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TAXATION AND CUSTOMS UNION DG

SUBJECT:

Design Document for National Import Application (DDNIA)

FRAMEWORK CONTRACT TAXUD/2013/CC/124

SPECIFIC CONTRACT 03

Status: **re-SfA** after review by DG TAXUD & National Administrations.

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Document History

Edi.	Rev.	Date	Description	Action (*)	Pages
0	10	13/09/2007	Implementing internal review comments. Submitted for pre-validation to Taxation and Customs Union DG.	I	All
0	20	01/10/2007	Submitted for review to Taxation and Customs Union DG.	I	All
1	00	13/12/2007	Submitted for acceptance to Taxation and Customs Union DG	I	All
1	10	25/01/2008	Submitted for review to Taxation and Customs Union DG.	I	All
2	00	15/02/2008	Submitted for acceptance to Taxation and Customs Union DG.	I	All
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3	10	15/04/2008	Updated with the implementation of ECG comment 227. Submitted for acceptance to Taxation and Customs Union DG.	I	As Required
3	20	24/09/2008	Updated with DDNA KEL 0.17b. Submitted for review to Taxation and Customs Union DG.	I, R	As Required
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4	10	30/04/2010	Updated with the implementation required under QTM 970 and QTM 987 (DDNA KEL 0.22). Implementing internal review comments. Submitted for review to Taxation and Customs Union DG.	I, R	Sections I, III, IV, VII, X
5	00	18/05/2010	Implementing QA and DG TAXUD comments. Submitted for acceptance to Taxation & Customs Union DG.	I, R	As Required
5	10	19/07/2010	Updated after ECG Review regarding the implementation performed under QTM 970 and QTM 987 (DDNA KEL 0.22). Implementing internal review comments. Submitted for review to Taxation and Customs Union DG.	I, R	Sections III.4.5.1, III.5.2
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7	10	19/09/2011	Aligned with the updated KEL v0.23. Submitted for review to Taxation & Customs Union DG.	I, R	1, 3
7	11	26/01/2012	Project and contractual data updated. Aligned with the KEL v0.24. Sent for internal review.	I, R	Sections: I.1.8 I.3.1 I.3.2 III.5.2 X.1.1
7	12	30/01/2012	Comments from the internal review are implemented. Sent for internal language review.	I, R	Pages 1, 3, 14 and 18
7	20	08/02/2012	Comments from the language review are implemented. Submitted for review to Taxation & Customs Union DG.	I, R	As Required
8	00	29/02/2012	Submitted for acceptance to Taxation and Customs Union DG.	I	3
8	10	31/07/2013	Project and contractual data updated. Aligned with the KEL v0.25. **WARNING: This and the next version do NOT include the changes for KEL24a.** Submitted for review to Taxation & Customs Union DG.	I, R	Sections: I.1.8 I.3.1 I.3.2
9	00	28/08/2012	Implementing DG TAXUD comments. Submitted for acceptance to Taxation and Customs Union DG.	I,R	Pages 4, 10 - 12, 23, 34, 36
8	60	15/02/2013	Project and contractual data updated. Aligned with the KEL v0.24a (KEL entry #321). **This and the next version were created in a side branch to address urgent business needs.** Submitted for review to Taxation & Customs Union DG.	I,R	Pages 15, 18 and 19
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9	10	06/03/2013	Project and contractual data updated. Aligned with the KEL v0.25a. **This and the next version also include the changes introduced within KEL v0.24a.** Submitted for review to Taxation & Customs Union DG.	I,R	Pages 15, 18 and 19

Edi.	Rev.	Date	Description	Action (*)	Pages
9	50	08/04/2013	Review comments implemented. Submitted for acceptance to Taxation and Customs Union DG	I,R	Page 15
9	51	15/08/2013	Project and contractual data updated. Aligned with the KEL v0.26. Sent for internal review.	I,R	Pages 17, 20-21, 33-34 and 59
9	60	26/08/2013	Comments from the internal review are implemented. Submitted for review to Taxation & Customs Union DG.	I,R	Pages 6-7, 18 and 20
10	00	03/10/2013	Review comments implemented. Submitted for acceptance to Taxation and Customs Union DG.	I,R	Pages 20-21, 56
10	01	16/01/2014	Project and contractual data updated. Aligned with the KEL v0.27 (KEL entries #346, #351). Sent for internal review.	I,R	Pages 16, 17, 20, 21
10	10	21/01/2014	Comments from the internal review are implemented. Submitted for review to Taxation & Customs Union DG.	I,R	As required
11	00	19/02/2014	Comments from the review are implemented. Submitted for acceptance to Taxation & Customs Union DG.	I,R	Pages 5, 8, 12, 14 – 19, 21 – 30, 33, 34, 37 – 39, 42 – 46, 55; Appendices A1, A2, A3
11	10	12/03/2015	Implementing QTM037 (RFC-List.28 Movements System). Submitted for Review (SfR) to Taxation & Customs Union DG.	I	Pages 20, 21, 42, 52
12	00	15/04/2015	Implementing QA3 and DG TAXUD review comments. Submitted for Acceptance (SfA) to Taxation & Customs Union DG.	I/R	As required
12	10	17/04/2015	Implementing DG TAXUD sanity check comments. Re-submitted for Acceptance (re-SfA) to Taxation & Customs Union DG.	I/R	Appendices C, X
12	20	28/04/2015	Implementing DG TAXUD sanity check comments. Re-submitted for Acceptance (re-SfA2) to Taxation & Customs Union DG.	I/R	Appendices C, X (add BG in CL070, correct MK)

Edi.	Rev.	Date	Description	Action (*)	Pages
12	30	14/09/2015	Implementing RFCs#383 and #384. Submitted for Review (SfR) to Taxation & Customs Union DG.	R	Sections I.1.8.8, I.3.2
12	40	28/09/2015	Implementing QA3 and DG TAXUD review comments. Submitted for Acceptance (SfA) to Taxation & Customs Union DG.	I/R	As required
12	50	26/10/2015	Implementing the comments of NA-DE under the call IM130031. Re-Submitted for Acceptance to Taxation & Customs Union DG.	I/R	Sections I.1.8, I.3.2

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Section I General Introduction

I.1 Document Overview

I.1.1 Purpose of DDNA document

The DDNA, the **Design Document for National Applications**, supersedes the DDNTA, the Design Document for National Transit Applications for NCTS Phase 3.2 and ECS. It specifies the design requirements to which any Customs Movement Application needs to conform.

The DDNA is **applicable to every Transit, Export and/or Import Control Application** and must be considered as a mandatory document for all implementation and verification activities.

The DDNA is aligned with [A1], [A2], [A4] and [R4].

Documents [A1] and [R4] contain the specifications for the entire NCTS (encompassing all Phases and sub-Phases), foreseeing a number of electronic and other (paper) Information Exchanges.

Document [A2] contains the functional specifications for ICS, foreseeing a number of electronic and other (paper) Information Exchanges.

Document [R7] contains the functional specifications for ECS, foreseeing a number of electronic and other (paper) Information Exchanges.

The DDNA consists of four volumes. One volume exists for each system (Transit, Export and Import) defining the design requirements of the specific system. One volume, defines common operations and methods for all systems namely the Design Document for Common Operations and Methods (DDCOM). For more information about DDNIA's purpose and structure, please refer to sections I.1.3 and I.1.6, respectively.

Information Exchanges are foreseen in the Common Domain (between National Administrations), in the National Domain (local to a National Administration), and in the External Domain (between National Administration and Traders). Common Domain exchanges will always take place via the CCN/CSI communication platform or the Inter(Extra)net. The different formatting and transport mechanisms will therefore be defined in detail in the DDNA. Moreover, additional design constraints and additional details on error and exception handling will be stated.

Within the Customs systems, the Central Project Team will initially produce a number of Centrally Developed Customs Application (CDCA) tools (e.g. STTA, TTA, CS/RD, and CS/MIS) in order to assist the NAs to implement, verify and operate their National Customs Application (NCA). All these CDCA tools must conform to this document, although their specification is not part of this document. In order to construct a NCA, the NA should therefore use this document, in order to decide which functionality remains to be implemented.

I.1.2 DDNA Structure

The DDNA consists of the following four volumes:

- Design Document for National Transit Application volume (DDNTA);
- Design Document for National Export Application volume (DDNXA);
- Design Document for National Import Application volume (DDNIA);
- Design Document for Common Operations and Methods volume (DDCOM).

I.1.3 Purpose of the DDNIA volume

This volume, which is the **Design Document for National Import Applications** is applicable to every NICA and must be considered as a mandatory document for all implementation and verification activities.

The purpose of this volume is twofold:

- To state unambiguously what needs to be developed. This will be achieved by specifying the sequences of Information Exchanges to be supported, as a number of message exchange protocols and the detailed structure and building rules of these Information Exchanges;
- To define how the Information Exchanges need to be performed and transported between the NICAs. The XML format, as the transport mechanism, is described in the DDCOM volume.

I.1.4 Scope of DDNIA volume

This volume is restricted to the electronic Information Exchanges within ICS and is aligned with [A2].

The [A4] defines the EBPs and IEs to be implemented and these are also specified in Appendix A of this volume. It also contains the specifications for ICS Phase 1, foreseeing a number of electronic exchanges.

It should be noted that [A4] identifies a certain number of mandatory Information Exchanges, while it provides only recommendations (or strong recommendations) for a number of other Information Exchanges. For the first category of (mandatory) Information Exchanges, DDNIA should therefore be considered as an applicable document, while for the latter category of (Recommended, Strongly Recommended or Optional) Information Exchanges, DDNIA should only be considered as a guideline with recommendations. The applicability of DDNIA is discussed further in this document (see Scope of development).

I.1.5 Intended audience

The intended audience for this document includes:

- Any person responsible for the functional specifications of ICS;
- Any person responsible for the development of software in the context of ICS;
- Any person responsible for the definition of tests for ICS;
- Any person within the affected service suppliers in the CCN/CSI projects responsible for the delivery of the required services to ICS;

- Any other authorised body affected by ICS, including Electronic Customs Coordination Group (ECCG), OLAF, and Traders Associations.

Readers are assumed to have a good understanding of the IT concepts and terminology used in this document. Also, it is assumed that readers are familiar with [A4] and [A2].

I.1.6 Structure of DDNIA volume

The DDNIA volume is structured in sections (further subdivided in chapters) and a number of appendices.

This document comprises the sections, chapters and lists of appendices summarised below:

SECTION I GENERAL INTRODUCTION includes the following chapters:

- Chapter 1 describes the **purpose** and the **scope** of DDNIA, the **intended audience**, the **internal structure** of the document, plus some document **service information**;
- Chapter 2 contains **definitions** used in this document (terminology, acronyms and abbreviations);
- Chapter 3 describes the **relationship of this document with other Customs baseline documents**. It defines dependencies with these documents and states the applicability of these documents. It also explains how this document, together with the other Customs documentation, should be used during the development and verification of any Customs application;
- Chapter 4 describes the **symbolism and the conventions** used in the various models included in this document. It also discusses the technical naming conventions used for the data dictionary that has been included in this document.

SECTION II SCOPE OF DEVELOPMENT discusses the items that need to be developed in ICS Phase 1 applications. Appendix A for ICS Phase 1 accompanies this section.

The following sections contain a detailed definition of the **message protocols** to be supported for the different Business Processes. These message protocols are described by a collection of **Sequence Diagrams**, supported by **State Transition Diagrams**. Each section deals with one of the following Business Process areas:

SECTION III ICS describes the Core Business for ICS Phase 1. In particular, it specifies the main Import Control scenarios.

SECTION IV CENTRAL SERVICES deals with the centralised collection and distribution of data that is of interest to the various MS for ICS Phase 1 and also covers availability reporting and statistics. It is subdivided as follows:

- Chapter 1 defines the Messages involved in Central Services;
- Chapter 2 defines how common RD and COL are exchanged;
- Chapter 3 defines how statistics and availability data are exchanged;
- Chapter 4 defines the message protocols to be used for exchanges with the CS/RD application via the Inter(Extra)net (for COL and common RD exchanges). In addition to the Information Exchanges, a number of Inter(Extra)net messages are introduced in this chapter;

- Chapter 5 defines the message protocols to be used for exchanges with the CS/RD application via CCN/CSI (for COL and common RD exchanges);
- Chapter 6 defines the message protocols to be used for exchanges with the CS/MIS application via the Inter(Extra)net (for exchanges of statistics data and availability data).

SECTION V SYSTEMS ADMINISTRATION deals with issues such as logging and tracing and any other administration function to be foreseen.

SECTION VI TECHNICAL MESSAGE STRUCTURE defines the detailed technical structure of the Information Exchanges of ICS Phase 1.

SECTION VII DESIGN PRINCIPLES explains how the system, defined in the previous sections, needs to be built. Basically, every Information Exchange needs to be formatted in XML format and needs to be transmitted across one of two communications platforms (CCN/CSI or Inter(Extra)net). This section states a number of principles that are common, regardless of the message format and transportation mechanism:

- Chapter 1 discusses the overall **approach**;
- Chapter 2 discusses the usage of **character sets** and **Data Item conventions**;
- Chapter 3 defines **exception handling** (how ICS should prevent and handle failures, defects, errors or mistakes);
- Chapter 4 defines **constraints** (any restrictions that are applicable to ICS development).

SECTION VIII EDIFACT message formatting
The Section VI of DDCOM [A3] is not applicable to ICS Phase 1.

SECTION IX XML message formatting defines how messages need to be formatted in an XML format.

SECTION X TRANSPORT OF MESSAGES VIA CCN/CSI defines how messages need to be transported across the CCN/CSI communication platform. This section is subdivided as follows:

- Chapter 1 defines **architectural assumptions** made for the transport of messages via CCN/CSI and details where references to CCN/CSI can be found;
- Chapter 2 presents the **mandatory CCN/CSI elements** that will ensure end-to-end communication between two CCN gateways;
- Chapter 3 presents the **recommended CCN/CSI elements** for sending and receiving messages;
- Chapter 4 defines the **configuration information** necessary for the CCN gateways;
- Chapter 5 defines the **CCN/CSI statistics services** provided by CCN/TC.

SECTION XI TRANSPORT OF MESSAGES VIA THE INTER(EXTRA)NET defines how messages need to be transported across the Inter(Extra)net communication platform.

- Chapter 1 **summarises all Information Exchanges and messages** for which Inter(Extra)net transport is to be foreseen;

- Chapter 2 defines **Inter(Extra)net conventions** for Import;
- Chapter 3 discusses the **format and usage** of the Information Exchanges and Inter(Extra)net messages for **CS/RD**;
- Chapter 4 repeats the same discussion for exchanges with **CS/MIS**;
- Chapter 5 discusses **security** aspects of Inter(Extra)net transport.

APPENDICES FOR ICS Phase 1

- Appendix A presents all messages included in the scope of DDNIA for ICS Phase 1 and lists those which are 'mandatory' vs. 'strongly recommended';
- Appendix C contains a definition of all Codelists used for ICS Phase 1;
- Appendix J presents how the different Data Groups and Data Items are correlated to the ICS Phase 1 messages;
- Appendix Q contains the definition of all messages for ICS Phase 1;
- Appendix R contains the XML mapping of all Data Items and Data Groups of the ICS Phase 1 messages;
- Appendix X contains the XML Schemas of the ICS Phase 1 messages;
- Appendix Y and Appendix Z contain a data dictionary for all elements (Data Items and Data Groups) used to construct these messages.

I.1.7 Document service information

The different parts that make up DDNA will each be submitted individually to configuration and version control. Individual components may be upgraded and delivered separately.

Maintenance will be provided for this document. The Taxation and Customs Union DG will define and schedule the different deliveries.

Comments can be submitted to this document, either via organised reviews or via SYNERGIA calls to the Central Service Desk at ITSM (https://itsmtaxud.europa.eu/smt/ess).

Known errors to this DDNA will be maintained in the format of the Known Error List (KEL) published on the project web site.

Whenever a part of this document is referred to, reference will be given either to an entire section or an entire chapter (within a section) or a paragraph (for any other subdivision).

This document will be submitted as a Word file with the following naming convention:

- DDNIA-Main document-vy.zz.doc, where y and zz are version and revision numbers.

All appendices of ICS will be delivered as:

- DDNIA-Appendix X-vy.zz.DDD, where
  - X stands for the Appendix name;
  - y and zz are version and revision numbers;
  - DDD is the document type (PDF for Adobe Acrobat, DOC for MS Word, MDB for MS Access or ZIP for ZIP format).

I.1.8 Change history

I.1.8.1 Changes in DDNIA version 8.00

Version 8.00 incorporates the following changes:

- DDNA Known Error List (KEL) 0.24 has been incorporated, implementing KEL entries 281, 284, 287, 289, 290, 291, 294, 298, 299, 300, 301 and 304.

I.1.8.2 Changes in DDNIA version 8.70

Version 8.70 incorporates the following changes **(this version was created in a side branch to address urgent business needs)**:

- DDNA Known Error List (KEL) 0.24a has been incorporated, implementing KEL entry 321.

I.1.8.3 Changes in DDNIA version 9.00

Version 9.00 incorporates the following changes **(WARNING: This version does NOT include the changes for KEL v0.24a)**:

- DDNA Known Error List (KEL) 0.25 has been incorporated, implementing KEL entries 309, 310, 311, 314 and 316.

I.1.8.4 Changes in DDNIA version 9.50

Version 9.50 incorporates the following changes **(This version also includes the changes introduced within KEL v0.24a)**:

- DDNA Known Error List (KEL) 0.25a has been incorporated, implementing KEL entry 323.

I.1.8.5 Changes in DDNIA version 10.00

Version 10.00 incorporates the following changes:

- DDNA Known Error List (KEL) 0.26 has been incorporated, implementing KEL entries 328, 331, 334, 335, 336, 337 and 344.

I.1.8.6 Changes in DDNIA version 11.00

Version 11.00 incorporates the following changes:

- DDNA Known Error List (KEL) 0.27 has been incorporated, implementing KEL entries 346 and 351.
- Corrections introduced after the review of version 10.10.

I.1.8.7 Changes in DDNIA version 12.20

Version 12.20 incorporates the following changes:

- DDNA RFC-List.28 has been incorporated, implementing RFC entries 356, 364 with impact on the main document, and RFC entries 358, 361, 363, 365, 366, 367, 368, 369, 370 with impact on the annexes.

I.1.8.8 Changes in DDNIA version 12.40

Version 12.40 incorporates the following changes:

- Implementing two emergency RFCs (RFC entries 383 and 384).

I.1.8.9 Changes in DDNIA version 12.50

Version 12.50 incorporates the following changes:

- Implementing the comments of NA-DE under the call IM130031.

I.2 Definitions

I.2.1 Definitions

Definitions of many of the terms used in this document may be found in the "Glossary of Terms" ([R1]). Definitions of the business terms relating to Import may also be found in [R5].

I.2.2 Terminology

The corresponding chapter from DDCOM [A3] is applicable to ICS Phase 1.

I.2.3 Acronyms and Abbreviations

The following acronyms are used in this document:

Acronyms	Description
AEO	Authorised Economic Operator
AIS	Automated Import System
ASCII	American Standard Code For Information Interchange
CCN/CSI	Common Communications Network / Common Systems Interface
CDCA	Centrally Developed Customs Application
COL	Customs Office List
CS/MIS	Central Services/Management Information System
DDCOM	Design Document for Common Operations and Methods
DDNA	Design Documentation for National Applications
DDNIA	Design Documentation for National Import Applications
DDNTA	Design Documentation for National Transit Applications
DDNXA	Design Documentation for National Export Applications
EBP	Elementary Business Process
ECS	Export Control System
EDI	Electronic Data Interchange

Acronyms	Description
EDIFACT	EDI for Administration, Commerce and Transport
ENS	Entry Summary Declaration
EORI	Economic Operator registration and Identification
FSS	Functional System Specification
FTSS	Functional Transit System Specification
ICS	Import Control System
IE	Information Exchange
IT	Information Technology
KEL	Known Error List
MS	Member State
NA	National Administration
NCA	National Customs Application
NCTS	New Computerised Transit System
NICA	National Import Control Application
OoFEnt	Office of first Entry
OoLdg	Office of Lodgement
OoSEnt	Office of subsequent Entry
RD	Reference Data
STTA	Standard Transit Test Application
TTA	Testing Transit Application
XML	eXtensible Mark-up Language

Table 1: Acronyms and Abbreviations

I.3 Applicable and Reference documents

I.3.1 Applicable documents

The following documents are applicable to this document:

Ref	Reference	Title	Version
A1	TSS-FSF-REL4	FTSS 4.00 Addendum 2008	Corrigendum *2/2013*[1]
A2	FSS – AIS	FTSS – AIS Addendum: ICS	Corrigendum *2/2013*[1]
A3	DDCOM	Design Document for Common Operations and Methods	14.10
A4	ICS P1-SD	The Business Scope of ICS Phase 1	12.10
A5	CD3-FQP	Framework Quality Plan	1.00

[1] The RFCs agreed in RFC-List.28 will be applied on the version corrigendum 2/2013 of [A1] and [A2], and will be published in Corrigendum 1/2015.

Ref	Reference	Title	Version
A6	TAXUD/2013/CC/124	Framework Contract	Dated 11/11/2013
A7	SC03	Specific Contract 03 under the Framework Contract TAXUD/2014/DE/121	Dated 20/06/2014

Table 2: Applicable Documents

Note that all documents listed above are applicable to this document (and are input to this document). Any change in any of the documents above is likely to have direct and immediate consequences for this document:

- The first document [A1] defines the overall system of NCTS;
- Document [A2] presents various business process threads of the Import Core business;
- Document [A3] is the Design Document for Common Operations and Methods;
- Document [A4] is the Scope Document for ICS Phase 1.

The Central Project Team will implement configuration management on all documents and CDCA software versions in order to assure coherence.

I.3.2 Reference documents

The following documents are also of interest to the NICA designer:

Ref	Reference	Title	Version
R1	TMP-GDL-GLSRY	Glossary of Terms	3.11
R2	eCu-TAS	eCustoms IT Architecture	1.00
R3	DDNXA	Design Document for National Export Applications	10.30
R4	DDNTA	Design Document for National Transit Applications	19.40
R5	TAXUD /734/2003	Import Control System (ICS) User Requirements	Final
R6	DDCOM-SD	Scope Document Common Volume	14.10
R7	FSS – AES	FSS – AES Addendum: ECS	Corrigendum *2/2013*[2]

Table 3: Reference Documents

[2] The RFCs agreed in RFC-List.28 will be applied on the version corrigendum 2/2013 of [R7], and will be published in Corrigendum 1/2015.

The first document, [R1], contains the glossary applicable to NCTS, ECS and/or ICS (terminology, acronyms and abbreviations used in NCTS).

The second document provides an overview of the eCustoms IT Architecture [R2].

The [R3] and [R4] documents are the domain specific DDNA volumes for Export and Transit domains.

The [R5] defines the User Requirements for Import Control System (ICS).

The [R6] is a document describing the scope of the Common Domain volume.

The [R7] is the Functional System specification for the Automated Export System.

I.3.3 DDNIA usage policy

This document should be considered as the main applicable document for all technical aspects regarding ICS:

- Any NICA will be developed as the sum of two components: DDNIA plus National Specifications;
- The [A4] should be considered as the applicable document for all operation, legal and procedural issues for ICS Phase 1;
- All CDCA tools will be based on this document.

I.4 Symbolism and Conventions Used

The section I.4 from DDCOM [A3] is applicable to ICS Phase 1.

Section II Scope of development

II.1 Information Exchange overview

The scope of ICS Phase 1 is depicted in a set of appendices:

- Appendix A1 presents an overall view of the Information Exchanges to be supported;
- Appendix A2 defines the applicability of this DDNIA. It defines the Information Exchanges for which this DDNIA should be considered as an applicable document and the Information Exchanges for which this document should be considered as a guideline only;
- Appendix A3 performs a breakdown of the development related to IE messages.

II.2 Information Exchange Map

The Information Exchanges to be supported in ICS Phase 1 and the different parties involved for this functional stage are summarised in the diagram below (Figure 1: Overview of Information Exchanges). More detailed specifications of those message exchanges are presented in Section III.

Please note that this diagram is not a sequence diagram; it only summarises the different possible sources and destinations for the various information exchanges. This diagram highlights between which domain the different exchanges are applicable.

Section III ICS Phase 1

III.1 Introduction

III.1.1 Overview

This section contains the detailed specifications for the message exchange protocols relevant to the Import Control System (ICS) Phase 1. The Information Exchanges supported and the different parties involved are summarised in Figure 1 below.

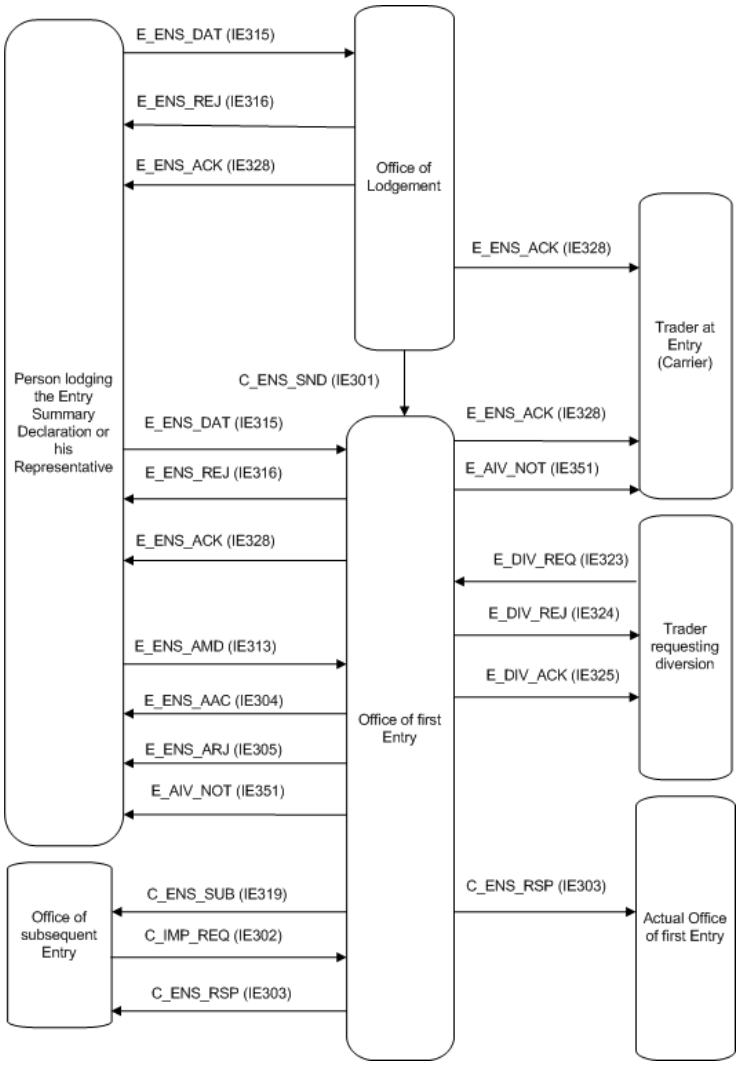

Figure 1: Overview of Information Exchanges for ICS Phase 1

In particular, Figure 1 illustrates the different exchanges foreseen for the Import Control System. A prefix of "C_" denotes exchanges within the Common Domain between the roles Office of Lodgement, Office of first Entry and Office of subsequent Entry. A prefix of "E_" denotes exchanges in the External Domain (between National Administrations and Traders).

All Information Exchanges related to exceptions are discussed in Section VII Design principles.

III.1.2 Import Actors

The following roles (Table 4) can be taken by organisations in ICS Phase 1.

Role Type	Role Name	Organisation
OoLdg	Office of Lodgement	Customs Office
OoFEnt	Office of first Entry	Customs Office
OoSEnt	Office of subsequent Entry	Customs Office
TraEnt	Trader at Entry (Carrier)	Trader
TraDiv	Trader requesting diversion	Trader
TraLdg	Person Lodging the Entry Summary Declaration	Trader
TraRep	Representative of the Person Lodging the Entry Summary Declaration	Trader

Table 4: Role types and organisations in Import Control

III.2 Scenarios and Sequence Diagrams

The different message exchange protocols are defined as a number of message exchange scenarios, each documented by one Sequence Diagram.

The different possible scenarios are grouped into the following categories:

- Core Flow;
- ENS at Office of Lodgement;
- Advanced Intervention Notifications;
- No Risk identified at the Office of first Entry;
- Request for Diversion;
- Amendment Requests;
- Rejections.

The scenario for the core flow should form the basis of every implementation. The other scenarios require the implementation of the core flow scenario and should be considered as extensions to it. In some cases different outcomes are possible and there are a number of cases where iterations and/or repetitions are possible. In such cases, only one Sequence Diagram with one possible outcome has been included and the other possibilities have been identified only textually. It should be noted that in the case that some messages that are included in the Sequence Diagrams are out of the scope of ICS Phase 1 are represented in a grey colour and are used only for illustration purposes.

III.3 Sequence Diagrams versus State Transition Diagrams

The different Sequence Diagrams should be read in conjunction with the State Transition Diagrams that have been included in chapter III.5. Every application should implement both Sequence Diagrams and State Transition Diagrams.

III.4 Sequence Diagrams

This section contains the Sequence Diagrams for ICS Phase 1 processes. In these diagrams, when more than one message starts from (or ends in) the same focus of control, it means that these messages are sent (or received) shortly after each other. In this case, the arrows will appear close to each other and the order of sending (or receiving) these messages is not important.

III.4.1 Core Flow

Figure 2 displays the core flow process in which the Entry Summary Declaration is submitted to the Office of first Entry, security and safety risk analysis is performed and risk is identified.

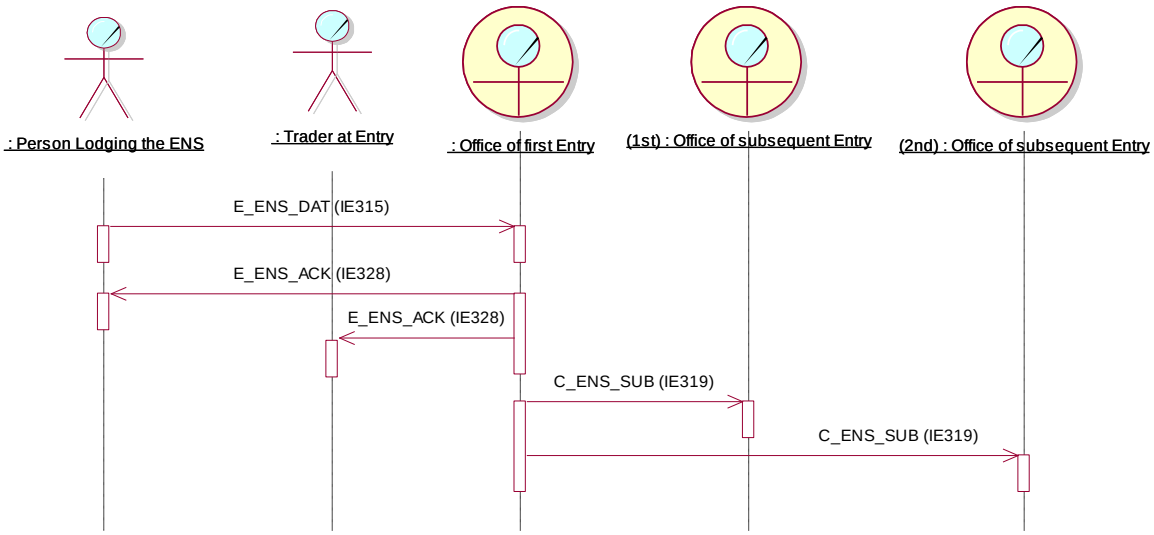

Figure 2: ICS Phase 1 Core Flow

The process starts with the Person Lodging the ENS, submitting the ENS to the Office of first Entry via an IE315 message. After successful validation of the ENS, the declaration is registered and a Movement Reference Number (MRN) is automatically generated. The allocated MRN is communicated back to the Person Lodging the ENS via an IE328 message and to the declared Trader at Entry (Carrier) if he is different from the Person Lodging the ENS and if he is connected to ICS in that Member State. Common security and safety risk analysis is performed for all the goods declared in the ENS. For the core flow process it is assumed that, risk was identified and also subsequent Offices are involved. In this case, the Office of first Entry forwards the appropriate ENS data including the relevant security and safety risk analysis results to all Offices of subsequent Entry declared in the ENS via an IE319 message. However, if one single ENS contains goods for more than one Office of subsequent Entry of the same MS then only one IE319 shall be sent. The forwarded data is received by the Office of subsequent Entry and registered in that Member State.

For the goods to be unloaded at the Office of first Entry, national risk analysis is performed on the basis of national regulations and requirements. The national risk analysis results are not communicated to the Offices of subsequent Entry.

The Office of subsequent Entry after common security and safety risk is identified at the Office of first Entry receives extract of the appropriate ENS data.

III.4.2 ENS submitted at the Office of Lodgement

III.4.2.1 ENS submitted at the Office of Lodgement with MRN communicated to Trader at Entry

Figure 3 indicates the case where the ENS is submitted to the Office of Lodgement and the MRN is communicated to the Trader at Entry (Carrier) by the Office of Lodgement.

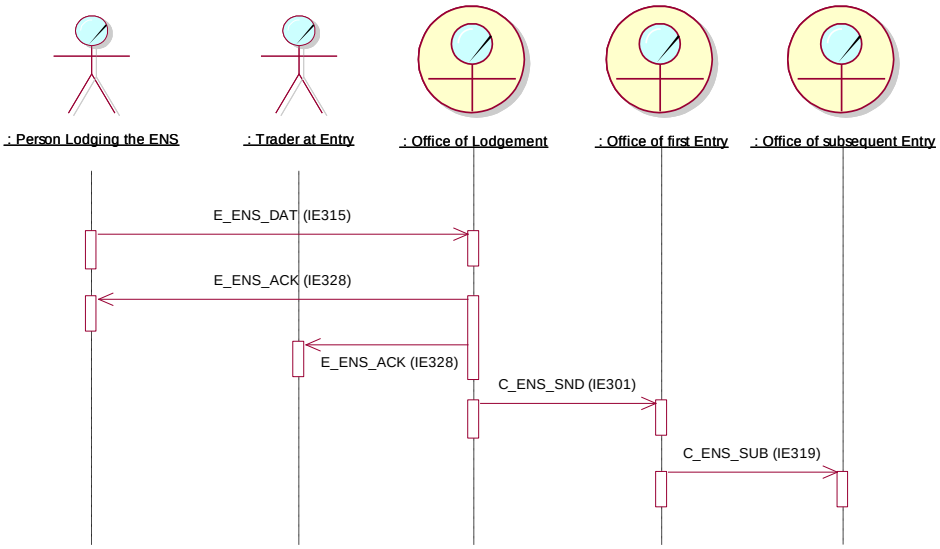

Figure 3: ENS submitted to Office of Lodgement with MRN communicated to Trader at Entry from the Office of Lodgement

The process starts with the Person Lodging the ENS submitting a valid ENS via an IE315 message to the Office of Lodgement. After successful validation of the ENS the Office of Lodgement registers the declaration and the generated MRN is communicated to the Person Lodging the ENS and to the Trader at Entry (Carrier) via an IE328 message if he is different from the Person Lodging the ENS and he is connected to ICS of that Member State.

The Office of Lodgement forwards the ENS data and in the case that the common security and safety risk analysis was performed, the risk analysis results to the declared Office of first Entry via an IE301 message. The Office of Lodgement also informs the declared Office of first Entry that the MRN has been communicated to the Trader at Entry (Carrier) so that the Office of first Entry does not communicate the MRN to the Trader at Entry (Carrier) again.

The process followed after the sending of the IE301 to the Office of first Entry is the same as the one described in the core flow scenario. It should be noted that in the case that risk analysis results have been communicated to the Office of first Entry, it is up to the Office of first Entry to decide whether the communicated risk analysis results are to be taken into account when conducting its own common security and safety risk analysis.

III.4.2.2 ENS submitted at the Office of Lodgement with MRN communicated to Trader at Entry from the Office of first Entry

Figure 4 indicates the case where the ENS is submitted to the Office of Lodgement but the MRN is sent to the Trader at Entry (Carrier) from the Office of first Entry.

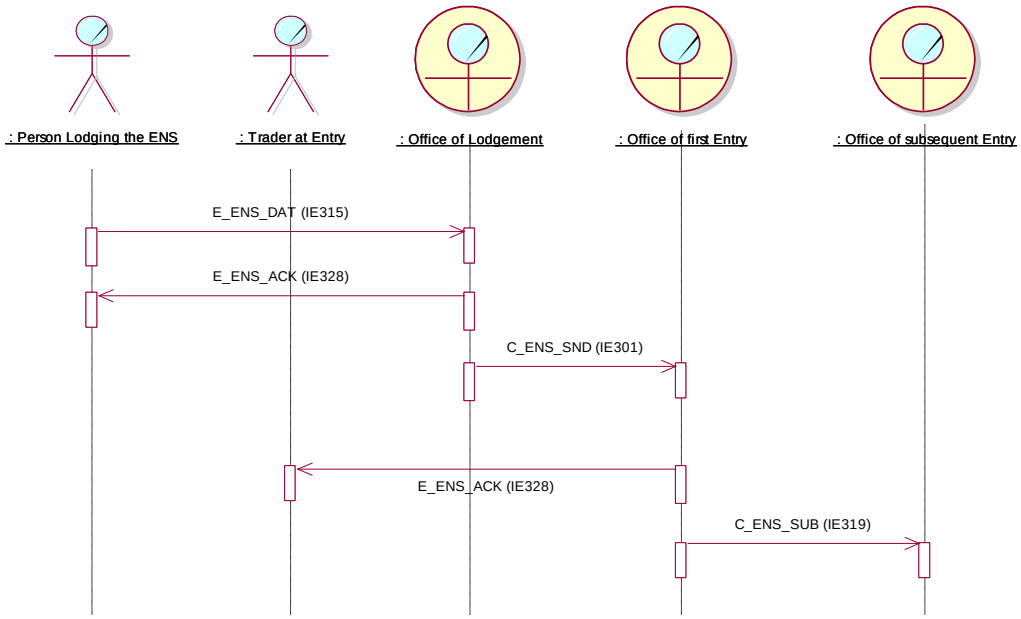

Figure 4: ENS submitted to Office of Lodgement with MRN communicated to Trader at Entry from the Office of first Entry

The process indicated in Figure 4 is similar to the one mentioned in the previous section. However, the main difference is that the Office of Lodgement cannot communicate the MRN to the Trader at Entry (Carrier) since he is not connected there. In this case the MRN is communicated from the declared Office of first Entry via an IE328 message after the reception of the forwarded data (IE301 message) from the Office of Lodgement.

III.4.3 Advanced Intervention Notification

III.4.3.1 Advanced Intervention Notification after the ENS is submitted to the Office of first Entry

Figure 5 indicates the case where the Advanced Intervention Notification is notified to the business actors concerned after the ENS has been submitted to the Office of first Entry.

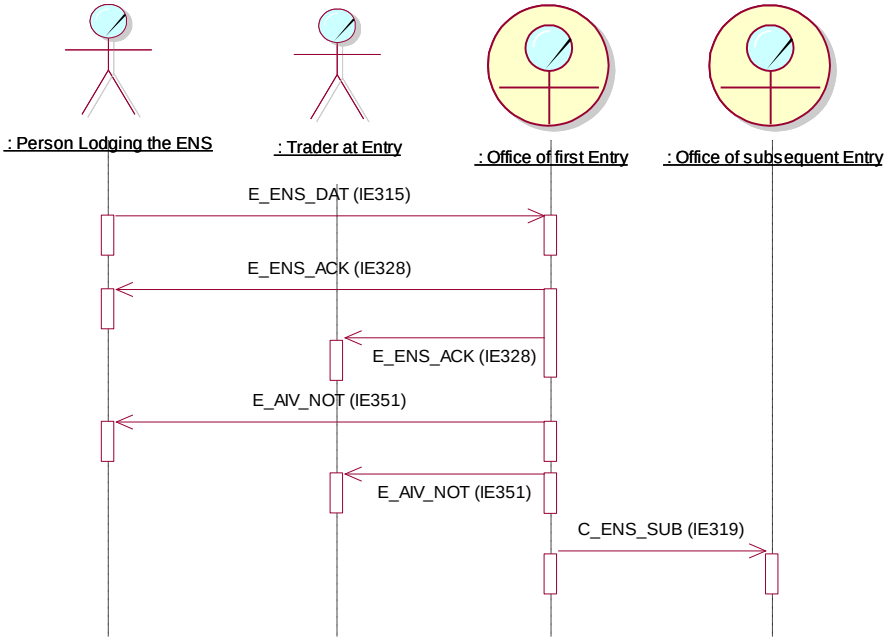

Figure 5: Advanced Intervention Notification at the Office of first Entry after submission of the ENS at the Office of first Entry

Up to the point where the Office of first Entry has performed the common security and safety risk analysis this process is the same as in the core flow scenario. If the security and safety risk analysis revealed that a 'no load' decision needs to be taken (risk analysis result code = 'A'), the Office of first Entry notifies the business actors concerned via an Advanced Intervention Notification (IE351 message). The business actors that are to be notified by the Office of first Entry are the Person Lodging the ENS that has sent the ENS or an amendment request and the Trader at Entry (Carrier).

In case other customs interventions/controls are to be performed, the Office of first Entry may decide to inform the Person Lodging the ENS that has sent the Entry Summary declaration or an amendment request in advance with the IE351 message if he is an AEO of type 'AEOS' or 'AEOF'.

The Office of first Entry forwards the risk analysis results along with the appropriate ENS data to the Office of subsequent Entry via an IE319 notifying the Office of subsequent Entry about the Advanced Intervention Notification.

III.4.3.2 Advanced Intervention Notification after the ENS is submitted to the Office of Lodgement

Figure 6 indicates the case where the Advanced Intervention Notification is notified to the business actors concerned after the ENS has been submitted to the Office of Lodgement.

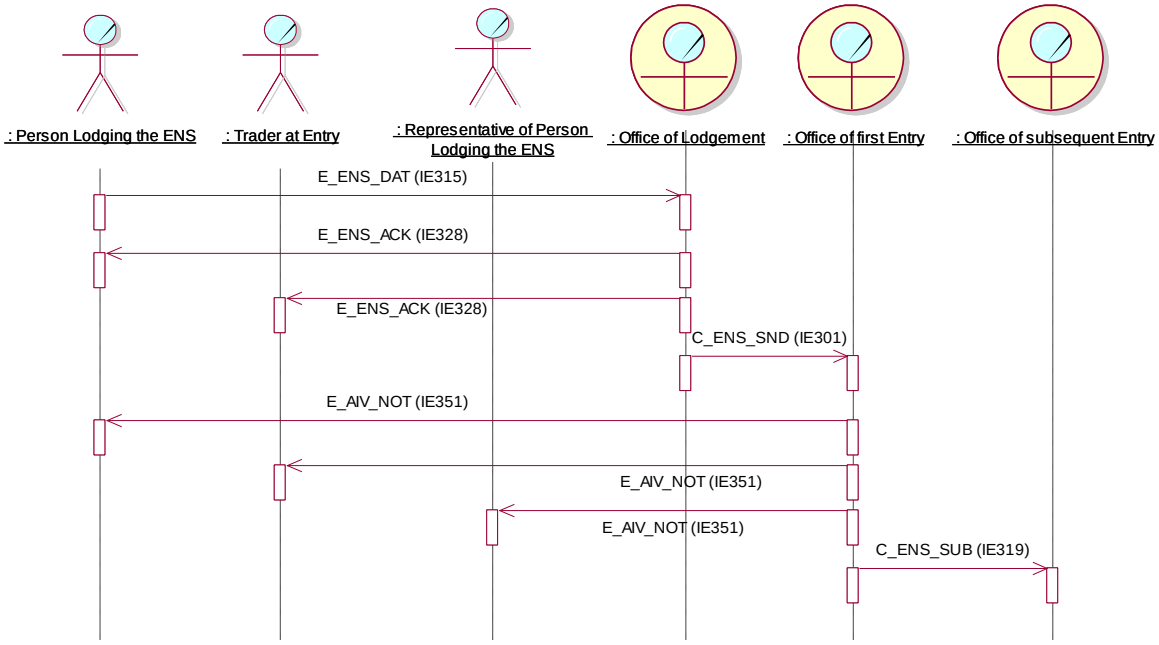

Figure 6: Advanced Intervention Notification at the Office of first Entry after submission of the ENS at the Office of Lodgement

Up to the point where the Office of first Entry has performed the common security and safety risk analysis this process is similar to the process for the ENS being submitted to the Office of Lodgement in Section III.4.2.1. If the security and safety risk analysis revealed that a 'no load' decision needs to be taken (risk analysis result code = 'A'), the Office of first Entry notifies the business actors concerned via an Advanced Intervention Notification (IE351 message). The business actors that are to be notified are the same as in the case that the ENS is lodged at the Office of first Entry. However, in this case the Representative of the Person Lodging the ENS is also notified via an IE351 if he is declared in the ENS or if he is the sender of an amendment request. It should also be noted that in order for the Person Lodging the ENS to be notified about the Advanced Intervention Notification, this Person has to be connected to ICS in the Member State where the Office of first Entry is located.

In case other customs interventions/controls are to be performed, the Office of first Entry may decide to inform the Person Lodging the ENS in advance with the IE351 message if he is an AEO of type 'AEOS' or 'AEOF'.

The Office of first Entry forwards the risk analysis results along with the appropriate ENS data to the Office of subsequent Entry via an IE319 notifying the Office of subsequent Entry about the Advanced Intervention Notification.

Common security and safety risk analysis results communicated by the Office of Lodgement (if available) shall either be accepted or taken into consideration when carrying out risk analysis at the Office of first Entry. However, the competent services of the Customs should

be given the possibility to amend/overrule the security and safety risk analysis results provided by the Office of Lodgement, if required.

III.4.4 No Risk identified at the Office of first Entry

III.4.4.1 No Risk identified at the Office of first Entry and subsequent Offices involved

Figure 7 indicates the case where the Office of first Entry has received an ENS including declared Offices of subsequent Entry and for which it has not identified any risks when performing the common security and safety risks analysis. In this case no IE319 is sent to the Offices of subsequent Entry. The IE344 message is displayed in the diagram only for illustration purposes since it is out of scope of ICS phase 1

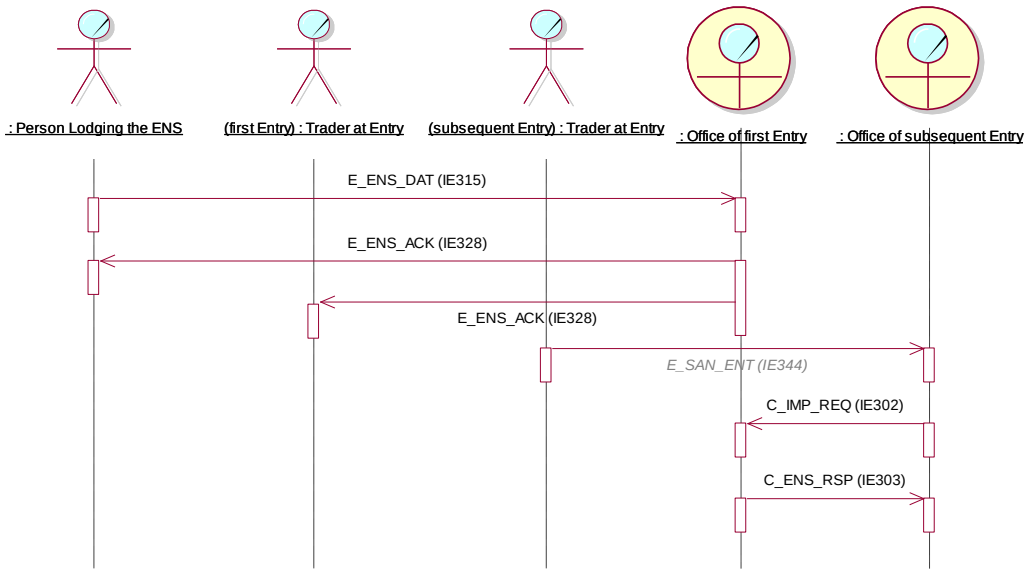

Figure 7: Subsequent Offices involved and No Risk identified at the Office of first Entry

Up to the point where the Office of first Entry has performed the common security and safety risk analysis this process is the same as in the core flow scenario. If the risk analysis reveals that there is no risk involved in the specific movement, no IE319 is sent to the Office of subsequent Entry. Since no appropriate data is available at the Office of subsequent Entry when the Trader at Entry (Carrier) submits the arrival notification (when he presents the goods), the Office of subsequent Entry sends a request to the Office of first Entry for the common security and safety risk analysis results and the appropriate ENS data via an IE302 message. The Office of first Entry retrieves the requested appropriate ENS data and the relevant common security and safety risk analysis results (which in this case do not exist) and sends the response to the Office of subsequent Entry via an IE303 message. The forwarded risk analysis result code is ‘0'. For the case that the risk analysis result code is ‘0’ the Office of subsequent Entry receives no ENS data since no risk is identified at the Office of first Entry.

III.4.5 Request for Diversion

III.4.5.1 Accepted diversion after request at the Office of first Entry declared

Figure 8 indicates the case where the Trader requesting diversion submits a diversion request to the Office of first Entry declared. National diversions are a national matter. In respect of ICS Phase 1 the diversions are limited to international diversion from Office of first Entry declared to the actual Office of first Entry. The Office of first Entry declared is notified about the diversion by the Trader requesting Diversion via an IE323 message. Diversion at the Office of subsequent Entry is a process similar to the one described in Section III.4.4.1.

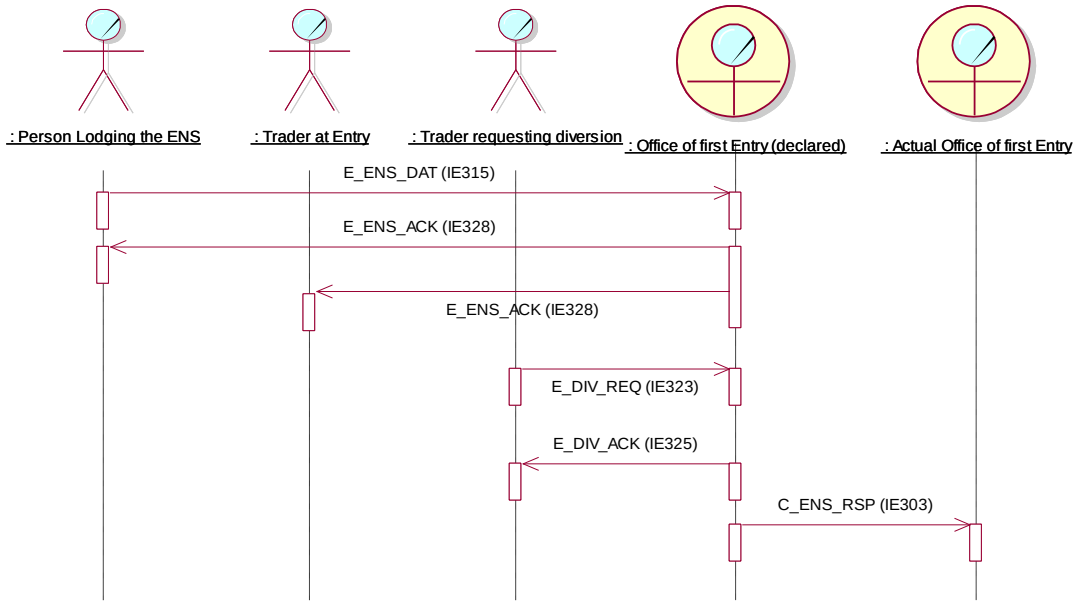

Figure 8: Accepted diversion after request at the Office of first Entry declared

Up to the point where the Trader requesting diversion sends the diversion request to the Office of first Entry declared the process is the same as in the core flow scenario. In this case the Trader requesting diversion sends a valid diversion request to the Office of first Entry declared via an IE323. This request must contain the Actual Office of first Entry and the MRN(s) of the ENS or data elements that provide a unique identification of the diverted active means of transport in order for the Office of first Entry declared to be able to identify the appropriate ENS. The Office of first Entry declared sends the required data to the Actual Office of first Entry via an IE303 message. If common security and safety risk analysis results are available (risk analysis result code is ‘A’, ‘B’ or ‘C’ for at least one ENS or at least one goods item) or the Office of first Entry was not in a position to carry out the risk analysis (risk analysis result code is ‘Z’ for at least one ENS) then the IE303 sent contains the related extracted ENS data, the indication that risk was identified (Risk = ‘1’) and the corresponding common security and safety risk analysis results. If no common security and safety risk analysis results are available (risk analysis result code is ‘0’ or ‘N’) then the IE303 sent indicates that no common security and safety risk analysis results are available for the diverted ENS (Risk = ‘0’). The Office of first Entry declared also notifies the Trader requesting diversion that the diversion request has been accepted via an IE325 message.

III.4.6 Amendment Request

III.4.6.1 Valid amendment request at the Office of first Entry

Figure 9 indicates the case where a valid amendment request is submitted at the Office of first Entry.

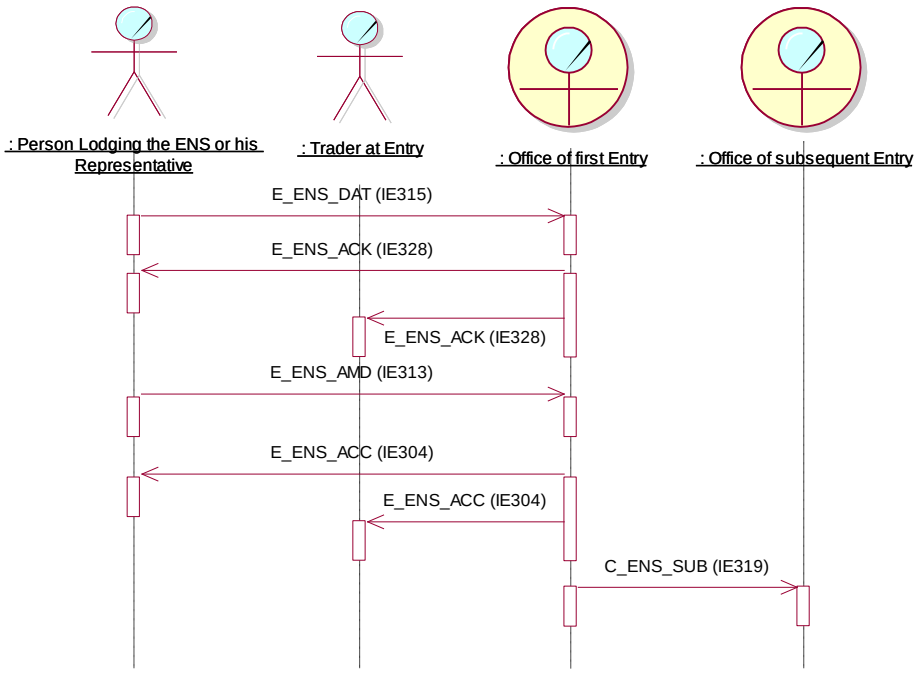

Figure 9: Valid amendment request at the Office of first Entry by the Person Lodging the ENS or his Representative

The Person Lodging the ENS or his Representative indicates to the Office of first Entry that he wishes to amend the submitted ENS via an IE313 message. Upon reception of the amendment request the Office of first Entry starts the validation process. The Office of first Entry checks if the amendment request is made on an already registered declaration and if the Person making the request is allowed to do so. Further checks take place upon the reception of the amendment request in order to confirm that the Office of first Entry can still accept it. The Office of first Entry cannot accept an amendment request if one of the following conditions is met:

- The Trader has been informed that the Office of first Entry intends to examine the goods;
- Customs Authorities have established that the particulars in question are incorrect;
- The Office of first Entry has accepted the corresponding presentation of the goods to Customs and has allowed the removal of goods;
- The Office of first Entry has accepted a diversion request (system constraint).

If the amendment is valid, the Office of first Entry communicates to the Person Lodging the ENS or his Representative and to the Trader at Entry (Carrier) (If he is declared in the ENS, he is different from the sender of the amendment request and he is connected to ICS of the

Member State that the Office of first Entry is located) that the amendment request was accepted via an IE304 message. When the amendment is accepted the common security and safety risk analysis is performed on the new ENS. If risk is identified on the new ENS then the IE319 is forwarded to the Office of subsequent Entry. The process to be followed after the IE319 is forwarded is the core flow scenario.

III.4.6.2 Valid amendment request at the Office of first Entry after the ENS data has been sent to Offices of subsequent Entry

Figure 10 indicates the case where an amendment request has been submitted after the Entry Summary declaration has been forwarded to the Office of subsequent Entry.

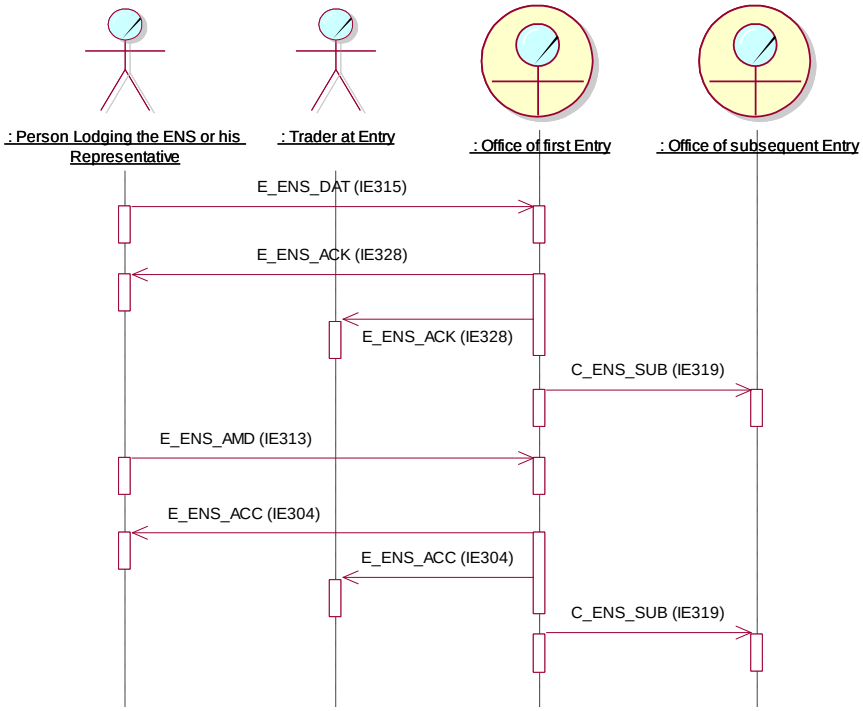

Figure 10: Valid amendment request at the Office of first Entry by the Person Lodging the ENS or his Representative after the ENS data has been sent to Offices of subsequent Entry

This case is similar to the case mentioned in the previous section. However, the difference is that the amendment request process via IE313 message and the acceptance of the amendment request via IE304 message take place after the forwarding of the appropriate ENS data and the common security and safety risk analysis results to the Office of subsequent Entry via IE319 message. If the amendment request is accepted and after the common security and safety risk analysis performed has identified risk, the Office of first Entry forwards the amended appropriate ENS data and the risk analysis results to the Office of subsequent Entry using the IE319 message.

III.4.7 Rejections

III.4.7.1 Invalid ENS at Office of first Entry

Figure 11 indicates the case where an invalid ENS is submitted to the Office of first Entry.

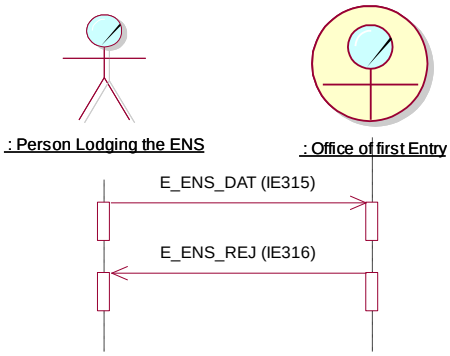

Figure 11: Invalid ENS submitted at the Office of first Entry

The Person Lodging the ENS submits the ENS to the Office of first Entry via an IE315 message. Upon reception of the ENS the Office of first Entry starts the validation process of the IE315 message. After the validation the Office of first Entry rejects the ENS as invalid and notifies the Person Lodging the ENS that the declaration is invalid by means of an IE316 message indicating the reason for the rejection of the ENS.

III.4.7.2 Invalid ENS at Office of Lodgement

Figure 12 indicates the case where an invalid ENS is submitted to the Office of Lodgement.

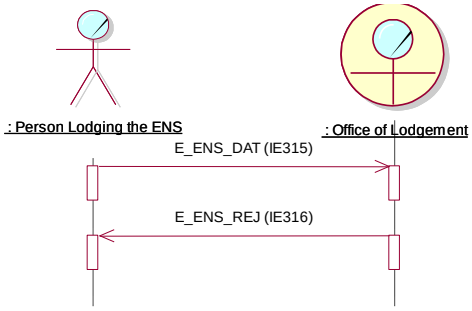

Figure 12: Invalid ENS submitted at the Office of Lodgement

The Person Lodging the ENS submits the ENS at the Office of Lodgement via an IE315 message. Upon reception of the ENS the Office of Lodgement starts the validation process of the IE315 message. After the validation the Office of Lodgement rejects the ENS as invalid and notifies the Person Lodging the ENS that the declaration is invalid by means of an IE316 message indicating the reason for the rejection of the ENS.

III.4.7.3 Invalid Amendment Request

Figure 13 indicates the case where an invalid amendment request is submitted to the Office of first Entry.

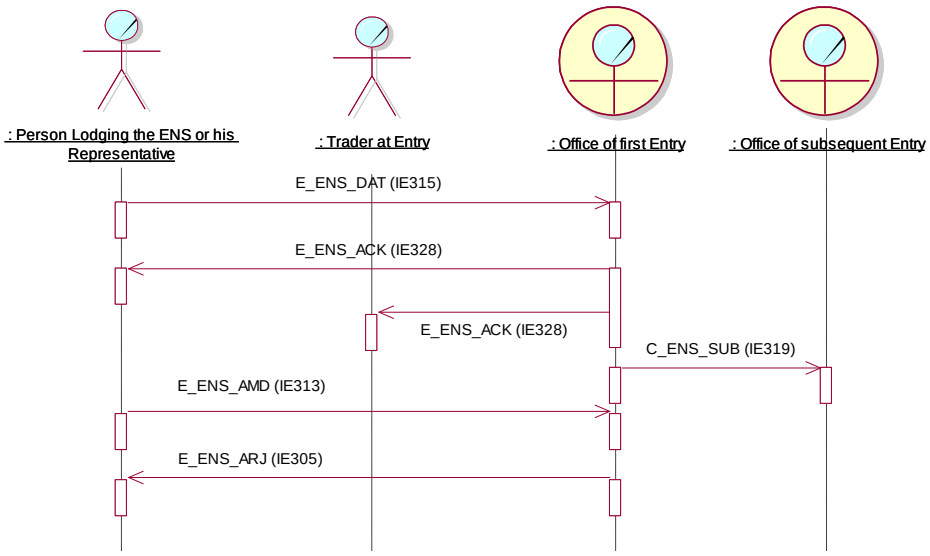

Figure 13: Invalid Amendment request

Up to the point that the amendment request is received at the Office of first Entry the process is the core flow. This means that after a valid ENS is submitted at the Office of first Entry, risk was identified and the IE319 was sent to the Office of subsequent Entry.

An amendment request is sent by the Person Lodging the ENS or his Representative to the Office of first Entry via an IE313. In this case, the amendment request is found to be invalid. If this is the case, the Office of first Entry notifies the Person Lodging the ENS or his Representative that the amendment request was invalid and that it is therefore rejected via an IE305 message. When the amendment request is rejected, the whole process can still continue since the original ENS is still valid.

III.4.7.4 Invalid Diversion Request at the Office of first Entry declared

Figure 14 indicates the case where an invalid diversion request is sent to the Office of first Entry declared.

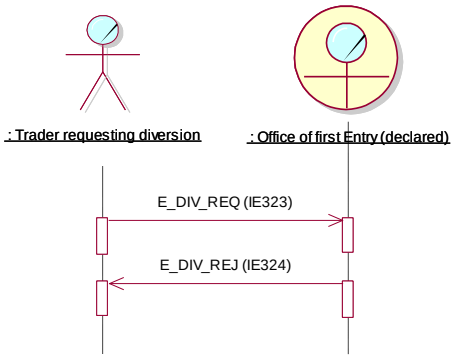

Figure 14: Invalid Diversion Request at the Office of first Entry declared

The Trader requesting diversion submits an invalid diversion request to the Office of first Entry declared via an IE323 message. The invalid diversion request is validated at the Office of first Entry declared and the rejection is communicated to the Trader requesting diversion via an IE324 message (e.g. MRN-structure invalid or ENS not available or in a wrong operation state).

III.5 State Transition Diagrams

This chapter presents the State Transition Diagrams for all Import operations (Entry operations). The purpose of this chapter is to define the different states that a National Import Control Application (NICA) needs to maintain. Any NICA should be capable of maintaining the roles of Office of Lodgement, Office of first Entry and Office of subsequent Entry and support the status models below for every movement (MRN).

The following interactions can therefore be defined:

- When acting as Office of Lodgement:
  - Interacting with Person lodging the Entry Summary Declaration;
  - Interacting with Office of first Entry;
  - Interacting with Trader at Entry.
- When acting as Office of first Entry:
  - Interacting with Person lodging the Entry Summary Declaration or their Representative;
  - Interacting with Office of Lodgement;
  - Interacting with Trader at Entry;
  - Interacting with Trader requesting diversion;
  - Interacting with Office of subsequent Entry;
  - Interacting with Actual Office of first Entry.
- When acting as Actual Office of first Entry:
  - Interacting with the Declared Office of first Entry.
- When acting as Office of subsequent Entry:
  - Interacting with Office of first Entry.

III.5.1 Office of Lodgement

The state transition diagram in Figure 15 below describes the possible states at the Office of Lodgement. This state transition diagram only shows what happens at the Office of Lodgement. It is assumed that after the state at the Office of Lodgement is "ENS forwarded to Office of first Entry" then the Office of first Entry starts playing its role.

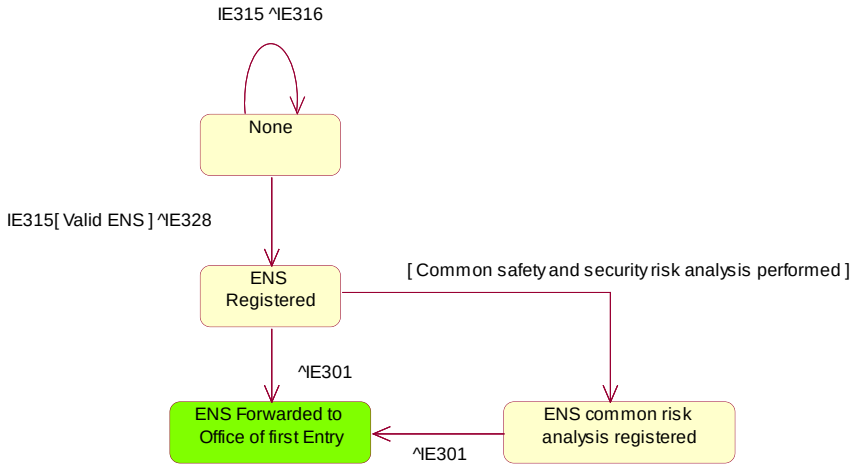

Figure 15: State Transition Diagram for Office of Lodgement

The ENS Data E_ENS_DAT (IE315) is submitted by the Person Lodging the ENS to the Office of Lodgement.

Any invalid ENS can have no impact on states in the Office of Lodgement and the only thing happening in the case of an invalid IE315 is that the Office of Lodgement notifies the Person Lodging the ENS that the ENS is rejected including the rejection reason via E_ENS_REJ (IE316).

In the case that a valid E_ENS_DAT (IE315) is received, a MRN is allocated and the Import Operation State of the ENS switches to "ENS Registered". The Person Lodging the ENS is notified of the acceptance of the ENS data by receiving the allocated MRN of the movement via E_ENS_ACK (IE328). In the cases that the Office of Lodgement can be used to lodge the ENS, it is assumed that the Office of Lodgement and the Office of first Entry are located in different Member States and that the Office of first Entry allows for the ENS to be lodged at an Office of Lodgement located at another Member State.

After the successful registration of the ENS, the Office of Lodgement may initiate the common security and safety risk analysis. The common security and safety risk analysis is optional for the Office of Lodgement and must be conducted by the Office of first Entry. In the case that the Office of Lodgement initiates the common security and safety risk analysis and the results are registered, the state of the ENS changes to "ENS common risk analysis registered".

In any case the ENS data is forwarded to the declared Office of first Entry via C_ENS_SND (IE301). The Import Operation State at the Office of Lodgement is set to "ENS forwarded to Office of first Entry".

III.5.1.1 MRN States at the Office of Lodgement

The possible status values for Office of Lodgement are summarised in the table below. This table also shows which status values are required (R) or optional (O). All states related to the Common Domain are required, while states related to National and External Domains are optional.

Name	Status	Final
None	R	No
ENS Registered	O	No
ENS Common risk analysis registered	O	No
ENS forwarded to Office of first Entry	R	Yes

Table 5: States of an MRN at an Office of Lodgement

III.5.2 Office of first Entry

The overall assumptions for the Office of first Entry are:

- It shall carry out common security and safety risk analysis;
- Where deep sea containerized cargo is concerned and where possible, it shall inform the Person Lodging the ENS and the Trader at Entry (carrier) if the goods shall not be loaded (by sending the "no load decision" IE351). In case a Representative acts in the name and on behalf of the Person Lodging the ENS, the Representative shall be informed instead of the Person Lodging the ENS;
- Where AEOs with certificates "AEOF" or "AEOS" are concerned and where possible, it may notify the Person Lodging the ENS or his Representative – prior to the arrival of the goods - of another customs intervention/control.

The state transition diagram in Figure 16 below indicates the possible states of the Office of first Entry.

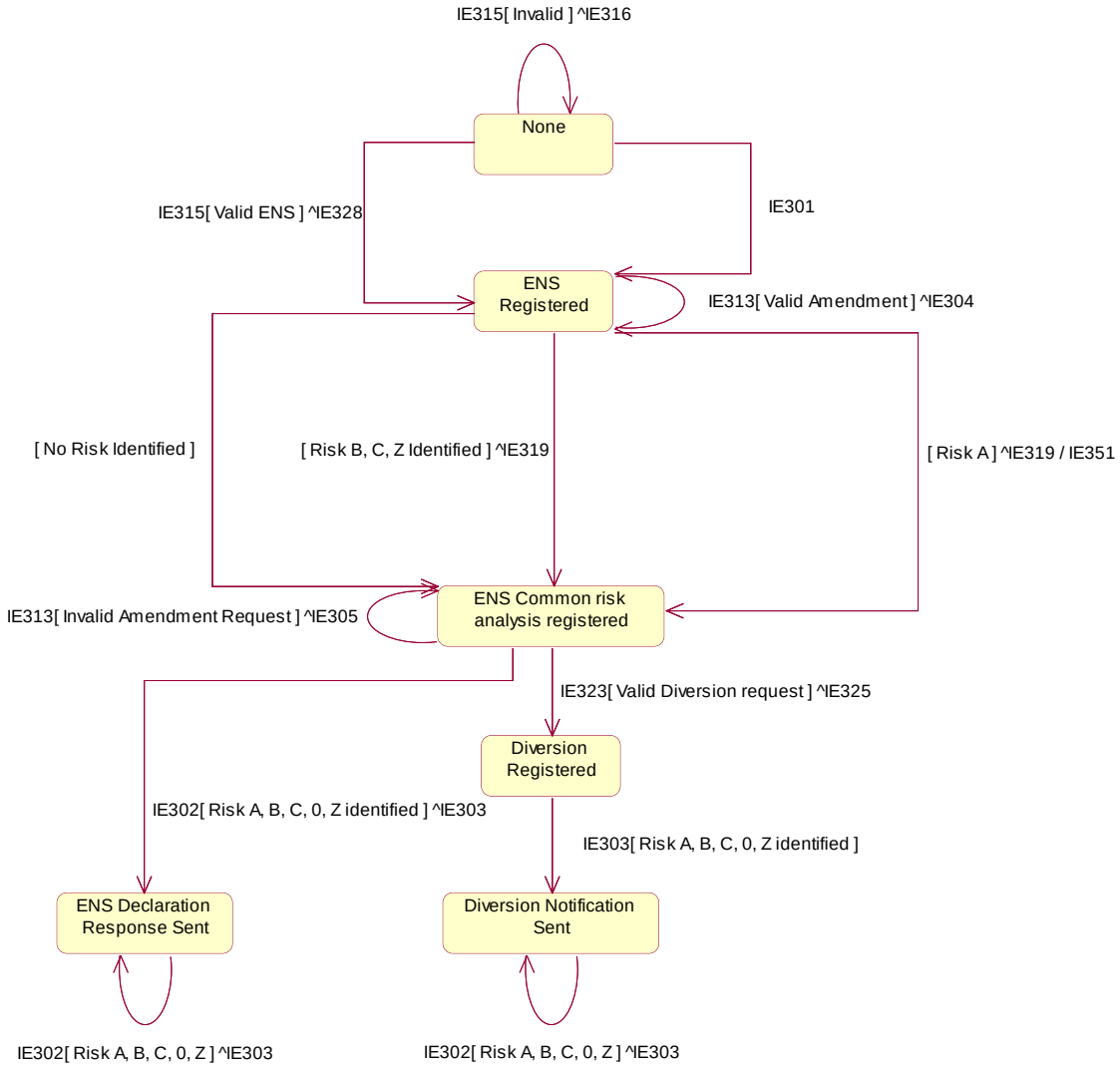

Figure 16: State Transition Diagram for Office of first Entry

The ENS is either lodged at the Office of first Entry by the Person Lodging the ENS via an E_ENS_DAT (IE315) or it has been forwarded by the Office of Lodgement via an E_ENS_SND (IE301). In the case that the E_ENS_DAT (IE315) is submitted to the Office of first Entry then the ENS is validated at the Office of first Entry and - if the validation is successful - the Person Lodging the ENS and the Trader at Entry (Carrier) are notified of the successful validation of the ENS via an E_ENS_ACK (IE328) including the allocated MRN. After the ENS is registered and the MRN is communicated to the appropriate actors the Import Operation State is set to "ENS Registered". In the case that the ENS has been submitted to the Office of Lodgement and the Office of first Entry receives the ENS and if available the common security and safety risk analysis results via an E_ENS_SND (IE301). The ENS is registered at the Office of first Entry and the Import Operation State is set to "ENS Registered".

After the ENS is registered, the Office of first Entry initiates the common security and safety risk analysis. If the ENS data was forwarded to the Office of first Entry from the Office of Lodgement including common security and safety risk analysis results, the Office of first Entry can take those results into account when conducting its own risk analysis. In any case

after the common security and safety risk analysis is performed the Import Operation State is set to "ENS common risk analysis registered". The risk analysis results are registered and further actions from the Office of first Entry are subject to its outcome. The registered risk analysis results can reveal the following risk result codes:

- Last digit of the risk analysis result code = 'A': The Office of first Entry shall forward the appropriate ENS data to the Office of subsequent Entry via C_ENS_SUB (IE319) including the risk analysis result code. Also it shall send an Advanced Intervention Notification E_AIV_NOT (IE351) to the appropriate Traders in order to prevent goods to be loaded at the port of loading. The code can be used only in cases where the regulation provides for a no load notification;
- Last digit of the risk analysis result code = 'B': Common risk for which an immediate action is required at the Office of first Entry is identified. The Office of first Entry shall forward the appropriate ENS data to the Office of subsequent Entry via C_ENS_SUB (IE319) including the risk analysis result code. It may also inform the Person Lodging the ENS in advance with the IE351 message if he is an AEO of type "AEOS" or "AEOF";
- Last digit of the risk analysis result code = 'C': Common risk is identified to be communicated (by the Office of first Entry) along with the appropriate ENS data to the Office(s) of subsequent Entry in other EU Member States via C_ENS_SUB (IE319);
- Last digit of the risk analysis result code = 'N' (national risk analysis result);
- Last digit of risk analysis result code = '0' (zero): No risk identified;
- Last digit of risk analysis result code = 'Z': The security and safety risk analysis was intended to be carried out, but it could not be carried out due to unavailability. The Office of first Entry shall forward the appropriate ENS data to the Office of subsequent Entry via C_ENS_SUB (IE319) including the risk analysis result code.

When the Import Operation State is "ENS common risk analysis registered" the following cases apply:

- Amendment request received;
- Declaration request received from the Office of subsequent Entry;
- Diversion request received from the Trader requesting diversion.

If an amendment request is received via an E_ENS_AMD (IE313), the Office of first Entry validates the amendment request. In the case that it is valid and the Office of first Entry can accept amendment requests, it is registered and the acceptance is communicated to the appropriate actors via an E_ENS_ACC (IE304). The new amended ENS is now valid and the Import Operation State is set to "ENS Registered". The common security and safety risk analysis is performed again for the new ENS. The Import Operation State is set to "ENS common risk analysis registered". The risk analysis on the new ENS can reveal one of the risk analysis result codes mentioned above. In the cases that the risk analysis result code is 'A' the concerned actors will be notified with the Advanced Intervention Notification via an E_AIV_NOT (IE351) message. In the case that the amendment request is invalid or the ENS at the Office of first Entry is in a state that cannot accept amendment requests then the appropriate actor is notified of the rejection via an E_ENS_ARJ (IE305). However, the

already registered ENS and the common security and safety risk analysis results are still valid and the Import Operation State remains "ENS common risk analysis registered". If an amendment request is received by the Office of first Entry after the sending of the C_ENS_SUB (IE319) and is accepted then the Office of first Entry shall initiate a common security and safety risk analysis for the new registered ENS and the C_ENS_SUB (IE319) shall be sent again to the Office of subsequent Entry.

The second case is the one that a C_IMP_REQ (IE302) (in the case that the goods arrive at the Office of subsequent Entry and an arrival notice is received) is received from the Office of subsequent Entry. This case occurs when no risk is identified at the Office of first Entry hence no C_ENS_SUB (IE319) was sent to the Office of subsequent Entry. The Office of first Entry retrieves the appropriate ENS data and the risk analysis results which in this case is of type '0' (in the case that no risk is identified at the Office of first Entry, the IE303 will contain only the risk analysis result code '0') and sends them to the Office of subsequent Entry via a C_ENS_RSP (IE303). The Import Operation State is set to "ENS Declaration Response Sent". A negative IE303 shall be sent if the IE302 MRN is unknown (see also section VII.3Exception Handling).

The third case is that the Office of first Entry declared receives from the Trader requesting diversion a valid diversion request via an E_DIV_REQ (IE323). The Office of first Entry declared notifies the Trader requesting diversion that the diversion request is accepted via an E_DIV_ACK (IE325). The Import Operation State is set to "Diversion Registered". The Office of first Entry declared sends the diversion notification to the Actual Office of first Entry via a C_ENS_RSP (IE303) providing either the common security and safety risk analysis results (risk analysis result code is 'A', 'B' or 'C' for at least one ENS or at least one goods item or 'Z' for at least one ENS in case the Office of first Entry was not in a position to carry out the risk analysis for this ENS) and the appropriate ENS data or it informs the Actual Office of first Entry that no common security and safety risk analysis results are available (risk analysis result code is '0' or 'N'). In any case the Import Operation State is set to "Diversion Notification Sent".

III.5.2.1 MRN States at the Office of first Entry

The possible status values for Office of first Entry are summarised in the table below. This table also shows which status values are required (R) or optional (O). All states related to the Common Domain are required, while states related to National and External Domains are optional.

Name	Status	Final
None	R	No
ENS Registered	R	No
ENS Common risk analysis registered	R	No
ENS Declaration Response Sent	R	No
Diversion Registered	O	No
Diversion Notification Sent	R	Yes

Table 6: States of an MRN at an Office of first Entry

III.5.3 Actual Office of first Entry

The state transition diagram in Figure 17 indicates the possible states of the Actual Office of first Entry.

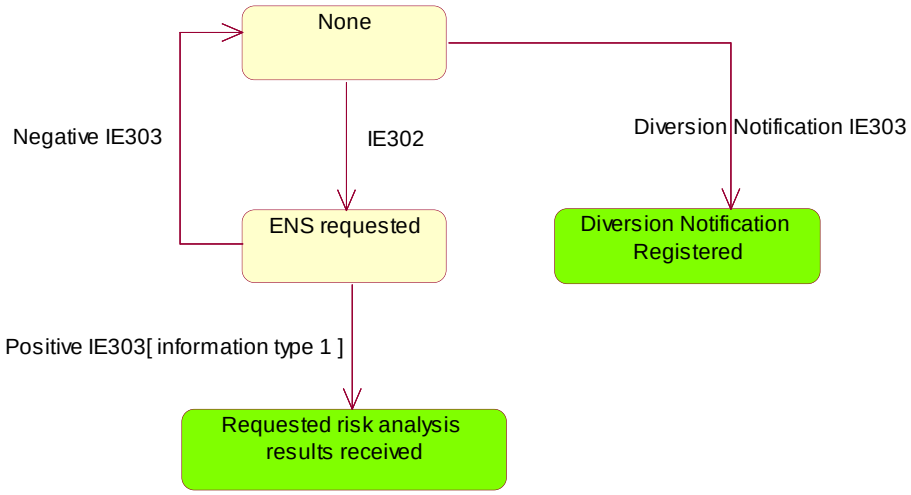

Figure 17: State Transition Diagram for Actual Office of first Entry

In the first case, the Actual Office of first Entry receives a diversion notification from the Office of first Entry declared via a C_ENS_RSP (IE303), which includes either the common security and safety risk analysis results and the appropriate ENS data, or information that no common security and safety risk analysis results are available. The Import Operation State is set to “Diversion Notification Registered”.

In the second case, the Actual Office of first Entry provides a declaration request C_IMP_REQ (IE302) to the Declared Office of first Entry in order to receive the common risk analysis results and appropriate ENS data. The ENS status is set to “ENS requested”. Two cases can take place:

1) A negative response C_ENS_RSP (IE303) might be sent and the ENS status is set to “None”.
2) A positive response C_ENS_RSP (IE303) having information type ‘1’ is sent indicating either that there are no relevant common risk analysis results or including the requested data. The ENS status is set to “Requested risk analysis results received”.

It is possible to provide positive and negative responses within one single IE303 message. Please note that the ENS status in the state diagram above (Figure 17) is defined per ENS.

III.5.3.1 MRN States at the Actual Office of first Entry

The possible status values for Actual Office of first Entry are summarised in the table below. This table also shows which status values are required (R) or are optional (O). All states related to the Common Domain are required, while states related to National and External Domains are optional.

Name	Status	Final
None	R	No
ENS Requested	R	No
Requested risk analysis results received	R	Yes
Diversion Notification Registered	R	Yes

Table 7: States of an MRN at an Actual Office of first Entry

III.5.4 Office of subsequent Entry

The state transition diagram in Figure 18 below indicates the possible states of the Office of subsequent Entry up to the allowed entry of the goods.

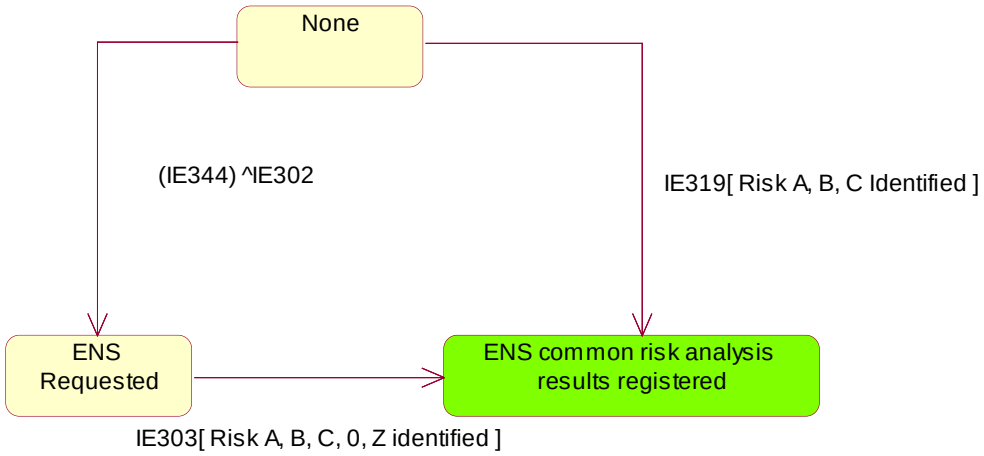

Figure 18: State Transition Diagram for the Office of subsequent Entry

The ENS has been forwarded to the Office of subsequent Entry C_ENS_SUB (IE319) by the Office of first Entry after risk has been identified. The common security and safety risk analysis results that are forwarded to the Office of subsequent Entry are of type A, B or C. Upon reception of the C_ENS_SUB (IE319) including the common security and safety risk analysis results and the relevant ENS data, the Office of subsequent Entry registers the ENS and the Import Operation State is set to “ENS common risk analysis results registered”.

When goods arrive at the Office of subsequent Entry an arrival notice is received and processed (the "()" around message IE344 indicate that it is outside the scope of ICS Phase 1 and is included in the diagram for illustrative purposes only).
If the Office of subsequent Entry has received no risk results for the active means of transport arriving, it may be due to diversion. In these circumstances the Office of

subsequent Entry may submit, to the Office of first Entry declared, a request for the risk results and relevant ENS data using an IE302 (C_IMP_REQ) message. When the request for the relevant data is sent the Import Operation State of the ENS is set to "ENS Requested" and the Office of subsequent Entry waits for the response from the Office of first Entry.

The Office of first Entry declared retrieves the requested ENS data and the common security and safety risk analysis results (A, B, C, Z, 0) and sends the response to the Office of subsequent Entry via a C_ENS_RSP (IE303). Upon the reception of the response the Office of subsequent Entry registers it and the Import Operation State of the ENS is set to "ENS common risk analysis results registered".

III.5.4.1 MRN States at the Office of subsequent Entry

The possible status values for Office of subsequent Entry are summarised in the table below. This table also shows which status values are required (R) or optional (O). All states related to the Common Domain are required, while states related to National and External Domains are optional.

Name	Status	Final
None	R	No
ENS Common risk analysis results registered	R	Yes
ENS Requested	R	No

Table 8: States of an MRN at an Office of subsequent Entry

III.6 Timers

Every ICS Application needs to conform to a number of timing rules. The different timing aspects are discussed in this chapter. The type of timers and/or timing rules that are suggested to be implemented the Timely Response Recommendations mentioned below.

III.6.1 Timely Response Recommendations

Whenever an Office of (first or subsequent) Entry requests relevant declaration data through a Declaration Request Import C_IMP_REQ (IE302) or in the case of an international diversion through a E_DIV_REQ (IE323), it needs the ENS Response through C_ENS_RSP (IE303) including the appropriate ENS data and the common security and safety risk analysis results, in order to be able to start the processing of an awaiting movement.

III.6.2 CCN/CSI Related Timers

A CCN/CSI report message (see Section X Transport of messages via CCN/CSI) is sent back to the sender:

- CoA report [CCN/CSI Confirm on Arrival Acknowledgement C_COA_ACK (IE909)] when the message has arrived on the remote Gateway;
- CoD report [CCN/CSI Confirm on Delivery Acknowledgement C_COD_ACK (IE908)] when the message has been read by the receiving application and deleted from the queue;
- Expiration report [CCN/CSI Expiration Notification C_EXP_NOT (IE910)] when a value of time lapse set in the CSIMQMD.Expiry variable has expired: the message, once arrived on destination queue (CoA), was not fetched from this queue by an application program during the time allotted;
- An exception report [CCN/CSI Exception Notification C_EXC_NOT (IE911)] is generated if the CSI message is blocked and the message cannot be put in the destination queue for whatever reason. The receiving CCN Gateway generates an *exception report*.

When the CCN/CSI Confirm on Arrival Acknowledgement C_COA_ACK (IE909) has been received but the original message has not been read from the destination queue before the timer set by the ‘Expiry’ field of the message descriptor expires, an expiration report is generated. The *expiration timer* is handled by the destination CCN Gateway.

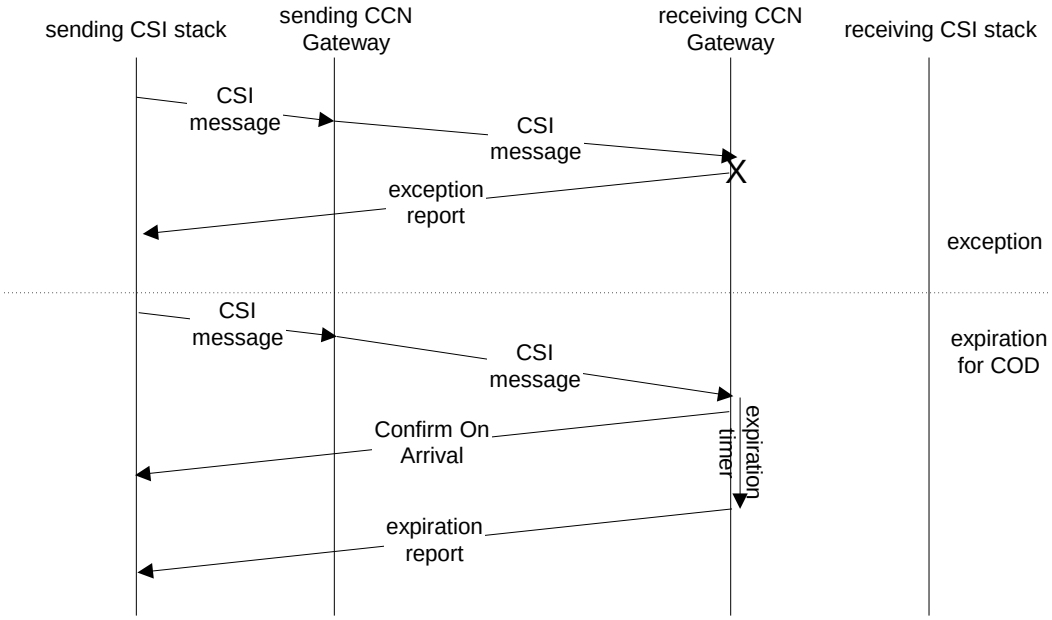

Figure 19: Exception and expiration reports

All possible options for the use of the QoS parameters and their exceptions are defined in Section VIII of DDCOM [A3]. This State Transition Diagram specifies the states of one CSI message present in the sending CSI stack, with respect to the use of CCN. It assumes that the binding of the CSI stack to the CCN Gateway has successfully taken place.

Section IV Central Services

The Section II of DDCOM [A3] is applicable to ICS Phase 1. Any deviation or ICS specific information is specified below.

IV.1 Exchange of statistics and availability data

Statistics and availability management are supported by a centrally developed Customs application (CDCA) called CS/MIS (Central Services/Management Information System). This system collects the statistics and availability data from the various NAs via two physical media (the Web and CCN/CSI) and distributes the information to the NAs after centralised consolidation.

This section deals with the following Information Exchanges:

Common IEs:

- Statistics: Technical CCN/CSI statistics;
- MRN nursing: CCN/CSI Audit files;
- Availability data: IE070, IE071, IE912, and IE971.

IV.1.1 Statistics management

IV.1.1.1 Business statistics

The Section II.3.2.3 of DDCOM [A3] is applicable to ICS Phase 1.

IV.2 Message exchanges with CS/MIS across the Web

IV.2.1 Introduction

IV.2.1.1 IEs for statistics and MRN follow up query

The Section II.6.1.2 of DDCOM [A3] is applicable to ICS Phase 1.

IV.2.2 CS/MIS HTTP exchanges protocols

IV.2.2.1 Downloading from CS/MIS

The Section II.6.2.3 of DDCOM [A3] is applicable to ICS except IE919 which is not included in the scope of ICS Phase 1.

IV.2.2.2 Uploading to CS/MIS

The Section II.6.2.4 of DDCOM [A3] is applicable to ICS Phase 1.

IV.2.3 CS/MIS manual mode of operation

The Section II.6.3 of DDCOM [A3] is applicable to ICS Phase 1.

IV.3 Message exchanges with CS/MIS via CCN/CSI

IV.3.1 Sending IE411 data to CS/MIS

The Section II.7.1 of DDCOM [A3] is applicable to ICS Phase 1.

IV.3.2 Exchanges of requests/responses of MRN Follow up information

The Section II.7.4 of DDCOM [A3] is not applicable to ICS Phase 1.

Section V Systems Administration

The Section III of DDCOM [A3] is applicable to ICS Phase 1.

Section VI Technical Message Structure

The Section IV of DDCOM [A3] is applicable to ICS Phase 1.

Section VII Design principles

The Section V of DDCOM [A3] is applicable to ICS Phase 1. Any deviation or ICS Phase 1 specific information is specified below.

VII.1 Approach

The Section V.1 of DDCOM [A3] is applicable to ICS Phase 1.

VII.2 Constraints

VII.2.1 Timing constraints

No timing constraints were defined for ICS within the FSS – AIS Addendum [A2].

VII.2.2 Suspension of sending messages

When each of the following specific Business Services is unavailable at a NA, the messages identified below should not be sent to that NA.

Technical code	Messages
W – All	IE302, IE301, IE303, IE319, IE031, IE032, IE071, IE931, IE932, IE971
U – Entry Processing	IE302, IE319, IE303
V – Lodgement	IE301
H – Reference Data	IE031, IE032, IE071, IE931, IE932, IE971

Table 9: Suspension of sending messages for ICS Phase 1

VII.3 Exception Handling

The Section V.3.2.1.2 of DDCOM [A3] is not applicable to ICS Phase 1.

In case the message with invalid MRN is received NICAs must respond as follows:

- Respond with IE917 if MRN does not conform to the pattern defined in Appendix X;
- Respond with IE906 if the MRN conforms to the defined pattern but does not conform to the structure defined in Section V.6.1 of DDCOM [A3]. In IE906 the Error code 93 (Invalid MRN) must be used in this case.

Section VIII EDIFACT message formatting

The Section VI of DDCOM [A3] is not applicable to ICS Phase 1.

Section IX XML message formatting

The Section VII of DDCOM [A3] is applicable to ICS Phase 1.

Section X Transport of messages via CCN/CSI

The Section VIII of DDCOM [A3] is applicable to ICS Phase 1 defining the principles for the Transport of messages via CCN/CSI. Any deviation or ICS specific information is specified below.

X.1 The CCN communication reminder

X.1.1 Message Descriptor

The section VIII.2.1 of DDCOM [A3] is applicable to ICS Phase 1. However, the point 8 of notes for the MQ Message Descriptor is updated as follows for the ICS exchanges:

The MsgId value is an identifier used by the application to correlate a Report Message with the Information Exchange it reports about. As an Expiration report may only be generated after 96 hours (see Note 2 for 'Expiry' field above), it is recommended that the MsgId generating rule uses a counter that does not "rewind" in less than 96 hours.

As the field MsgId presents 24 bytes, the NCA designer is able to choose a MsgId definition that covers this condition and well beyond.

The MsgId is a binary value that can be defined automatically by CCN/CSI or that can be defined by the sending application itself. When automatically created by CCN/CSI, the MsgId is based upon system date and time and is satisfying the criterion defined above.

In order to achieve the nursing of the messages, the following conventions should be followed:

- When sending a message, the MsgId is generated automatically by CCN/CSI. The CorrelId is equal to the MRN or to the Entry Key (in an ASCII format) or to the "Exceptional CorrelID values" indicated on the table below in order to be always taking a unique value. However, for the IE906 and IE917 the message ID (MSGID) of the corresponding erroneous message can be filled in and this will enable the correlation of an error message to the erroneous message;
- When a report is sent back, the MsgId is equal to the MsgId of the original message. The CorrelId is equal to the CorrelId of the original message (and is thus equal to the MRN or Entry Key).

Therefore, the MsgId needs to be set to CSIMQMI_NONE. The queue manager will then generate a unique message identifier upon sending.

The MsgId of the original message is copied into the MsgId of the report message by setting the appropriate flag CSIMRQRO_PASS_MSG_ID in the ReportRequest field of the QOS (see section X.1.2).

The Entry Key shall have the following form:

<Expected date of arrival><Transport mode at border>< Identification of the means of transport >

The Exceptional CorrelID values of the CCN/CSI message descriptor (CSIMQMD) are shown on the table below.

IE	CorrelID value
IE302	= MESSAGE. IMPORT OPERATION(1).Document/reference number
IE303	IF response to IE323 THEN IF IE323.MESSAGE.HEADER. Identification of the means of transport is present THEN = IE323.ENTRY KEY ELSE = IE323.MESSAGE.IMPORT OPERATION(1).Document/reference number ELSE IE302.MESSAGE. IMPORT OPERATION(1).Document/reference number

Table 10: The Exceptional CorrelID values of the CCN/CSI message descriptor

The CorrelId is a CSIBYTE24. Using ASCII character encoding, it has to be filled with 23 characters of the Entry Key + '\0'. If the Entry Key is longer than 23 characters in total, then it must be truncated to the first 23 characters (i.e. nnnnnnnnnnnnnnnnnnnnnn\0). If the Entry Key is shorter than 23 characters in total, no trailing zeros are required and therefore a length of less than 23 characters is valid.

X.1.2 The quality of service

The Section VIII.2.6 of DDCOM [A3] is applicable to ICS Phase 1.

In the following table the main messages for ICS Phase 1 are defined.

IE	IE Name	Reference	Message Type string	Phase
IE302	Declaration Request Import	C_IMP_REQ	“CD302A-MSG.ICS”	Phase 1
IE301	ENS	C_ENS_SND	“CD301A-MSG.ICS”	Phase 1
IE303	Entry Summary Declaration Response	C_ENS_RSP	“CD303A-MSG.ICS”	Phase 1
IE319	Transmission to subsequent Office of Entry	C_ENS_SUB	“CD319A-MSG.ICS”	Phase 1
IE906	Functional Negative Acknowledgement	C_FUN_NCK	“CD906B-MSG.ICS”	Phase 1
IE917	XML Negative Acknowledgement	C_XML_NCK	“CD917B-MSG.ICS”	Phase 1

Table 11: High priority Information Exchanges for ICS Phase 1

Section XI Transport of messages via the Inter(Extra)net

The Section IX of DDCOM [A3] is applicable to ICS Phase 1 defining the principles for the Transport of messages via Inter(Extra)net. Any deviation or ICS Phase 1 specific information is specified below.

XI.1 Message formats and usage for exchanges with CS/MIS

XI.1.1 4.1 Exchange Policy variables

The variables for CS/MIS are given below in Table 12:

Variable	Description
<REGISTER URI>	URI for registering an e-mail address
<IE70 URI>	URI for sending the IE070 messages file
<IE912 URI>	URI for sending the IE912 messages file
<INITIATE REQUEST IE71 URI>	URI for requesting an IE071 messages file
<INITIATE REQUEST IE971 URI>	URI for requesting the current IE971
<MONITOR URI>	URI for getting system information, including the latest system modification date
<ENTITY CODES>	A set of supported entity codes. These can be as follows: “AVAILABILITY” (for IE071)
<IE FORMAT CODES>	The only allowed value is “XML”
<MIME TYPES>	A set of MIME-types. The set is defined as consisting of the following items: “application/octet-stream” “application/xml” “application/x-gzip” “application/x-gzip-compressed” “application/x-zip-compressed”

Table 12: Programmatic interface variables for CS/MIS