

WCO Data Model: A Framework for Conformity

The WCO DM represents a standardized and harmonized compendium of data sets to be used by CBRAs and trade chain partners. These data sets will be used by CBRAs to modernize and streamline processes for import, export and transit.

Standardized data sets will allow for greater facilitation of international trade, increased efficiency of cross-border processes, and the meaningful exchange of trade data. **Standardization will also eliminate the redundancy of data submitted to governments,** thereby reducing costs to both government and trade.



The WCO DM is an international initiative to simplify and standardize electronic information required by CBRAs. The establishment of this standard could lead to future G2G, B2G and G2B (Government-to-Business) information exchanges. The adoption of the WCO DM will also enable the implementation of single-window systems, through which all required regulatory information is managed electronically through a single point of contact.

Developing and maintaining the WCO DM is a collaborative process, ensuring that most member requirements are represented. Promoting conformity among WCO members may require encouragement and capacity building to maximize member acceptance. Non-compliance to the WCO DM standard may result in adding costs and difficulties for prospective partners in the CBRA information exchange community. The benefits that the WCO DM offers should be sufficient encouragement for governments to conform to the standard.

5.1. Definition of Conformity

Conformity, with respect to the WCO DM, implies an on-going acceptance by CBRAs of the established standards. It is not an absolute concept; its adoption can be viewed in terms of the objectives described in section 5.2.

5.2. Conformity Objectives (in order of importance)

- 5.2.1. To promote and establish a cooperative relationship between government agencies and trade chain partners involved in regulating and facilitating cross-border trade.
- 5.2.2. To eliminate, wherever possible, the requirement for the same information to be provided more than once across different platforms.
- 5.2.3. Terms familiar to the stakeholders must be used wherever possible and can be matched with the WCO terms. The cross referencing must employ WCO Reference number / UNTDED tags as the codes for identifying each data element. The process of educating clients and demonstrating the benefits of the WCO DM are crucial to promoting data model conformity.
- 5.2.4. To compare matching data elements with respect to definition, representation and codes used.
- 5.2.5. To standardize the use of data elements across different procedures.
- 5.2.6. To adopt interchange scenarios outlined in the Use Case specifications that accompany the WCO DM compendium.
- 5.2.7. To adopt message syntax conforming to UN/EDIFACT and XML message standards, following the production of the WCO DM.

5.3. The WCO Data Model Compliance Process

5.3.1. Identification of Process Models

The first step towards the DM evaluation is the comparison of business processes. The WCO DM is based on the procedures outlined in the Revised Kyoto Convention, General and Specific Annexes and the Guidelines. The key procedures for import, export and transit that impact the data requirements from Transport and Trade for Customs purposes were modelled in the WCO DM and are described as information and business process models in UML notations. For administrations who wish to use the WCO DM for single window, the business processes should be defined in collaboration with CBRAs and trade chain partners to ensure all the program requirements are identified. In order to conform to the WCO DM, national process must match appropriate Kyoto processes. This helps establish the areas in the National Data Model that should be compared with the WCO DM.

5.3.2. Data Model Assessment

The Member Administration's National Data Model requires being methodically assessed. The assessment formally compares the National data model with the WCO Data Set and the UNTDED, the authoritative source to which the WCO DM is referenced. The similarities and differences can be analyzed by examining data requirements by CBRAs import, export and transit procedures. The present data requirements are best understood by examining the current input and output data of the automated systems. The result of this assessment will create a core listing of data elements necessary for processing international trade transactions. Where systems are not automated, it is worth examining the statutorily prescribed forms for various government procedures. Through the assessment process, a "data model concordance table" could be published in the same format in which the WCO Data Sets are published. The concordance table would highlight the inconsistencies between the Member Administration's systems and WCO DM.

It is expected that there will be significant harmony between the WCO DM and the National Data Model. Any differences may be classified into the following categories:

5.3.2.1.1. Data element to be added

Genuine data requirements could be a candidate for the Data Maintenance Requests (DMR) process. In order to determine whether the data is a genuine requirement, the following assessment criteria must be applied.

- i. Essential for the import, export or transit process
- ii. Trade/Transport is the best source for the information
- iii. Required by national legislation

5.3.2.1.2. Data element for deletion

This involves deletion of redundant data elements. In order to determine which elements are eligible for deletion, examining existing data in this area and what purpose they serve in the import, export or transit process will be necessary.

5.3.2.1.3. Data element identified incorrectly

The information is required but the data element used to seek it is incorrect. Re-engineering may be necessary in order to accommodate the information need while remaining compatible with the WCO DM.

5.3.2.1.4. Data element needs to be revised

The data element definition or representation is incorrect and in need of revision. This involves modification of the information name, representation, or position of the data element

The assessment would help place the country's data model into one of three categories, namely 'non-conformant', 'compatible' and 'conformant.' The following table provides the broad implications of each category.

| Non-conformant | Compatible | Conformant |
|---|---|---|
| <p>Uses proprietary data structures.</p> <p>Does not follow international standards.</p> <p>Too many deviations from the WCO Data Model.</p> <p>Work-around not possible to meet the data exchange requirements.</p> <p>Direct Trader Input is the predominant mode of entry</p> <p>Costly for the trader to operate and maintain.</p> <p>Major obstacle to participation in Globally Networked Customs</p> <p>Single Window development is infeasible.</p> | <p>Largely follows the WCO Data Model but has few variations in usage.</p> <p>Variations in usage can be overcome with minor but significant adjustments using 'adaptors' or 'translators'.</p> <p>The larger the number of adaptors, the more expensive it is for the trader to maintain software applications and to operate</p> <p>Does not stop the country's participation in international data exchange but may be limited due to expensive and complicated workarounds.</p> <p>Development of Single Window would entail serious challenges, high levels of effort.</p> | <p>Follows the WCO Data Model for all practical purposes of information exchange.</p> <p>National models are nearly true subsets of the WCO Data Model.</p> <p>Deviations from the WCO Data Model are either non-existent or are immaterial.</p> <p>Translators and adaptors don't play a significant role.</p> <p>Offers cost-savings to the trader in terms of information re-use and access to low cost compliance solutions.</p> <p>Facilitates participation in Customs to Customs information exchange.</p> <p>Facilitates the building of a Single Window Environment.</p> |

Countries that are non-conformant would be at a disadvantage in activities involving international data exchange. Countries that are compatible could make gradual and systematic changes to their regulatory requirements and information systems in order to conform with the WCO Data Model. Countries that are assessed as conformant should strive to maintain that status on an ongoing basis.

5.3.3. Collaboration

The work of Data Model conformance assessment is best done in a collaborative environment involving national experts representing various cross-border regulatory agencies, WCO experts, volunteers from the Data Model project team and other stakeholders. Resources that can help perform conformance assessment are accessible through the website www.wcodatamodel.org.

5.3.4. Publication & Consultation

The Data Model has extensive implications for the entire community of trade and transport partners. The findings of the WCO DM assessment study should therefore be published as a national metadata repository and should be available for public review. Countries that are compatible or conformant with the WCO Data Model would benefit from a trade facilitation point of view if they are able to publish statements illustrating how their national models conforms with the WCO Data Model. Publication

and consultation help promote business practices that encourage re-use of data in the international supply chain. It also helps in bringing to the marketplace, packaged solutions that are based on the WCO Data Model.

5.3.5. **Facilitating DM compliance**

Where administrations may lack experience in conducting internal assessments of their respective data models, they can be assisted by either bodies with expertise in the area, or by the WCO through its capacity building programs. The Information Management Sub-Committee (IMSC) should serve as the catalyst for such assessments.

5.3.6. **WCO Data Model Maintenance**

Using the established WCO DM, maintenance procedures will ensure that the WCO DM continues to be an adaptive standard that can conform with changing trade practices.

5.4. Conclusions

The WCO DM highlights the benefits of data modelling and data standardization. A data model is affected by legislative, strategic and trade facilitation requirements, as well as legacy systems and other normative considerations. It is therefore appropriate to view implementation of the DM in terms of stages rather than in fixed and absolute terms.

While member administrations may meet some of the conformity objectives, they may not be in a position to enforce all aspects of the model. It is essential for administrations to understand the impacts of non-conformity on their ability to operate in an electronic mode. Non-compliance does not necessarily equate an inability to participate in the process (countries have permitted simultaneous use of multiple and, at times, proprietary standards).

While the WCO DM is evolutionary and adaptable to the changing needs of stakeholders, it also demands their adherence in order to be successful. The process of building the WCO DM focused on promoting maximum acceptance. A framework with flexible concepts of conformity will ensure success for the WCO DM.
