Introduction to WCO DM

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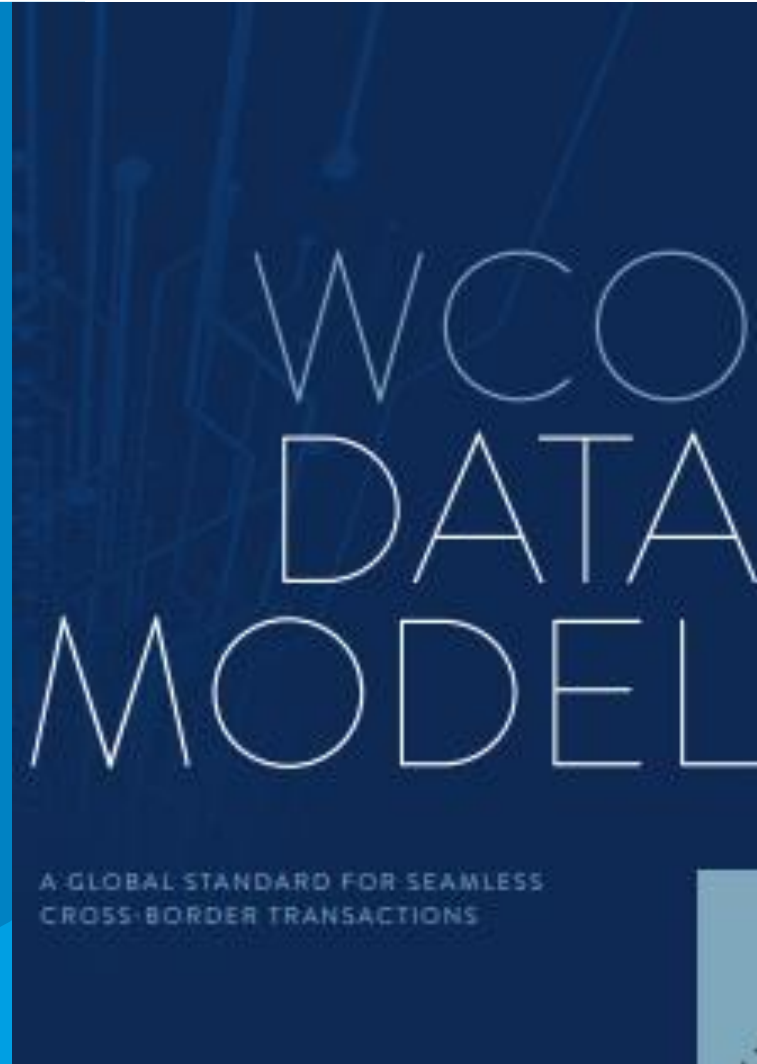
Procedure and Facilitation, Compliance and Facilitation
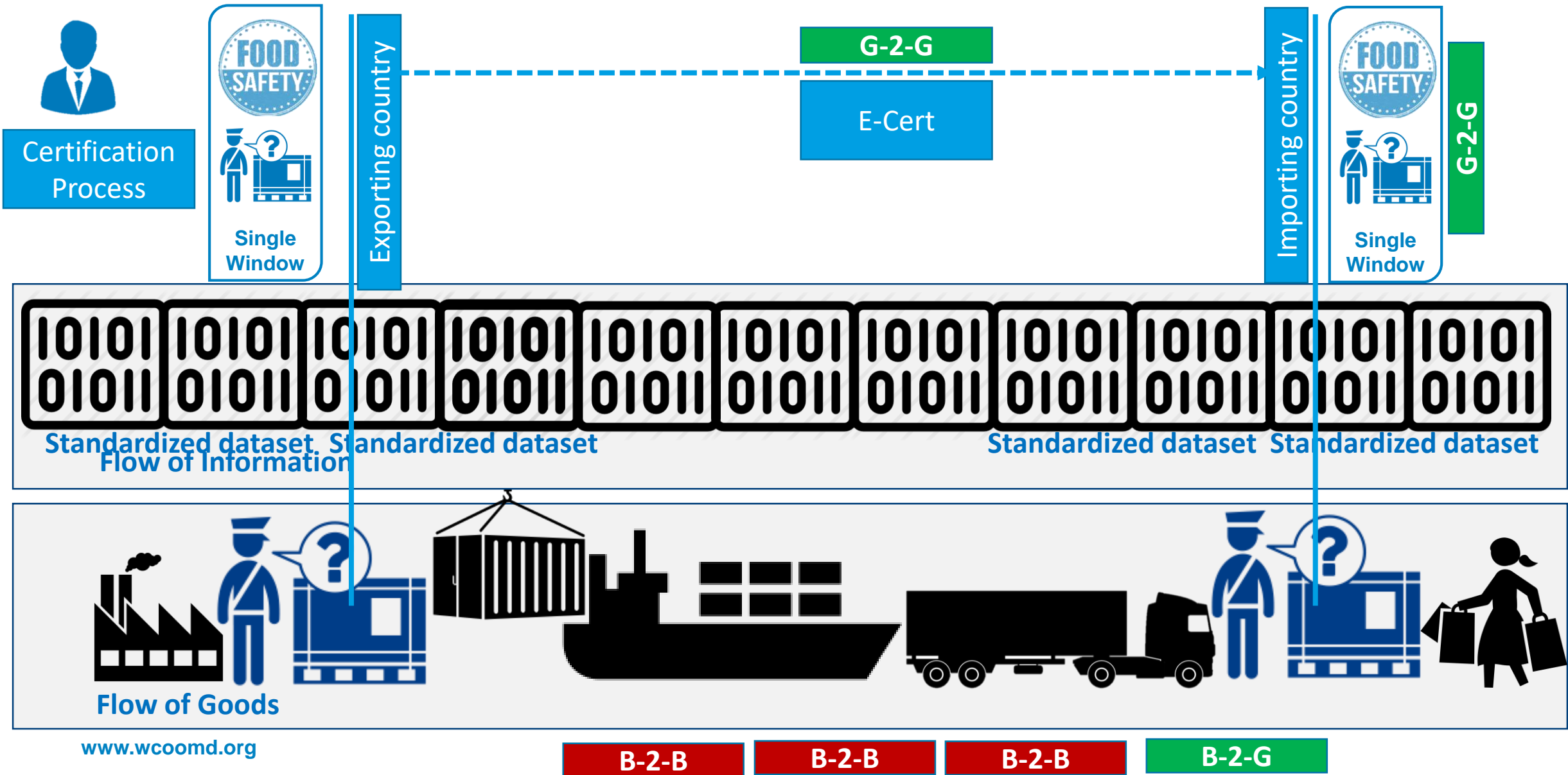World Customs Organization

Knowledge Academy

June 2022

WCO Data Model

- The WCO Data Model (DM) is the data foundation for global trade interoperability
- The WCO DM a universal language for cross-border data exchange enabling the implementation of Single Window systems and fuelling Data Analytics.
- It is 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 (CBRAs) responsible for border management.

www.wcoomd.org/DataModel

Streamlining flow of goods and flow of information

WCO

Certification Process

FOOD SAFETY

Single Window

Exporting country

G-2-G

E-Cert

Importing country

FOOD SAFETY

Single Window

G-2-G

Standardized dataset   Standardized dataset   Standardized dataset   Standardized dataset

Flow of Information

Flow of Goods

www.wcoomd.org

B-2-B   B-2-B   B-2-B   B-2-G

International Legal Framework

General Annex Revised Kyoto Convention RKC 7.2:

- When introducing computer applications, the Customs shall use relevant internationally accepted standards.

WCO Recommendation on the use of the WCO DM:
- Adopt the WCO Data Model for the identification and definition of all cross-border regulatory data requirements related to pre-arrival/pre-departure formalities and procedures for import, export and transit
- Use the WCO data elements, their names and reference numbers (WCO ID's), the data element descriptions, the character representations (including the suggested code lists) in describing and composing electronic messages
- Use the standard electronic messages described in the WCO Data Model in Government to Government and Business to Government /Government to Business electronic messages.

WCO DM Building Blocks

WCO

Electronic message and data exchange protocol

| EDIFACT - GOVCBR | XML | JSON | OpenAPI |

Semantics

Library
- Data dictionary (name and definition)
- Classes
- Data elements
- Core data type

Recommended code values

Information model (Based on UML Class Diagram)

Business Process Model

WCO DM Building Blocks

Supply-chain objects → **WCO DM Library** → **Information Model**

WCO DM Library

Attribute Name

Identification issuing country, code R147

To achieve a globally unique standardised TIN format for cross-border exchanges, add this separate 2-digit alpha numeric ISO Country Code attribute as a qualifier to the existing national identifier.
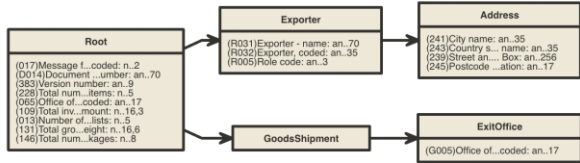
Role code R005

Code giving specific meaning to a party

Exporter, coded R032

To identify the party who makes , or on whose behalf the export declaration is made, and who is the owner of the goods or has similar rights of disposal over them at the time when the declaration is accepted

Exporter - name R031

Information Model

Root
(017)Message f...coded: n..2
(D014)Document ...umber: an..70
(383)Version number: an..9
(228)Total num...items: n..5
(065)Office of...coded: an..17
(109)Total inv...mount: n..16,3
(013)Number of...lists: n..5
(131)Total gro...eight: n..16,6
(146)Total num...kages: n..8

Exporter
(R031)Exporter - name: an..70
(R032)Exporter, coded: an..35
(R005)Role code: an..3

Address
(241)City name: an..35
(243)Country s... name: an..35
(239)Street an.... Box: an..256
(245)Postcode ...ation: an..17

GoodsShipment

ExitOffice
(G005)Office of...coded: an..17

Electronic Messages

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns="urn:wco:datamodel:WCO:AEI:1"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:ds="urn:wco:datamodel:WCO:AEI_DS:1"
    targetNamespace="urn:wco:datamodel:WCO:AEI:1"
    elementFormDefault="qualified">
    <xs:import namespace="urn:wco:datamodel:WCO:AEI_DS:1"
schemaLocation="AEI_1p0_urn_wco_datamodel_WCO_AEI_DS_1.:
    <xs:element name="Declaration">
        <xs:annotation>
            <xs:documentation>
                <SuperClassID>SC1</SuperClassID>
                <SuperClassName>RootDocument</SuperClassName>
            </xs:documentation>
            <xs:documentation xml:lang="EN">
                <WCOClassID>42A</WCOClassID>
                <WCOClassName>Declaration</WCOClassName>
            </xs:documentation>
            <xs:documentation>
                <DictionaryEntryName>Content Information Struct
                <UniqueDecClassID>0001D</UniqueDecClassID>
                <BIPUsageDeclaration>X</BIPUsageDeclaration>
            </xs:documentation>
        </xs:annotation>
        <xs:complexType>
            <xs:sequence>
                <xs:element name="InvoiceAmount" type="ds:Decla
                    <xs:annotation>
```

Exit Office
Origin
Entry Office
Shipping Mark
Transport Equipment
Consignment Item
Commodity - Gross weight
Classification
Cargo Description
Border Transport Means
Transport Contract
Consignor - Consignee
Transp. Doc. No
Unique Consignment. Ref

WCO | DATA MODEL

WCO DM Semantics: **Library**

Class:
WCO DM representation of a particular supply chain object

Data Element:
A piece of information that provide specific detail to a particular supply chain object represented by a Class

Class Name
DepartureTransportMeans `46A` ▼
Departure of goods in the context of export
ExportCountry `95B`
Details related to the export country
Exporter `57A` ▼
Person who makes or on whose behalf an export declaration is made
IntermediateConsignee `77A`
A party who takes possession of the goods from consignor to exporting carrier and from importing carrier to consignee

Attribute Name	Format	Code List
Identification issuing country, code `R147` *To achieve a globally unique standardised TIN format for cross-border exchanges, add this separate 2-digit alpha numeric ISO Country Code attribute as a qualifier to the existing national identifier.*	a2	EDIFACT codes (3207) = ISO 3166-1 2-alpha code
Role code `R005` *Code giving specific meaning to a party*	an..3	EDIFACT codes (3035)
Exporter, coded `R032` *To identify the party who makes , or on whose behalf the export declaration is made, and who is the owner of the goods or has similar rights of disposal over them at the time when the declaration is accepted*	an..35	
Exporter - name `R031`		

WCO DM Semantics: **Coded values**

Code:
- Concise and consistence representation of a piece of information, which otherwise expressed with longer, inconsistent text
- Eliminate risk of typography error
- Reduce the size of information
- Enable automated data processing

Example:
- Unit measurement codes
- Currency code
- 2 Digit Country Code
- UN Location Code
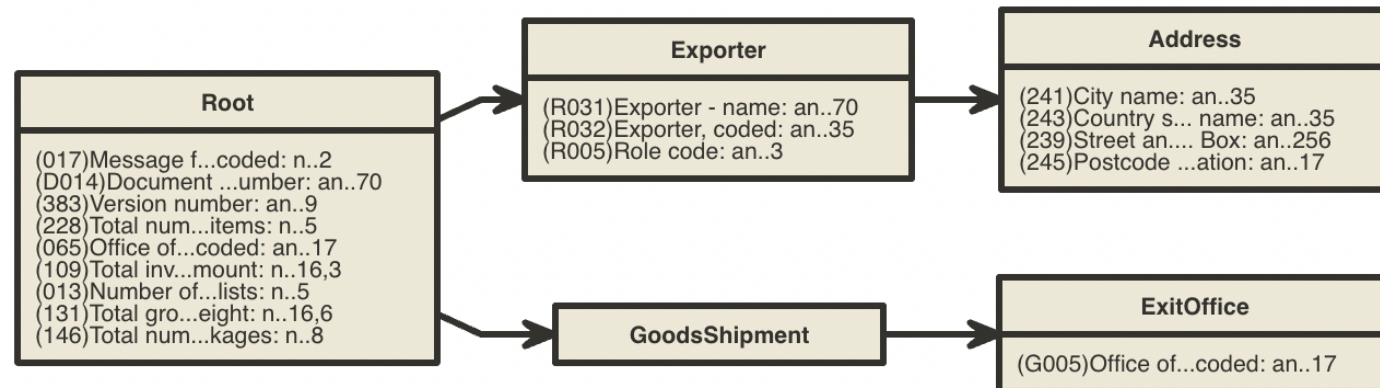
Consistent representation of a piece of information:
- **BE**
- Belgium
- Belgia
- Belgique
- Blegia (typo)

WCO DM representation of relationship between a piece of information to the others
- Represented with UML Class Diagram

Information Package

Information Packages:

- WCO DM is a multipurpose regulatory data management framework;

- Information package is a tool to organize the subsets of the WCO DM based on their specific purposes

- An IP may have additional details related to the procedures it is implemented

- The basis to generate certain electronic messages / electronic messages' schemas.

Library

Overall Information Model

BIP

Declaration	Response	LPCO	INTERGOV

DIP

Postal	Single Administrative Doc	Maritime		Food safety	Origin	Temporary Admission
Valuation	Immediate Release	Customs Dec (IM, EX, CR, TRT)		Plant Protection	Transit Guarantee	Waste - Mgt
Advance Electronic Information	Advance Passenger Information			Animal Health	Cultural Object	Conformity

Customs to Customs exchange

Transit Interconnectivity

AEO MRA

MyIP

NATIONAL IMPLEMENTATIONS

The use of WCO DM by Private sectors

- The WCO DM is now available for free for all stakeholders
- Private Sector may use the WCO DM to identify their commercial documents that are important for Customs

FOOD SAFETY

Single Window

G-2-G
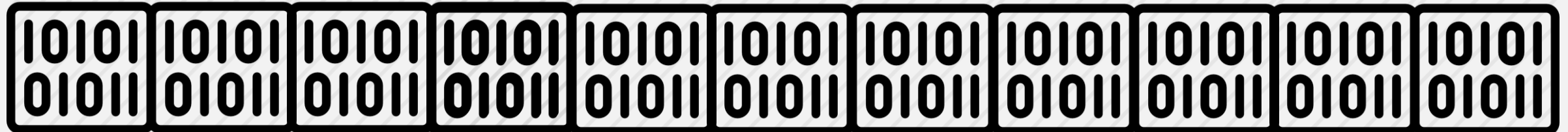
Standardized dataset Standardized dataset

Flow of Information

Standardized dataset Standardized dataset

Flow of Goods

B-2-B   **B-2-B**   **B-2-B**   **B-2-B**   **B-2-B**   **B-2-G**

The use of WCO DM by Private sectors

Commercial Documents (B2B)

- Invoice
- Invoice

- Transport Contract
- Transport Contract

Regulatory Documents (B2G)

- Customs Declaration

- Manifest

Single Window
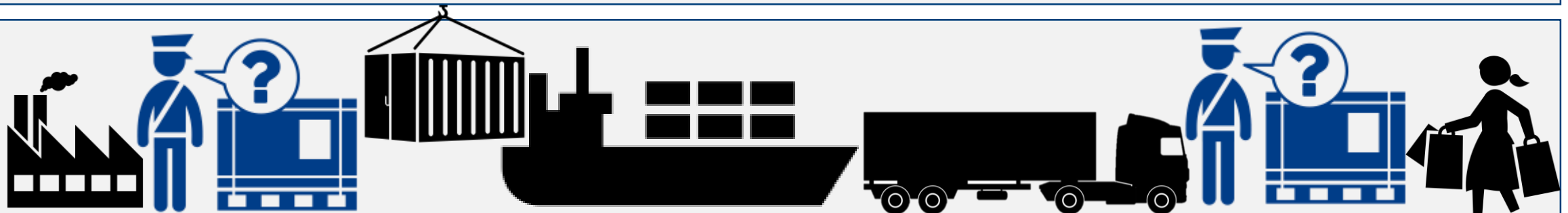
WCO Data Model Versions
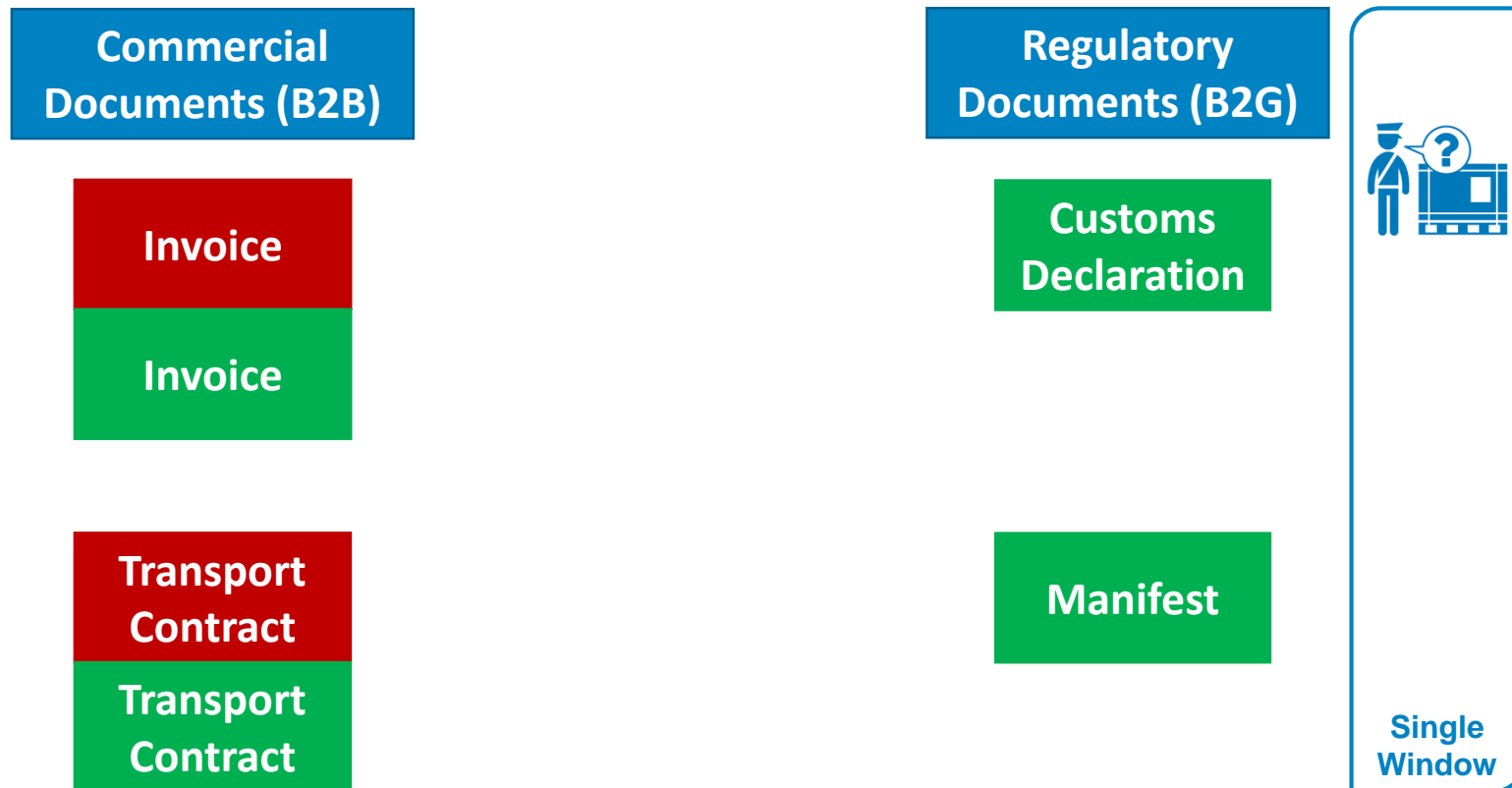
Release of version 3.11.0

- The WCO Released version 3.11.0 of the WCO DM in December 2021
- Published in an interactive Web App (WCO DM App)

WCO DM Version 3.11.0 Include:

- Changes to the WCO DM **approved** by the Data Model Projects Team (DMPT) through the <u>WCO DM Maintenance Procedure</u> from Sep 2021 – May 2022
- Message Implementation Guide (MIG) for the International Maritime Organization (IMO) Compendium
- MIG for the updated WCO – Universal Postal Union - Joint Message Standard (CUSITM/CUSRSP)

Where can you find WCO DM?

wcoomd.org/DataModel

datamodel.wcoomd.org

Thank you

World Customs Organization

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