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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

Thirteenth session
Geneva, 26-27 November 2007
Item 2 (a) (iii) of the provisional agenda

ACTIVITIES OF THE INFORMAL AD HOC EXPERT GROUP

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). In line with this request, the secretariat prepared a first draft of Chapter 3 contained in annex to this document.

* The UNECE Transport Division has submitted the present document after the official documentation deadline due to resource constraints.

B. ANALYSIS

2. 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.

3. 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.

4. 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.

5. Furthermore, the class diagram in Chapter 2 is further developed and is now divided into three3 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.

B. FURTHER CONSIDERATIONS

6. The Expert Group may wish to discuss and further elaborate Chapter 3 of the Reference Model.

Annex

Chapter 3 – Analysis

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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

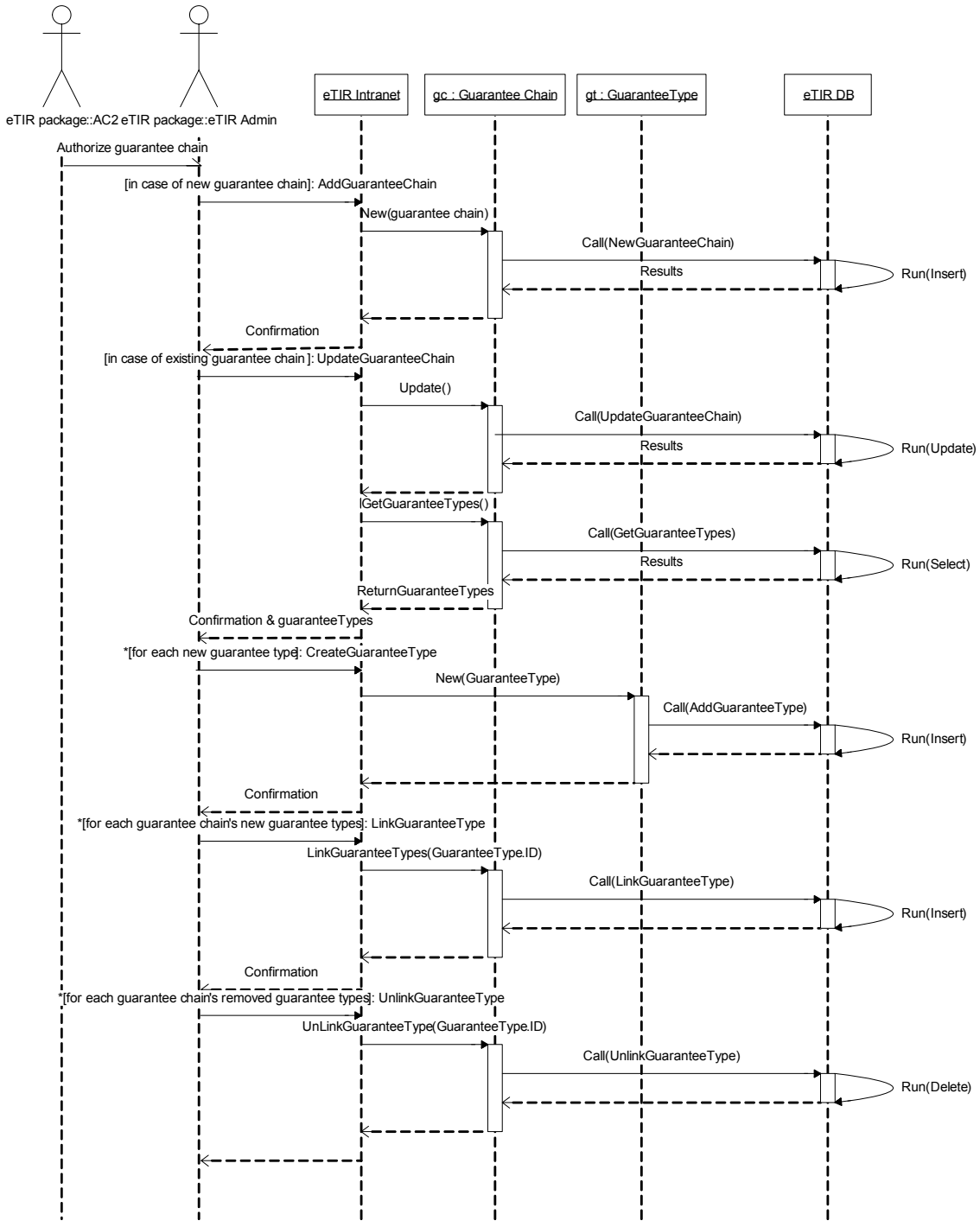

Figure 3.1: Register guarantee chain sequence diagram

3.1.1.2. Register guarantee

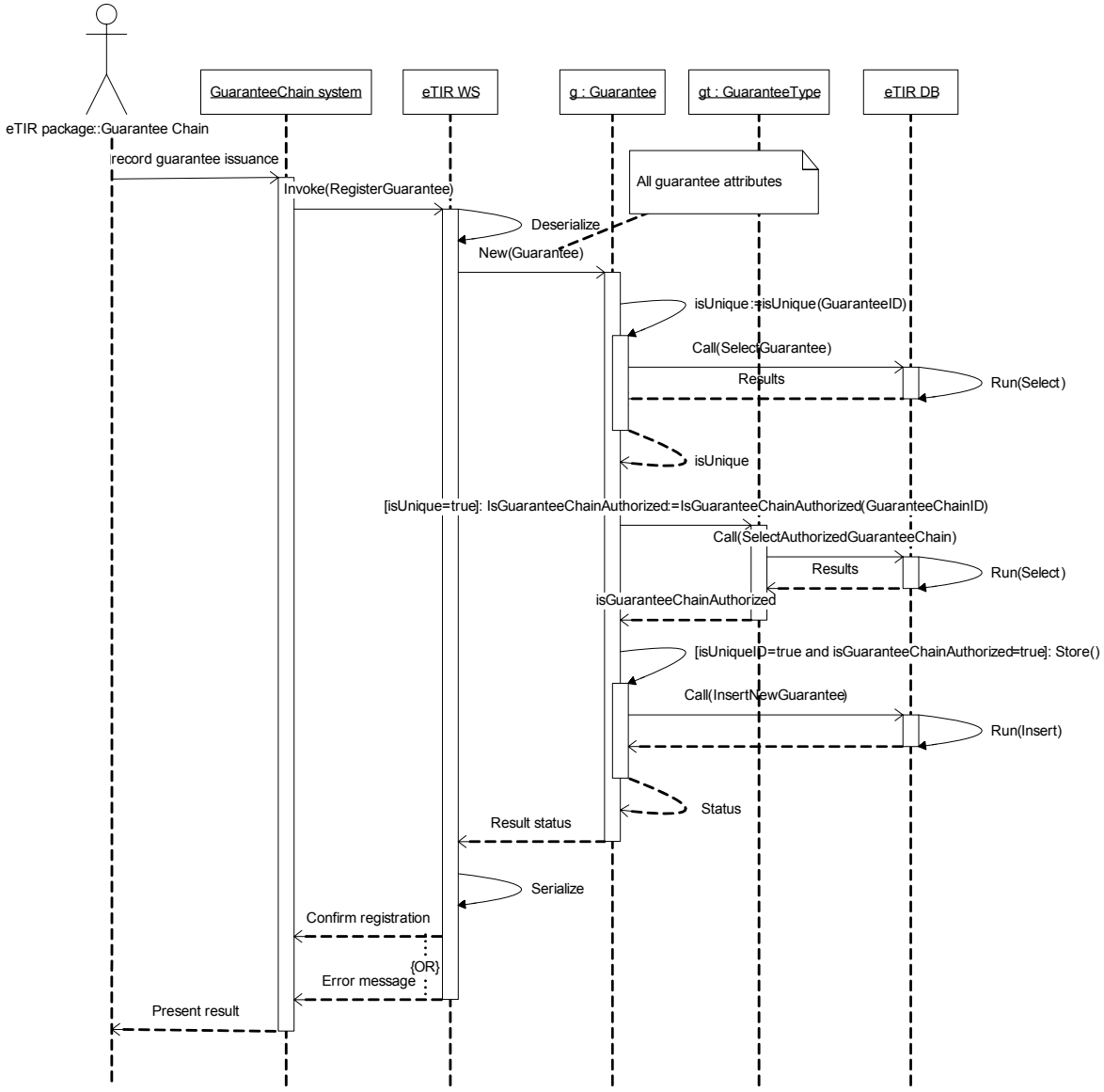

Figure 3.2: Register guarantee sequence diagram

3.1.1.3. Cancel guarantee

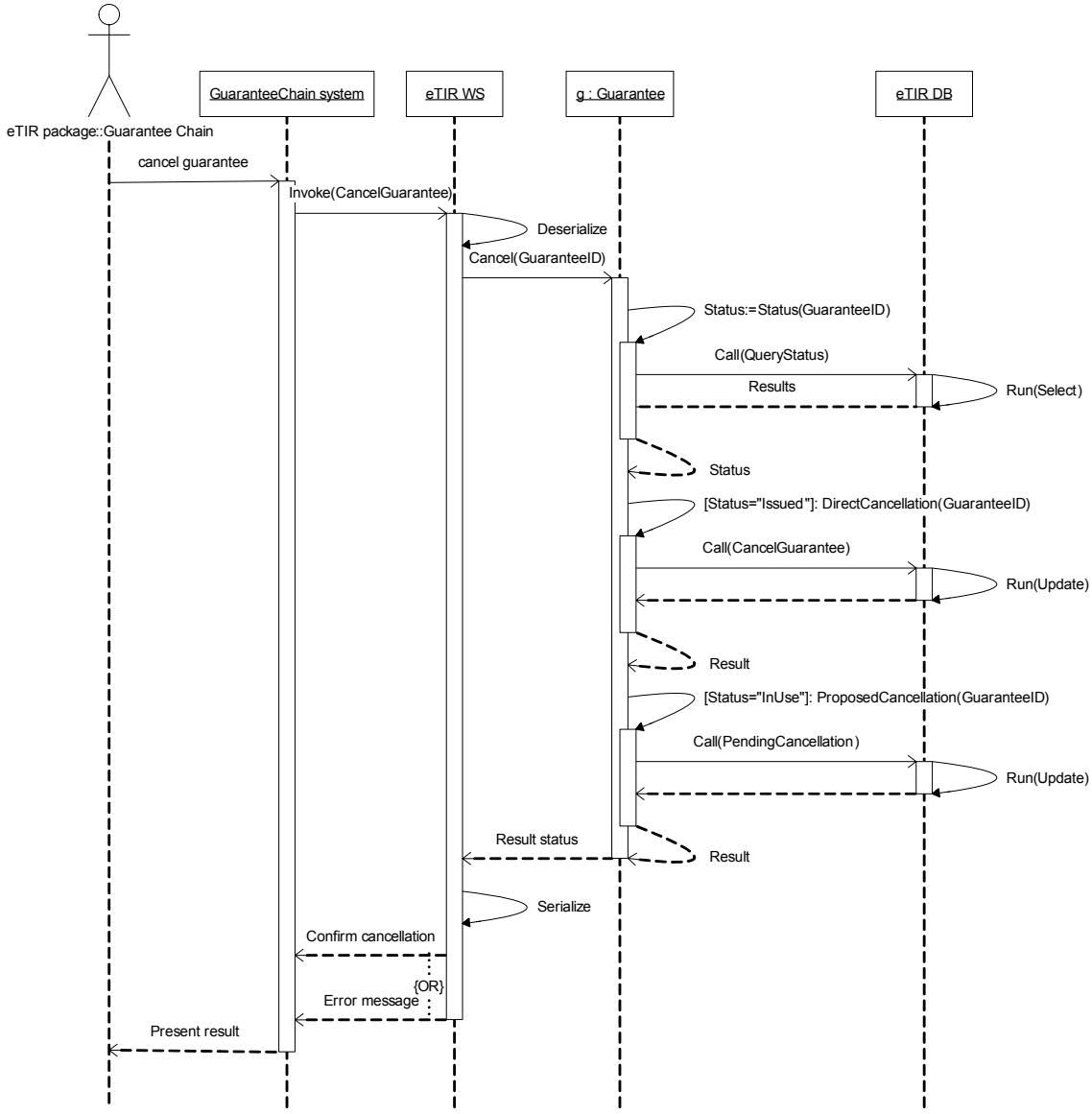

Figure 3.3: Cancel guarantee sequence diagram

3.1.1.4. Accept guarantee

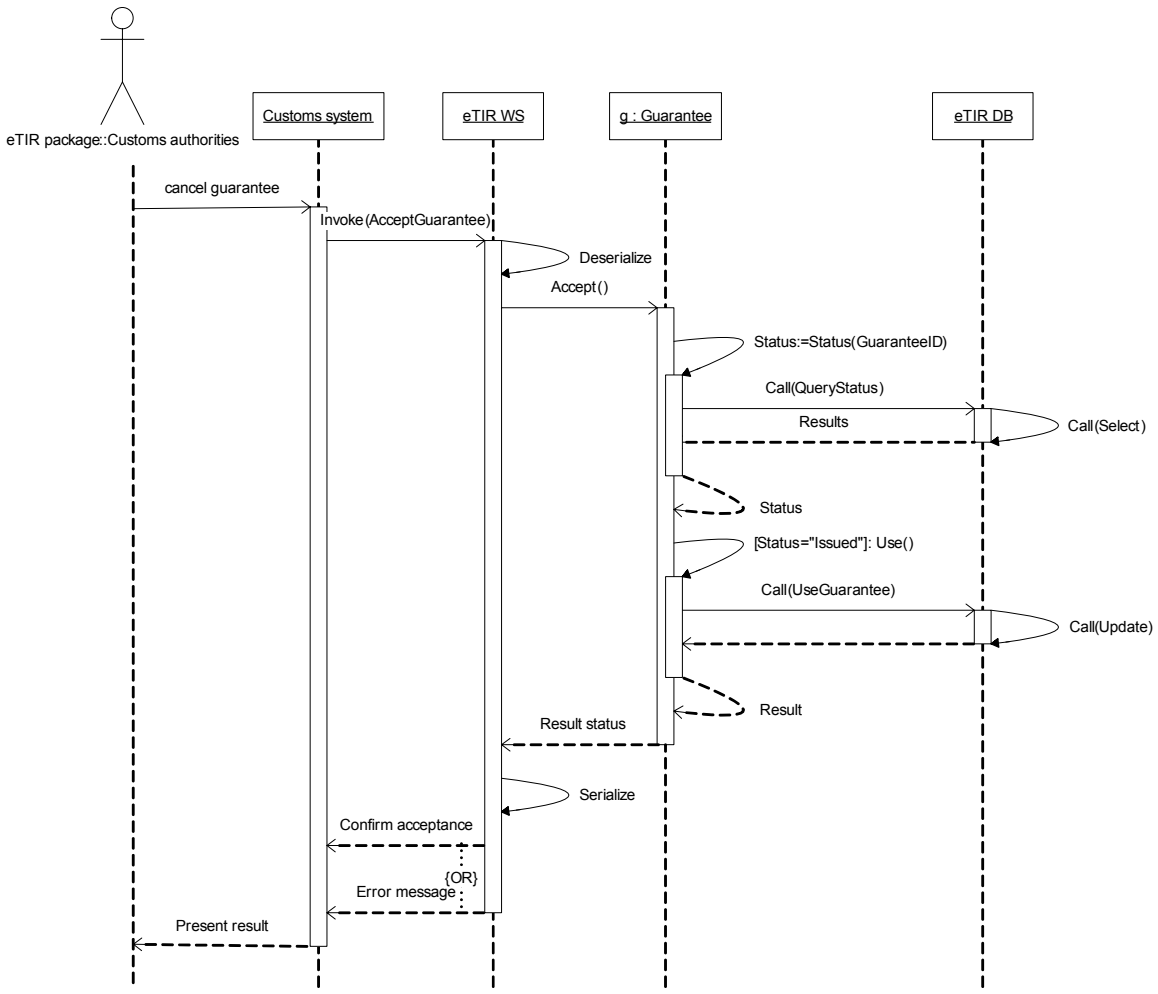

Figure 3.4: Accept guarantee sequence diagram

3.1.1.5. Get holder information

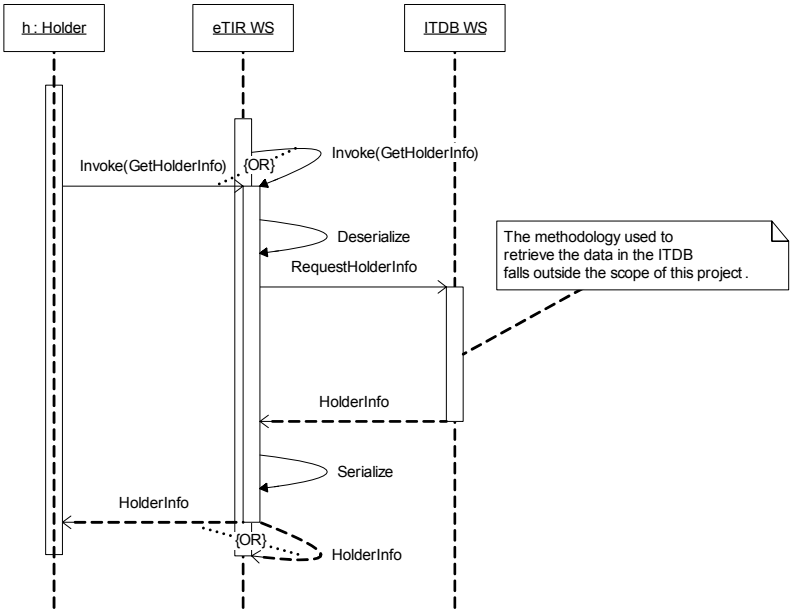

Figure 3.5: Get operator information sequence diagram

3.1.1.6. Query guarantee

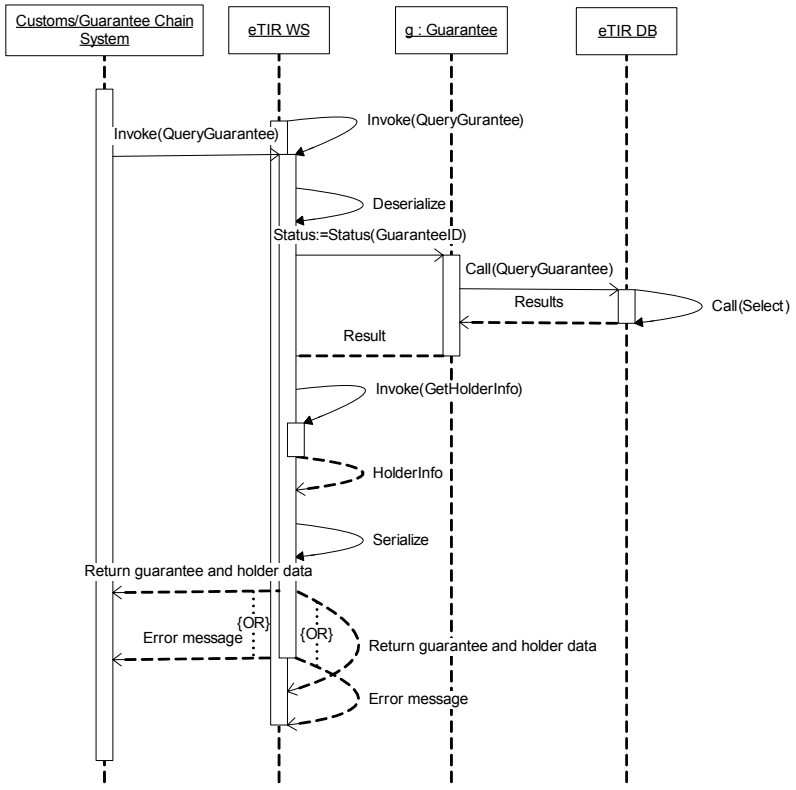

Figure 3.6: Query guarantee sequence diagram

3.1.2. Data exchange

3.1.2.1. Record consignment

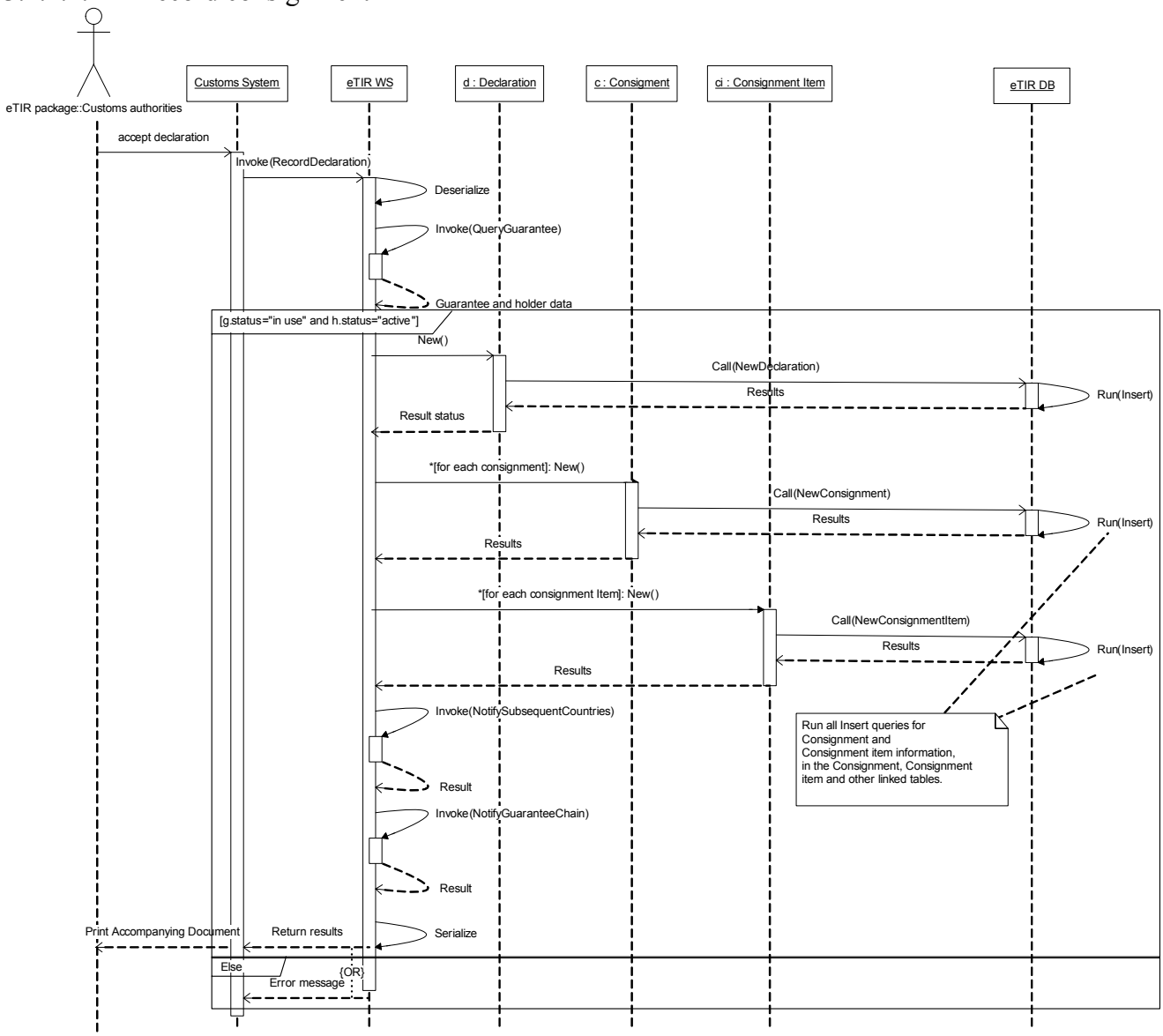

Figure 3.7: Record consignment sequence diagram

3.1.2.2. Update consignment information

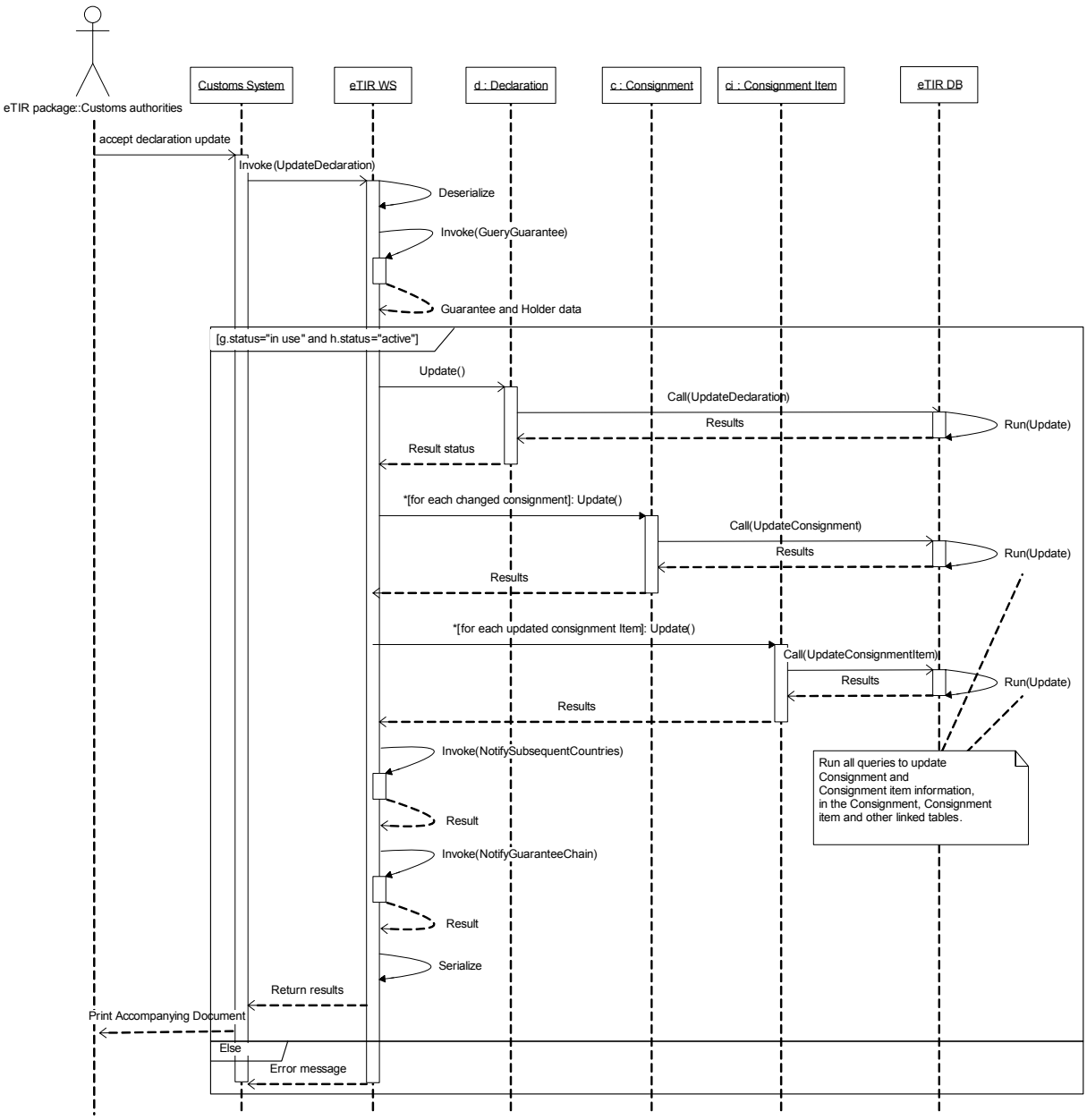

Figure 3.8: Update consignment information sequence diagram

3.1.2.3. Start of TIR operation

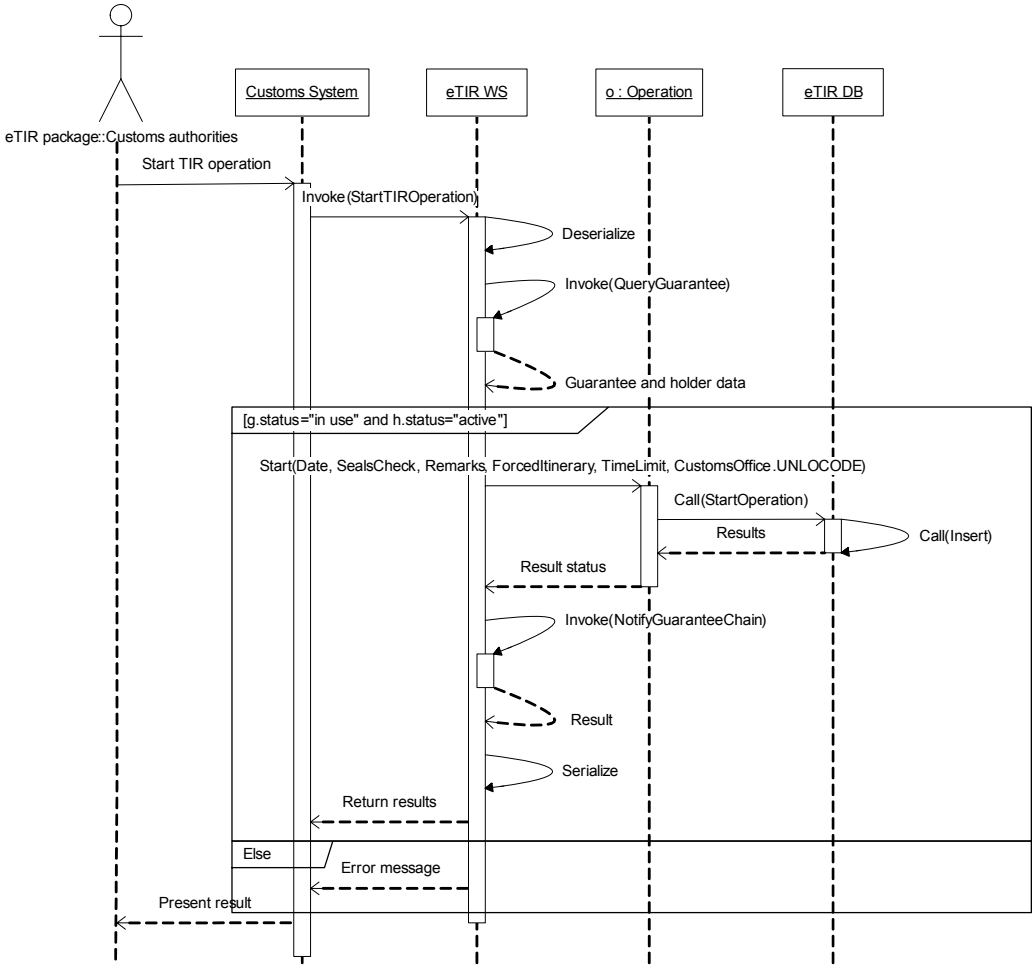

Figure 3.9: Start of TIR operation sequence diagram

3.1.2.4. Terminate TIR operation

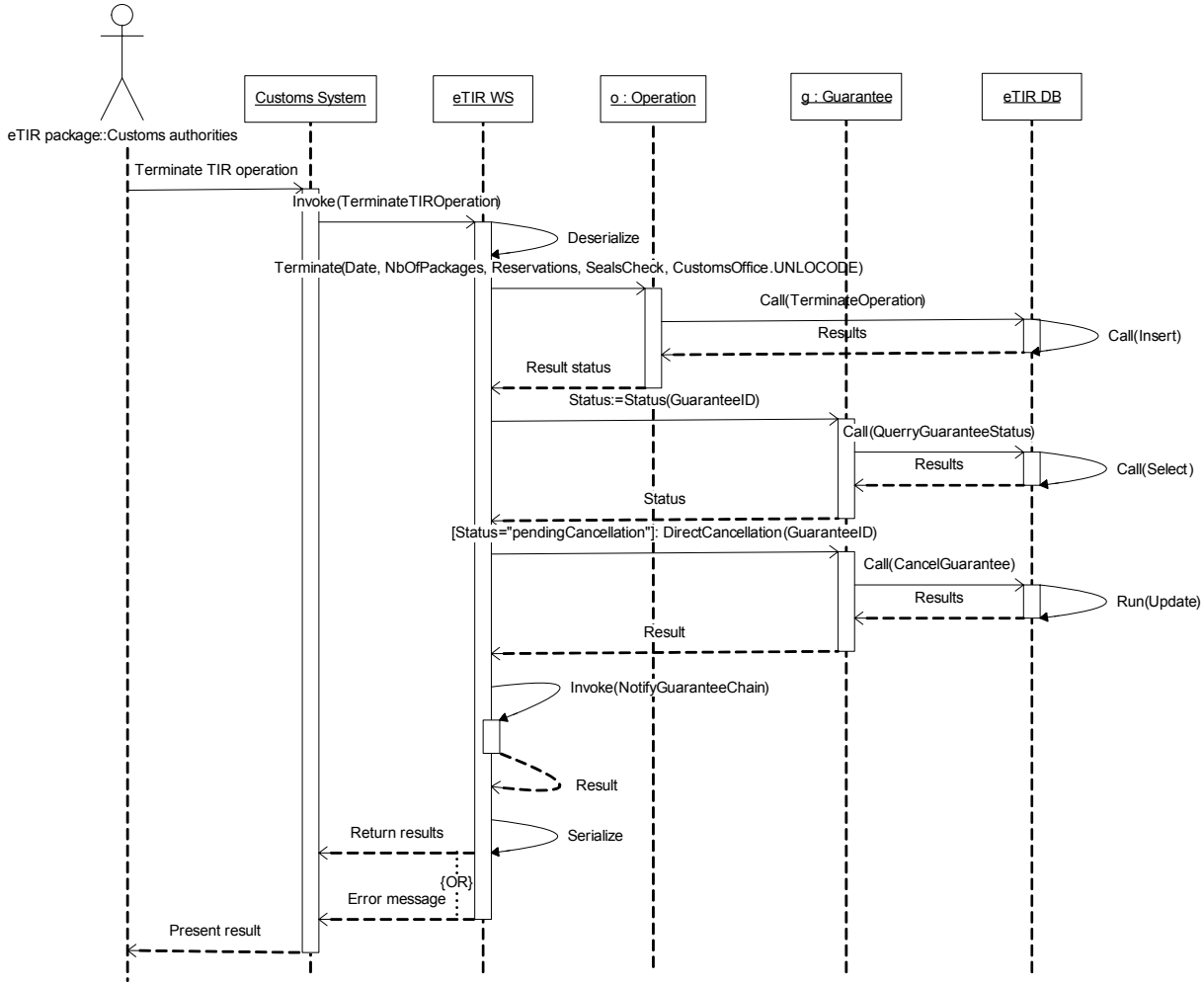

Figure 3.10: Terminate TIR operation sequence diagram

3.1.2.5. Discharge TIR operation

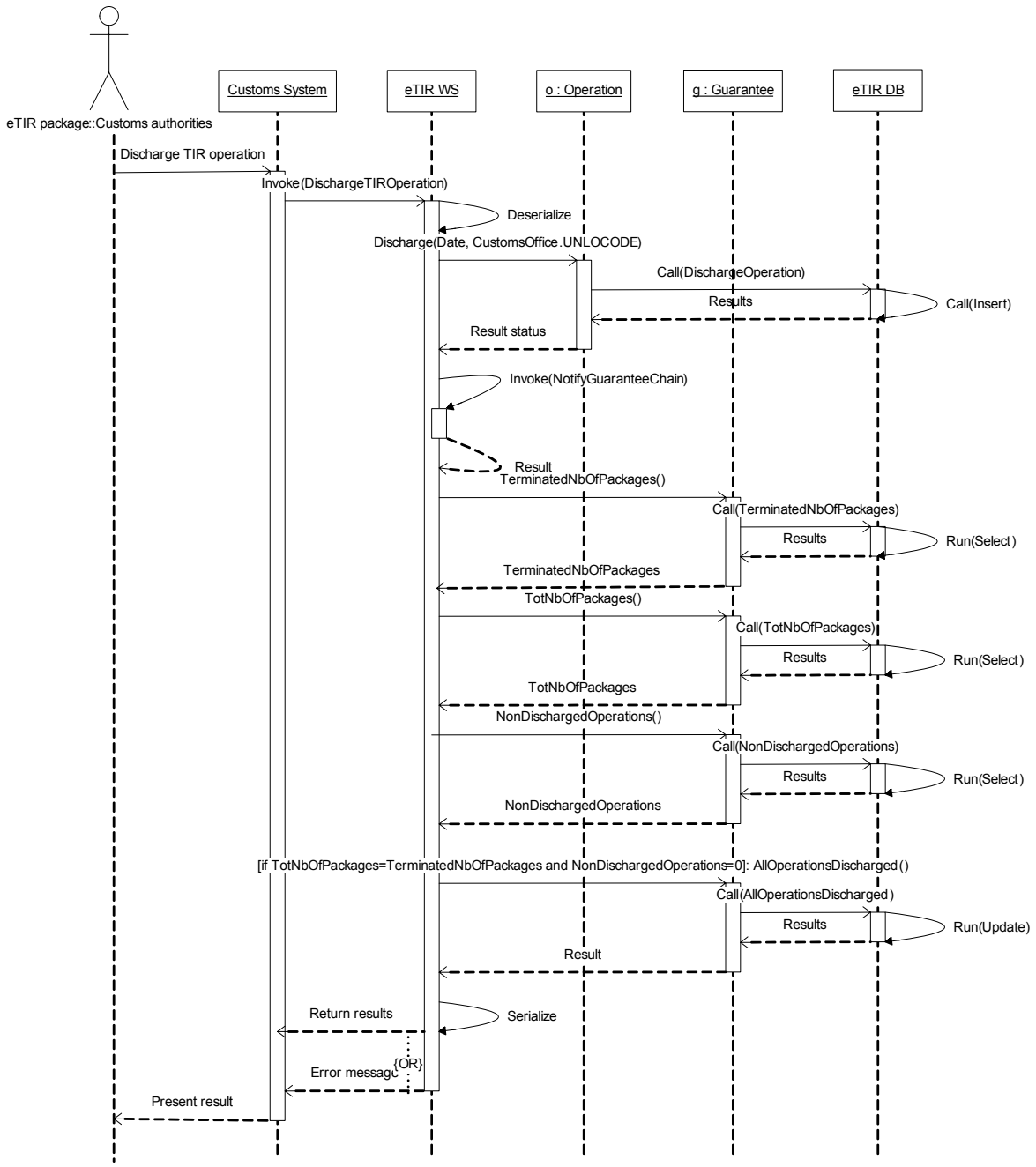

Figure 3.11: Discharge TIR operation sequence diagram

3.1.2.6. Notify guarantee chain

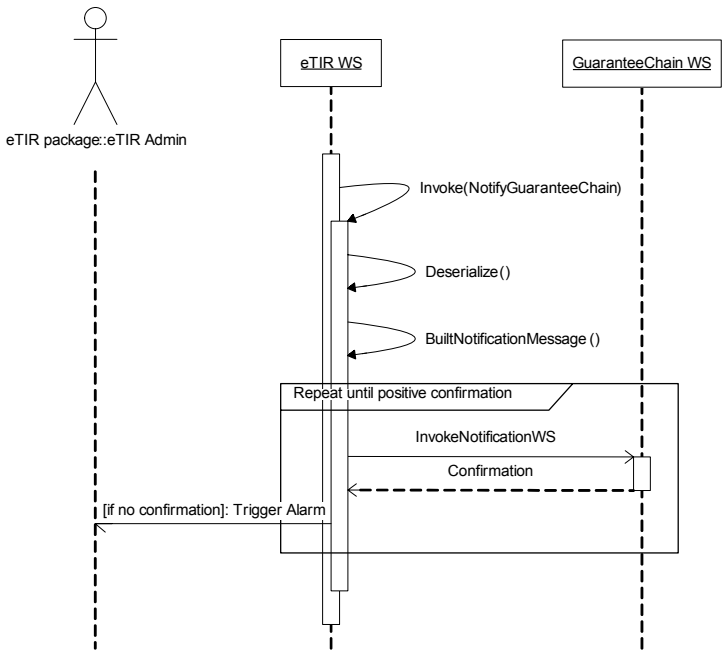

Figure 3.12: Notify guarantee chain sequence diagram

3.1.2.7. Notify subsequent countries

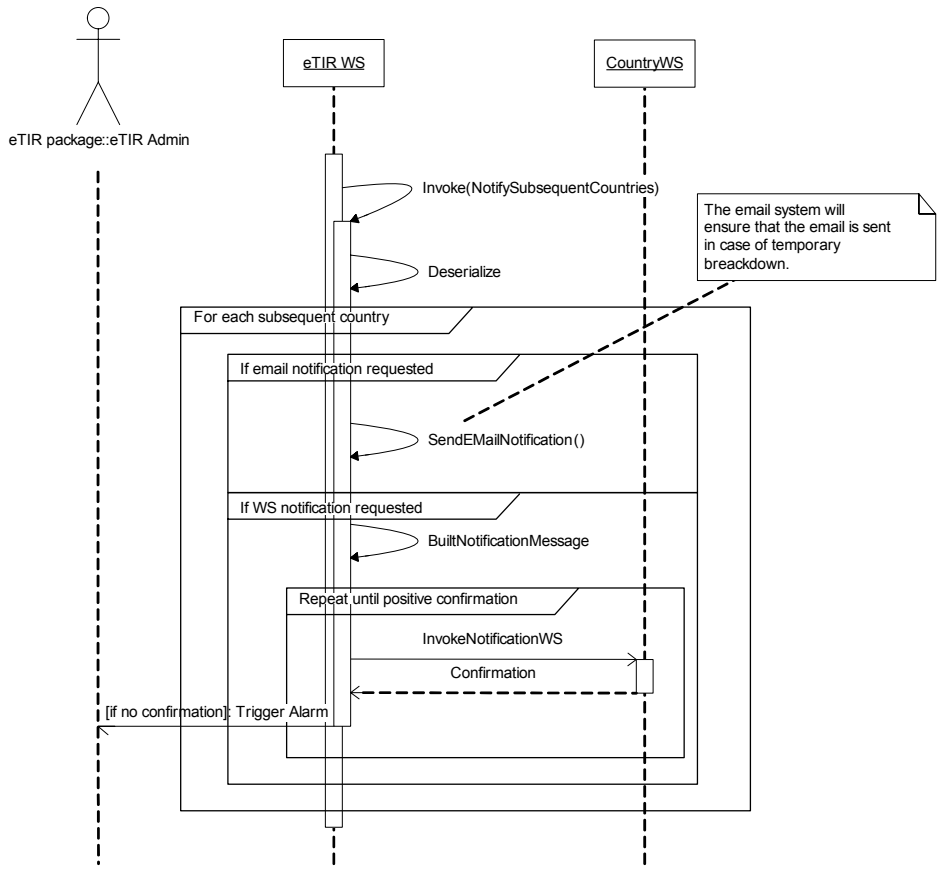

Figure 3.13: Notify subsequent countries sequence diagram

3.1.3. Electronic messages

3.1.3.1. External messages

External messages refer to exchanges between the eTIR international system and the national Customs systems or the guarantee chain system. Chapter 4 deals with the design of messages.

No.	Description	Response
E1	…	
E2	…	x

(To be completed…)

3.1.3.2. Internal messages

Internal messages refer to the messages exchanged between the objects within the eTIR international system itself.

No.	Description	Response

I1		
I2		x

(To be completed…)

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 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 on 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.

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

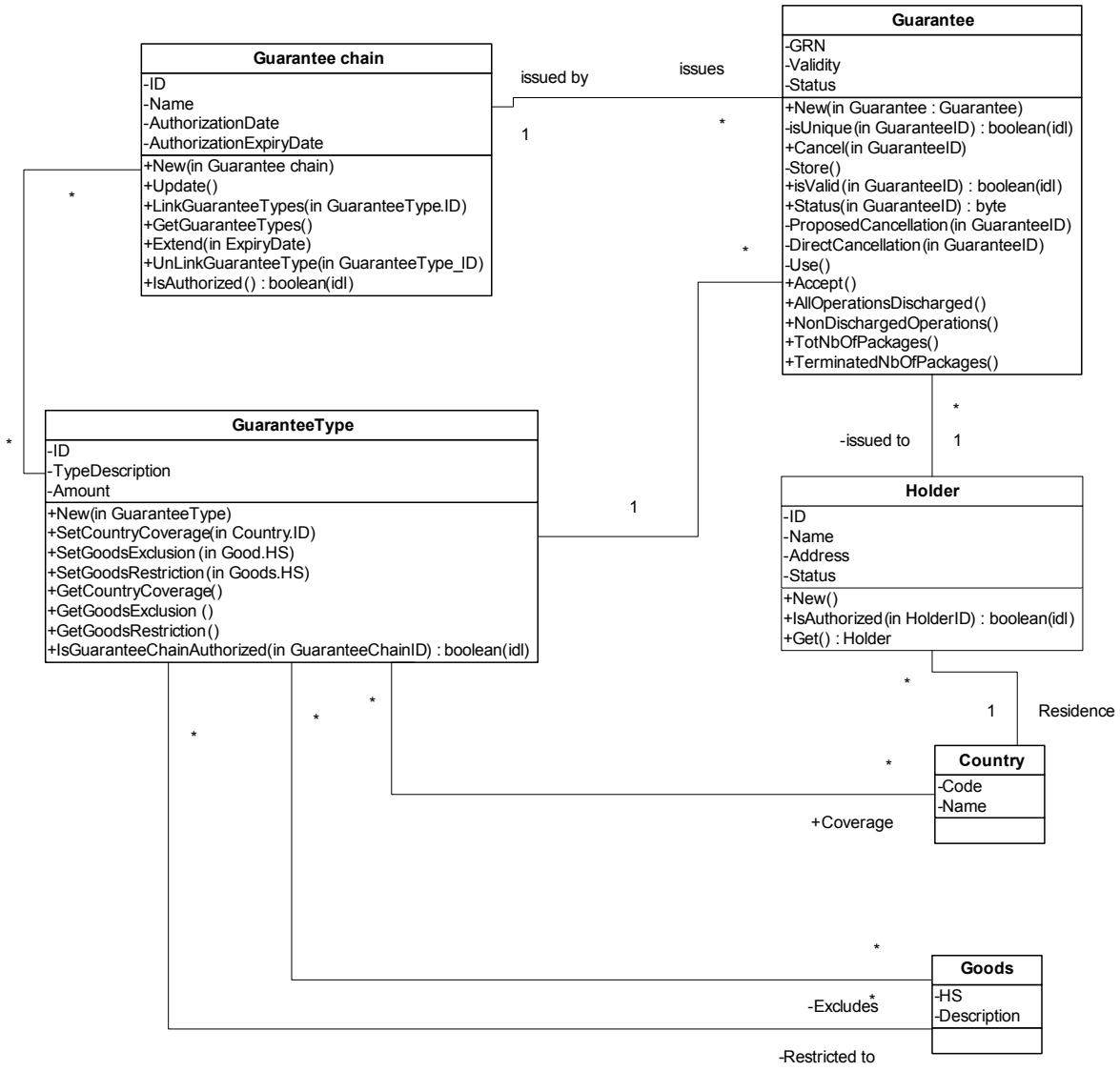

Figure 3.14: Customs management of guarantees class diagram

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.

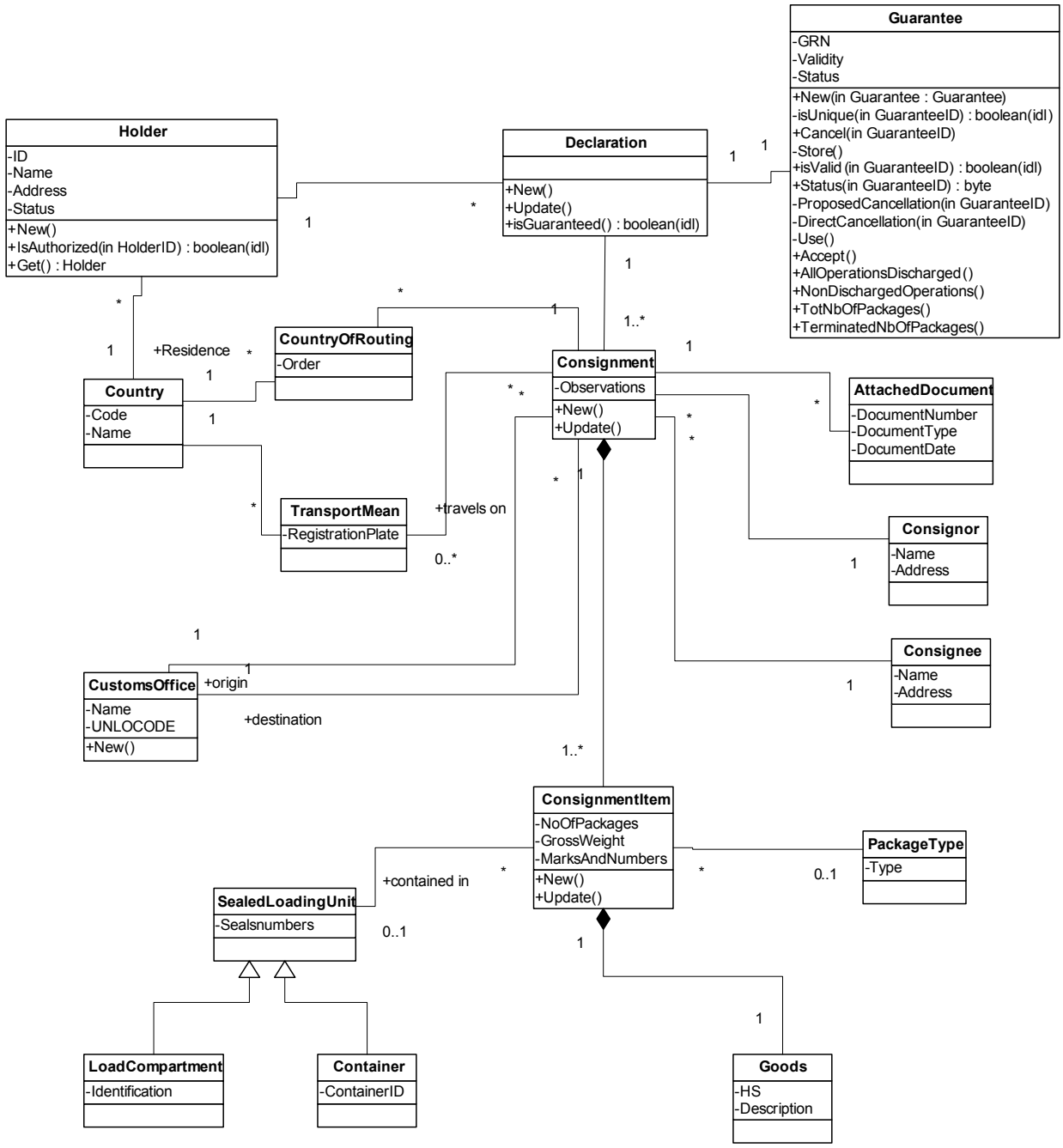

Figure 3.15: Declaration class diagram

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.

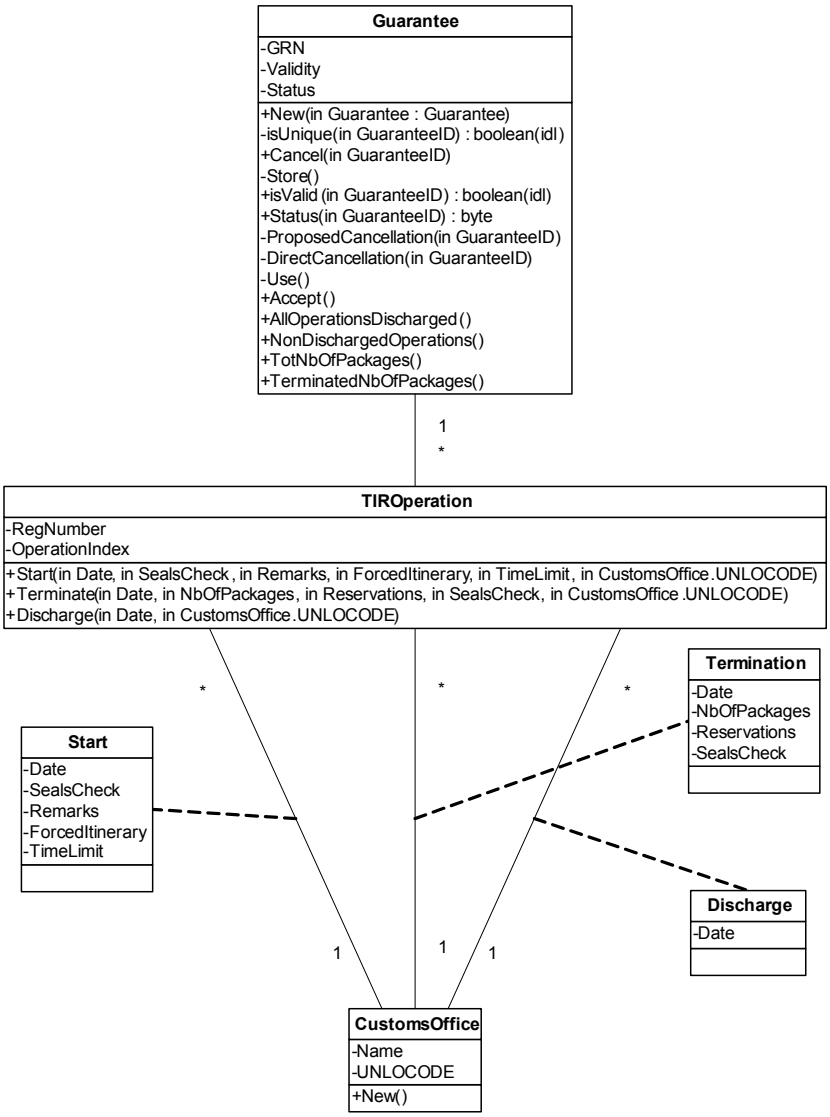

Figure 3.16: Data exchange class diagram

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