3 How to study the WCO Data Model

The WCO DM consists of six building blocks. Documents have been drafted for each of the building blocks, and collectively they form the WCO DM Guide. In order to obtain a clear understanding of the WCO DM, it is recommended that all of the available documents are read.

The three major elements of the WCO DM are the Interactive Data Set, the Unified Modeling Language (UML) modelling information and the Message Implementation Guidelines.

Broadly speaking, any study of the data model must begin with an overview of the Interactive Data Set. After developing familiarity with the components of the Interactive Data Set, the reader can turn his attention to data structures described in the data set and the message specifications given in the Message Implementation guidelines. This chapter gives a quick introduction to these three major elements.

3.1 Interactive Data Set

The Interactive Data Set is a spreadsheet containing 11 different data sets¹ – one for each border crossing procedure, as well as all of the data sets from the Data Model. The Interactive Data Set can serve as a repository of information from the perspective of CBRAs. There is additional information provided in regard to data elements used in the SAFE Framework of Standards.

There is information in regard to data model classes that leads us into information modelling, EDIFACT and XML development.

The spreadsheet is a useful tool for those studying the WCO DM, as it provides information about each data element, and also offers links to other Data Model documents.

The Explanatory Notes (see example below) provide a detailed explanation of the information included in the Data Model and instructions for navigating the data sets. The detailed explanation is provided in Chapter 7.

LEVEL 1

United Nations Trade Data Element Directory 2005 (UNTDED) tag and name which corresponds to the WCO data

Name and definition for a data element used in the WCO Data Model

General Procedures

Click the blue hyperlinks for Import or Export to move to Level 2 and see which data elements are used for the components of Imports and Exports. Click the blue hyperlinks for Conveyance, Transit or Response for the entire list of data elements

Click here for Level 2 Explanatory Notes

Click a purple hyperlink to move to Level 2 to see which data elements are used for the components in the Framework of Standards to Secure and Facilitate Global Trade (SAFE) or to see more information on Data Element Names (DENs)

Click here for Level 2 Explanatory Notes

Click here for Level 2 Explanatory Notes

NOTE: Not all unique identifiers appear on Level 1

Click an orange hyperlink to go to a Level 1 SuperClass which has its own unique identifiers

Click here for Level 1 SuperClass Explanatory

Click here for Level 1 SuperClass Explanatory

Click here for Level 1 SuperClass Explanatory

Examples of field lengths and formats:

| n3          | 3 numerical characters, fixed length |
| a3          | 3 alphabetic characters, fixed length |
| an3         | 3 alpha-numerical characters, fixed length |
| n.3         | up to 3 numeric characters |
| a.3         | up to 3 alphabetic characters |
| an.3        | up to 3 alpha-numerical characters |
| n.16.5      | up to 16 numeric characters including maximum 2 decimals - delimiter is allowed to float |
| CCYYMMDDHHMMSS | description of a date format |

¹ (Data sets for IM1, IM12, IM22, EX1, EX12, EX22, CRI, CRE, CONV, TRT, RES)
3.2 UML Modelling Information

Broadly speaking, there are two types of models that have been developed. Business process models and Information Models.

The customs procedures are described in the data set have been analyzed through business processes modelling. UML-based use case diagrams and activity diagrams have been used in order to describe these models.

The inter-relationship between data elements has been described using information models. UML Class diagrams depict these relationships effectively. Given below are examples of UML class diagrams and the detailed description of a UML class.

The specific UML class diagram chosen for this illustration is the response class diagram. This class diagram provides a more detailed information about the level at which this information is required (See a sample UML Class diagram below).

Detailed explanation on how to use these diagrams and their components is provided in Chapter 9.
3.3 The UN/EDIFACT Message Implementation Guidelines

These Message Implementation Guidelines help the reader in linking-up the data set for a given procedure with the Hierarchical UML model, and then with UN/EDIFACT mapping for each data element. Thereafter, UN/EDIFACT mapping is fully specified.

The Table of Contents describes what Message Implementation Guidelines contain.

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3. CLASSES AND ATTRIBUTES
   3.1 HIERARCHICAL OVERVIEW OF CLASSES
   3.2 DETAILED OVERVIEW OF CLASSES AND ATTRIBUTES
4. UML MODEL DIAGRAM (HIERARCHICAL)
5. EDIFACT BRANCHING DIAGRAM
6. MAPPING TO EDIFACT

3.4 XML Guidelines

These WCO XML Guidelines and the WCO XML Schema Customization Guidelines help the reader in creating XML Schemas and example XML specifications. Starting with the data set that contains the Dictionary Entry Names (DENs), the guidelines describe the exact method for deriving XML schemas and XML specifications from the hierarchical UML model.

Detailed explanation on how to the UN/EDIFACT Message Implementation Guidelines and XML Guidelines can be used is provided in Chapter 10.