



**Economic and Social  
Council**

Distr.  
GENERAL

ECE/TRANS/WP.30/GE.1/2006/9  
9 September 2006

ENGLISH ONLY

---

**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

Tenth session  
Geneva, 25-26 September 2006  
Item 2 (c) of the provisional agenda

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

Future Projects for the Reference Model of the TIR Procedure

Transmitted by Customs Experts from the European Commission, Finland,  
Lithuania, Netherlands, Serbia and Turkey

**A. BACKGROUND**

1. At its one-hundred-and-thirteenth session, the Working Party on Customs Questions affecting Transport had an extensive exchange of views on the various aspects which should be addressed in the eTIR Project. The Working Party confirmed 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. Furthermore, Contracting Parties agreed that the management of data on guarantees, once the guarantor had issued a guarantee to an operator, should lie with Customs. The Working Party adopted the principles set out in document ECE/TRANS/WP.30/2006/8 and requested the Expert Group to continue its work on the further elaboration of the technical aspects of the eTIR Project, provided that the Expert Group would take due account of the observations by the Working Party, including the role of the national associations and the international organization (ECE/TRANS/WP.30/216, para. 41).

2. Taking account of the above, an informal group of Customs Experts from various Contracting Parties met in Ankara on 27-28 June 2006, at the kind invitation of the Turkish Customs authorities, with the aim to discuss how to facilitate a fast implementation of the eTIR Project, in particular with regard to the Customs management of guarantees [and the facilitation of advance cargo information]. The annex to this document reflects the group's proposal for a draft Chapter 2 to the Reference Model.
3. The Expert Group may wish to consider and, if possible, adopt this document to be used as the basis for the elaboration of Chapter 2 to the Reference Model.

**Annex**  
**E-Business requirements**

## TABLE OF CONTENTS

<b>2. E-BUSINESS REQUIREMENTS .....</b>	<b>4</b>
2.1 USE CASES ANALYSIS .....	4
Customs management of guarantees use case.....	4
Customs management of guarantees use case diagram.....	4
Register guarantee use case description.....	5
Register guarantee activity diagram.....	6
Cancel guarantee use case description.....	7
Cancel guarantee activity diagram.....	8
Accept guarantee cancellation use case description.....	9
Accept guarantee cancellation activity diagram .....	10
Check guarantee use case description.....	10
Check guarantee activity diagram.....	12
Accept guarantee use case description.....	13
Accept guarantee activity diagram.....	14
Get operator info use case description .....	15
Get operator info activity diagram.....	16
Query guarantee use case description .....	16
Query guarantee activity diagram.....	17
Data exchange use case .....	18
Data exchange use case diagram.....	18
Record consignment information use case description .....	19
Record consignment information activity diagram.....	20
Update consignment information use case description .....	20
Update consignment information activity diagram.....	22
Start TIR operation use case description.....	23
Start TIR operation activity diagram .....	24
Terminate TIR operation use case description.....	24
Terminate TIR operation activity diagram.....	25
Discharge TIR operation use case description .....	26
Discharge TIR operation activity diagram.....	27
Notify Guarantor use case description .....	28
Notify guarantor activity diagram.....	28
Notify subsequent Countries use case description .....	29
Notify subsequent Countries activity diagram.....	29
CLASS DIAGRAM .....	30

## 2. e-Business requirements

### 2.1 Use cases analysis

The elaboration of Chapter 2 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 guarantor had issued a guarantee to an operator, should lie with Customs (ECE/TRANS/WP.30/226, para. 41).

#### Customs management of guarantees use case

The Customs management of guarantees requires that the Guarantor updates the guarantees directly in the eTIR international system right after having issued them to operators.

#### Customs management of guarantees use case diagram

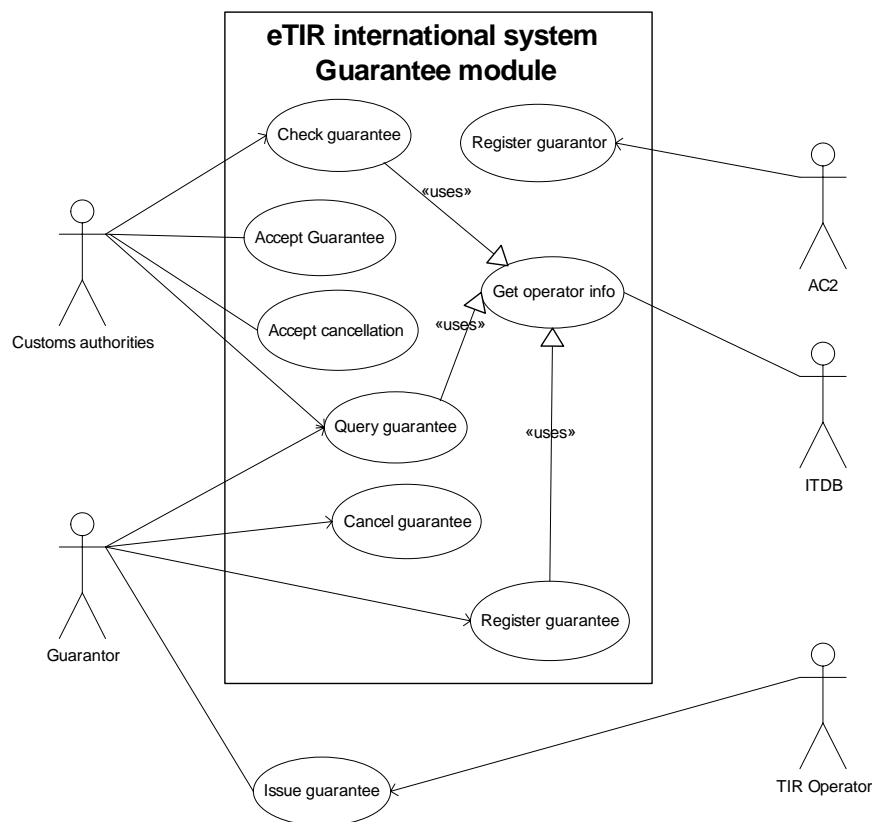
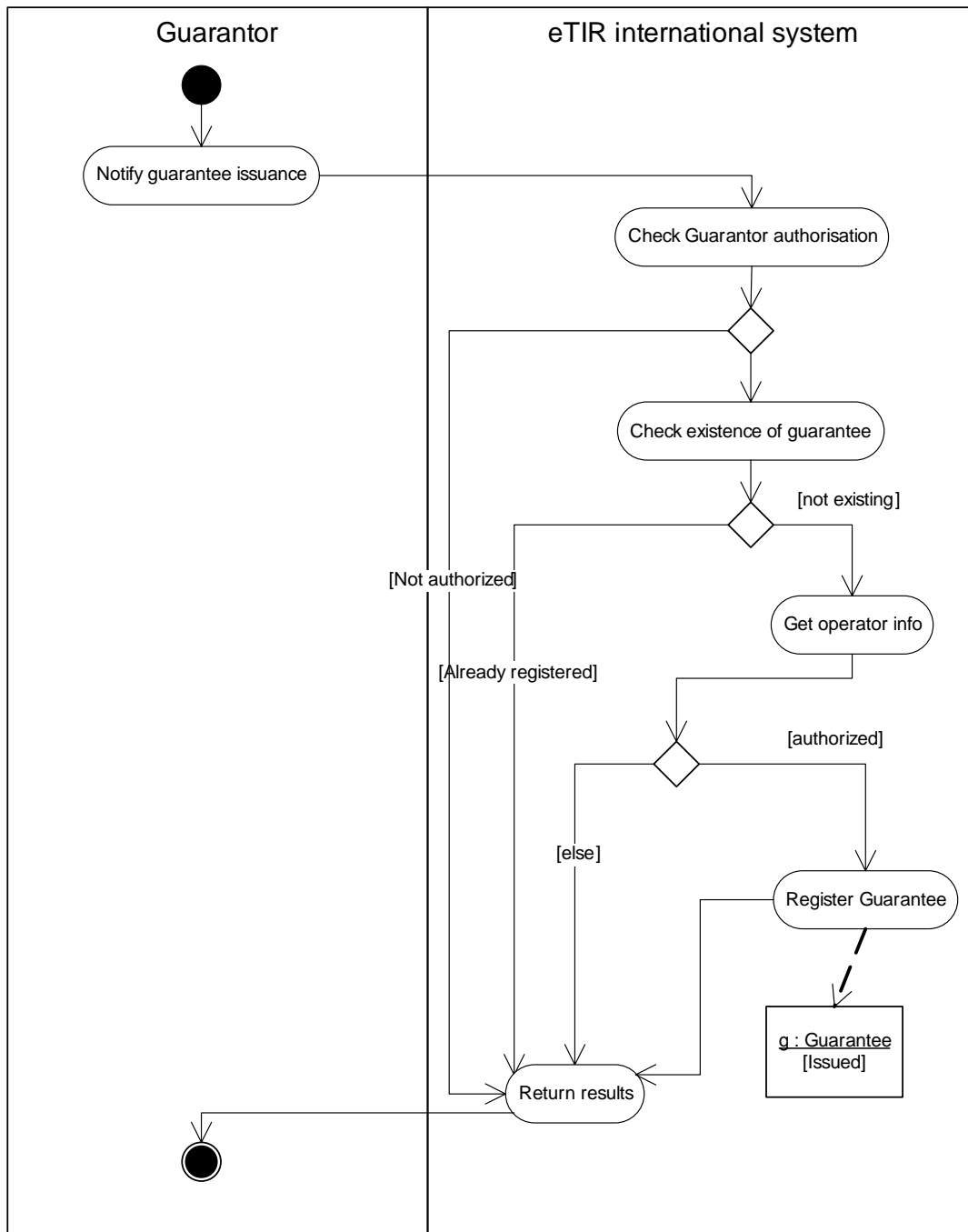


Figure 2.1 Customs management of guarantees use case diagram

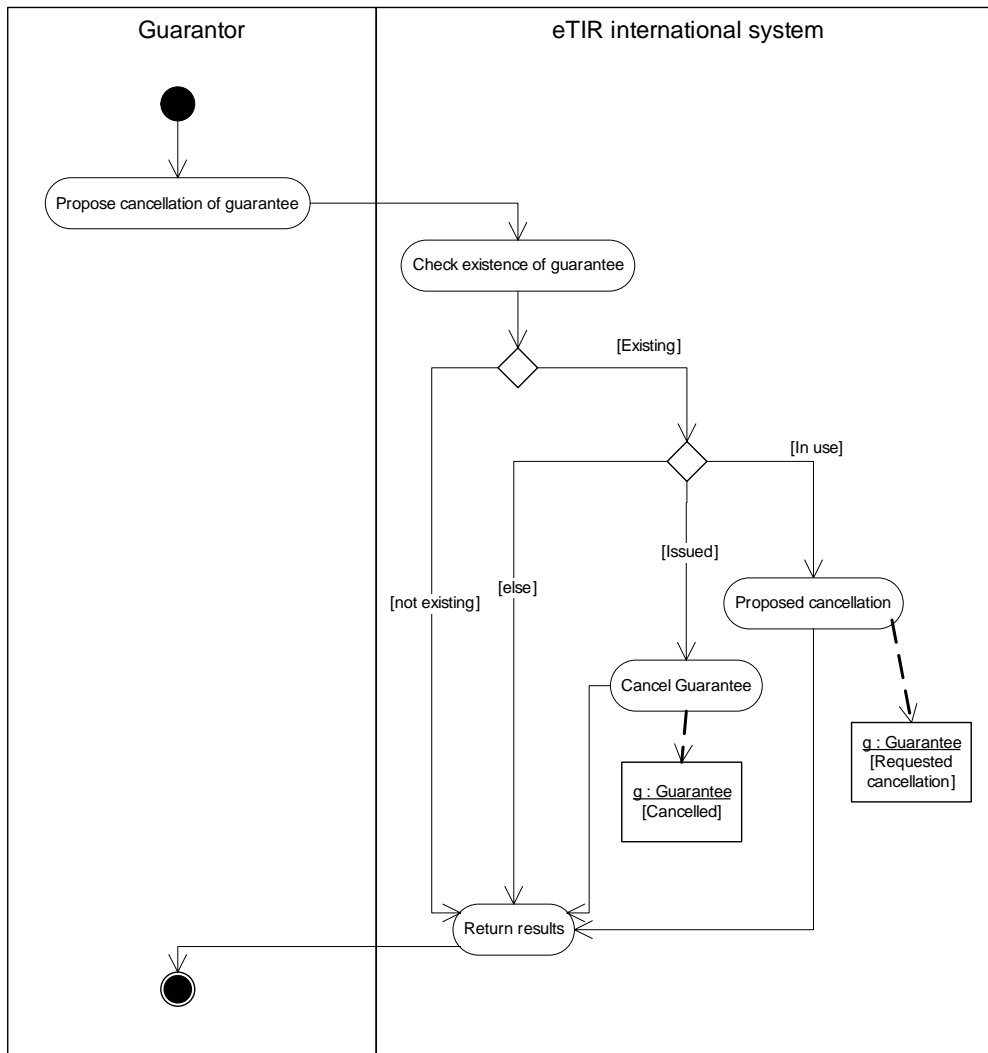
**Register guarantee use case description**

Name	<b>Register guarantee use case</b>
Description	The guarantor registers each guarantee issued to an operator in the eTIR international system by sending an electronic message.
Actors	Guarantor
Performance Goals	Any guarantee, issued to an operator, shall be registered in the eTIR international system before it can be used by an operator to accompany a declaration.
Preconditions	The operator, to whom the guarantor 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><b>Registration</b></p> <p>The guarantor issues a guarantee to an operator and sends a secure electronic message with all information regarding the guarantee to the eTIR international system. The eTIR international system checks if the guarantor is authorized and if the guarantee has not yet been registered. Then it gets operator information, including its current status. In case the guarantee has not yet been registered and the operator is authorized, the system registers the guarantee and notifies the results of the registration of the guarantee to the guarantor. If the registration failed for any reason, the guarantor is informed accordingly.</p>
Alternative Scenario	<p><b>Fallback scenario</b></p> <p>If electronic messages cannot be sent to the guarantee module, the information can also be provided via a secured web interface. If both the electronic messaging and web interface are unavailable, the information can also be sent by other secure means of communication that will be made available.</p>
Special requirements	The guarantor cannot update any information he has registered in the eTIR international system. Only the cancellation of the guarantee is possible.
Extension Points	-
Requirements Covered	-

**Register guarantee activity diagram***Figure 2.2 Register guarantee activity diagram*

**Cancel guarantee use case description**

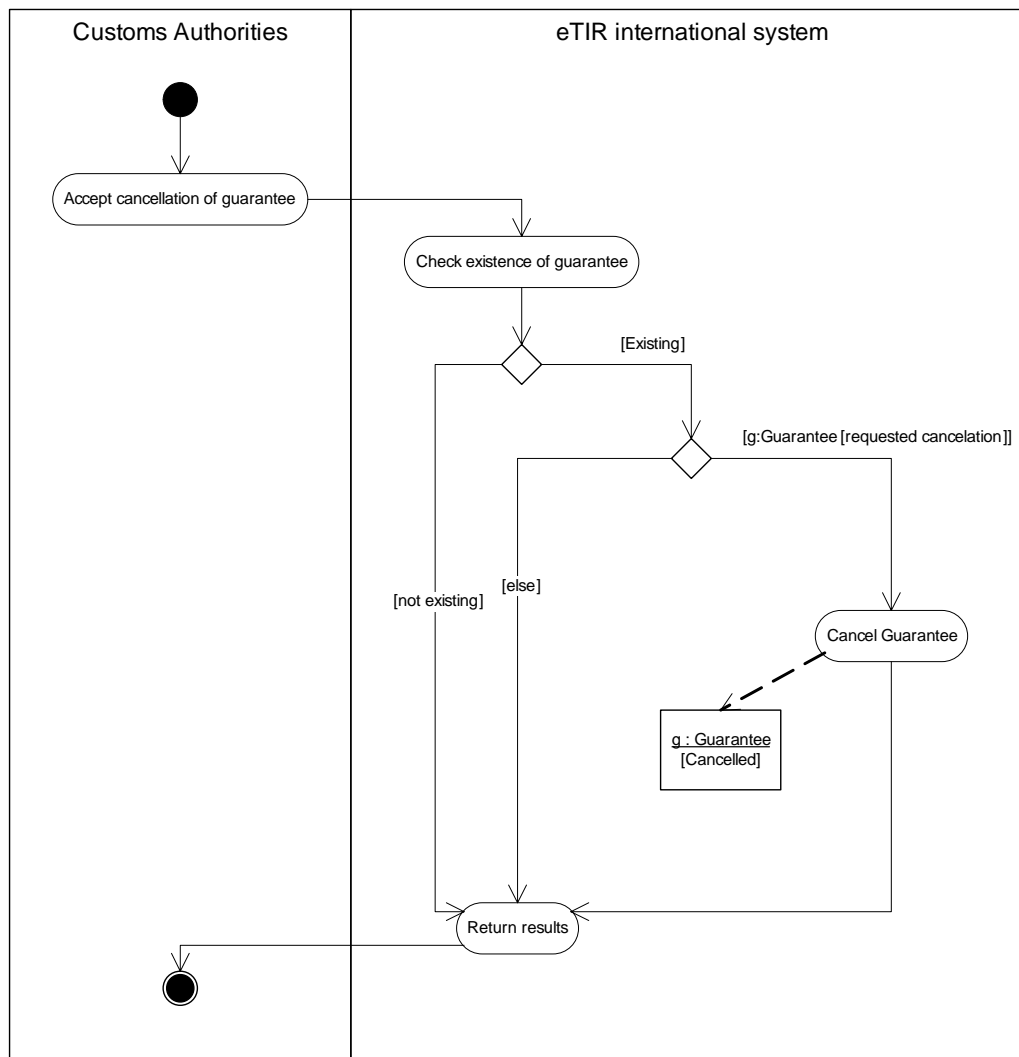
Name	<b>Cancel guarantee use case</b>
Description	The guarantor cancels a guarantee after it has been issued to an operator by sending an electronic message to the eTIR international system.
Actors	Guarantor
Performance Goals	-
Preconditions	The guarantee must have been registered and has the status “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><b>Cancellation</b></p> <p>The guarantor 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”, TIR international system changes the guarantee status to “cancelled”. If the guarantee status is “in use”, its status is turned to “requested cancellation”. [Pending further discussion in this and other fora]</p>
Alternative Scenario	<p><b>Fallback scenario</b></p> <p>If electronic messages cannot be sent to the guarantee module, the information can also be provided via a secured web interface. If both the electronic messaging and web interface are unavailable, the information can also be sent by other secure means of communication that will be made available.</p>
Special requirements	
Extension Points	-
Requirements Covered	-

**Cancel guarantee activity diagram***Figure 2.3 Cancel guarantee activity diagram*

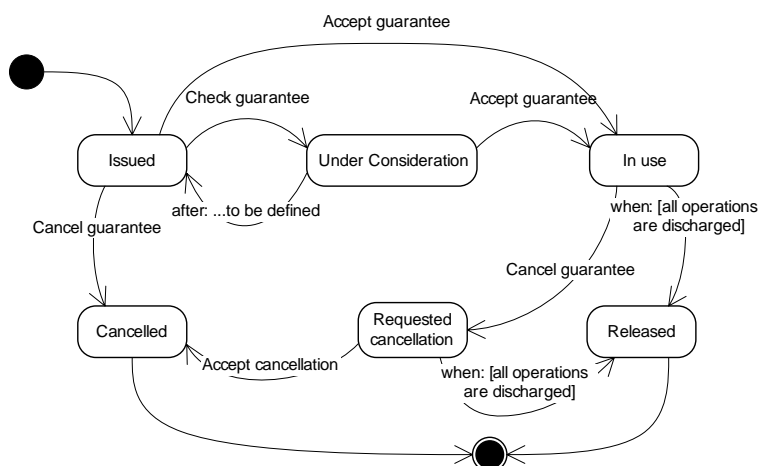


**Accept guarantee cancellation use case description**

Name	<b>Accept guarantee cancellation use case</b>
Description	The Customs authorities accept the guarantee cancellation proposed by the guarantor by sending an electronic message to the eTIR international system.
Actors	Customs authorities
Performance Goals	-
Preconditions	The guarantee cancellation must have been proposed by the guarantor (the guarantee has the status “requested cancellation”).
Postconditions	The guarantee status is changed to “cancelled”.
Scenario	<p><b>Accept Cancellation</b></p> <p>After having received a reply to a query message from the eTIR international system notifying that the guarantor had proposed to cancel a guarantee which is currently “in use”, Customs authorities accept the cancellation and send a secure “accept cancellation” message to the eTIR international system. [Pending further discussion in this and other fora]</p>
Alternative Scenario	<p><b>Fallback scenario</b></p> <p>If electronic messages cannot be sent to the guarantee module, the information can also be provided via a secured web interface. If both the electronic messaging and web interface are unavailable, the information can also be sent by other secure means of communication that will be made available.</p>
Special requirements	Customs authorities are free not to send the Accept cancellation message and to continue the Transport despite the “Requested cancellation” status of the guarantee. [Pending further discussion in this and other fora]
Extension Points	-
Requirements Covered	-

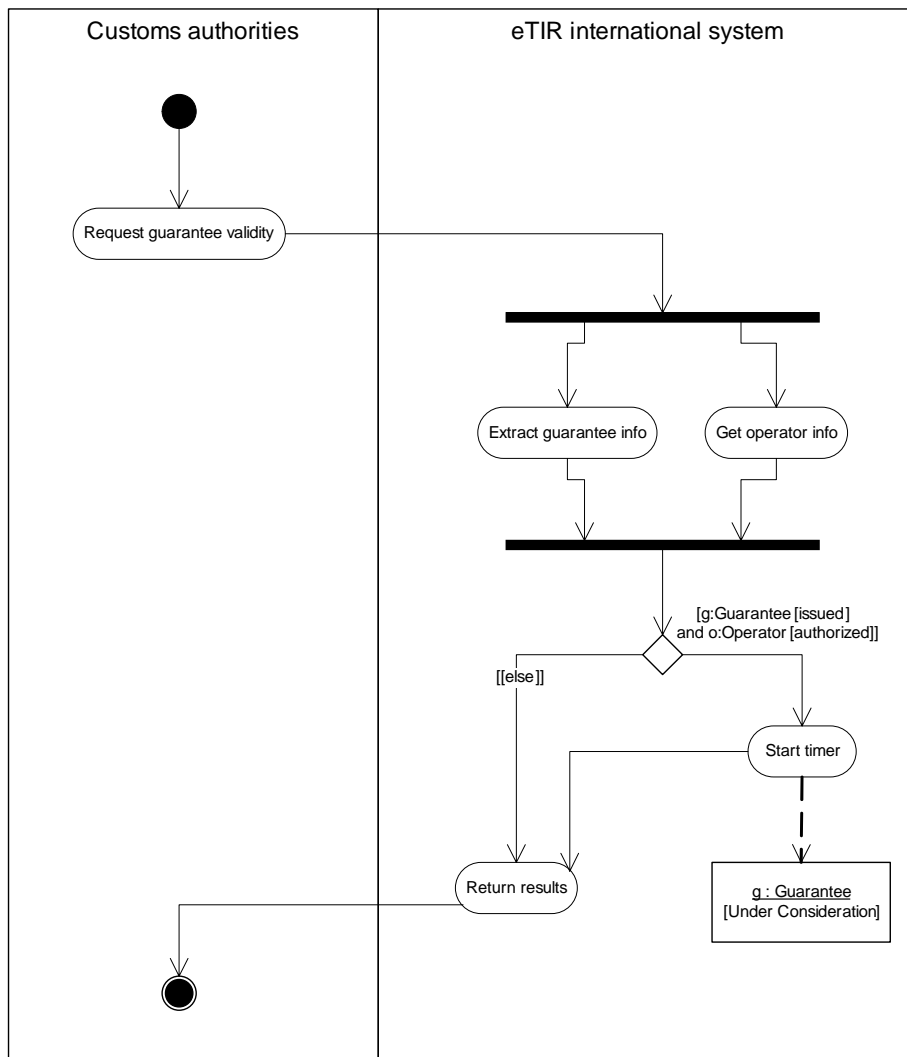
**Accept guarantee cancellation activity diagram***Figure 2.4 Cancel guarantee activity diagram***Check guarantee use case description**

Name	<b>Check guarantee use case</b>
Description	Customs authorities query the eTIR international system for guarantee data before they decide on the acceptance of the guarantee related to the TIR-declaration. The eTIR international system extracts information on the guarantee and queries the ITDB to obtain information on the operator. All data is sent to the Customs authorities.
Actors	Customs authorities

Performance Goals	-
Preconditions	The Customs authorities have received a TIR declaration from the operator.
Postconditions	The status of the guarantee is changed in “Under Consideration” or stays in the status before checking.
Scenario	<p><b>Checking of guarantee</b></p> <p>Having received the declaration (paper or electronic), Customs authorities send a secure electronic message to the eTIR international system. The latter, after having retrieved the operator’s information, returns guarantee and operator statuses.</p> <p>If the guarantee status is “issued” and the operator currently authorized, then the guarantee status is changed to “under consideration”. A timer is started to ensure that if the guarantee is not accepted within a specific amount of time, the status of the guarantee is changed back to “issued”.</p>
Alternative Scenario	<p><b>Fallback scenario</b></p> <p>If electronic messages cannot be sent to the guarantee module, the information can also be provided via a secured web interface. If both the electronic messaging and web interface are unavailable, the information can also be sent by other secure means of communication that will be made available.</p>
Special requirements	<p>The guarantee status can be:</p> <ul style="list-style-type: none"> <li>• “issued”</li> <li>• “cancelled”</li> <li>• “in use”</li> <li>• “under consideration”</li> <li>• “requested cancellation”</li> <li>• “released”</li> </ul>  <pre> stateDiagram-v2     [*] --&gt; Issued     Issued --&gt; UnderConsideration: Check guarantee     UnderConsideration --&gt; Issued: after: ...to be defined     UnderConsideration --&gt; InUse: Accept guarantee     InUse --&gt; UnderConsideration: Accept guarantee     InUse --&gt; Released: when: [all operations are discharged]     Released --&gt; RequestedCancellation: Cancel guarantee     RequestedCancellation --&gt; Released: when: [all operations are discharged]     RequestedCancellation --&gt; Cancelled: Accept cancellation     Cancelled --&gt; Issued: Cancel guarantee     Cancelled --&gt; [*]:    </pre> <p>The diagram illustrates the state transitions for a guarantee status. It starts at an initial state (black circle) and moves to the 'Issued' state. From 'Issued', a 'Check guarantee' event leads to 'Under Consideration'. A self-loop on 'Under Consideration' is labeled 'after: ...to be defined'. From 'Under Consideration', an 'Accept guarantee' event leads to 'In use'. From 'In use', an 'Accept guarantee' event leads back to 'Under Consideration'. A 'Cancel guarantee' event from 'In use' leads to 'Released'. From 'Released', a 'Cancel guarantee' event leads to 'Requested cancellation'. From 'Requested cancellation', an 'Accept cancellation' event leads to 'Cancelled'. From 'Cancelled', a 'Cancel guarantee' event leads back to 'Issued'. Finally, both 'Requested cancellation' and 'Cancelled' lead to a final state (bullseye circle) via a transition labeled 'when: [all operations are discharged]'.</p>

	<i>Figure 2.5 Guarantee status state diagram</i>
Extension Points	-
Requirements Covered	-

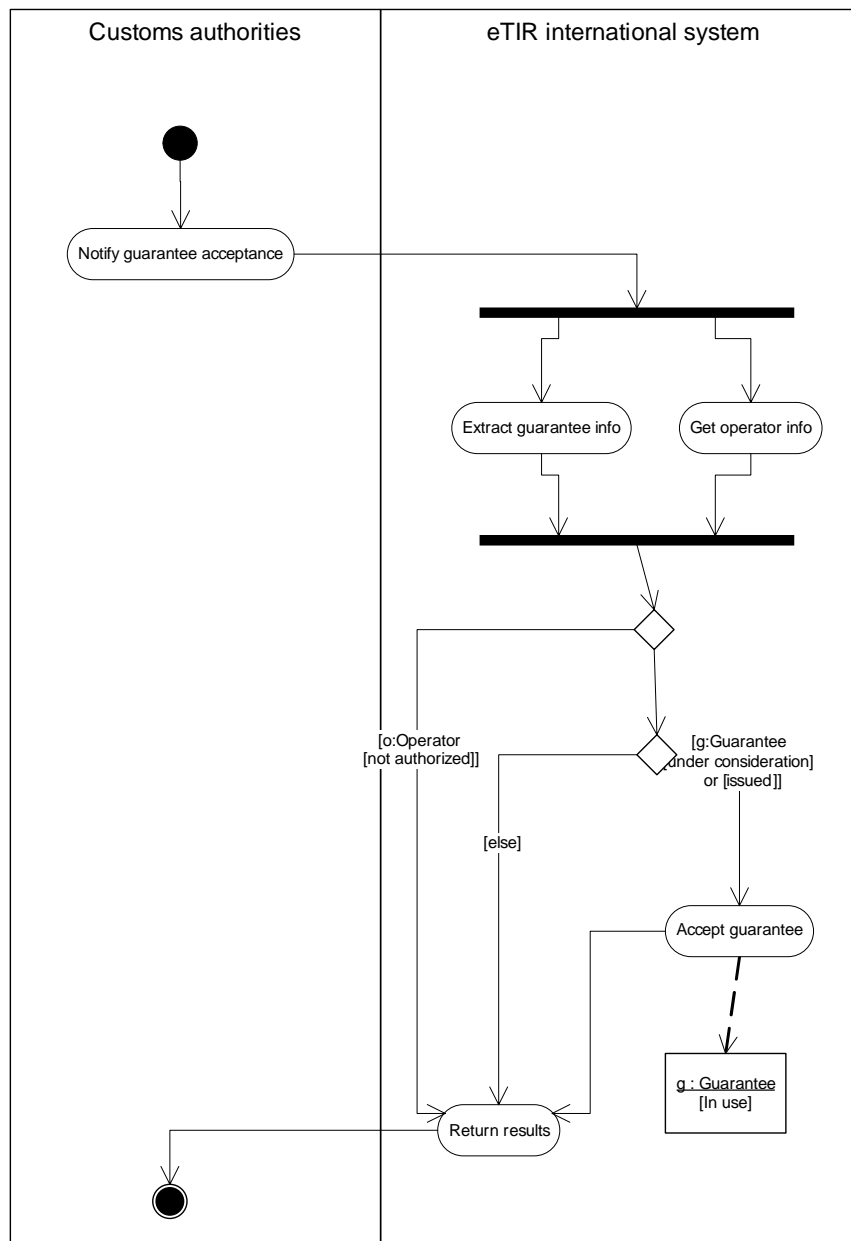
### Check guarantee activity diagram



*Figure 2.6 Check guarantee activity diagram*

**Accept guarantee use case description**

Name	<b>Accept guarantee use case</b>
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 “under consideration” or “issued”. The Customs authorities at departure must also have received a TIR declaration.
Postconditions	The guarantee status is changed to “in use” or remains at its current status.
Scenario	<b>Accept guarantee</b> 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	<b>Fallback scenario</b> If electronic messages cannot be sent to the guarantee module, the information can also be provided via a secured web interface. If both the electronic messaging and web interface are unavailable, the information can also be sent by other secure means of communication that will be made available.
Special requirements	-
Extension Points	-
Requirements Covered	-

**Accept guarantee activity diagram***Figure 2.7 Accept guarantee activity diagram*

**Get operator info use case description**

Name	<b>Get operator info use case</b>
Description	The eTIR international system queries the ITDB and receives data on an operator.
Actors	ITDB
Performance Goals	-
Preconditions	-
Postconditions	-
Scenario	The eTIR international system sends a query to the ITDB about an operator. The ITDB returns the data about this operator or sends a message indicating that the operator is unknown.
Alternative Scenario	<b>Fallback scenario</b> <i>to be discussed</i>
Special requirements	<i>This use case is internal to the system and is used by the following use cases:</i> <ul style="list-style-type: none"> <li>• <i>Register guarantee</i></li> <li>• <i>Query guarantee</i></li> <li>• <i>Check guarantee</i></li> </ul>
Extension Points	-
Requirements Covered	-

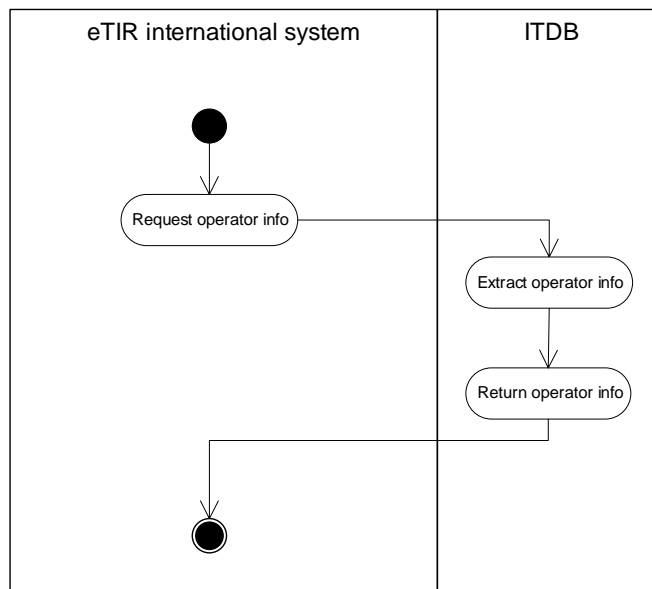
**Get operator info activity diagram**

Figure 2.8 Get operator info activity diagram

**Query guarantee use case description**

Name	<b>Query guarantee use case</b>
Description	Customs authorities or guarantors requests the eTIR international system information on issued guarantees.
Actors	Guarantor, Customs authorities
Performance Goals	-
Preconditions	-
Postconditions	-
Scenario	<b>Query the guarantee</b> The guarantor 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 operator (get operator info) and sends all information to Customs authorities or to the guarantor. If the guarantee has not yet been registered, the Customs authorities or the guarantor are informed accordingly.
Alternative Scenario	<b>Fallback scenario</b> <i>to be discussed (national databases, manual updating of the eTIR international database by call center,...)</i>



Special requirements	A guarantor can only query information on those guarantees 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	-

### Query guarantee activity diagram

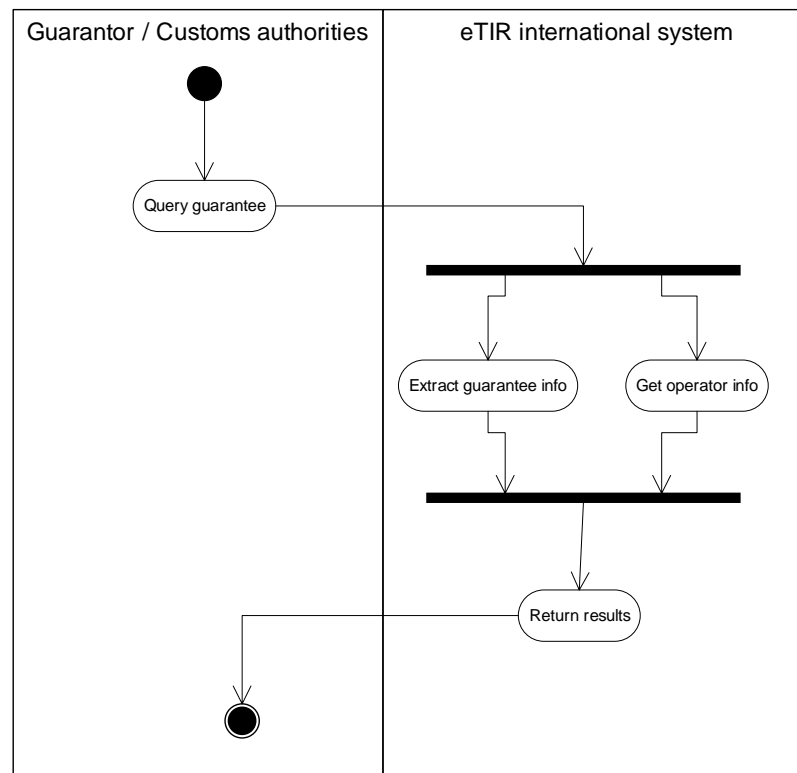


Figure 2.9 Query guarantee activity diagram

## Data exchange use case

## Data exchange use case diagram

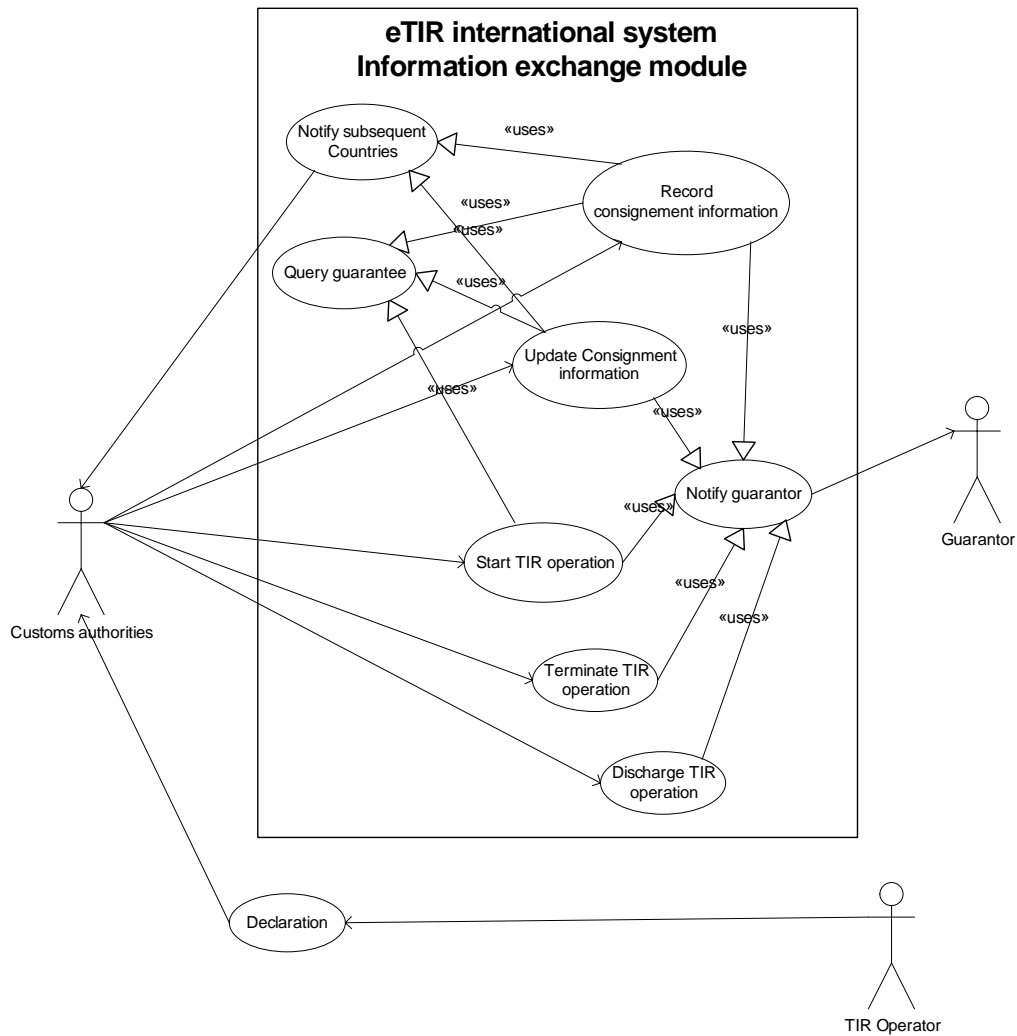
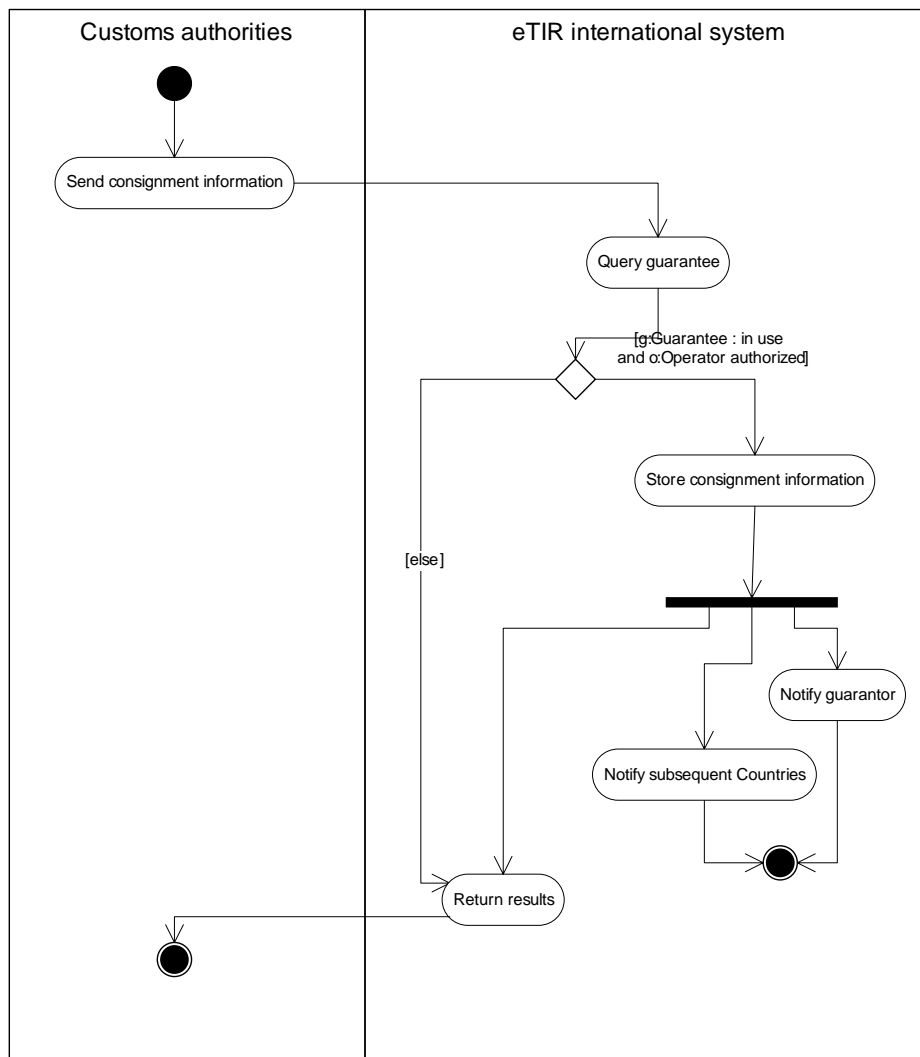


Figure 2.10 Data exchange use case diagram

**Record consignment information use case description**

Name	<b>Record consignment information use case</b>
Description	The information about the consignment is centrally stored.
Actors	Customs authorities
Performance Goals	
Preconditions	The guarantee must have been accepted (status “in use”). 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 guarantor with the information.
Alternative Scenario	<b>Fallback scenario</b> <i>to be discussed</i>
Special requirements	<i>At national level the Customs authorities should provide the operator with an accompanying paper document.</i>
Extension Points	-
Requirements Covered	-

**Record consignment information activity diagram***Figure 2.11 Record consignment information activity diagram***Update consignment information use case description**

Name	<b>Update consignment information use case</b>
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

Performance Goals	
Preconditions	The declaration updates have been accepted by Customs Authorities.
Postconditions	-
Scenario	<p><b>Intermediate loading points</b></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 guarantor with the updated information.</p>
Alternative Scenario	<p><b>Intermediate Unloading points</b></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 guarantor with the updated information.</p> <p><b>Customs checks</b></p> <p>After having unsealed 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 guarantor with the updated information.</p> <p><b>Change of itinerary</b></p> <p>After having been informed by the operator 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 guarantor with the updated information. It also informs the countries removed from the itinerary that the TIR Transport will not transit their country.</p> <p><b>Vehicles change</b></p> <p>After having been informed by the operator 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 guarantor with the updated information. It also informs the countries removed from the itinerary that the TIR Transport will not transit their country.</p> <p><b>Fallback scenario</b></p> <p><i>to be discussed</i></p>
Special	<i>At national level the Customs authorities should provide the operator with</i>

requirements	<i>an updated accompanying paper document.</i>
Extension Points	-
Requirements Covered	-

### Update consignment information activity diagram

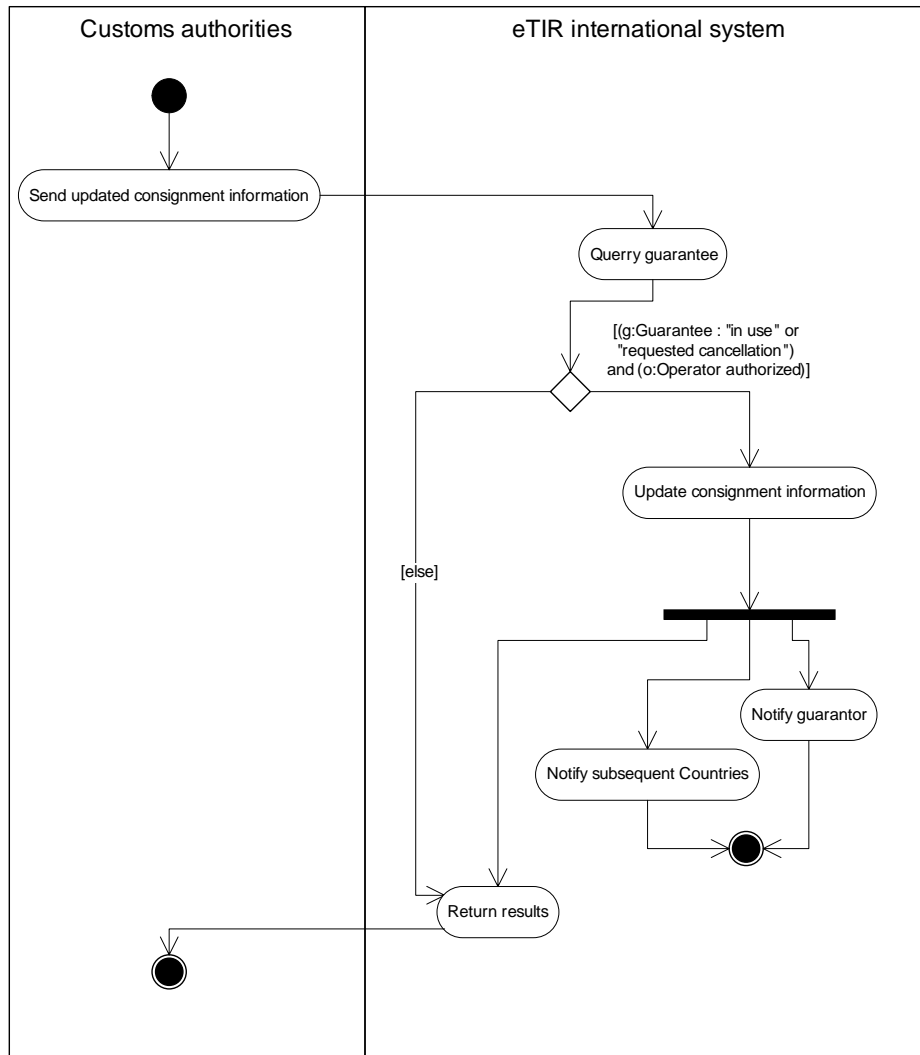
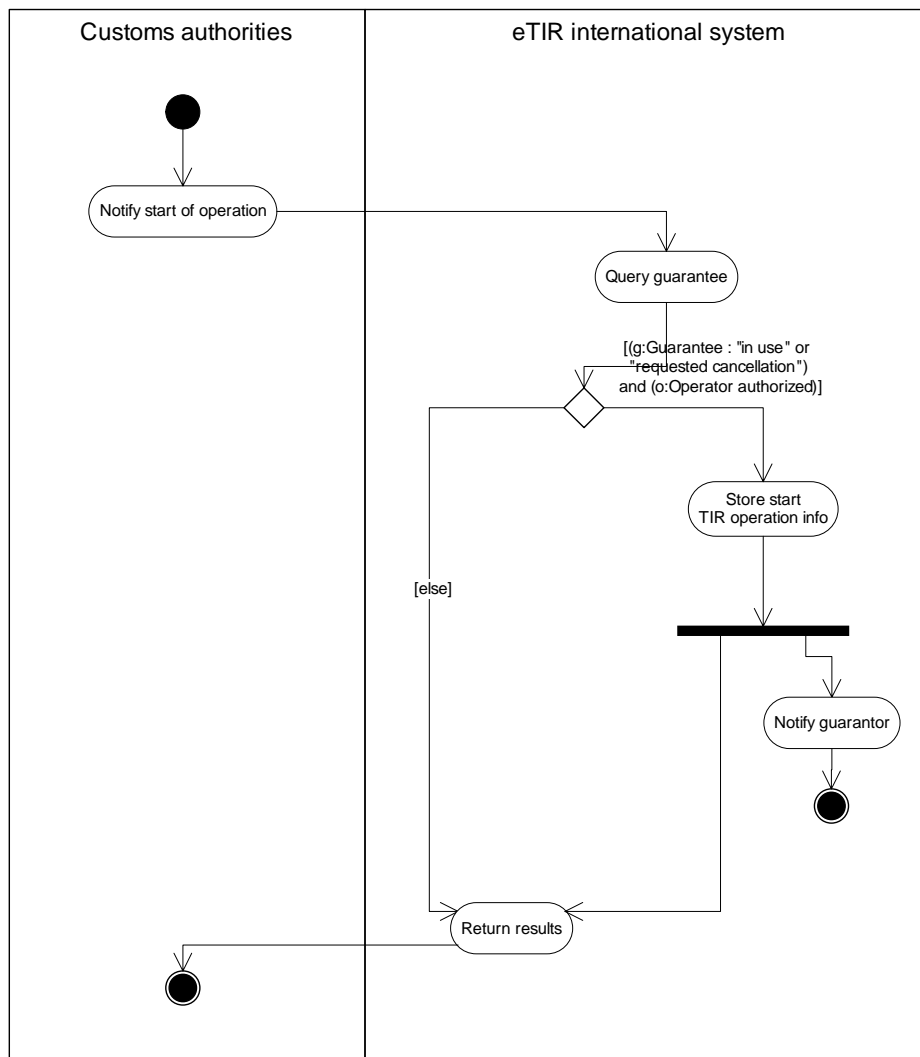


Figure 2.12 Update consignment information activity diagram

**Start TIR operation use case description**

Name	<b>Start TIR operation use case</b>
Description	Customs authorities provide the eTIR international system with information regarding the start of a TIR operation.
Actors	Customs authorities, Guarantor
Performance Goals	-
Preconditions	Ensure the validity of the guarantee and the authorization for the operator.
Postconditions	-
Scenario	Customs authorities send a message to the eTIR international system notifying that a TIR operation has started. If the operator is authorised and the guarantee status is “in use” or “requested cancellation”, the eTIR system saves the information and notifies the Guarantor of the start of a TIR operation.
Alternative Scenario	<b>Fallback scenario</b> <i>to be discussed</i>
Special requirements	-
Extension Points	-
Requirements Covered	-

**Start TIR operation activity diagram***Figure 2.13 Start TIR operation activity diagram***Terminate TIR operation use case description**

Name	<b>Terminate TIR operation use case</b>
Description	Customs authorities provide the eTIR international system with information regarding the termination of a TIR operation.
Actors	Customs authorities, Guarantor
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 and notifies the guarantor of the termination of the TIR operation.
Alternative Scenario	<b>Fallback scenario</b> <i>to be discussed</i>
Special requirements	-
Extension Points	-
Requirements Covered	-

### Terminate TIR operation activity diagram

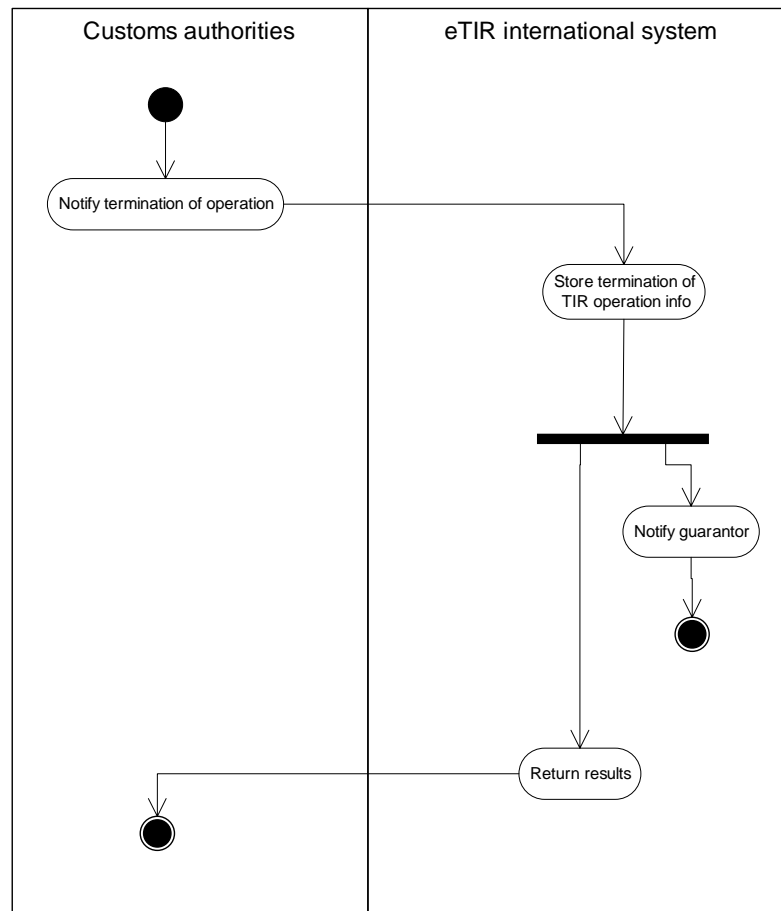
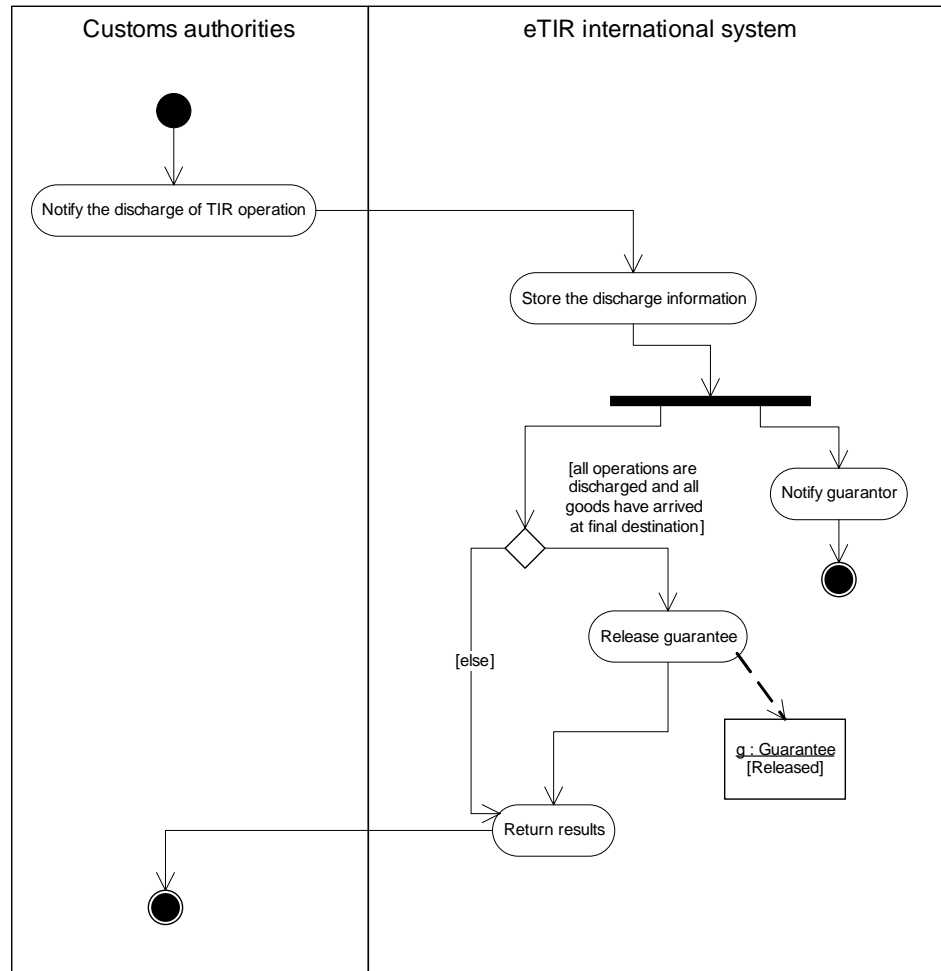


Figure 2.14 Terminate TIR operation activity diagram

**Discharge TIR operation use case description**

Name	<b>Discharge TIR operation use case</b>
Description	Customs authorities provide the eTIR international system with information regarding the discharge of a TIR operation.
Actors	Customs authorities, Guarantor
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 guarantor of the discharge of the TIR operation. When all goods have reached their final destination and all TIR operations covered by the guarantee are discharged, the status of the guarantee is changed to “released”.
Alternative Scenario	<b>Fallback scenario</b> <i>to be discussed</i>
Special requirements	-
Extension Points	-
Requirements Covered	-

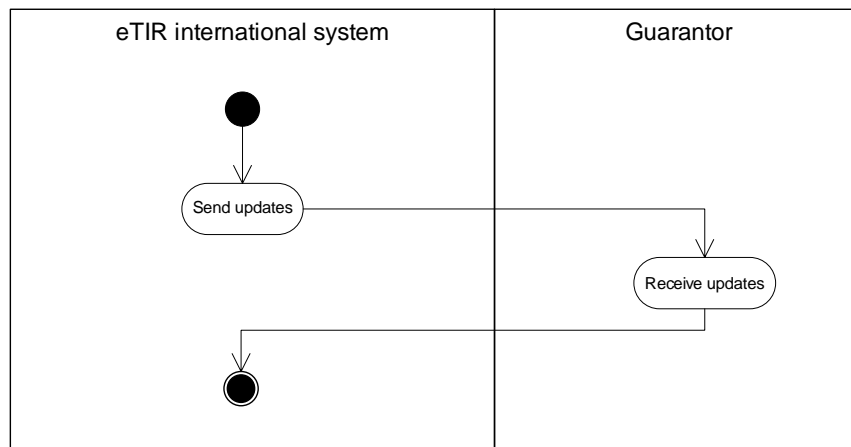
**Discharge TIR operation activity diagram**



*Figure 2.15 Discharge TIR operation activity diagram*

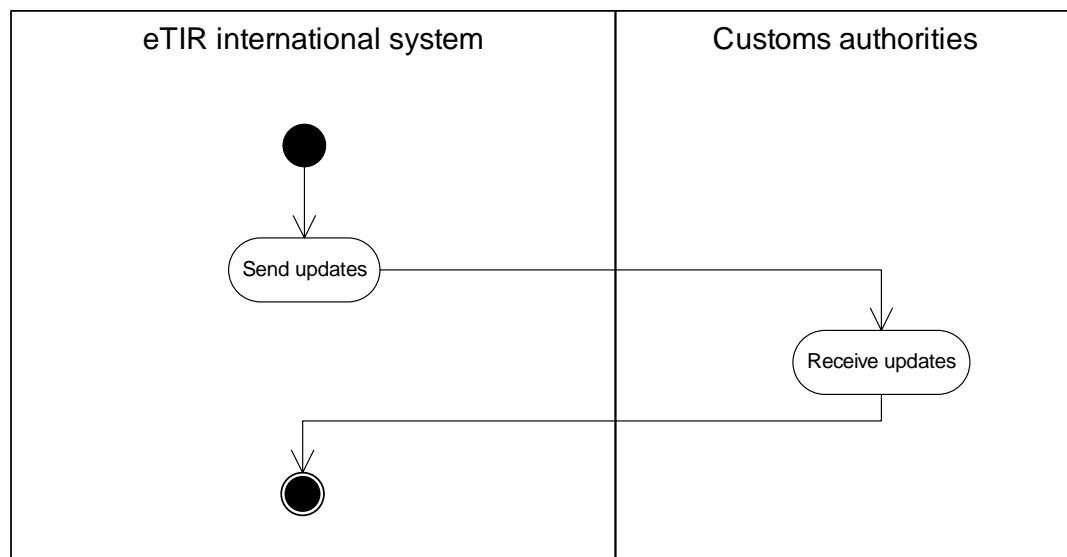
**Notify Guarantor use case description**

Name	<b>Notify guarantor use case</b>
Description	The eTIR international systems notifies the guarantor of changes in the information related to a guarantee he has issued.
Actors	Guarantor
Performance Goals	
Preconditions	-
Postconditions	-
Scenario	The eTIR international system notifies the guarantor of changes in the information related to a guarantee he has issued by sending him an electronic message.
Alternative Scenario	<b>Fallback scenario</b> <i>to be discussed</i>
Special requirements	-
Extension Points	-
Requirements Covered	-

**Notify guarantor activity diagram***Figure 2.16 Notify guarantor activity diagram*

**Notify subsequent Countries use case description**

Name	<b>Notify subsequent Countries use case</b>
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	<b>Fallback scenario</b> <i>to be discussed</i>
Special requirements	-
Extension Points	-
Requirements Covered	-

**Notify subsequent Countries activity diagram***Figure 2.17 Notify subsequent Countries activity diagram*

Class diagram

The class diagram in figure 2.18

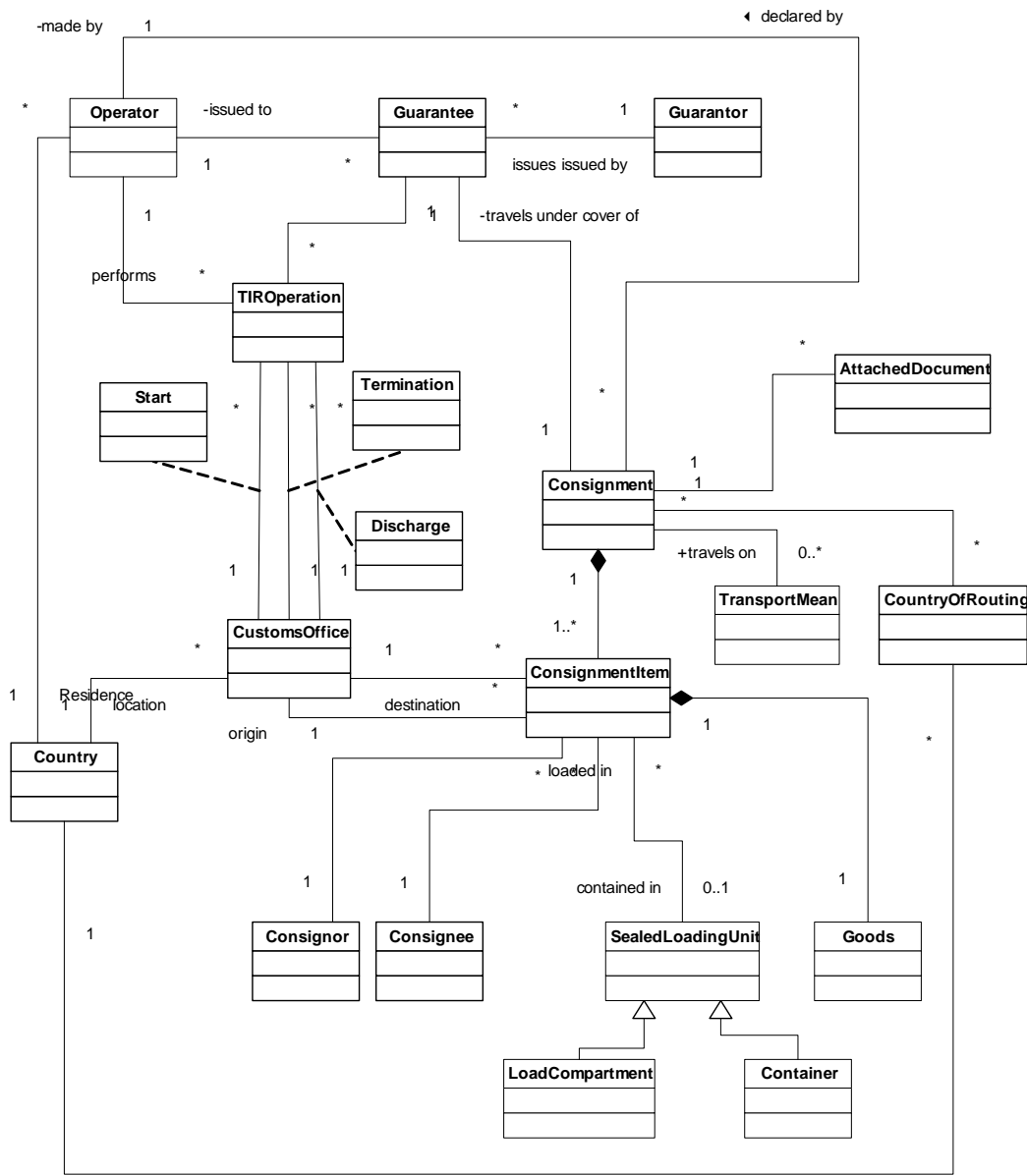


Figure 2.18 eTIR class diagram

-----