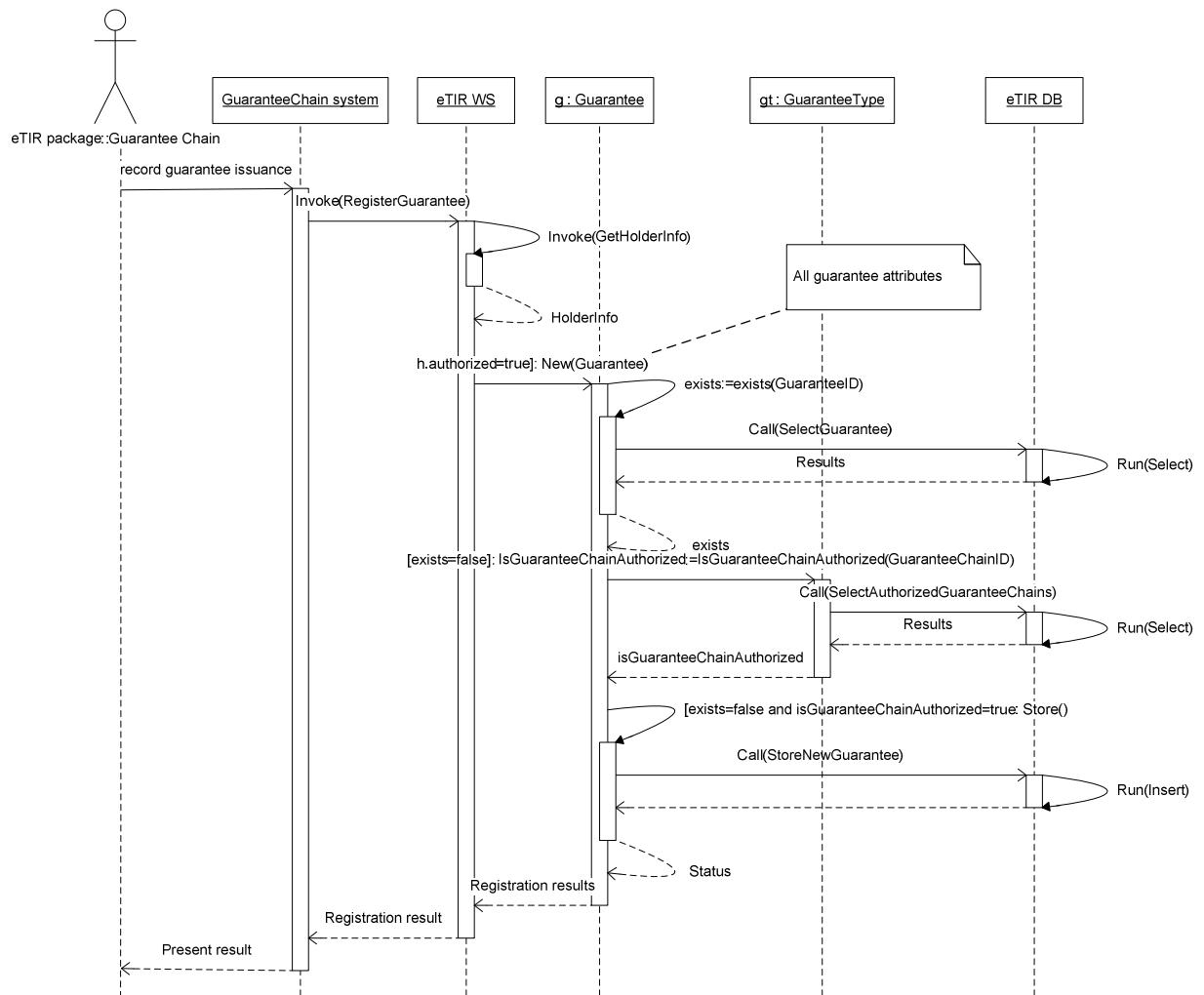
Figure 3.2: Register guarantee sequence diagram

3.1.1.3.   Cancel guarantee
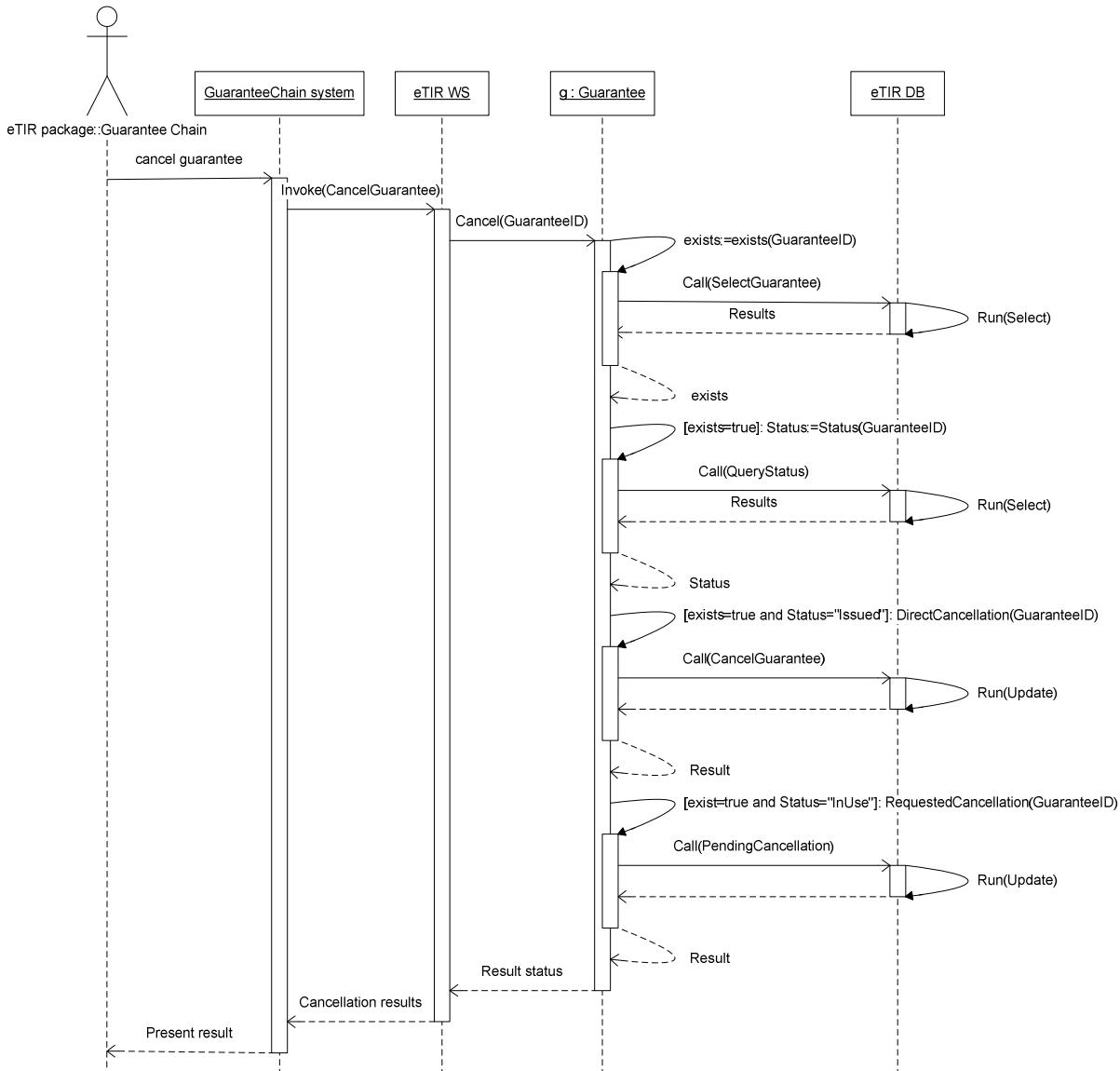
Figure 3.3: Cancel guarantee sequence diagram

3.1.1.4.   Accept guarantee
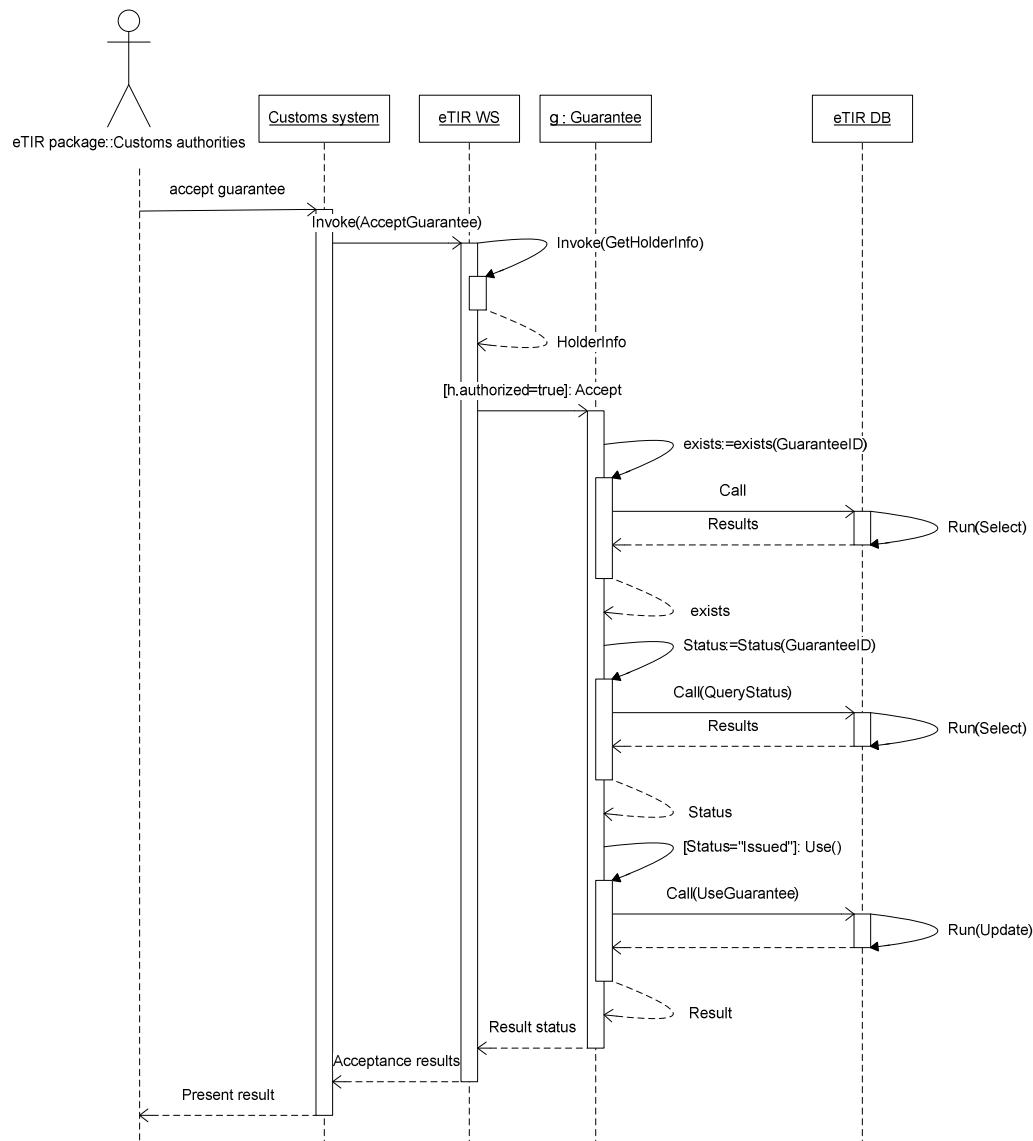
Figure 3.4: Accept guarantee sequence diagram

3.1.1.5. Get holder information
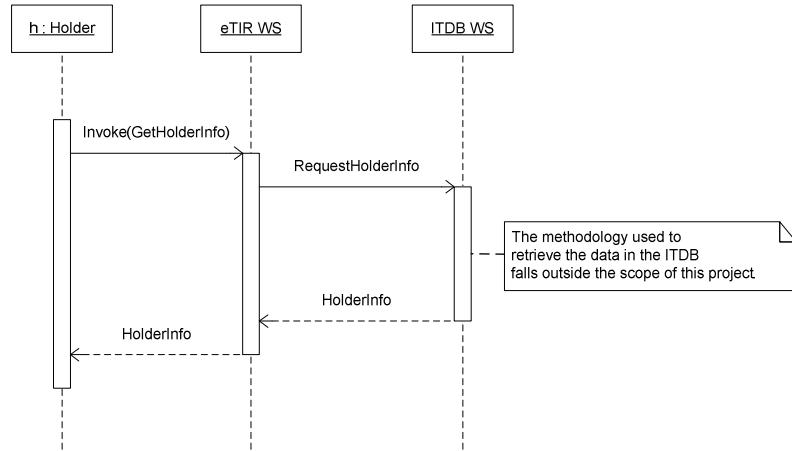
Figure 3.5: Get operator information sequence diagram

3.1.1.6. Query guarantee
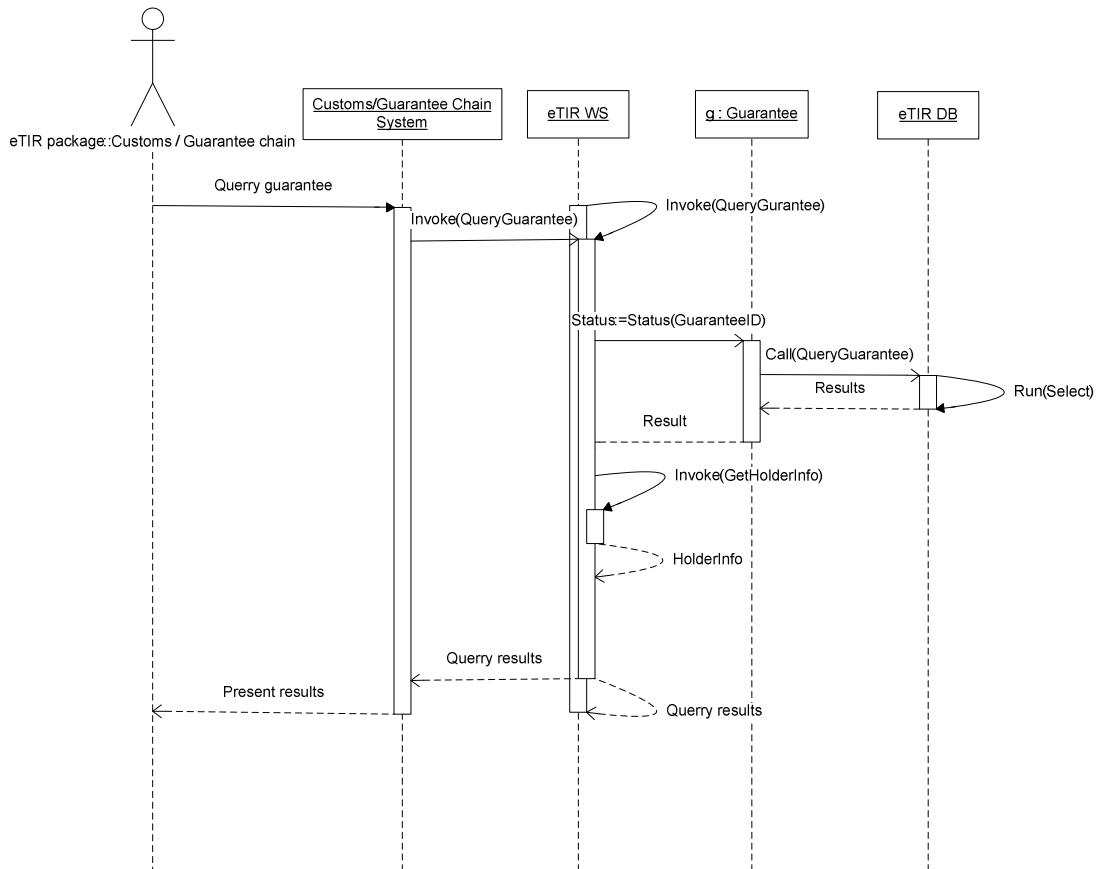
Figure 3.6: Query guarantee sequence diagram

3.1.2.   Data exchange

3.1.2.1.   Record consignment
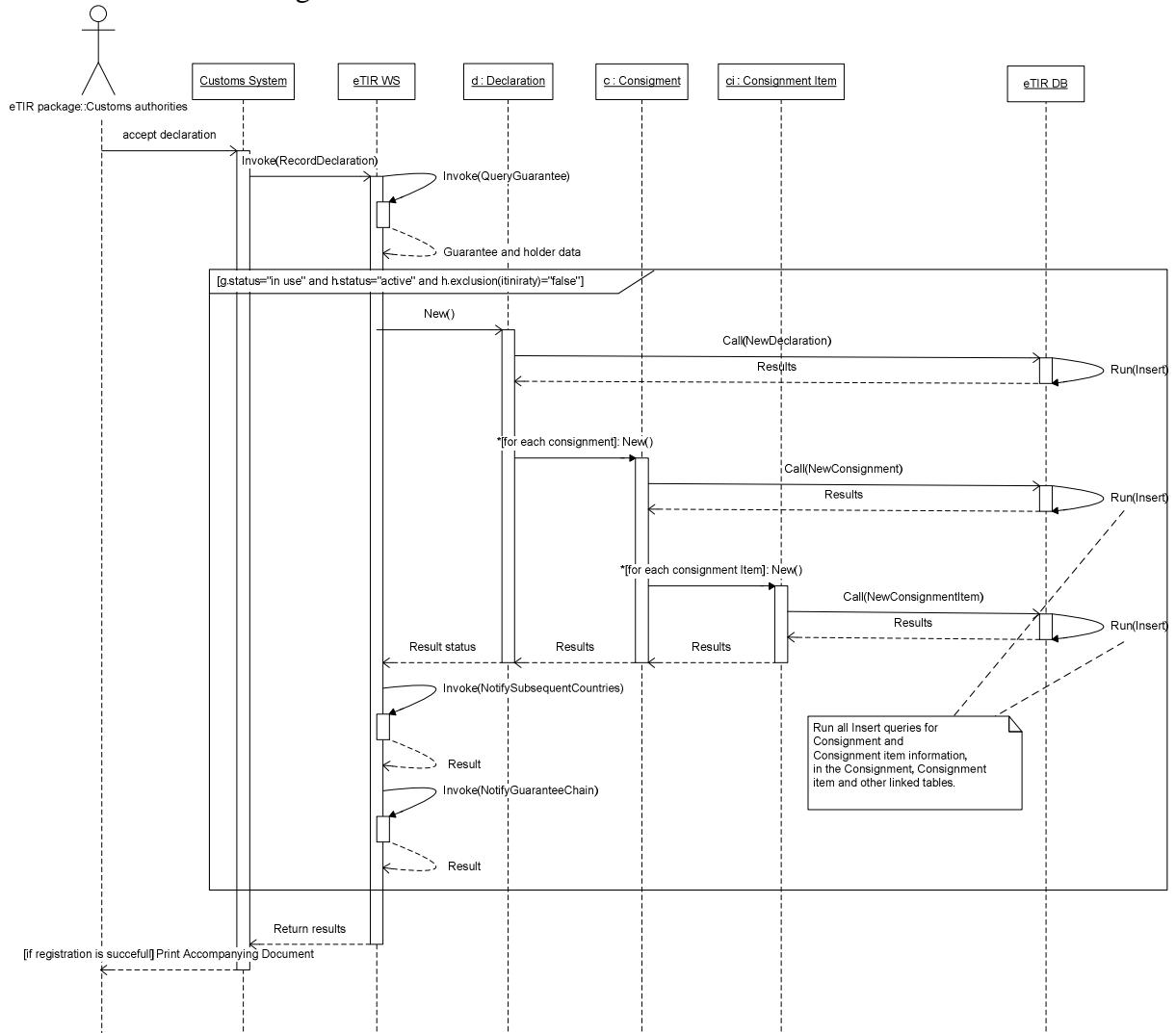
Figure 3.7: Record consignment sequence diagram

3.1.2.2. Update consignment information
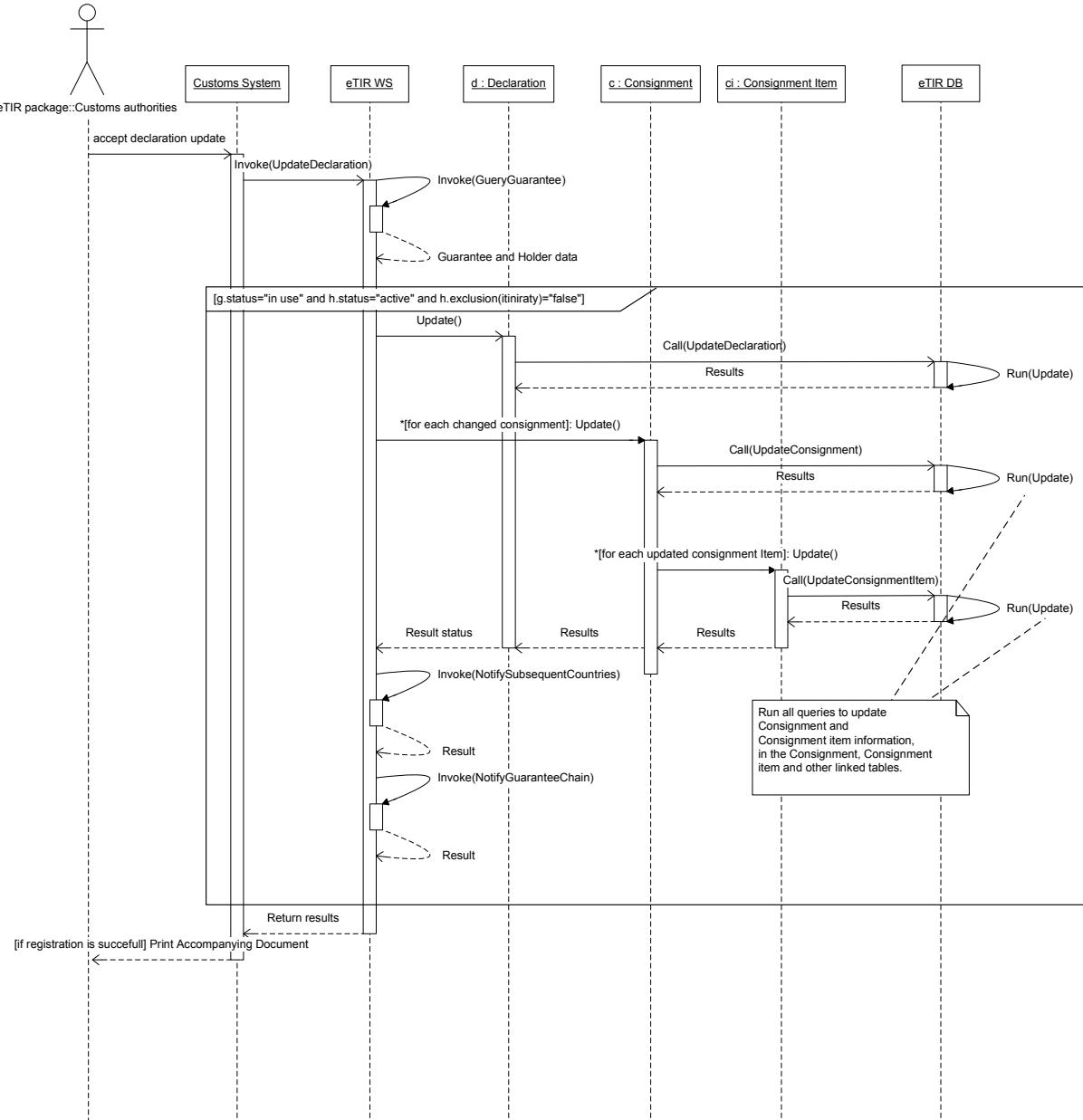
Figure 3.8: Update consignment information sequence diagram

3.1.2.3.   Start of TIR operation
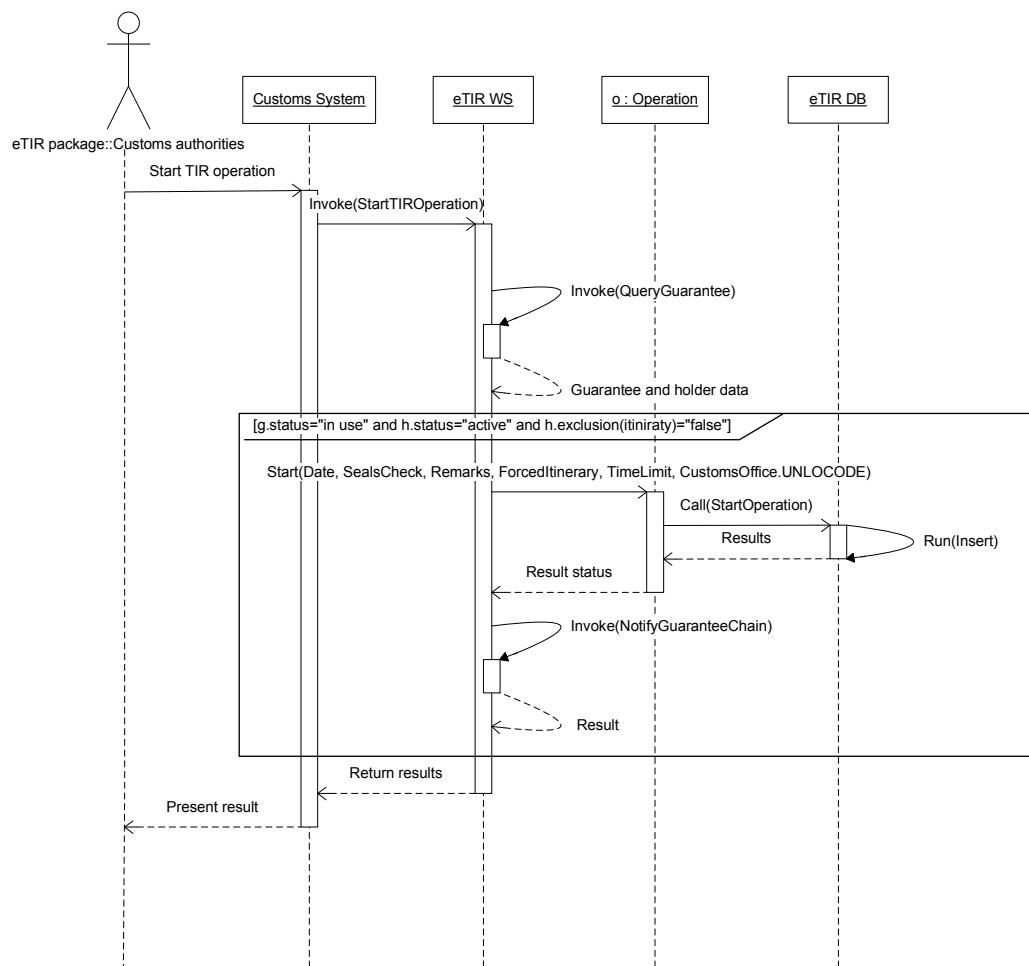
Figure 3.9: Start of TIR operation sequence diagram

3.1.2.4.   Terminate TIR operation
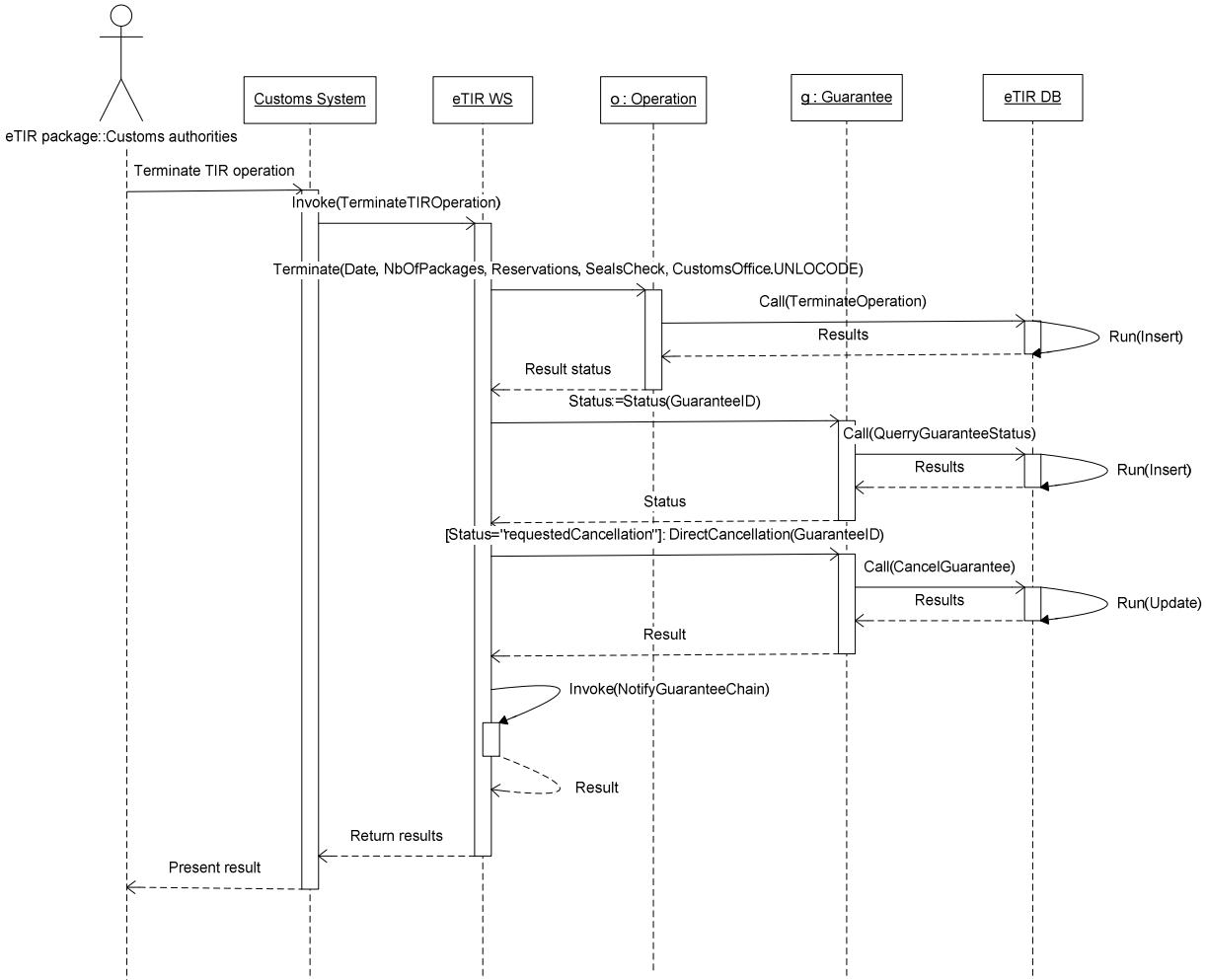
Figure 3.10: Terminate TIR operation sequence diagram

3.1.2.5. Discharge TIR operation
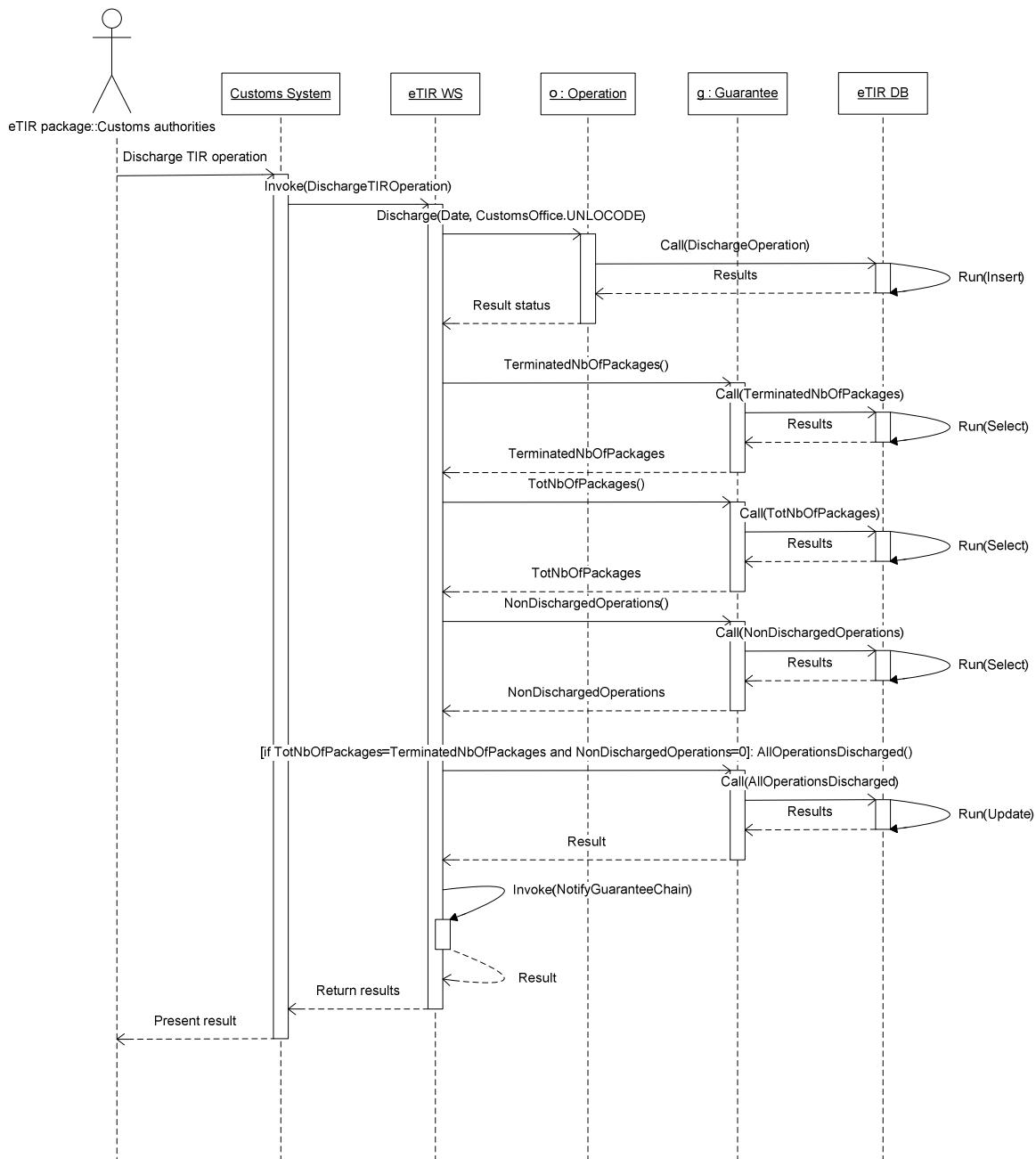
Figure 3.11: Discharge TIR operation sequence diagram

3.1.2.6.   Notify guarantee chain
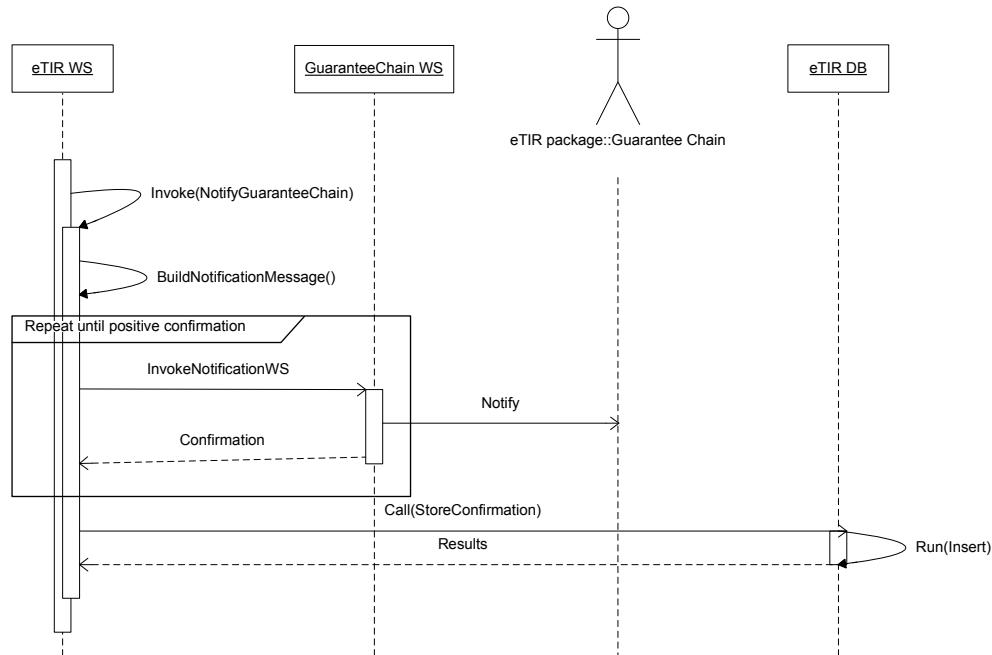
Figure 3.12: Notify guarantee chain sequence diagram

3.1.2.7.   Notify subsequent countries
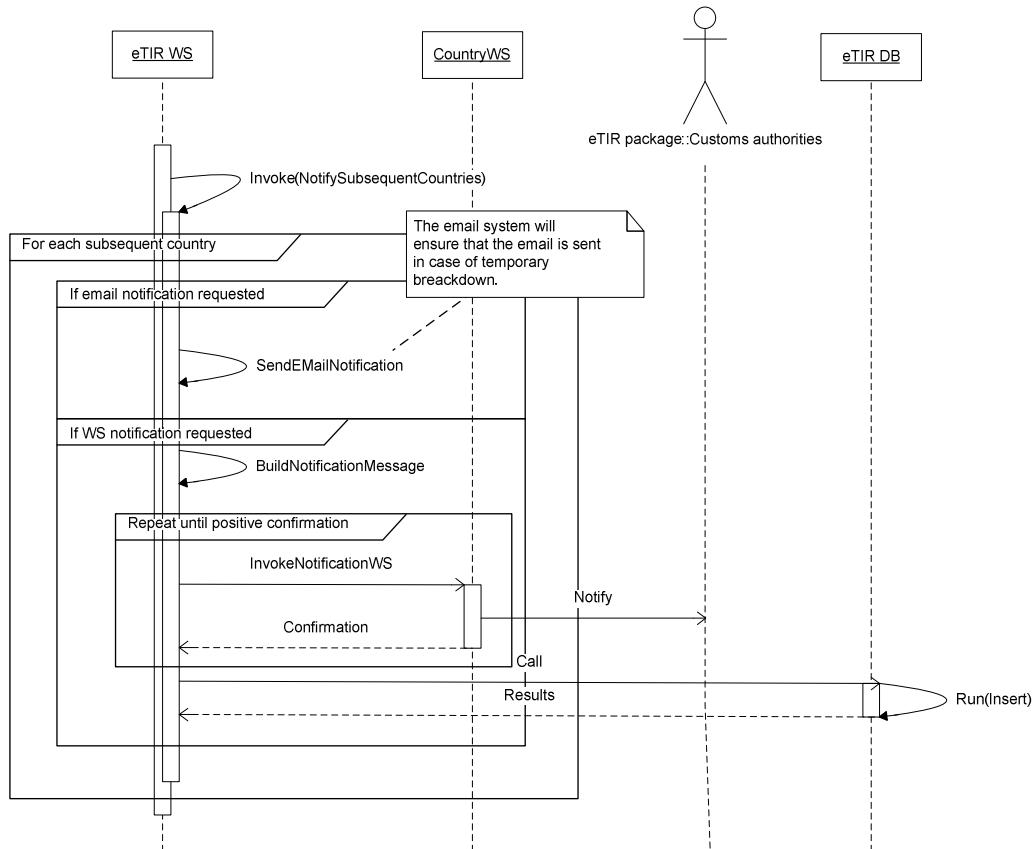
Figure 3.13: Notify subsequent countries sequence diagram

3.1.3.   Lists of electronic messages

3.1.3.1.   External messages

External messages are used to exchange information between Customs systems (including the eTIR international system) and other actors (guarantee chain and holder).

No.	Description	Response to:
E1	Register guarantee	-
E2	Registration results	E1
E3	Cancel guarantee	-
E4	Cancellation results	E3
E5	Query guarantee	-
E6	Query results	E5
E7	Notify guarantee chain	-
E8	Notification confirmation	E7
E9	Declaration	-
E10	Declaration confirmation	E9

3.1.3.2.   Internal messages

Internal messages refer to the messages exchanged within the Customs international environment (between the eTIR international system and national Customs system).

No.	Description	Response to:
I1	Accept Guarantee	-
I2	Acceptance results	I1
I3	Get holder info	-
I4	Holder info	I3
I5	Query guarantee	-
I6	Query results	I5
I7	Record declaration	-
I8	Record declaration results	I7
I9	Update declaration	-
I10	Update declaration results	I9
I11	Start TIR operation	-
I12	Start results	I11
I13	Terminate TIR operation	-
I14	Termination results	I13
I15	Discharge TIR operation	-
I16	Discharge results	I15
I17	Notify Customs	-
I18	Notification confirmation	I17

3.1.4.   Fallback scenarios

Fallback scenarios are based on three major elements:

- accompanying document;
- local information;
- helpdesk.

3.1.4.1.   Management by Customs of data on guarantees

Guarantee related information is crucial for the well-functioning of the eTIR system. Therefore, particular emphasis is put on the analysis of use cases where the eTIR international system is not in a position to provide the required exchange of guarantee information. The helpdesk will ensure that guarantee information can be provided to Customs administrations in case the eTIR international system, the guarantee chain system or Customs systems are not available.

The helpdesk should fulfil its fallback role within a deadline to be specified.

3.1.4.1.1.   *Register guarantee*

Potential problems:

1.   The guarantee chain system is not functioning.

2.   The connection between the guarantee chain system and the eTIR international system is broken.

3.   The eTIR international system is not functioning.

Fallbacks:

1.   The guarantee chain transmits the information to the eTIR helpdesk by fax or phone. The helpdesk keys-in the data in the eTIR international system. The guarantee chain will update its system as soon as it is again functioning, keeping in mind that the guarantees have already been entered in the eTIR international system. The eTIR international system will inform the guarantee chain accordingly in case it would try to register a guarantee while the fallback procedure is in use.

2.   The guarantee chain transmits the information to the eTIR helpdesk by fax or phone. The helpdesk keys-in the data in the eTIR international system. The eTIR international system will inform the guarantee chain accordingly in case it would try to register a guarantee while the fallback procedure is in use.

3.   The guarantee chain transmits the information to the eTIR helpdesk by fax or phone. The helpdesk keeps the information available, in case Customs would query the guarantee before the information can be recorded in the eTIR international system. The helpdesk will update the eTIR international system as soon as it is functioning again.

3.1.4.1.2.   *Cancel guarantee*

Potential problems:

1.   The guarantee chain system is not functioning.

2.   The connection between the guarantee chain system and the eTIR international system is broken.

3.   The eTIR international system is not functioning.

Fallbacks:

1. The guarantee chain transmits the information to the eTIR helpdesk by fax or phone. The helpdesk keys-in the data in the eTIR international system. The guarantee chain will update its system as soon as it is again functioning, keeping in mind that the guarantees concerned have already been entered in the eTIR international system. The eTIR international system will inform the guarantee chain accordingly in case it would try to cancel the guarantees while the fallback procedure is in use.

2. The guarantee chain transmits the information to the eTIR helpdesk by fax or phone. The helpdesk keys-in the data in the eTIR international system. The eTIR international system will inform the guarantee chain accordingly in case it would try to cancel guarantees while the fallback procedure is in use.

3. The guarantee chain transmits the information to the eTIR helpdesk by fax or phone. The helpdesk keeps the information available, in case Customs would query the guarantee before the information can be recorded in the eTIR international system. The helpdesk will update the eTIR international system as soon as it is functioning again.

3.1.4.1.3. *Accept guarantee*

Potential problems:

1. The Customs system is not functioning.

2. The connection between the Customs system and the eTIR international system is broken.

3. The eTIR international system is not functioning.

Fallbacks:

1. Customs authorities transmit the information to the eTIR helpdesk by fax or phone. The helpdesk keys in the data in the eTIR international system. Customs authorities will update their system as soon as it is again functioning, keeping in mind that the guarantee acceptance has already been registered in the eTIR international system. The eTIR international system will inform Customs authorities accordingly in case they would try to accept guarantees which have already been accepted while the fallback procedure was in use.

2. Customs authorities transmit the information to the eTIR helpdesk by fax or phone. The helpdesk keys-in the data in the eTIR international system. The eTIR international system will inform Customs authorities accordingly in case they would try to accept guarantees which have already been accepted while the fallback procedure was in use.

3. Customs authorities transmit the information to the eTIR helpdesk by fax or phone. The helpdesk keeps the information available in case other Customs would query the guarantee before the information is recorded in the eTIR international system. The helpdesk will update the eTIR international system as soon as it is functioning again.

3.1.4.1.4. *Get holder information*

Potential problems:

1. The ITDB is not functioning.

2. The connection between the ITDB and the eTIR international system is broken.

Fallbacks:

1. The eTIR international system reports the status of the holder as "not available".

2. Same as 1.

3.1.4.1.5. *Query guarantee*

The query guarantee use case has three functions:

(a) allowing Customs authorities and the guarantee chain to obtain information on a guarantee (e.g. status or type),

(b) allowing Customs authorities and the guarantee chain to obtain all information related to TIR transports and

(c) allowing Customs authorities and the guarantee chain to obtain all information related to TIR operations.

The first function is of higher importance for the security of the system than the others and, therefore, the helpdesk will not provide information under (b) and (c).

Potential problems:

1. The Customs or guarantee chain system is not functioning.

2. The connection between the Customs or guarantee chain system and the eTIR international system is broken.

3. The eTIR international system is not functioning.

Fallbacks:

1. (a) Customs authorities or the guarantee chain call the eTIR helpdesk to request the status of the guarantee. (b) In order to obtain TIR transport information (mainly the declaration), the Customs office of departure can either use a backup system, if available, or request the holder to provide his declaration in paper format. At other Customs offices, the declaration information in the accompanying document will be used. The guarantee chain will be able to obtain the information related to the TIR transport only when its system will be functioning again. (c) TIR operation information will be requested once the system is functioning again.

2. (a) Customs authorities or the guarantee chain call the eTIR helpdesk to request the status of the guarantee. (b) At Customs offices, other than the first Customs office of departure, the TIR transport information in the accompanying document will be used. The guarantee chain will be able to obtain the information related to the TIR transport only when the connection to the eTIR international system will be restored. (c) TIR operation information will be requested once the connection is restored.

3. (a) Customs authorities or the guarantee chain call the eTIR helpdesk to request the information about the guarantee. The helpdesk extracts the information on the guarantee from its backups and other information received during the system failure. (b) At Customs offices, other than the first Customs office of departure, the TIR transport information in the accompanying document will be used. The guarantee chain will be able to obtain the information related to the TIR transport only when the eTIR international system will be functioning again. (c) TIR operation information will be requested once the system is functioning again. After a system failure, the query functionality will only be restored once all information received during the downtime will have been keyed-in in the system.

3.1.4.2.   Data exchange

The exchange of TIR transport data is a key element of the eTIR system. Customs authorities provide the holder with a paper accompanying document as reference. The paper accompanying document will also be used in case the information cannot be exchanged electronically. The information on TIR operations is also important but is considered of secondary importance and, therefore, will not be subject to fallback procedures.

3.1.4.2.1. *Record consignment*

Potential problems:

1. The Customs system of the country of departure is not functioning.

2. The connection between the Customs system of the country of departure and the eTIR international system is broken.

3. The eTIR international system is not functioning.

Fallbacks:

1. Customs authorities prepare manually a paper accompanying document that will serve as the primary source of information for the TIR transport. They will input and transmit the electronic information as soon as their system is functioning again. The holder is informed that countries along the itinerary might not receive advance information in time. The holder becomes responsible to comply with advance information requirements in subsequent countries.

2. The accompanying document becomes the primary source of information for the TIR transport. The Customs system will automatically transmit the information electronically as soon as the connection is restored. The holder is informed that countries along the itinerary might not receive advance information in time. The holder becomes responsible to comply with advance information requirements in subsequent countries.

3. The accompanying document becomes the primary source of information for the TIR transport. The Customs system will automatically transmit the information electronically as soon as the eTIR system is functioning again. The holder is informed that countries along the itinerary might not receive advance information in time. The holder becomes responsible to comply with advance information requirements in subsequent countries.

3.1.4.2.2. *Update consignment information*

Potential problems and fallbacks are identical to those of the record consignment use case.

3.1.4.2.3. *Start of TIR operation*

Potential problems:

1. The Customs system is not functioning.

2. The connection between the Customs system and the eTIR international system is broken.

3. The eTIR international system is not functioning.

Fallbacks:

1. Customs authorities accept the accompanying document as only source for the declaration and revert to a paper procedure to start the TIR operation. The appropriate information is filled-in on the accompanying document. The start information will be keyed-in and transmitted to the eTIR international system once the system is working.

2. Customs authorities accept the accompanying document as source for the declaration and manually key-in the information in their system. The appropriate information is filled-in on the accompanying document. The start information will be transmitted to the eTIR international system once the system is working.

3. Same as 2.

3.1.4.2.4. *Terminate TIR operation*

Potential problems:

1. The Customs system is not functioning.

2. The connection between the Customs system and the eTIR international system is broken.

3. The eTIR international system is not functioning.

Fallbacks:

1. Customs authorities accept the accompanying document as only source for the declaration and revert to a paper procedure to terminate the TIR operation. The appropriate information is filled-in on the accompanying document. The termination information will be keyed-in and transmitted to the eTIR international system once the system is working.

2. Customs authorities accept the accompanying document as source for the declaration and manually key-in the information in their system. The appropriate information is filled-in on the accompanying document. The termination information will be transmitted to the eTIR international system once the system is working.

3. Same as 2.

3.1.4.2.5. *Discharge TIR operation*

Potential problems:

1. The Customs system is not functioning.

2. The connection between the Customs system and the eTIR international system is broken.

3. The eTIR international system is not functioning.

Fallbacks:

1. Customs authorities postpone the transmission of the discharge information until the system is working.

2. Customs authorities postpone the transmission of the discharge information until the connection is re-established.

3. Same as 1.

3.1.4.2.6. *Notify guarantee chain*

Potential problems:

1. The guarantee chain system is not functioning.

2. The connection between the guarantee chain system and the eTIR international system is broken.

Fallbacks:

1. The eTIR international system will keep on trying to send the information until the connection is restored.

2. Same as 1.

3.1.4.2.7. Notify subsequent countries

Potential problems:

1. The Customs system of one country along the itinerary is not functioning.

2. The connection between the Customs system of one country along the itinerary and the eTIR international system is broken.

Fallbacks:

1. The eTIR international system keeps on trying to send the information until the Customs system is functioning. If the holder presents himself to a Customs office, whose system is not functioning, the accompanying document will be used as source of information.

2. The eTIR international system keeps on trying to send the information until the connection is restored. If the holder presents himself to a Customs office, whose system was not linked to the eTIR system, the accompanying document will be used as source of information.

3.2. DATA ANALYSIS

The class diagrams below are based on the class diagram presented in Chapter 2 and are aligned to the standard WCO transit data model version 3[1]. Whereas the class diagrams in Chapter 2 only contained the classes names and the relationships between classes, they now show the attributes and methods of each class. The methods allow for interactions between objects and/or actors as presented in the sequence diagrams in Chapter 3.1. The attributes are used in Chapter 4 as the data

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[1] The WCO Council should approve the WCO data model version 3 by the end of 2008.

elements of the electronic messages and, together with the relationships, serve to design database structures used in the eTIR international system.

Three class diagrams are presented separately to facilitate the reading. As a consequence, the classes guarantee, goods, Customs office, country, holder can be found in more than one diagram.

3.2.1. *Management by Customs of data on guarantees class diagram*

The management by Customs of data on guarantees class diagram presents the classes involved in providing guarantee-related information and the relationships between theses classes.
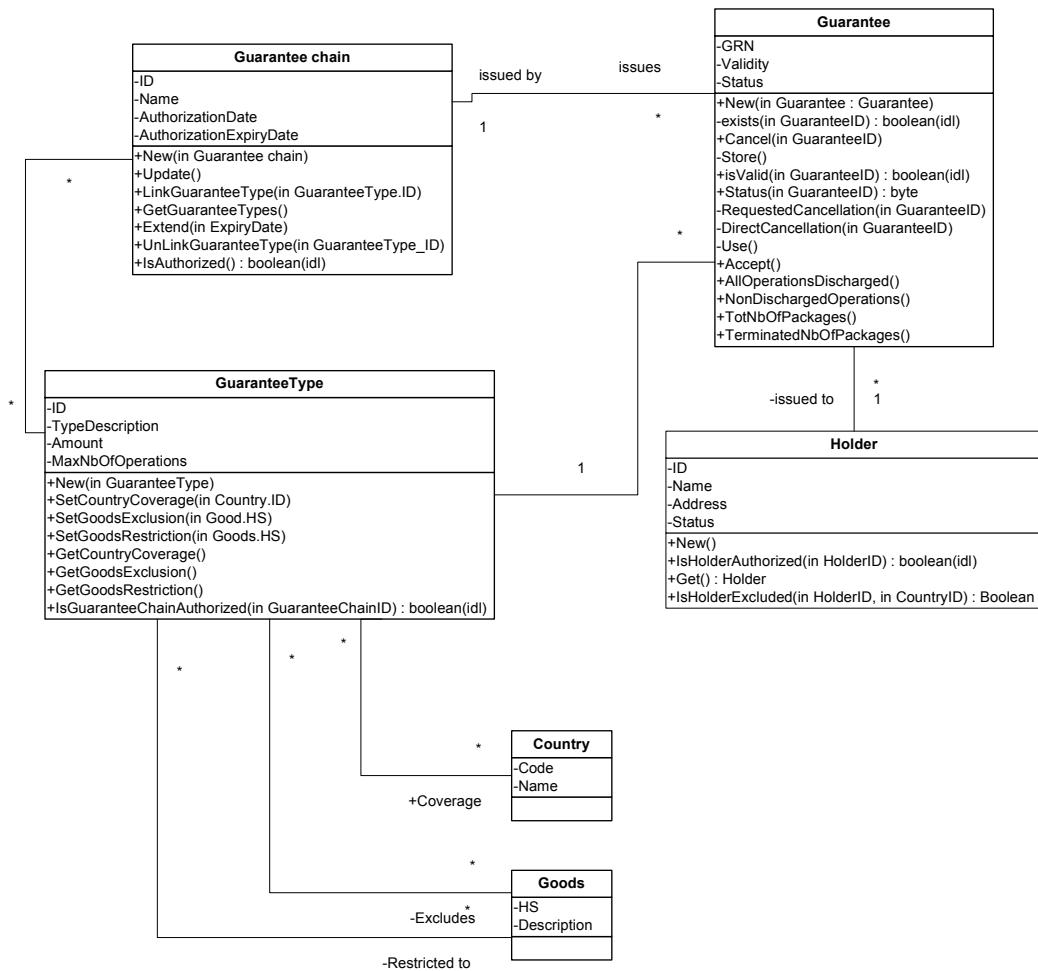
Figure 3.14: Customs management of guarantees class diagram

3.2.2. *Declaration class diagram*

The declaration class diagram presents the classes involved in the exchange of declaration-related information and the relationships between these classes.

Holder

-ID
-Name
-Address
-Status

+New()
+IsHolderAuthorized(in HolderID) : boolean(idl)
+Get() : Holder
+IsHolderExcluded(in HolderID, in CountryID) : Boolean

Declaration

+New()
+Update()
+isGuaranteed() : boolean(idl)

Guarantee

-GRN
-Validity
-Status

+New(in Guarantee : Guarantee)
-exists(in GuaranteeID) : boolean(idl)
+Cancel(in GuaranteeID)
-Store()
+isValid(in GuaranteeID) : boolean(idl)
+Status(in GuaranteeID) : byte
-RequestedCancellation(in GuaranteeID)
-DirectCancellation(in GuaranteeID)
-Use()
+Accept()
+AllOperationsDischarged()
+NonDischargedOperations()
+TotNbOfPackages()
+TerminatedNbOfPackages()

SubContractor

-ID
-Name
-Address

CountryOfRouting

-Order

Country

-Code
-Name

Consignment

-Observations

+New()
+Update()

AttachedDocument

-DocumentNumber
-DocumentType
-DocumentDate

TransportMean

-Identification
-Type

+travels on

Consignor

-Name
-Address

Consignee

-Name
-Address

+origin

CustomsOffice

-Name
-Code

+destination

ConsignmentItem

-NoOfPackages
-GrossWeight
-MarksAndNumbers

+New()
+Update()

AdditionalInformation

-text

Seals

-ID
-Number

SealedLoadingUnit

-Sealsnumbers

+contained in

PackageType

-Type

LoadCompartment

-Identification

Container

-ContainerID

Goods

-HS
-Description

Figure 3.15: Declaration class diagram

3.2.3. TIR operations class diagram

The TIR operation class diagram presents the classes involved in the exchange of operation-related information and the relationships between these classes.
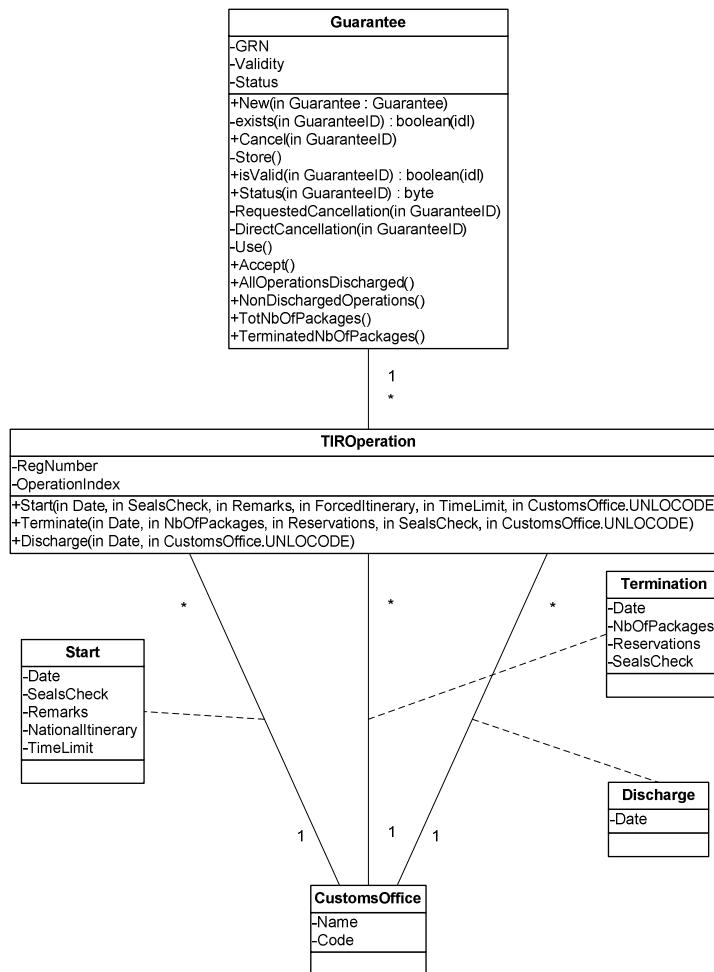
Figure 3.16: Data exchange class diagram

3.2.4. Electronic messages data elements

3.2.4.1. External messages

3.2.4.1.1. E1- Register guarantee

Structure

- Guarantee		1:n
	- Guarantee Chain	1
	- Guarantee Type	1
	- Holder	1

Class/Attribute	Type	Cardinality	Remarks
Guarantee	**-**	**1:n**	
GRN		1	
Validity		1	
Guarantee Chain	**-**	**1**	
ID		*1*	
Guarantee Type	**-**	**1**	
ID		*1*	
Holder	**-**	**1**	
ID		*1*	

3.2.4.1.2.   E2 - Registration results

Structure

- Guarantee   1:n
    - Results   1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Results	**-**	**1:n**	
Result Code		1	*Code list E2.1*

3.2.4.1.3.   E3 - Cancel guarantee

Structure

- Guarantee   1:n
    - Guarantee Chain   1
    - Guarantee Type   1
    - Holder   1

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Guarantee Chain	**-**	**1**	
ID		*1*	
Guarantee Type	**-**	**1**	
ID		*1*	
Holder	**-**	**1**	
ID		*1*	

3.2.4.1.4.   E4 - Cancellation results

Structure

- Guarantee   1:n
    - Results   1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Results	**-**	**1:n**	
Result Code		1	Code list E4.1

3.2.4.1.5.   E5 - Query guarantee

Structure

- Guarantee   1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	

3.2.4.1.6.   E.6- Query results

Structure

- Guarantee   1:n
    - Guarantee Chain   1
    - Guarantee Type   1
    - Holder   1
    - Declaration   0:n
        - Subcontractor   0:1
        - Consignment   1:n
            - Consignee   1
            - Consignor   1
            - Country of Routing   0:n
                - Country   1
            - Transport Means   0:n
                - Country   1
            - Attached Document   0:n
            - Customs offices of origin   1

- Customs office of destination	1
- Consignment item	1:n
- Additional information	0:1
- Seal loading unit	0:1
- Seals	1
- Load compartment	0:1
- Container	0:1
- Goods	1
- Package Type	0:1
- TIR operation	0:n
- Start	1:n
- Customs office	1
- Termination	0:n
- Customs office	1
- Discharge	0:n
- Customs office	1
- Results	0:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**0:n**	
GRN		1	
Validity		1	
Status		1	
Guarantee Chain	-	**1**	
ID		*1*	
Guarantee Type	-	**1**	
ID		*1*	
Holder	-	**1**	
ID		*1*	
Name		*1*	
Address		*1*	
Status		*1*	
Declaration	-	**0:n**	
Amendment code		*0:1*	
Date		*1*	
Subcontractor	-	**0:1**	
ID		*1*	
Name		*1*	
Address		*1*	
Consignment	-	**1:n**	
Observations		*0:1*	
Consignee	-	**1**	
Name		*1*	

Address		*1*	
Consignor	-	**1**	
Name		*1*	
Address		*1*	
Country of Routing	-	**0:n**	
Order		*1*	
Country	-	**1**	
Code		*1*	
Transport Means	-	**0:n**	
Identification		*1*	
Type		*1*	
Country	-	**1**	
Code		*1*	
Attached Document	-	**0:n**	
Document Number		*1*	
Document Type		*1*	
Document Date		*1*	
Customs offices of origin	-	**1**	
Name		*1*	
Code		*1*	
Customs office of destination	-	**1**	
Name		*1*	
Code		*1*	
Consignment item	-	**1:n**	
Number of packages		*1*	
Gross weight		*1*	
Marks and numbers		*1*	
Additional information	-	**0:n**	
Text		*1*	
Seal loading unit	-	**0:1**	
Seals	-	**1**	
ID		*1*	
Number		*1*	
Load compartment	-	**0:n**	*C1*
Identification		*1*	
Container	-	**0:n**	*C1*
Container ID		*1*	
Goods	-	**1**	
HS code		*1*	
Description		*1*	
Package Type	-	**0:1**	
Type		*1*	
TIR operation	-	**0:n**	

Registration Number		*1*	
Operation Index		*1*	
Start	**-**	**1:n**	
Date		*1*	
Seals check		*1*	
Remarks		*0:1*	
National itinerary		*0:1*	
Time Limit		*0:1*	
Customs office	**-**	**1**	
Name		*1*	
Code		*1*	
Termination	**-**	**0:n**	
Date		*1*	
Number of packages		*1*	
Reservations		*0:1*	
Seals Check		*1*	
Customs office	**-**	**1**	
Name		*1*	
Code		*1*	
Discharge	**-**	**0:n**	
Name		*1*	
Customs office	**-**	**1**	
Name		*1*	
Code		*1*	
Results	**-**	**0:n**	
Result Code		1	*Code list E6.1*

3.2.4.1.7.   *E7 - Notify guarantee chain*

Structure

- Guarantee   1:n
  - Notification   1:n

Class/Attribute	*Type*	*Cardinality*	*Remarks*
Guarantee	-	**1:n**	
GRN		1	
Notification	-	**1:n**	
Notification Code		1	*Code list E7.1*

3.2.4.1.8. E8 - Notification confirmation

Structure

- Guarantee	1:n
- Results	1:n

Class/Attribute	*Type*	*Cardinality*	*Remarks*
Guarantee	-	**1:n**	
GRN		1	
Results	**-**	**1:n**	
Result Code		1	*Code list E8.1*

3.2.4.1.9. E9 - Declaration

Structure

- Guarantee	1:n
- Guarantee Chain	1
- Guarantee Type	1
- Holder	1
- Declaration	1:n
- Subcontractor	0:1
- Consignment	1:n
- Consignee	1
- Consignor	1
- Country of Routing	0:n
- Country	1
- Transport Means	0:n
- Country	1
- Attached Document	0:n
- Customs offices of origin	1
- Customs office of destination	1
- Consignment item	1:n
- Additional information	0:1
- Seal loading unit	0:1
- Seals	0:1
- Load compartment	0:1
- Container	0:1
- Goods	1
- Package Type	0:1

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Validity		1	
Status		1	
Guarantee Chain	-	**1**	
ID		1	
Guarantee Type	-	**1**	
ID		1	
Holder	-	**1**	
ID		1	
Name		1	
Address		1	
Declaration	-	**1:n**	
Amendment code		0:1	
Date		1	
Subcontractor	-	**0:1**	
ID		1	
Name		1	
Address		1	
Consignment	-	**1:n**	
Observations		0:1	
Consignee	-	**1**	
Name		1	
Address		1	
Consignor	-	**1**	
Name		1	
Address		1	
Country of Routing	-	**0:n**	
Order		1	
Country	-	**1**	
Code		1	
Transport Means	-	**0:n**	
Identification		1	
Type		1	
Country	-	**1**	
Code		1	
Attached Document	-	**0:n**	
Document Number		1	
Document Type		1	
Document Date		1	
Customs offices of origin	-	**1**	
Name		1	

Code		*1*	
Customs office of destination	**-**	**1**	
Name		*1*	
Code		*1*	
Consignment item	**-**	**1:n**	
Number of packages		*1*	
Gross weight		*1*	
Marks and numbers		*1*	
Additional information	**-**	**0:n**	
Text		*1*	
Seal loading unit	**-**	**0:1**	
Seals	**-**	**0:1**	*Condition 2*
ID		*1*	
Number		*1*	
Load compartment	**-**	**0:n**	*Condition 1*
Identification		*1*	
Container	**-**	**0:n**	*Condition 1*
Container ID		*1*	
Goods	**-**	**1**	
HS code		*1*	
Description		*1*	
Package Type	**-**	**0:1**	
Type		*1*	

3.2.4.1.10. E10 - Declaration confirmation

Structure

- Guarantee   1:n
  - Declaration   1:n
    - Results   1:n

Class/Attribute	*Type*	*Cardinality*	*Remarks*
Guarantee	-	**1:n**	
GRN		1	
Declaration	**-**	**1:n**	
Date		*1*	
Results	**-**	**1:n**	
Result Code		1	*Code list E10.1*

3.2.4.2.   Internal messages

3.2.4.2.1. I1 - Accept Guarantee

Structure

- Guarantee		1:n
- Guarantee Chain		1
- Guarantee Type		1
- Holder		1

Class/Attribute	*Type*	*Cardinality*	*Remarks*
Guarantee	-	**1:n**	
GRN		1	
Guarantee Chain	**-**	**1**	
ID		*1*	
Guarantee Type	**-**	**1**	
ID		*1*	
Holder	**-**	**1**	
ID		*1*	

3.2.4.2.2. I2 - Acceptance results

Structure

- Guarantee		1:n
- Results		1:n

Class/Attribute	*Type*	*Cardinality*	*Remarks*
Guarantee	-	**1:n**	
GRN		1	
Results	**-**	**1:n**	
Result Code		1	*Code list I2.1*

3.2.4.2.3. I3 - Get holder info

Structure

- Holder		1:n

Class/Attribute	*Type*	*Cardinality*	*Remarks*
Holder	**-**	**1:n**	
ID		*1*	

3.2.4.2.4. *I4 - Holder info*

Structure

-	Holder		1:n
	- Results		1:n

Class/Attribute	Type	Cardinality	Remarks
Holder	**-**	**1:n**	
ID		*1*	
Name		*1*	
Address		*1*	
Status		*1*	
Results	**-**	**1:n**	
Result Code		1	*Code list I4.1*

3.2.4.2.5. *I5 - Query guarantee*

Structure

-	Guarantee	1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	

3.2.4.2.6. *I6 - Query results*

Structure

- Guarantee   1:n
  - Guarantee Chain   1
  - Guarantee Type   1
  - Holder   1
  - Declaration   0:n
    - Subcontractor   0:1
    - Consignment   1:n
      - Consignee   1
      - Consignor   1
      - Country of Routing   0:n
        - Country   1
      - Transport Means   0:n
        - Country   1
      - Attached Document   0:n
      - Customs offices of origin   1

- Customs office of destination		1
- Consignment item		1:n
- Additional information		0:1
- Seal loading unit		0:1
- Seals		1
- Load compartment		0:1
- Container		0:1
- Goods		1
- Package Type		0:1
- TIR operation		0:n
- Start		1:n
- Customs office		1
- Termination		0:n
- Customs office		1
- Discharge		0:n
- Customs office		1
- Results		0:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**0:n**	
GRN		1	
Validity		1	
Status		1	
Guarantee Chain	-	**1**	
ID		1	
Guarantee Type	-	**1**	
ID		1	
Holder	-	**1**	
ID		1	
Name		1	
Address		1	
Status		1	
Declaration	-	**0:n**	
Amendment code		0:1	
Date		1	
Subcontractor	-	**0:1**	
ID		1	
Name		1	
Address		1	
Consignment	-	**1:n**	
Observations		0:1	
Consignee	-	**1**	
Name		1	

Address		*1*	
Consignor	-	**1**	
Name		*1*	
Address		*1*	
Country of Routing	-	**0:n**	
Order		*1*	
Country	-	**1**	
Code		*1*	
Transport Means	-	**0:n**	
Identification		*1*	
Tyoe		*1*	
Country	-	**1**	
Code		*1*	
Attached Document	-	**0:n**	
Document Number		*1*	
Document Type		*1*	
Document Date		*1*	
Customs offices of origin	-	**1**	
Name		*1*	
Code		*1*	
Customs office of destination	-	**1**	
Name		*1*	
Code		*1*	
Consignment item	-	**1:n**	
Number of packages		*1*	
Gross weight		*1*	
Marks and numbers		*1*	
Additional information	-	**0:n**	
Text		*1*	
Seal loading unit	-	**0:1**	
Seals	-	**1**	
ID		*1*	
Number		*1*	
Load compartment	-	**0:n**	*C1*
Identification		*1*	
Container	-	**0:n**	*C1*
Container ID		*1*	
Goods	-	**1**	
HS code		*1*	
Description		*1*	
Package Type	-	**0:1**	
Type		*1*	
TIR operation	-	**0:n**	

Registration Number		*1*	
Operation Index		*1*	
Start	**-**	**1:n**	
Date		*1*	
Seals check		*1*	
Remarks		*0:1*	
National itinerary		*0:1*	
Time Limit		*0:1*	
Customs office	**-**	**1**	
Name		*1*	
Code		*1*	
Termination	**-**	**0:n**	
Date		*1*	
Number of packages		*1*	
Reservations		*0:1*	
Seals Check		*1*	
Customs office	**-**	**1**	
Name		*1*	
Code		*1*	
Discharge	**-**	**0:n**	
Name		*1*	
Customs office	**-**	**1**	
Name		*1*	
Code		*1*	
Results	**-**	**0:n**	
Result Code		1	*Code list I6.1*

3.2.4.2.7.   *I7 - Record declaration*

Structure

- Guarantee		1:n
- Guarantee Chain		1
- Guarantee Type		1
- Holder		1
- Declaration		1:n
- Subcontractor		0:1
- Consignment		1:n
- Consignee		1
- Consignor		1
- Country of Routing		0:n
- Country		1
- Transport Means		0:n
- Country		1

-	Attached Document	0:n
-	Customs offices of origin	1
-	Customs office of destination	1
-	Consignment item	1:n
	- Additional information	0:1
	- Seal loading unit	0:1
	- Seals	1
	- Load compartment	0:1
	- Container	0:1
	- Goods	1
	- Package Type	0:1

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Validity		1	
Status		1	
Guarantee Chain	-	**1**	
ID		1	
Guarantee Type	-	**1**	
ID		1	
Holder	-	**1**	
ID		1	
Name		1	
Address		1	
Declaration	-	**1:n**	
Amendment code		0:1	
Date		1	
Subcontractor	-	**0:1**	
ID		1	
Name		1	
Address		1	
Consignment	-	**1:n**	
Observations		0:1	
Consignee	-	**1**	
Name		1	
Address		1	
Consignor	-	**1**	
Name		1	
Address		1	
Country of Routing	-	**0:n**	
Order		1	
Country	-	**1**	

Code		*1*	
Transport Means	**-**	**0:n**	
Identification		*1*	
Type		*1*	
Country	**-**	**1**	
Code		*1*	
Attached Document	**-**	**0:n**	
Document Number		*1*	
Document Type		*1*	
Document Date		*1*	
Customs offices of origin	**-**	**1**	
Name		*1*	
Code		*1*	
Customs office of destination	**-**	**1**	
Name		*1*	
Code		*1*	
Consignment item	**-**	**1:n**	
Number of packages		*1*	
Gross weight		*1*	
Marks and numbers		*1*	
Additional information	**-**	**0:n**	
Text		*1*	
Seal loading unit	**-**	**0:1**	
Seals	**-**	**1**	
ID		*1*	
Number		*1*	
Load compartment	**-**	**0:n**	*C1*
Identification		*1*	
Container	**-**	**0:n**	*C1*
Container ID		*1*	
Goods	**-**	**1**	
HS code		*1*	
Description		*1*	
Package Type	**-**	**0:1**	
Type		*1*	

3.2.4.2.8.   *I8 - Record declaration results*

Structure

- Guarantee		1:n
- Declaration		1:n
- Results		1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Declaration	**-**	**1:n**	
Date		*1*	
Results	**-**	**1:n**	
Result Code		1	*Code list I8.1*

3.2.4.2.9. I9 - Update declaration

Structure

- Guarantee		1:n
- Guarantee Chain		1
- Guarantee Type		1
- Holder		1
- Declaration		1:n
- Subcontractor		0:1
- Consignment		1:n
- Consignee		1
- Consignor		1
- Country of Routing		0:n
- Country		1
- Transport Means		0:n
- Country		1
- Attached Document		0:n
- Customs offices of origin		1
- Customs office of destination		1
- Consignment item		1:n
- Additional information		0:1
- Seal loading unit		0:1
- Seals		1
- Load compartment		0:1
- Container		0:1
- Goods		1
- Package Type		0:1
- Update		1

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Validity		1	
Status		1	
Guarantee Chain	-	**1**	
ID		1	
Guarantee Type	-	**1**	
ID		1	
Holder	-	**1**	
ID		1	
Name		1	
Address		1	
Declaration	-	**1:n**	
Amendment code		1	
Date		1	
Subcontractor	-	**0:1**	
ID		1	
Name		1	
Address		1	
Consignment	-	**1:n**	
Observations		0:1	
Consignee	-	**1**	
Name		1	
Address		1	
Consignor	-	**1**	
Name		1	
Address		1	
Country of Routing	-	**0:n**	
Order		1	
Country	-	**1**	
Code		1	
Transport Means	-	**0:n**	
Identification		1	
Type		1	
Country	-	**1**	
Code		1	
Attached Document	-	**0:n**	
Document Number		1	
Document Type		1	
Document Date		1	
Customs offices of origin	-	**1**	
Name		1	

Code		*1*	
Customs office of destination	**-**	**1**	
Name		*1*	
Code		*1*	
Consignment item	**-**	**1:n**	
Number of packages		*1*	
Gross weight		*1*	
Marks and numbers		*1*	
Additional information	**-**	**0:n**	
Text		*1*	
Seal loading unit	**-**	**0:1**	
Seals	**-**	**1**	
ID		*1*	
Number		*1*	
Load compartment	**-**	**0:n**	*Condition 1*
Identification		*1*	
Container	**-**	**0:n**	*Condition 1*
Container ID		*1*	
Goods	**-**	**1**	
HS code		*1*	
Description		*1*	
Package Type	**-**	**0:1**	
Type		*1*	
Update	**-**	**1:n**	
Update Code		1	*Code list I9.1*

3.2.4.2.10. *I10 - Update declaration results*

Structure

- Guarantee   1:n
  - Declaration   1:n
    - Results   1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Declaration	**-**	**1:n**	
Date		*1*	
Results	**-**	**1:n**	
Result Code		1	*Code list I10.1*

3.2.4.2.11. I11 - Start TIR operation

Structure

- Guarantee		1:n
- Guarantee Chain		1
- Guarantee Type		1
- Holder		1
- TIR operation		1
- Start		1
- Customs office		1

Class/Attribute	Type	Cardinality	Remarks
Guarantee	**-**	**0:n**	
GRN		*1*	
Validity		*1*	
Status		*1*	
Guarantee Chain	**-**	**1**	
ID		*1*	
Guarantee Type	**-**	**1**	
ID		*1*	
Holder	**-**	**1**	
ID		*1*	
TIR operation	**-**	**1**	
Registration Number		*1*	
Operation Index		*1*	
Start	**-**	**1**	
Date		*1*	
Seals check		*1*	
Remarks		*0:1*	
National itinerary		*0:1*	
Time Limit		*0:1*	
Customs office	**-**	**1**	
Name		*1*	
Code		*1*	

3.2.4.2.12. I12 - Start results

Structure

- Guarantee		1:n
- TIR operation		1
- Start		1
- Results		1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	**-**	**0:n**	
GRN		1	
Guarantee Chain	**-**	**1**	
ID		*1*	
Guarantee Type	**-**	**1**	
ID		*1*	
Holder	**-**	**1**	
ID		*1*	
TIR operation	**-**	**1**	
Registration Number		*1*	
Start	**-**	**1**	
Date		*1*	
Results	**-**	**1:n**	
Result Code		1	*Code list I12.1*

3.2.4.2.13. I13 - Terminate TIR operation

Structure

- Guarantee   1:n
  - Guarantee Chain   1
  - Guarantee Type   1
  - Holder   1
  - TIR operation   1
    - Start   1
      - Customs office   1

Class/Attribute	Type	Cardinality	Remarks
Guarantee	**-**	**0:n**	
GRN		1	
Validity		1	
Status		1	
Guarantee Chain	**-**	**1**	
ID		*1*	
Guarantee Type	**-**	**1**	
ID		*1*	
Holder	**-**	**1**	
ID		*1*	
TIR operation	**-**	**1**	
Registration Number		*1*	
Operation Index		*1*	
Termination	**-**	**1**	
Date		*1*	

Number of packages		*1*	
Reservations		*0:1*	
Seals Check		*1*	
Customs office	**-**	**1**	
Name		*1*	
Code		*1*	

3.2.4.2.14. I14 - Termination results

Structure

- Guarantee		1:n
- TIR operation		1
- Termination		1
- Results		1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	**-**	**0:n**	
GRN		1	
Guarantee Chain	**-**	**1**	
ID		*1*	
Guarantee Type	**-**	**1**	
ID		*1*	
Holder	**-**	**1**	
ID		*1*	
TIR operation	**-**	**1**	
Registration Number		*1*	
Termination	**-**	**1**	
Date		*1*	
Results	**-**	**1:n**	
Result Code		1	*Code list I14.1*

3.2.4.2.15. I15 - Discharge TIR operation

Structure

- Guarantee		1:n
- Guarantee Chain		1
- Guarantee Type		1
- Holder		1
- Country		1
- TIR operation		1
- Start		1
- Customs office		1

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**0:n**	
GRN		1	
Validity		1	
Status		1	
Guarantee Chain	-	**1**	
ID		*1*	
Guarantee Type	-	**1**	
ID		*1*	
Holder	-	**1**	
ID		*1*	
TIR operation	-	**1**	
Registration Number		*1*	
Operation Index		*1*	
Discharge	-	**1**	
Name		*1*	
Customs office	-	**1**	
Name		*1*	
Code		*1*	

3.2.4.2.16. I16 - Discharge results

Structure

- Guarantee		1:n
- TIR operation		1
- Discharge		1
- Results		1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**0:n**	
GRN		1	
Guarantee Chain	-	**1**	
ID		*1*	
Guarantee Type	-	**1**	
ID		*1*	
Holder	-	**1**	
ID		*1*	
TIR operation	-	**1**	
Registration Number		*1*	
Discharge	-	**1**	
Date		*1*	
Results	-	**1:n**	
Result Code		1	*Code list I16.1*

3.2.4.2.17. I17 - Notify Customs

Structure

- Guarantee   1:n
  - Notification   1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Notification	-	**1:n**	
Notification Code		1	Code list I17.1

3.2.4.2.18. I18 - Notification confirmation

Structure

- Guarantee   1:n
  - Results   1:n

Class/Attribute	Type	Cardinality	Remarks
Guarantee	-	**1:n**	
GRN		1	
Results	-	**1:n**	
Result Code		1	Code list I18.1

3.2.5.   Code lists

3.2.5.1.   Code list E2.1

Code	Definition

3.2.5.2.   Code list E4.1

Code	Definition

3.2.5.3. Code list E6.1

Code	*Definition*

3.2.5.4. Code list E7.1

Code	*Definition*

3.2.5.5. Code list E8.1

Code	*Definition*

3.2.5.6. Code list E10.1

Code	*Definition*

3.2.5.7. Code list E12.1

Code	*Definition*

3.2.5.8. Code list I2.1

Code	*Definition*

3.2.5.9.   Code list I4.1

Code	*Definition*

3.2.5.10.   Code list I6.1

Code	*Definition*

3.2.5.11.   Code list I8.1

Code	*Definition*

3.2.5.12.   Code list I9.1

Code	*Definition*

3.2.5.13.   Code list I10.1

Code	*Definition*

3.2.5.14.   Code list I12.1

Code	*Definition*

3.2.5.15.   Code list I14.1

Code	*Definition*

3.2.5.16.   Code list I16.1

Code	*Definition*

3.2.5.17.   Code list I17.1

Code	*Definition*

3.2.5.18.   Code list I18.1

Code	*Definition*

3.2.6.   Conditions

1	Either the load compartment or the Container information should be provided.
2	Seals can be provided in the declaration in case an authorized consignor would be authorized to seal the loading unit.

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