International Standards

for Data Exchange

Business Guide on the WCO Data Model

World Customs Organization

Business Guide on the WCO DM

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WCO Data Model Business Guide version 1.0
(based on the WCO Data Model as published in its version 3.7.0)

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Glossary of Terms and Acronyms

AEI	Advance Electronic Information
AEO	Authorized Economic Operator
B2G	Business-to-Government
BIP	Base Information Package
CBM	Coordinated Border Management
CBRAs	Cross-Border Regulatory Agencies
CDT	Core Data Type
DIP	Derived Information Package
DM	Data Model
DMR	Data Maintenance Request
DMPT	Data Model Projects Team
EDI	Electronic Data Interchange
G2B	Government-to-Business
G2G	Government-to-Government
GNC	Globally Networked Customs
GOVCBR	Government Cross-Border Regulatory message
MIP	My Information Package
MIG	Message Implementation Guideline
MRA	Mutual Recognition Arrangement/ Agreement
OIS	Overall Information Structure
RKC	Revised Kyoto Convention
UML	Unified Modelling Language
UN/TDED	United Nations Trade Data Element Directory
UN/EDIFACT	United Nations Rules for Electronic Data Interchange For Administration, Commerce and Transport
WCO	World Customs Organization
XML	Extensible Markup Language

I. Introduction

Foreword

Governments around the world have realized that rapid economic growth cannot be achieved in an environment where international trade processes are inefficient and cumbersome. Over the past decades, serious attention has been devoted to the modernization of international trade and cross-border regulatory procedures. Countries have committed substantial resources to national projects in the areas of governmental automation and **Electronic Data Interchange (EDI)** infrastructure.

The delivery of electronic '**Single Window'** services is being implemented in many countries. Based on the principle of coordinated government services, the 'Single Window' environment has the potential to deliver transformational advantages to business by simplifying and unifying touch-points between members of the trading community and the different government departments involved in cross-border regulatory procedures.

The WCO Data Model (WCO DM) is an important foundation and key instrument for coping with these challenges, and provides the basic elements of a solution. Project leaders will need to address different possibilities with regard to project scope, business process design and the design of the basic data structure, based on international standards, handling of legacy assets, etc.

Document Scope and Purpose

The purpose of this document is to provide a plain language description of the WCO DM and to explain, in a comprehensible way, its use and its relationship

with other international instruments and governmental best practice recommendations. The information it contains is intended for use by governmental administrations and others contemplating WCO DM adoption and/or implementation. This is not a technical document; it is intended for use by management as well as business persons and provides basic information on the WCO DM, as well as practical guidance on the planning and implementation phases of WCO DM adoption.

II. What is the WCO Data Model?

WCO DM Definition

The WCO DM is a compilation of clearly structured, harmonized, standardized and reusable sets of data definitions and electronic messages designed to meet operational and legal requirements of cross-border regulatory agencies (CBRAs), including Customs, which are responsible for border management.

The content of the electronic data messages includes goods declarations, cargo declaration, cargo movements, goods inspections and permits, as well as licensing requirements. The WCO DM, as an international standard, implements other commonly used international data standards that are recommended to be adopted by the international trade and transport communities. Information received in WCO standard formats can be used to develop harmonized clearance processes, trade statistical databases and enable the adoption of Coordinated Border Management (CBM), risk management and comprehensive audit programmes. WCO DM users may use subsets of the electronic message standards to manage their border reporting requirements.

The WCO DM promotes collaboration between customs administrations, government regulators and the business community to manage reporting and compliance with government border requirements (see Figure 1).

A Harmonized Set of Data Definitions and Electronic Messages

The WCO DM is a common language for information exchange between different stakeholders in the cross-border trade and movement of goods and passengers. In general, it contains a standardized dataset, which can be considered

as the "dictionary" of the language and the structure, as well as syntax for electronic messages that build the "grammar" of the language.

The harmonized and standardized data sets and electronic messages of the WCO DM, incorporating international code standards, are the key to effective and efficient Business-to-Government (B2G), Government-to-Business (G2B) and Government-to-Government (G2G) exchange and sharing of information.

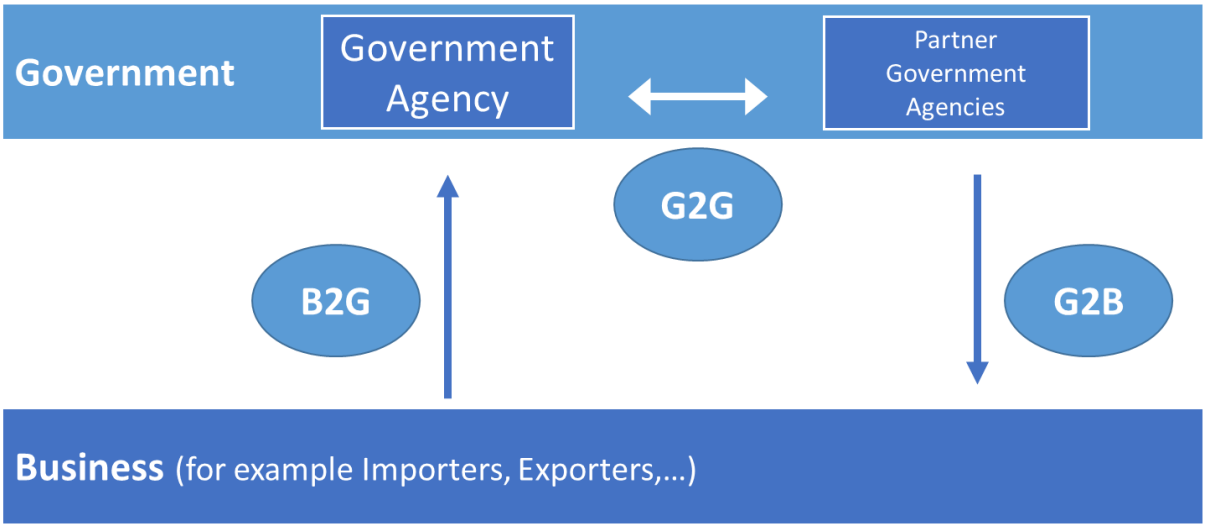

Figure 1 Regulatory Space of the WCO DM

Business Process and Information Modelling

The WCO DM includes the analysis and modelling of the Customs procedures and processes contained in the Revised Kyoto Convention, using activity diagrams, use-case diagrams and descriptions. Based upon this analysis, illustrative scenarios for governmental business processes are developed. In the WCO DM, information flows from cross-border regulatory agencies (including Customs) have been categorized and brought together in 'class diagrams', and modelled using the Unified Modelling Language (UML).

Digital Collaboration

As shown in Figure 2, the development of standardized data sets and electronic messages that include data beyond the focus of Customs allows Customs administrations, CBRAs and the private sector to benefit from the use of the WCO DM.

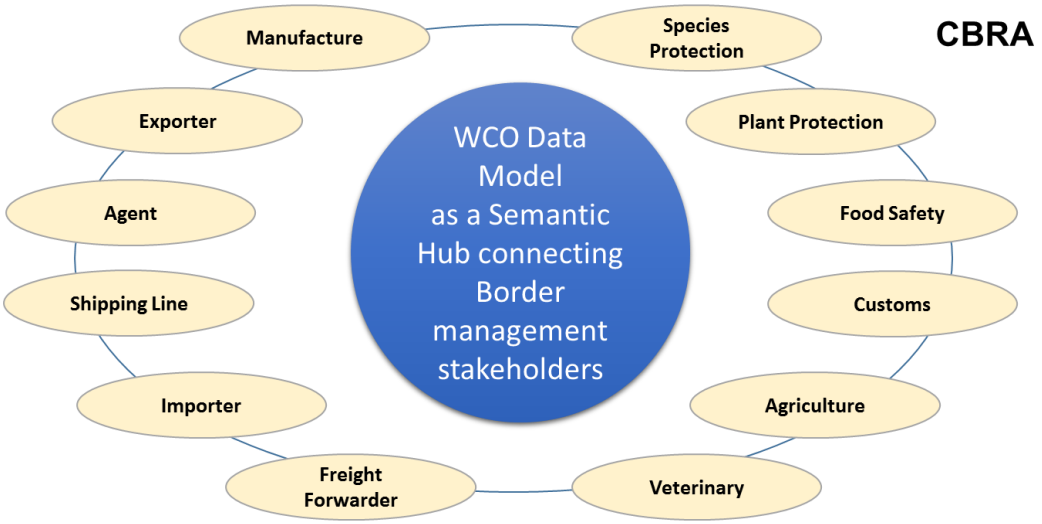

Figure 2 WCO DM as semantic hub

Since Version 3.0, WCO DM has been developed to support the implementation of Single Window. This is an environment model for border management stakeholders, including Customs, cross-border regulatory agencies and other economic operators.

History and Background of the WCO Data Model

The development of core customs automated systems and EDI facilities has shifted from reliance only on national requirements, fragmented data and their national description, to a more standardized approach in line with the WCO DM. This shift was consistent with recognition of the need to follow international data standards. The UN Trade Data Element Directory (UN/TDED) and the United

Nations Rules for EDI for Administration, Commerce and Transport (UN/EDIFACT) were used extensively in many countries.

Despite the use of these international standards, there were no international data dictionaries in existence for the Customs domain. The UN/EDIFACT standard electronic messages for customs purposes represent a common example of an organized approach in this area; over the years, these messages have grown into a very complex structure.

In 1996, the Heads of State and governments of the world's seven largest economies determined that confusing, redundant and non-standard systems of data had become an on-tariff barrier to trade. As a consequence, a group of customs experts was established. The mandate of the G7 customs experts was to standardize and reduce the amount of data necessary to meet customs requirements and improve trade facilitation. As part of this project, harmonized data sets for theG7 countries were developed for each of the basic customs procedures, with the emphasis on minimizing the data requirements by elimination, simplification and standardization. The G7 work was handed over to the World Customs Organization (WCO), and was known as Version 1.0 of the WCO Customs Data Model.

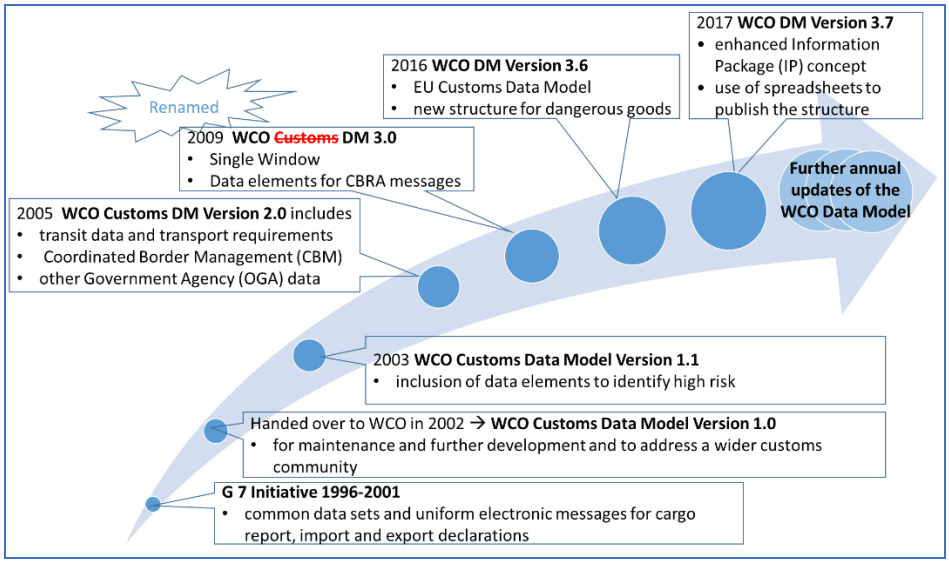

Figure 3 Brief History of the WCO DM

Through transparent Data Maintenance Request (DMR) procedures, the WCO DM content has been broadened and deepened in stages. With inputs from a number of WCO Member administrations, the WCO produces annual updates of the WCO DM.

III. The Strategic View

The WCO Recommendations

The WCO Recommendations reflect the high-level commitment of the international Customs community agreed upon by WCO Council, and implicitly commit Customs administrations, insofar as possible, to implementing the Recommendations' provisions for securing the highest degree of harmonization.

There are two Recommendations that are related to Customs data requirements, and they are highly representative of the strategic objectives of the WCO DM:

1. Recommendation on the use of the WCO DM (2009):
    - Adopt the WCO DM
    - Use the WCO data elements
    - Use the standard electronic messages described in the WCO DM

2. Recommendation on the dematerialization of supporting documents (2012):
    - Eliminate the need for supporting documents, if possible
    - Discontinue hard copy
    - Use electronic declaration and automated verification

Benefits of Implementing the WCO Data Model

Taking into account the role of the WCO DM as a basis for data harmonization and information exchange, and its role as a semantic hub connecting border management stakeholders, the implementation of the WCO DM provides various benefits from different points of view.

Implementing the WCO DM:

- enables the implementation of systems for electronic customs procedures and electronic message exchange that decrease the need for paper forms by creating electronic interfaces;
- improves the integrity and transparency of service delivery processes as an enabler for introducing automated processes;
- reduces costs to businesses and governments by providing a standard set of data eliminating duplication and redundancy;
- is an enabler for eliminating unnecessary intermediaries by providing direct access to government services; and
- fosters and facilitates the implementation of a Single Window environment.

Focused on a cross-border regulatory agency stand point, the WCO DM:

- covers multiple border regulatory requirements, such as those of Customs, Food Safety, Agriculture, Marine Safety and other cross-border regulatory agencies;
- enables easy access to regulatory services by traders, and offers enhanced border process efficiency;
- provides a standardized dictionary of data that enables regulators to enhance the capability of risk management systems;
- improves compliance with regulatory requirements by enhancing data quality;
- underpins harmonized development of IT systems and Single Window environments; and
- facilitates seamless data exchange, processing and storage.

From a private sector stand point, the WCO DM:

- reduces regulatory reporting costs;
- enables the sharing and reuse of data from partners across the global supply chain;
- facilitates simplified business processes and better internal controls;
- enhances trade facilitation;

- harmonizes and enhances the implementation of new policies and programmes, such as AEO programmes and AEO MRAs, and ensures delivery of associated benefits.

Challenges of Implementing the WCO Data Model

The mapping of existing systems' data sets in order to ascertain alignment may present some challenges; time and dedication are required to understand the WCO DM, develop technical expertise and ensure continuity of knowledge and resources.

IT programming of the necessary adjustments to the existing customs ICT system involves analysis, time and dedicated resources. Once the system is in place, ongoing maintenance is the key to continuing success.

Changing the existing national legal framework to support the adoption of the Data Model and Single Window requires time, dedicated high-level commitment and close collaboration with Trade, cross-border regulatory agencies and the general public.

Chapter VI of this document aims to provide practical support for mastering these challenges. A tried-and-tested, step-by-step "Adoption Strategy" helps with planning and implementing projects for the adoption of the WCO DM in a structured and consistent way. The benefits of implementing the WCO DM might not become visible immediately after implementation has taken place. It will take time for it to become clear that the investment required has uplifted the quality of customs and other regulatory procedures.

The WCO Data Model and Single Window

A major aspect of modern Customs' forward-thinking is the notion of Coordinated Border Management (CBM) and, within that concept, the whole-of-government Single Window.

The WCO DM is the key enabler for a Single Window environment as it is the solution for optimized electronic data exchange, providing a global standard for whole-of-government cross-border data requirements. It promotes the concept of 'single submission' of data – where each piece of information is submitted only once through a single point of entry to the cross-border regulatory agencies. The objective is to obtain such data from the parties that are in the best position to provide it. The data should be obtained at the earliest point in time in the supply chain and incrementally added by relevant parties, as it becomes available along the international supply chain.

The WCO DM provides all border control agencies with a universal language for cross-border regulatory data exchange, thus enabling the early sharing of information. It enhances risk management with minimum calls on commercial operators, as the critical data needs of all related cross-border regulatory agencies can be met by a single submission to the Single Window.

IV. The Relationship between the WCO Data Model and other International Instruments and Standards

The International Context

As an enabler for information exchange between all CBRAs as well as private sector economic operators, the WCO DM has numerous interrelations to other international conventions, instruments, standards and tools.

The WCO DM can support or even enable the implementation of related international agreements or recommendations. Furthermore, the WCO DM itself was built using established international conventions and standards.

The Revised Kyoto Convention

The WCO Council adopted the Revised Kyoto Convention (RKC) in June 1999 as the blueprint for modern and efficient customs procedures in the 21st Century. It has come into force on 3 February 2006. The RKC is the fundamental Convention for the WCO DM; it provides the basis for the customs procedures that are addressed in the WCO DM.

The RKC elaborates several key governing principles, chief among which are:

- Transparency and predictability of Customs' actions;
- Standardization and simplification of the goods declaration and supporting documents;
- Simplified procedures for authorized persons;
- Maximum use of information technology;
- Minimum customs control necessary to ensure compliance with regulations;
- Use of risk management and audit-based controls;
- Coordinated interventions with other border agencies; and
- Partnership with Trade.

WCO Instruments and Tools

The WCO's mission is to enhance the efficiency and effectiveness of Customs administrations by harmonizing and simplifying Customs procedures. In order to further trade facilitation the WCO has developed, and maintains, various standards, instruments and tools. The WCO DM is one of the tools that the WCO provides in this context. Other WCO instruments and tools that are strongly interrelated with the WCO DM are described below:

SAFE Framework of Standards[1]

In June 2005 the WCO Council adopted the SAFE Framework of Standards to Secure and Facilitate Global Trade (SAFE FoS), that acts as a deterrent to international terrorism, helps secure revenue collection and promotes trade facilitation worldwide. The core principles of the SAFE Framework of Standards includes advance electronic information (AEI) and risk management. The WCO DM takes this requirement into account and contains structures that can be used for exchanging AEI under the SAFE FoS; for example, using the WCO DM, electronic messages can be created to enable end-to-end container tracking, as well as effective and timely risk management.

Similarly, the WCO DM supports the implementation of all three Pillars of the SAFE Framework: Pillar 1 (Customs-to-Customs), Pillar 2 (Customs-to-Business) and Pillar 3 (Customs-to-Other Government and Inter-Government Agencies) and respective associated standards.

Coordinated Border Management[2]

Coordinated Border Management (CBM) is an approach to managing the interaction between border control agencies in order to ensure efficient and effective

[1] SAFE Framework of Standards to Secure and Facilitate Global Trade - 2018 edition

[2] Coordinatd Border Management Compendium 2015

processes applicable to travellers, goods and means of conveyance. The issues addressed by CBM include:

- Complex procedures
- Integrity problems
- Excessive numbers of controls
- Poor co-ordination of border control processes
- Ineffective information sharing among border agencies

CBM involves all stakeholders at the border, including Customs, cross-border regulatory agencies and the private sector. As CBM also addresses information exchange, the WCO DM is an enabler for this approach.

Globally Networked Customs (GNC)[3]

GNC is a concept for the systematic exchange of information that enhances the ability of Customs and border agencies to discharge their responsibilities more effectively. This is achieved by improving the use of available data in import, export or transit declarations and similar data transfers from industry to Customs, including cargo declarations and other transport logistics data. The use of harmonized and standardized data as provided by the WCO DM is key to this strategy.

Single Window Guidelines[4]

The importance of the WCO Data Model for the development of a Single Window environment has already been described in Chapter III. In order to support capacity building efforts, the WCO has developed the Compendium on "Building a Single Window Environment". The Compendium consists of two volumes providing comprehensive guidance on how to build a Single Window environment. It also

[3] Globally Networked Customs (GNC) Concept and Handbook 2012

[4] Single Window Guidelines 2017

contains "Guidelines on Data Harmonization", which are based on the WCO DM as the foundation for undertaking data harmonization work, as a basic building block for the development of a Single Window environment.

Customs-Business Partnership Guidance[5]

The Guidance provides a detailed, step-by-step, phased approach, together with several best practices for developing a robust and sustainable engagement/partnership mechanism between Customs and Business. The WCO Data Model has been developed in cooperation with the trade and transport community, and other cross-border regulatory agencies. Trade and transport organizations, as well as partner cross-border regulatory agencies, are also involved in the work of maintaining the WCO Data Model. Therefore, the WCO Data Model itself is a successful example of Customs-Business partnership on the one hand, while on the other hand it facilitates the exchange of information between businesses and Customs, and also supports initiatives such as Single Window, the AEO Programme, and mutual recognition of controls and AEOs.

Risk Management Compendium[6]

The development and implementation of an intelligence-enabled risk management framework, along with the development of a risk management culture within a Customs organization, is seen as one of the principles associated with modern customs administrations. The WCO Risk Management Compendium meets the need to define a common approach enabling Customs administrations to speak the same language about the methodology they utilize to identify and mitigate potential risks. Effective risk management without information is impossible. The availability of standardized and harmonized data is the key ingredient, and in this

[5] Customs-Business Partnership Guidance 2015

[6] WCO Riskmanagement Compendium 2011

context the WCO DM is one of the main enablers of an effective risk management system.

International Conventions and Recommendations

Other key international conventions and recommendations (besides the RKC) that are interconnected with the WCO DM are:

- WTO Trade Facilitation Agreement (TFA)
- WTO Agreement on Customs Valuation
- HS Convention (International Convention on the Harmonized Commodity Description and Coding System, 1983)
- General Agreement on Tariffs and Trade (GATT)
- IMO Convention on Facilitation of International Maritime Traffic (IMO FAL)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on International Transport of Goods Under Cover of TIR Carnets (TIR Convention)
- International Plant Protection Convention (IPPC)
- The Codex Alimentarius or "Food Code"
- World Organization for Animal Health (OIE) International Standards and Codes
- International Civil Aviation Organization (ICAO)/Chicago Convention on International Civil Aviation
- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
- Stockholm Convention on Persistent Organic Pollutants

International Standards

The WCO DM data set and message structures have been developed from existing international data standards, such as

- UN/TDED
- UN/EDIFACT Messaging Standards
- ISO Standards

These standards are widely used for international trade by traders, regulators, and service providers such as transport operators.

V. Components of the WCO DM

WCO DM as a complete Toolbox

The WCO DM is a toolbox containing material that can be used for a variety of purposes. As shown in Figure 5 below, the WCO DM consists of several components. This makes it clear that the Data Model is not a single, monolithic entity; rather, it is a complex, interrelated set of discrete components. To fully appreciate the Data Model, each component needs to be analysed and understood.

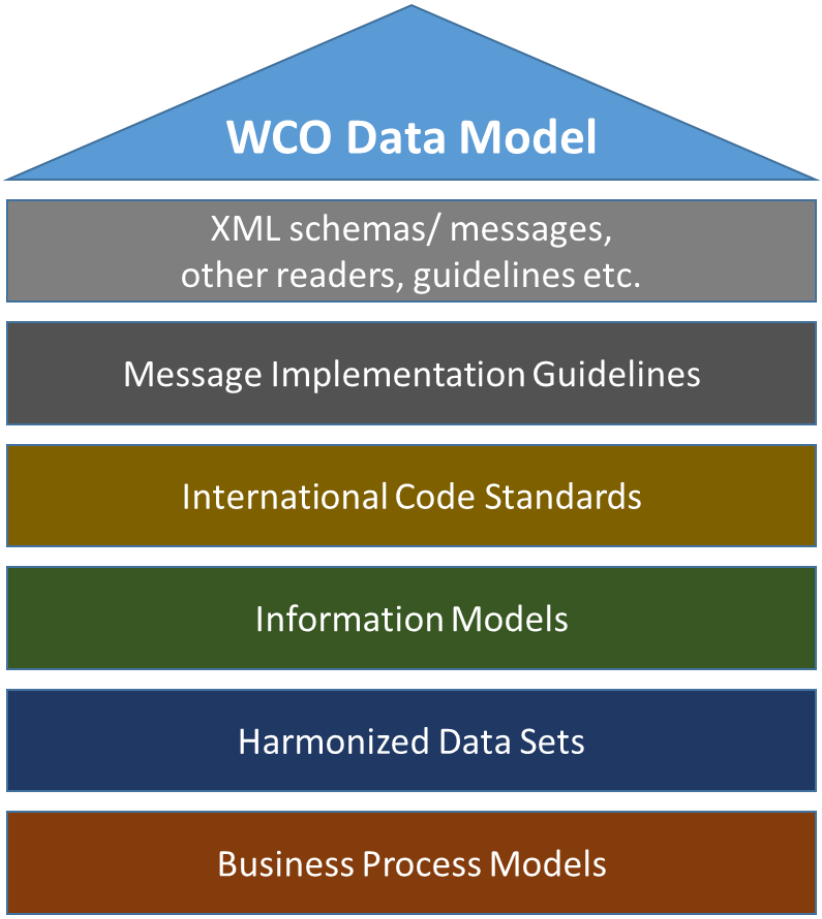

Figure 4 Building blocks of the WCO DM

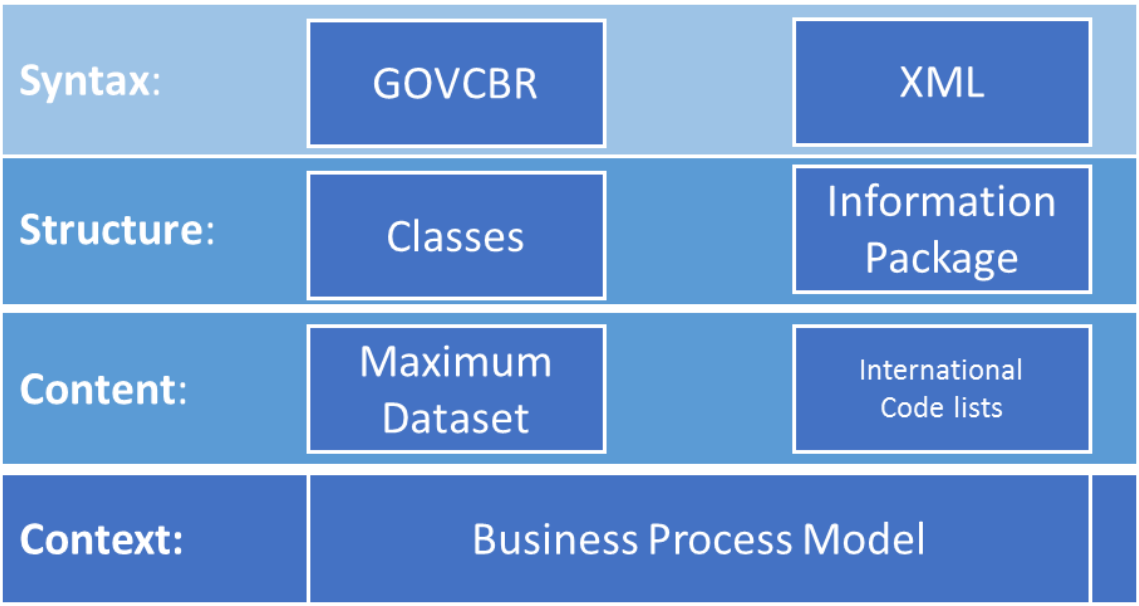

Figure 5 Components of the WCO Data Model

The Context

As mentioned earlier in this document, the WCO DM includes analysis and modelling of the customs procedures and processes contained in the RKC, other WCO tools and other international agreements and standards, using use-case diagrams and activity diagrams and descriptions. Based upon this analysis, illustrative scenarios are developed for governmental business processes. The figure below shows one Example of a WCO Data Model Use Case Diagram:

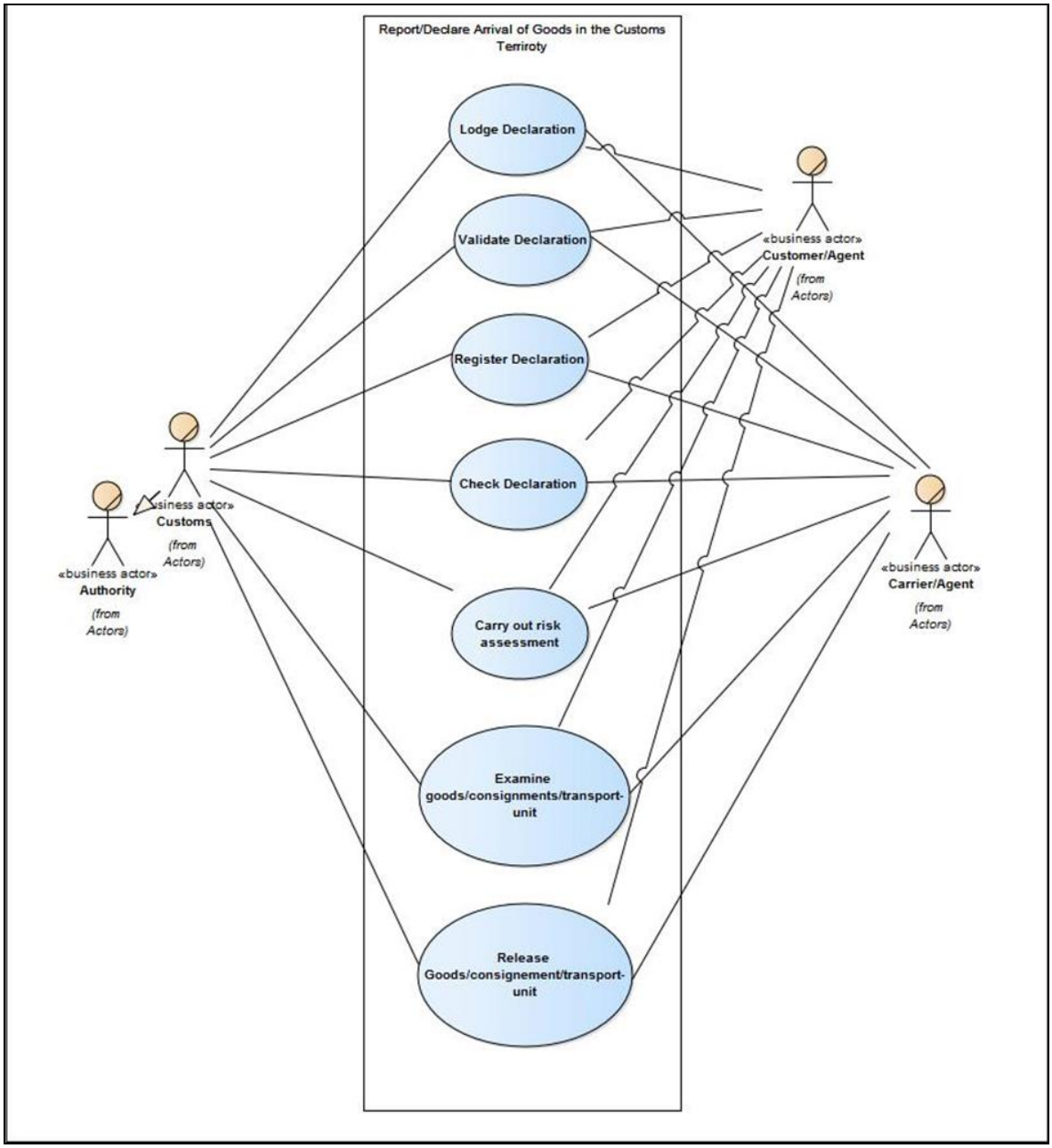

Figure 6 Example of a WCO Data Model Use Case Diagram

The Content

The WCO DM is a comprehensive dictionary of the data required to exchange and support processes and regulatory information needed for several cross-border regulatory agencies, including Customs. In this perspective, the WCO DM encompasses the basis for an agreed maximum data set, which contains the harmonized and standardized Data Elements and Definitions, as well as the code list used by each data element.

The Structure

At the structural level, the WCO DM is a technical model, systematically developed to reflect the relationships between the different pieces of information by defining how the data elements are related to each other, as well as organized and constructed to form a specific electronic message. The structure of the WCO DM is organized within Classes and Information Packages.

The Syntax

The syntax explains how the WCO DM is used in an actual implementation, employing two known computer message formats, namely XML and EDIFACT Government Cross-Border Regulatory messages (GOVCBR).

XML Schemas and XML Message Implementation Guidelines (MIG) help implement XML messages that are consistent with the Data Model. Reusable components of XML Schemas include documentation from the WCO DM, which can be used for validation purposes. The aim is to simplify message processing by promoting the reuse of schema components.

The multifunctional GOVCBR message covers all "old" EDIFACT messages for export, conveyance, cargo, import and transit reporting, as well as response messages from a cross-border regulatory agency.

The Overall Information Structure and the Information Packages of the WCO DM

The Overall Information Structure (OIS) and the Information Packages are structuring components of the WCO DM. At the very basic level, there is the Maximum Data Set that lists all the data elements that make up the Data Model. In layman's terms, the OIS describes how the data elements are structured to build all the information that can be exchanged. Technically speaking, it contains the overall class structure as a basis for electronic messages. Information Packages are subsets of

the OIS that are classified and refined by context categories, and that represent the business usage of data.

There are three types of Information Packages that provide data subsets for specific purposes, namely:

- Base Information Package (BIP)
- Derived Information Package (DIP)
- My Information Package (MIP)

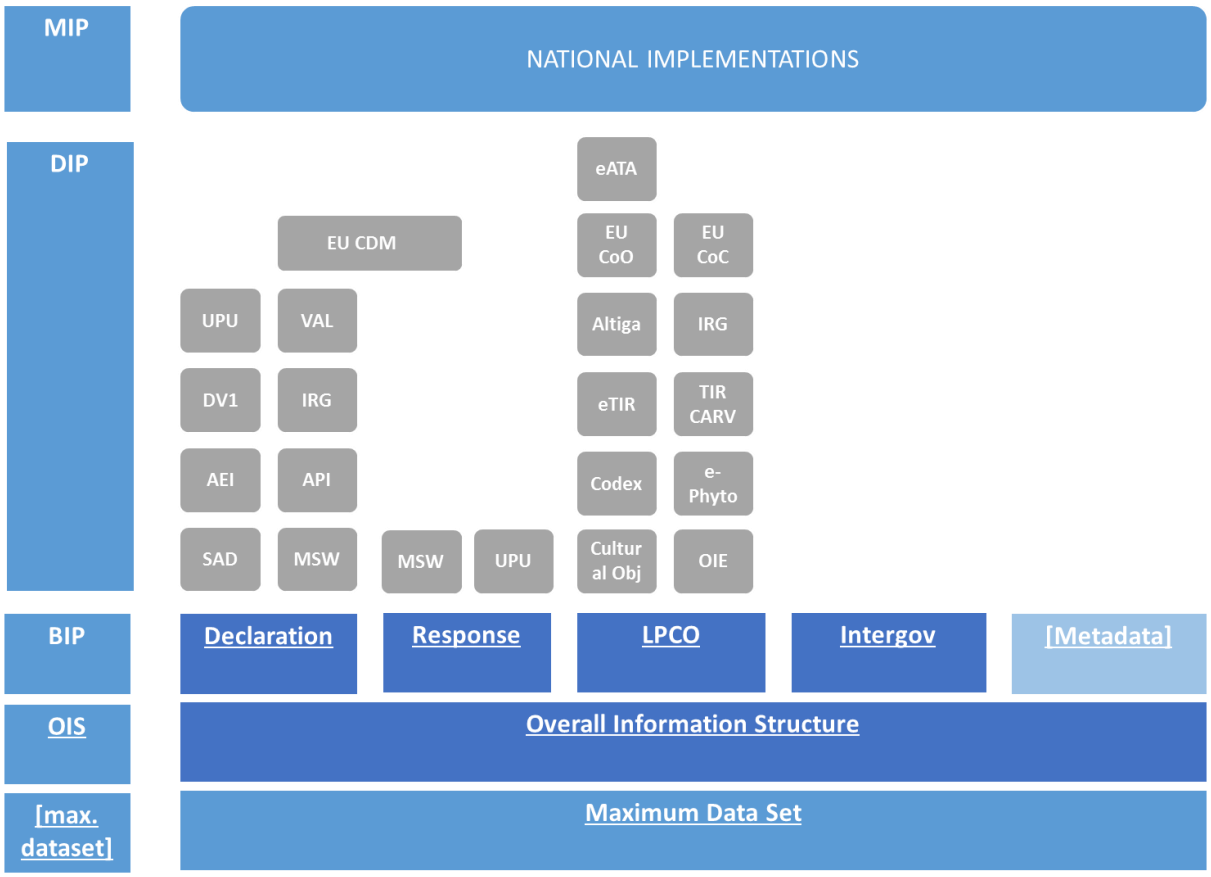

Figure 7 Overview of the WCO DM Information Packages

Base Information Package (BIP)

BIPs are basic assemblies for a specific business context from which smaller subsets can be derived. At present, the following types of base information packages have been constructed (see also Figure 7):

- Declaration: A document assembly representing Business-to-Government (B2G) messages.
- Response: A document assembly representing Government-to-Business (G2B) messages.
- InterGov: A document assembly representing Government-to-Government (G2G) messages, between government agencies in the same country or in different countries.
- LPCO: A document assembly representing Licences, Permits, Certificates and Other types of authorizations, which can be used in B2G, G2B or G2G
- Metadata: Technical envelope information to be used with any of the above Information Packages.

Derived Information Packages (DIP)

Each BIP can be reused and restricted to 'derive' several subset assemblies, the so-called DIP. Every DIP must be based on a specific BIP and is related to a specific legal framework. Figure 7 shows several examples of WCO DM DIP.

My Information Packages (MIP)

A MIP represents national or regional subsets of a DIP. A MIP is always based on a specific DIP or BIP.

WCO DM Class Diagrams

Classes are units of information of the WCO DM that are composed of several data elements joined together, each having a unique identification and a semantic definition. Super classes are templates for classes that have similar characteristics; these are more general types of classes that have generic meaning and abstract data elements, which will be reused to construct classes that have similar characteristics. The WCO DM provides class information within the spreadsheets as well as in UML class diagrams.

The Maximum Data Set and the Information Packages are more a conceptual representation of the data, and they cannot be used directly for actual message transmission. To transmit or exchange information between two or more parties, the information needs to be put into an electronic and machine readable format, such as XML or EDIFACT. This requires that the data elements be organized in classes to construct a specific message.

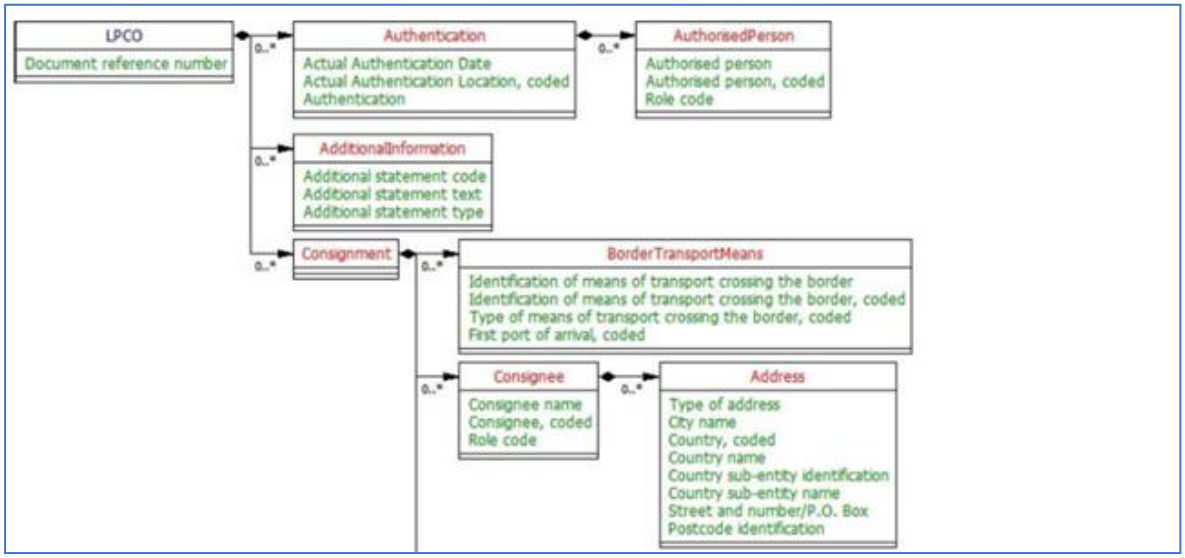

Figure 8 Excerpt from a WCO DM Class Diagram

Use of Codes and Code Lists

The data elements in the WCO DM are used to exchange specific pieces of information between the senders and recipients of messages. Codes are used to transfer agreed meanings, rather than text which can be prone to errors. Therefore, as much information exchange as possible is carried out using mutually agreed codes.

Using the codes defined in the WCO DM ensures that data can be readily understood by, and exchanged between WCO DM users. Where codes are used, the WCO DM identifies the code sets to be used, providing values and their definitions.

Code sets are comprised of code values. A code value represents a specific item within a set. In the example below, the code set is UN/ECE Recommendation 21 and the code values are 0 to 9, with the meanings provided alongside.

When implementing the WCO DM, administrations must use the code values and code sets provided in the WCO DM.

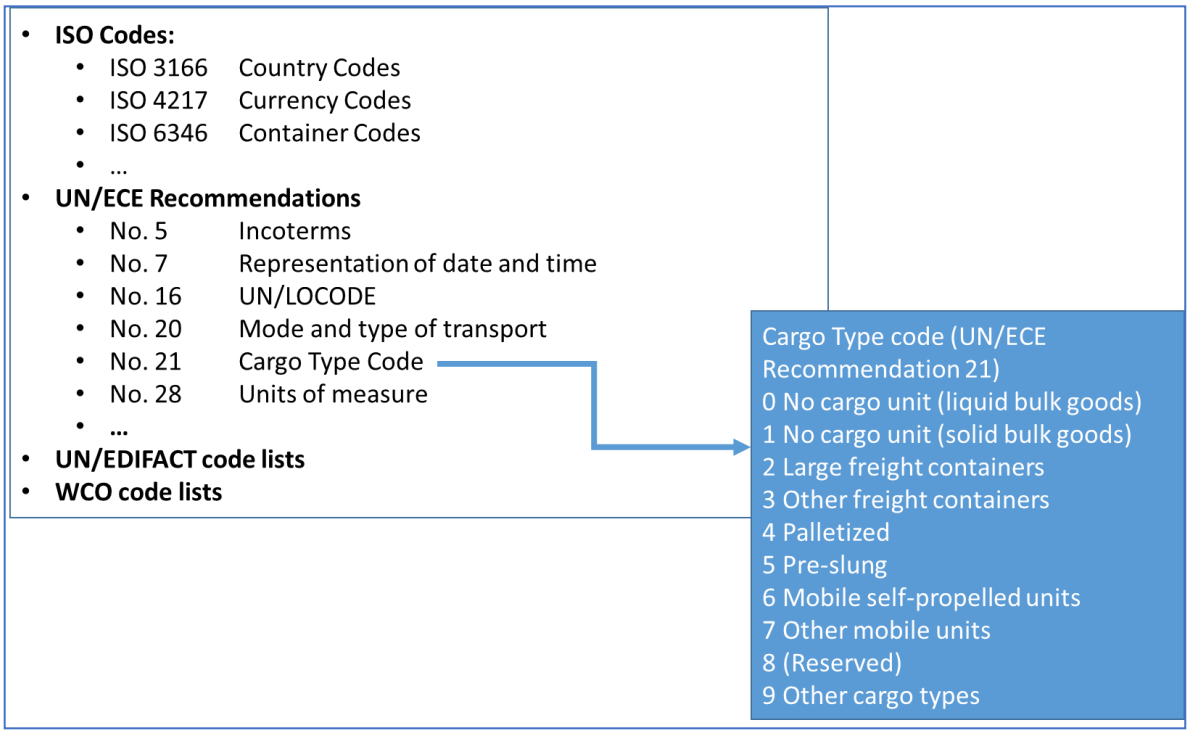

Figure 9 Examples of code sets and code lists used in the WCO DM

A full list of UN/EDIFACT code lists is included in the WCO DM eHandbook.

In addition to code sets and codes lists, the WCO DM uses the Core Data Type (CDT) concept based on the UN/CEFACT Core Component Technical Specification.

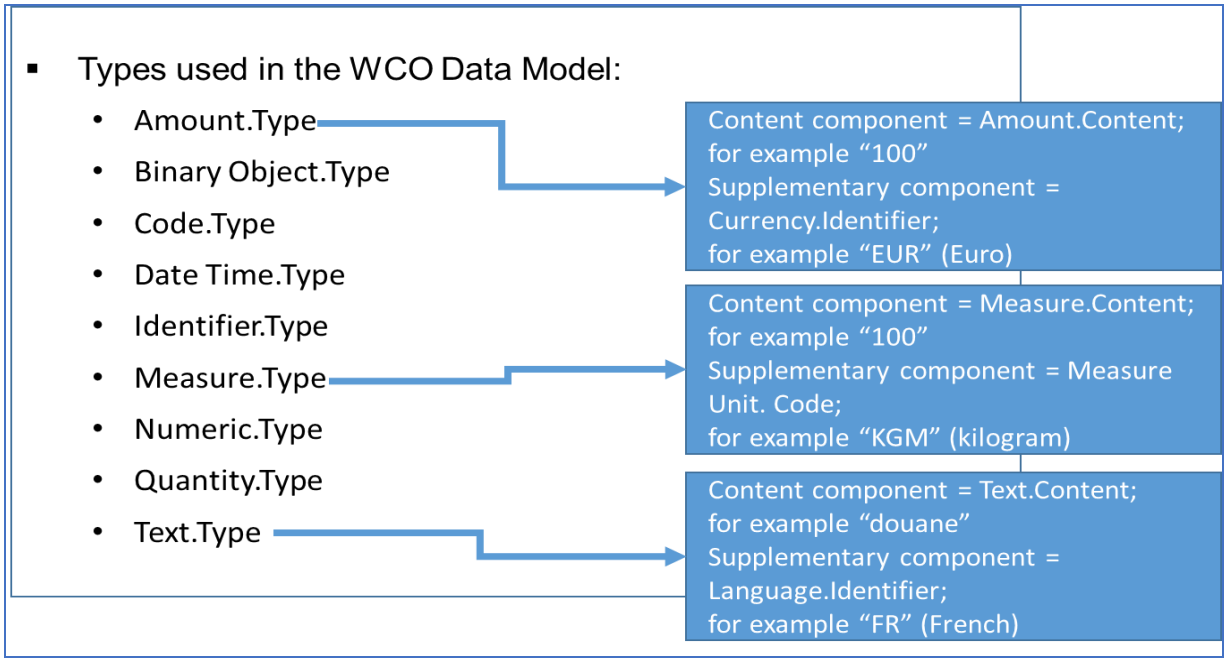

Figure 10 Examples of Core Data Types

VI. Implementing the WCO DM

The WCO DM could be implemented at the national level in a cross-border Single Window environment. However, it can also be implemented without a Single Window. Greater benefits will be derived from the WCO DM if implementation takes into account scenarios involving bilateral or multilateral data exchange. In addition, implementation should take place only after close consultation with Trade and cross-border regulatory agencies.

It should be noted that the following adoption strategy focuses only on the specific issue of the development of WCO DM conformant data sets and messages as a basis for a system that enables data exchange. More general guidance on ICT project management can be found in the "WCO IT Guide for Executives", while specific guidelines on the establishment of a Single Window environment are the subject of the WCO Compendium on "Building a Single Window Environment".

The WCO DM Adoption Strategy

Adoption of the WCO DM enables the use of standardized data sets that will allow greater facilitation of international trade and increased efficiency of cross-border processes. Harmonization and standardization eliminate the redundancy of data submitted to governments and enable the implementation of single-window systems, under which all required regulatory information is managed electronically by a single point of contact.

Aligning an original data set on the WCO DM requires strong support by executive management, knowledge of the business processes and legal framework, as well as advanced ICT technical skills. The figure below shows the WCO DM Adoption Strategy.

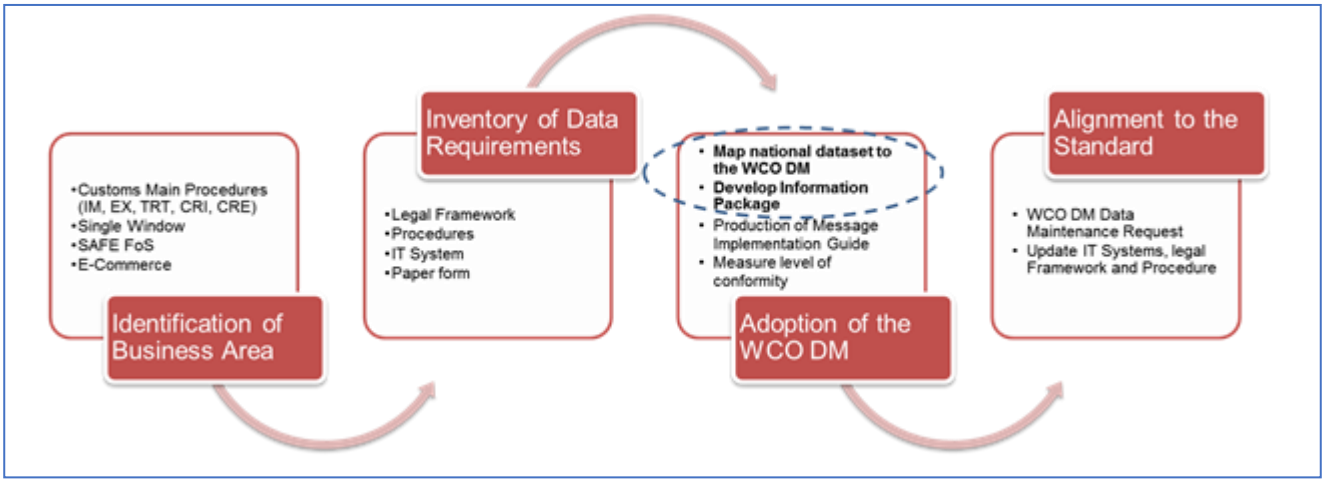

Figure 11 WCO DM Adoption Strategy

Identification of Business Area

First of all, the business area needs to be identified. This includes the identification and definition of the procedures and business processes, as well as the strategic scope and the vision to be addressed by the adoption project. It also entails the identification of all relevant stakeholders and attribution of ownership responsibilities.

The main Customs procedures as outlined in the RKC can be a useful guideline for this step. Depending on the strategic objective of the mapping project, WCO instruments and tools such as the Single Window Compendium, the SAFE FoS or the Framework of Standards on Cross-Border E-Commerce can provide further guidance (see also Chapter III).

Inventory of Data Requirements

The investigation and definition of data requirements includes:

a) A business diagnostic in order to examine and analyse:
   - the legal framework (national, regional and international)
   - the identified business processes and procedures (e.g., need for changes or standardization of processes through business process

modelling, identification of information as input or output for the various steps in the process)

- existing paper forms (e.g., possibilities for standardization, elimination or transfer to electronic data exchange)
- ICT systems already in place (including their technical specifications with regard to data requirements)

b) Data diagnostic and data inventory to define:

- the relevant data elements based on the outcome of the business diagnostic
- the draft data set

Mapping of the WCO DM

In order to map the identified data set to the WCO DM, the use of a 4-step mapping methodology is recommended. This 4-step mapping methodology is an approach for mapping a data set to the WCO DM with the objective of developing a WCO DM-conformant data set.

The 4-step mapping methodology consists of the following steps:

1. Listing of the current data elements required by Customs and other government agencies
2. Removal of duplicates and redundancies from the list of original elements
3. Mapping of each data element to the corresponding WCO DM data element
4. Structuring the matching data elements based on the structure of a WCO DM Information Package, taking into account, of course, the existing (original) structure

The "WCO Data Model Mapping Guide" provides practical support for the process of mapping a data set to the WCO DM, and for the development of a My

Information Package (MIP). For that purpose, the Guide includes explanations of the mapping process as well as templates for working materials and practical instructions on how to use those materials.

Once the mapping has been finalized, the Message Implementation Guideline (MIG) can be produced. The MIG describes how the message definitions are to be used in the context of the exchange of the identified and mapped data elements, based on the WCO DM and the supported message syntaxes.

An electronic message is conformant with the WCO DM when its data element specifications (including its data definition, format representation and recommended code list), information structures and syntax are true subsets of the standards of the WCO DM. An information system is therefore conformant with the WCO DM when it can produce, transmit, receive and process WCO DM-conformant electronic messages.

The status of being conformant indicates the capability of regulatory border management information systems to exchange electronic information efficiently. The level of conformity of a national or regional data model to the WCO DM is identified by means of three categories, namely 'non-conformant', 'compatible' and 'conformant'.

Alignment on the Standards

The final step of the Adoption Strategy includes the actual implementation of an information system that is conformant to the WCO DM. This will usually be part of a national implementation plan.

This step also addresses the maintenance work on the WCO DM, as implementation may necessitate changes to the WCO DM itself. Such changes must be requested through the formal Procedure for WCO Data Maintenance Requests (see Chapter VII on Maintaining the WCO DM).

VII. Maintaining the WCO DM

WCO working bodies and groups

The WCO DM is developed and maintained by the Data Model Projects Team (DMPT) which reports to the WCO Information Management Sub-Committee (IMSC). The DMPT meets regularly during the year, with the participation of delegates from WCO Members and observers from other international organizations, trade associations and the private sector.

Members and interested parties from the business community are encouraged to participate in the work of the DMPT, in order to improve subsequent versions of the WCO DM.

Data Maintenance Requests (DMRs)

WCO Member administrations have agreed that changes to the WCO DM must follow strict amendment procedures. Data elements, for example, will be added only if it is determined that the requested element is critical to the needs of the requesting Member administration and that the information cannot be derived from an existing data element in the Data Model. Changes and additions should be required or supported by at least two Members using the DMR procedure, under which Members represented in the DMPT have to decide whether the DMR will be approved, withdrawn, rejected or deferred.

The originator of a DMR should be the delegate of a WCO Member; DMRs originating from other organizations/associations must be presented by a WCO Member, in exceptional cases the WCO can be the Originator. DMRs are processed by the delegates present at the DMPT meeting concerned; each DMR is given a status; if accepted, a DMR will be included in the next release of the DM after finalizing the necessary modelling work.

New versions of the DM

Based on DMRs and other improvement and development needs, the DMPT normally updates the published version of the WCO Data Model annually.

Upgrading to a latest release of the WCO DM in national implementation is required only when the national administration intends to include a functionality that is not covered by previous versions.

VIII. Publications on the WCO DM

Further information about the WCO DM can be found on the following websites and platforms:

- WCO Members website:

  http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/tools/data-model.aspx

- WCO DM eHandbook (credentials needed):

  http://ehandbook.dm3.wcoomdpublications.org/

- WCO DM ePrimer (credentials needed):

  http://eprimer.dm3.wcoomdpublications.org/

- WCO E-Learning platform CLiKC! (credentials needed):

  http://clikc.wcoomd.org/login/