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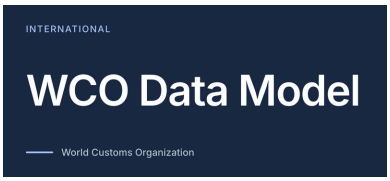
Framework / Data Governance / Other

WCO Data Model (Version 4.3.0)

The WCO Data Model is the World Customs Organization's harmonized data definitions and message structures for cross-border regulatory data exchange; Version 4.3.0 came out July 15, 2026.



What it is

The WCO Data Model is the World Customs Organization's standard set of harmonized data definitions and reusable electronic message structures for exchanging cross-border regulatory data between traders, Customs and other cross-border regulatory agencies; adopted in 2002 as Version 1.0 of the Customs Data Model and maintained since by the Data Model Projects Team, it now stands at Version 4.3.0, approved by the WCO Council in June 2026 and published on July 15, 2026.

The WCO describes the model as a compilation of clearly structured, harmonized, standardized and reusable sets of data definitions and electronic messages designed to meet the operational and legal requirements of Customs and other cross-border regulatory agencies, mapped to the United Nations Trade Data Elements Directory (UN/TDED) and built on UN/CEFACT and ISO standards. It is a language rather than a message format: users pick the harmonized fields they need and build their own exchange templates from the standardized structures, in UN/EDIFACT, XML, JSON or any other syntax.

At a glance

PUBLISHER World Customs Organization (WCO), Data Model Projects Team	TYPE Architecture / Technical Model	VERSION Version 4.3.0 (approved by the WCO Council June 2026, released July 15, 2026)
EFFECTIVE July 15, 2026 (Version 4.3.0)	DOMAIN Data Governance	FAMILY Other
REGION International	ADOPTION MODEL Voluntary	IMPLEMENTATION COMPLEXITY Medium

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

Why it matters

- **One dictionary for trade data** The model's harmonized definitions and reusable message structures mean a field means the same thing to a trader, a Customs administration and a partner agency.
- **Syntax-neutral implementation** The same structures can be carried in UN/EDIFACT, XML, JSON or any other syntax, and Version 4.3.0 adds a JSON tag to every class and data element.
- **Information packages for specific contexts** Subsets of the model cover defined business needs, such as Customs Bonds and Certificates of Origin (Version 4.2.0) and Maritime Advance Passenger Information and AEO Mutual Recognition (Version 4.3.0).
- **Member-driven maintenance** Changes start with a business need, are submitted as Data Maintenance Requests through the App and are decided by the DMPT, with medium releases that stay compatible within the Version 4 series.

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How SmartSuite supports WCO Data Model

Information Package Library

Load the classes and data elements of each information package in scope, with the Version 4.3.0 JSON tag and the version that introduced each element.

National Dataset Mapping Register

Record each national data field against its WCO Data Model class and element, the mapping owner, the status and any gap that needs a Data Maintenance Request.

Version Adoption Plan

Track the move from Version 4.2.0 to 4.3.0 as a change with its compatibility review, affected messages and go-live date, and repeat for each annual maintenance release.

Data Maintenance Requests

Log DMRs the organization submits through the WCO Data Model App, the business need behind each, the DMPT outcome and the release that carried it.

Supporting Document Types

Maintain the register of digital supporting documents exchanged under Version 4.3.0, from invoices and certificates to images, with the message each travels in.

Mapping Coverage Reporting

Report the share of national fields mapped to the model, open gaps by package and pending DMRs to the project board and partner agencies.

Common framework mappings

ISO 28000 | ISO 27001:2022 | UN/CEFACT

Official resources

WCO Data Model Overview

Defines the structure and components of the WCO Data Model for customs and regulatory data exchange.

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

WCO eLearning Modules

Provides guidance on implementing the WCO Data Model through structured online training modules.

clikc.wcoomd.org

Frequently asked questions

What is the WCO Data Model, and who maintains it?

It is the World Customs Organization's standard set of harmonized data definitions and reusable electronic message structures for exchanging cross-border regulatory data between traders, Customs and other border agencies, mapped to the UN/TDED and built on UN/CEFACT and ISO standards. It is maintained by the Data Model Projects Team, which is open to representatives of all WCO Members and observers and meets three or four times a year in Brussels, and it is published through the free WCO Data Model App.

What is new in Version 4.3.0?

Version 4.3.0, approved by the WCO Council in June 2026 and published on July 15, 2026, adds a Maritime Advance Passenger Information package for passengers and crew arriving by sea, aligned with the IMO Compendium on Facilitation and Electronic Business, and an Authorized Economic Operator Mutual Recognition Agreement package published as a work in progress. It also gives every class and data element a JSON tag and supports the exchange of virtually any type of digital supporting document. It is a medium release in the annual maintenance cycle and remains fully compatible with the Version 4 series.

Is use of the WCO Data Model mandatory?

The model is a WCO standard that Members adopt in their own declaration, clearance and Single Window systems; the WCO encourages implementation of the current version but the decision, and any legal requirement on traders, rests with each administration. Administrations that have described their implementations include New Zealand Customs, which has used the model since 2013, the Zambia Revenue Authority and the Nigeria Customs Service, and the European Union's Customs Data Model is based on WCO standards.

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How does an organization implement the WCO Data Model?

Users determine which harmonized fields they require and use the model's standardized structures to develop their own templates for exchanging data, in UN/EDIFACT, XML, JSON or another syntax. The WCO Data Model App, free of charge, lets them browse classes and data elements across versions, explore information packages (subsets of the model for a business context such as Customs Bonds or Certificates of Origin), download the model, map national datasets with the built-in mapping tool and consult implementation guidance such as the eHandbook and the Single Window Data Harmonization Guidelines.

How is the model changed, and how often?

Every change starts with a Member's business need and is submitted as a Data Maintenance Request through the WCO Data Model App; the Data Model Projects Team reviews, models and quality-assures it before publication. Releases follow an annual maintenance cycle: Version 4.2.0 in July 2025 added the Customs Bonds and Certificate of Origin packages, and Version 4.3.0 in July 2026 added the maritime passenger and AEO packages. Medium releases stay compatible within the Version 4 series so existing implementations are not disrupted.

License included / downloadable: Yes The WCO Data Model is available free of charge through the WCO Data Model App, where users can browse, download and map it; WCO Members and observers may join the Data Model Projects Team; the text is the World Customs Organization's copyright and the platform links to the WCO's page.

Full framework page and mappings: smartsuite.com/frameworks/wco-data-model