OWNER:	ISSUE DATE:	VERSION:
DG TAXUD	26/10/2015	19.40

Taxation and Customs Union DG

CUST-DEV3 Project

SUBJECT:

DDNTA for NCTS Phase 4

Appendix Q1: Technical Message Structures
(CUST-DEV3-SC03-DDNTA_APP_Q1)

FRAMEWORK CONTRACT TAXUD/2013/CC/124
SPECIFIC CONTRACT 03

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1 Introduction

This appendix describes the detailed structure of each Functional Message Structure (FMS) for NCTS (Security & New Enquiry) messages.

FMSs are organised into data groups that contain data items. A data group is not necessarily the equivalent of a database entity. The data items are grouped together in such a way that they build up coherent logical blocks within the scope of each FMS.

The detailed structures are listed from the CSE database, comprising:
- The characteristics of the data groups belonging to the FMS: sequence, number of repetitions, status value to indicate if the data group is mandatory (R: Required), optional (O: Optional) or conditional (D: Dependent).
- The characteristics of the data items belonging to a data group : sequence, number of repetitions, type, length and a value to indicate if a data item is mandatory (R: Required), optional (O: Optional) or conditional (D: Dependent).
- Data group indentation to indicate that the data group may contain not only data items but also other groups of data.
- Rules and Conditions applying.

2   Representation of FMSs

IE15 **(a)** **(b)** DECLARATION DATA **(c)** (E_DEC_DAT)

(B)

HEADER **(a)**	**(b)** 1x	R **(c)**	**(f)**
(AUTHORISED CONSIGNEE) TRADER	1x	O	R015
CONTROL RESULT	1x	O	
GUARANTEE	9x	R	
---GUARANTEE REFERENCE **(d)**	99x	D	C085
------VALIDITY LIMITATION EC	1x	O	
GOODS ITEM	999x	R	R095
---CONTAINERS	99x	D	C055
---PACKAGES	99x	O	

(C)

HEADER **(a)**

Reference number **(b)**	R **(c)**	an **(d)** ..22 **(e)**	Rule 123 **(f)**
Type of declaration	R	an..9	Cond 234
Number of loading lists	O	n..5	TR900
Total number of packages	D	n..7	

The IE model is divided into three parts:

(A)   The identification part, each IE is identified by:
- a unique number that consists of the two characters 'IE' followed by a maximum of 3 digits **(a)** ;
- the title of the message **(b)** ;
- a unique reference **(c)** in a one to one relationship with the unique number of the IE; each IE is prefixed with 'E_' (external domain), 'C_' (common domain).

(B)   The structure part provides the following:
- the sequence of the data groups in the IE;
- a data group name **(a)** ;
- a number followed by the character 'x' **(b)** indicating how many times the data group is repeated in the IE;

- a value **c** indicating whether the data group is (R)equired, (O)ptional or conditional (D: Dependent);

- when any Rules or Conditions apply, a reference **f** is provided;

- data group indentation **d** indicates that the data group depends on lower indent data group.

C The 'data group' detail part provides for each attribute the following:
- the sequence of attributes within a data group;

- a data group name **a** , as in the structure part;

- the attribute name **b** within the data group;

- a value **c** indicating whether an attribute is (R)equired, (O)ptional or conditional (D: Dependent);

- the data type of a data item **d** : (a)lphabetic and/or (n)numeric;

- the attribute length **e** (the optional 2 dots before the length indicator mean that a data item has no fixed length, but it can have up to a number of digits, as specified by the length indicator); it must be noted that the data type / attribute length of fields representing a date is always 'n8' in order to be year 2000 compliant (e.g. 19980220); also, a comma in the data item length (e.g. 11,3), means that a data item can hold decimals, the digit before the comma indicates the maximum total length of an data item, the digit after the comma indicates the maximum number of digits after the decimal point;

- The FTSS Rules and Conditions **f** or Technical Rule (TR) applying.

3 Documented amendments

The IEs were aligned with the Single Administrative Message (SAM) Mapping Guide, where relevant. As the SAM Mapping Guide covers transit (NCTS) changes have been made to an IE in some cases. In other cases, more detail needed to be added.

3.1 SAM Mapping guide alignment

The FMS specified in Appendix B of FTSS 4.0 (as amended by its Corrigendum) is changed on the following aspects for the various reasons mentioned:
- To align with SAM, the data group 'TRANSIT OPERATION' is renamed into 'HEADER' to support import, export and NCTS.

- The data item HEADER.Document/reference number equals MRN (Movement Reference Number). It is mapped to SAD box number A (Document/reference number) in line with the SAM Mapping Guide. [Note that the mapping of the MRN to the SAD box A is for the purpose of alignment of FMS with SAM mapping to UN/EDIFACT and not for printing purposes.]

- The data item HEADER.Reference number equals LRN (Local Reference Number). It is mapped to SAD box number 7 (Reference number of the declaration) in line with the SAM Mapping Guide.

- HEADER.Declaration date and HEADER.Declaration place are mapped to two boxes of the Single Administrative Document, namely box 50 and 54. The mapping of box 50 is valid for NCTS; box 54 is valid for import and export procedures.

- All date formats are n8 for both NCTS and the SAM Mapping Guide, with the exception of the date exchanged in the UNB segment (n6).

- IE18 contains new seal information and seal numbers mapped to box F. The data groups 'NEW SEALS INFO' and 'NEW SEALS' are documented as 'SEALS INFO' and 'SEALS ID' respectively for IE18 to achieve consistency across IEs. Due to alignment with SAM, the mapping of these data groups to box F for IE18 only is therefore not documented in the DDNTA.

- CONTAINERS.Container number is considered to always be Required if the group CONTAINERS is to be present.

- The CUSTOMS OFFICE of Destination and GOODS ITEM groups are not considered as children groups of the HEADER group in IE200 and IE203 as defined in FTSS. They are nested under the root of these messages.

- The data item GUARANTEE REFERENCE. INVALID GUARANTEE REASON. Error Text in IE55 declared in FTSS, is renamed to GUARANTEE REFERENCE.INVALID GUARANTEE REASON.Invalid guarantee reason to achieve consistency across IEs.

- The REPLY TO REQUESTED ADDITIONAL INFORMATION group declared in FTSS, is removed from the hierarchy of IE104 since it does not incorporate any data item. The ADDITIONAL INFORMATION RESPONSE group was inserted in its place with repetition 99 and status optional.

- The CUSTOMS OFFICE Presentation Office.Reference number in the IE103 is considered required. (changed from Optional as defined in FTSS). The application of the C315 is performed on the CUSTOMS OFFICE Presentation Office group.

- All the LNG data items (i.e. Agreed location of goods LNG) that are used to define the language of the corresponding data item (i.e. Agreed location of goods) in any data group, are considered Optional and are checked against TR0099 (changed from Required or Optional as defined in FTSS).

- The NAD LNG field that is used to define the language of name and address fields in the TRADER groups, is considered Optional and is checked against TR0099 (changed from Required as defined in FTSS).

3.2   Further Changes

Various data item names are aligned with the SAM Mapping Guide. Furthermore, other data item names have been made consistent throughout all FMS, e.g. all data items referring to language codes end with 'LNG'.

These changes are listed in the Appendix Q2 – part 2, at the start of the detailed FMS Structure Report in the tables:
- FORMAT DIFFERENCES
- NAMING DIFFERENCES

3.2.1   Explanatory Notes

The following applies to the FORMAT DIFFERENCES table:

1. The reasons for changes are:
   - Alignment with the SAM Mapping Guide (SAM).
   - Agreement to implement changes with EC/DGXXI/B3 (agreed).
   - Subsets to be used by NCTS.

2. Specification of the code list to be used will constrain the format of the following data items to that shown in the 'FMS format' column:
   - Kind of packages.
   - Unit of measure.

3. Format of Commodity code is to be characters, rather than numeric, to avoid suppression of leading zeroes. Entry validation, however, will accept only characters 0-9 with trailing spaces.

3.3 From FMS to TMS

The following details have been added to the IEs:

3.3.1 RESULTS OF CONTROL.Corrected value

This field did not have a format. Format an..27 has been selected since this is the longest value of a corrected data item of 'EXPORT OPERATION' that can be exchanged.

3.3.2 Message group

The MESSAGE group has been added for every IE. This message group corresponds to a number of EDIFACT header fields.

In general, exchange of messages requires control information. This control information, which is basically the information contained in the UN/EDIFACT UNB and UNH segments, is added to all FMS by the data group MESSAGE. The control information is of a technical nature and as such not specified.

Not all control information is relevant to an ECS application but might be added and removed by a UN/EDIFACT converter if UN/EDIFACT is used to exchange messages. The following elements are at least required by an ECS application processing IEs:

Data item	Reason
Message sender	required for detecting the proper sender at reception
Message recipient	required for sending a message to its proper Destination
Message identification	unique reference of a message within an MRN assigned by the sender of that message
Message type	string identifying the number of the IE, the domain in which it is used, and the version
Test indicator	to indicate the difference between testing using an testing tool.

Table 1: Control data items required by an ECS application

It is up to each application developer and NA to decide on the use of the other elements of the MESSAGE data group.

3.3.3   Expansion of IEs including other IEs

Two alternative approaches are possible:

1. Completely include the "sub"-IE.
   This may however pose some problems with duplication of information.

2. Merge some of the "sub"-IE information with the "master"-IE.

The second solution has been followed as much as possible. The following paragraphs explain how each case of "IE inside IE" was handled to arrive at a unique and consistent representation.

3.3.3.1   IE03 (C_AAR_RSP)

A positive C_AAR_RSP will include the original IE01 (C_AAR_SND) as a whole, while a negative C_AAR_RSP will include only the HEADER, including the 3 additional AAR rejection reason fields, (DEPARTURE) CUSTOMS OFFICE and (PRESENTATION OFFICE) CUSTOMS OFFICE.

As the (DEPARTURE) CUSTOMS OFFICE is already present, and is 'Required', on the IE01, it has not been included again, but becomes required on the IE03. The (PRESENTATION OFFICE) CUSTOMS OFFICE has been added.

Technical rules TR0200 – TR0204 have replaced rule 215. These apply to the different structures of the positive/negative IE03.

3.3.3.2   IE05 (E_AMD_REJ), IE58 (E_ULD_REJ), IE62 (E_REQ_REJ)

These messages all comprise rejection of previously sent data. The FMS cites rule 123 for the rejection message, stating that only fields in error should be sent back, together with an identification of what was wrong. Sending back only the erroneous fields would be technically very difficult, since the messages have a hierarchy (imposing that a higher level group needs to be present if one wants to include a lower level group).

An approach as for the IE906 Functional Error message has therefore been foreseen. The rejection message includes a pointer to the erroneous field, together with an error reason and the original value of the attribute.

3.3.3.3   IE11 (C_SGI_NOT)

The sensitive goods notification is a copy of the C_AAR_SND (IE01). No additional fields and groups have been added in the structure of the message.

3.3.3.4 IE13 (E_DEC_AMD)

A declaration amendment comprises the original declaration E_DEC_DAT (IE15), plus the CTL_CONTROL group. Following rule 115, a number of fields have been replaced in the E_DEC_AMD (Document/Reference number (MRN) instead of Reference number (LRN), and Date of amendment, amendment place and amendment place LNG instead of "…declaration…").

3.3.3.5 IE16 (E_DEC_REJ)

The approach above as for the IE906 Functional Error message has been foreseen. To meet CUSRES requirements, the E_DEC_REJ contains an extra data item that is not specified in FTSS. The data item HEADER.Type of Declaration is required to be able to map to the mandatory UN/EDIFACT BGM segment and to be in line with all other FMS mapped to CUSRES.

3.3.3.6 IE29 (E_REL_TRA)

This IE includes the E_DEC_DAT. The additional fields are attached to the header for the E_DEC_DAT. The groups (RETURN OFFICE) COPIES and CONTROL RESULT are attached to the original IE15.

3.3.3.7 IE31 (C_COL_NAT)

The contents of this IE are completely equal to IE30. However the technical attribute 'Action Identification', required to enable error reporting when loading COL data into the Central Services database, is not necessary when distributing the data from the Centre to the NAs and is therefore removed.

3.3.3.8 IE32 (E_REF_MOD)

The cardinality of the LSD fields in the IE32 is set to 9, which is insufficient if one considers that some Common RD have 18 LSD fields. The cardinality of the LSD fields has been set to 99x.

3.3.3.9 IE38 (C_MVT_RSP)

The original IE01 has been modified as follows:
The specific groups for IE38 have been added (except for (DEPARTURE) CUSTOMS OFFICE, which was already part of the IE01).

3.3.3.10 IE50 (C_ATR_SND)

The IE01 (C_AAR_SND) has been incorporated in the message. The additional header field (binding itinerary) has been added in the structure of the message.

3.3.3.11 IE51 (C_REL_NOT)

The additional header fields have been added to the header of the IE15. The other groups have been added to the structure.

3.3.3.12 IE115 (C_ATR_SND)

The additional header fields have been added to the header of the C_ATR_SND. The additional groups have also been added (except for (DEPARTURE) CUSTOMS OFFICE).

3.3.3.13 IE203 (C_GUA_USE)

The contents of this IE are equal to IE200 C_GUA_CHE.
The Office of Departure requests the check of the integrity of a used guarantee by sending the IE200 to the Office of Guarantee. Similarly, the Office of Departure requests the guarantee lock and registration via the IE203. The information that is demanded for these processes is identical.

3.4   Implementation of FTSS Rules and Conditions

The FMS specified in Appendix B of FTSS contain rules and conditions. The conditions are not implemented in DDNTA, because they refer to the content of exchanged messages.

Not all rules have been implemented in the DDNTA. Those that are implemented have been implemented either as code values or as status of a data item, or in the structure of an FMS.

The following rule has been implemented as code values:
- Rule 175, 180, 186, 200, 205 and 230 are code values '0' or '1' of a flag;
- Rules 422 and 460 refer to an external code list for UN/Locodes.

The following rules have been implemented by the status of a data item:
- Rule 10, 11, 41, 75, 181, 190, 215, 216, 240, 241, 250, 251, 260, 261, 262, 263, 264, 266,268, 269, 270, 271, 280, 506, 515, 526, 527 and 610.

The following rules are implemented by the structure of an FMS:

Rule number	IE no.	IE Name
115	13	Declaration Amendment
123	05	Amendment rejections
	08	Arrival notification rejection
	16	Declaration rejection
	58	Unloading remarks rejection
	62	Release Request rejection
135	51	No release for Transit
150	17	Departure control results
	18	Destination control results
	44	Unloading remarks
	51	No release for Transit
210	18	Destination control results
211	44	Unloading remarks
212	17	Departure control results
215	03	AAR response

Rule number	IE no.	IE Name
410	30	Notification of Customs Office modification to Common Domain
	31	Notification of Customs Office modification to National Domain
	32	Notification of Customs Office modification to National Domain
411	70	Notification of System Unavailability to Common Domain
	71	Notification of System Unavailability to National Domain
510	43	Unloading permission

Table 2: Rules implemented in an FMS structure

3.5   Technical Rules and Conditions

Technical Rules have been introduced to cater for particular situations:
- Implementation of the technique of RESULTS OF CONTROL as defined originally by the C_DES_CON workshop (April 1999);
- Optional contents of a message dependent on whether the request can be positively answered (e.g. the declaration data sent to the requester) or negatively (an error code returned by the system or explanatory text from a Customs Officer);
- Attributes Required or not dependent on the message direction (to/from Central Services);
- Rules applicable to Technical Messages;
- Improved wording of a rule.

Correlation between the Technical Rules and the FTSS ADDENDUM [A4] Rules/Conditions is shown by the following Table:

Functional Area	Technical Rules	FTSS Rules/Conditions
RESULTS OF CONTROL	TR01 to TR19	R150 R210
_LNG	TR0099	C99
Optional contents of a message	TR0200 to TR0203 TR0215	R215
Optional contents of a message	TR0216	R216
PREVIOUS ADMINISTRATIVE REFERENCES,	TR0100	R79
PRODUCED DOCUMENTS CERTIFICATES	TR0103	R79
IE200, IE203 – GOODS ITEM	TR0527	R527
Requested Additional Information Code	TR9130	C330
Optional contents of a message	TR9090	C005
Optional contents of a message	TR9095	C006

Functional Area	Technical Rules	FTSS Rules/Conditions
Optional contents of a message	TR0280	C280
IE200, IE203 – GOODS ITEM	TR0527	R527
Identity of means of transport at departure (exp/trans)	TR0035	R035
Nationality of means of transport at departure	TR0035	R035
IE18 – Groups and Data items that C185 applies at FTSS level	TR0007 TR0008 TR0012 TR0013 TR0002	C185
IE01,IE03,IE11,IE13, IE15, IE17, IE18, IE29, IE38, IE43, IE44, IE50, IE51, IE115 – Number of Packages	TR0020	R021

Table 3: Application of Technical Rules

3.6   Results of Control

For any corrected 'TRANSIT OPERATION' data items, both the original and corrected values are exchanged. For each new or corrected 'GOODS ITEM', the complete set of data items is exchanged.

3.6.1   Transit Operation

Each data item of 'TRANSIT OPERATION' can be accompanied by a control indicator with the value 'DI' (Differences) or 'OT' (Other). When the CONTROL RESULT.Control result code is not "A1" and therefore discrepancies are detected, the original and corrected values are exchanged in RESULTS OF CONTROL group. Otherwise, only the original values are exchanged.

The original values of data items of 'TRANSIT OPERATION' are exchanged by the original data group; the corrected values by the data group 'RESULTS OF CONTROL'. A pointer is given in the 'RESULTS OF CONTROL' to the box number of the corrected data item (the structure of the pointer is specified below).

When the control indicator is 'DI', the pointer to the data item and the corrected value are required. When the control indicator is 'OT', the pointer to the data item and the corrected value are optional.

3.6.2   Goods Item

Each goods item can have one or more occurrences of 'RESULTS OF CONTROL' with 'Control Indicator' values of
> 'OR' (Original),
> 'DI' (Difference),
> 'OT' (Other),
> 'NE' (New)
> 'NP' (Not Present).

The following possibilities can occur:
- In the case of a discrepancy, the original goods item and the corrected one are exchanged. The original goods item group is indicated by an occurrence of 'RESULTS OF CONTROL' with 'Control Indicator' value 'OR' (Original). The corrected goods item group is indicated by an occurrence of 'RESULTS OF CONTROL' with 'Control Indicator' value 'DI' (Differences). If the totals of 'TRANSIT OPERATION' are affected by any changes at goods item level, these are exchanged as 'TRANSIT OPERATION' above.

- In the case of a missing 'Goods item', the original goods item and the corrected one (ie an empty group except the 'Item number' field and the 'RESULTS OF CONTROL' groups) are exchanged. The original goods item group is indicated by an occurrence of

'RESULTS OF CONTROL' with 'Control Indicator' value 'OR' (Original). The corrected goods item group is indicated by an occurrence of 'RESULTS OF CONTROL' with 'Control Indicator' value 'DI' (Differences) and optionally an 'OT' 'RESULT OF CONTROL' group.). If the totals of 'TRANSIT OPERATION' are affected by any changes at goods item level, these are exchanged as 'TRANSIT OPERATION' above.

- In the case of one or more documents not being presented for a goods item, the corrected goods item group is exchanged with an additional occurrence of 'RESULTS OF CONTROL' for each of the missing documents, with 'Control Indicator' value 'NP'. The pointer in 'RESULTS OF CONTROL' refers to the particular occurrence of 'PRODUCED DOCUMENTS/ CERTIFICATES' which is missing from that goods item. Upon receiving a ROC = "NP" the OoDep will determine a procedure for ascertaining which document has not been presented. Their options are to perform a computerised check of the two items returned (the original with ROC = "OR" and the other with ROC = "DI" and also ROC = "NP"), or to print/display the two versions of the item so that the Customs Officer can identify which document has not been produced.

- In the case of some other reportable situation (ie a comment on a 'Goods item') which is not a discrepancy, the goods item group is exchanged with one 'RESULTS OF CONTROL' with 'Control Indicator' value 'OR' (Original) and one or more additional occurrences of 'RESULTS OF CONTROL' with 'Control Indicator' value 'OT'.

- In the case of a new goods item being discovered, only the values of that new goods item are exchanged, there being no original values. The 'Control Indicator' of 'RESULTS OF CONTROL' of the new goods item group has value 'NE'. Totals of 'TRANSIT OPERATION' need to be updated according to the changes at goods item level.

The pointer in 'RESULTS OF CONTROL' refers to the box number of the Transit Accompanying Documents of a particular data item. Where the data item is a further subdivision or if a particular occurrence of a document needs to be identified, this is denoted by :

'box_number' # 'subdivision/occurrence'

NB:
- 'occurrence' refers to the sequence in which the information was sent.
- the '/' indicating that either a subdivision or an occurrence is given.
- Example 1 (subdivision):
  18#1 refers to 'Identity of means of transport at departure
  (the first subdivision of Box 18)'
- Example 2 (occurrence):
  If the third document is missing, this is indicated as 44#3
  (since documents are listed in Box 44).