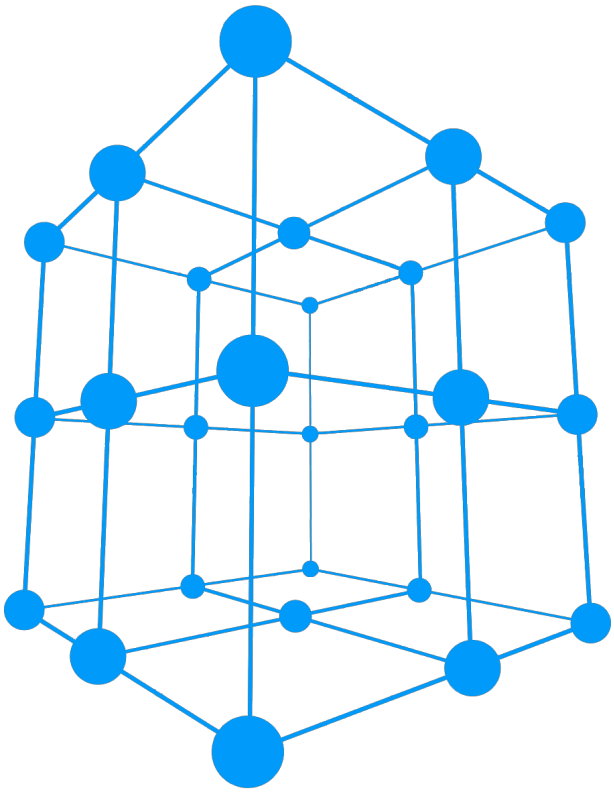
睿库研究

Recode-T(EC)-2017004

世界海关组织数据模型（中英对照）
WCO Data Model



Re-Code

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WCO Data Model

世界海关组织数据模型（中英对照）

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WCO Data Model / 世界海关组织数据模型，含：

Single Window Data Harmonization / 单一窗口数据协调

Cross-border Transactions on the Fast Track / WCO 数据模型链接贸易

WCO Data Model connects trade stakeholders / 利益相关方跨境交易的快车道

Table of Contents

目 录

WCO Data Model connects trade stakeholders / 84

Single Window Data Harmonization

单一窗口数据协调

1 Introduction

A Single Window environment sure is a complex technical issue, but it cannot work without the politics and other non-IT issues being examined first.
Please be sure to get the policy, legal and administrative frameworks analysed and sorted before looking at technical options.

In many countries the design and development of automated systems and the establishment of information and data requirements are often done with little co-ordination among regulatory agencies and with little co-ordination and consultation of other government agencies. As a result Trade[1] must comply with a variety of electronic messages and forms resulting in increased costs and in many cases inaccurate data.

A Single Window environment would provide a solution to the problem of the different electronic messages and would improve the accuracy of the use of data if internationally agreed standards are being used such as the WCO Data Model.

2 Scope

The scope of these Guidelines is to provide

- Single Window environment developers with tools that can be used in order to achieve data harmonisation. Internationally standardised, in the context of these Guidelines, are the data element names, definitions, the UNTDED[2] tag and the format[3].

- Single Window users with tools based on best practices that have been successfully employed by countries where Single Window systems are being developed or have been implemented.

3 Benefits

The use of non-standard, country-specific, and / or agency-specific data is highly inefficient in terms of cost and accuracy for both government and trade. Governments are required to maintain or develop agency-specific systems and Trade must develop and maintain interfaces for these redundant and duplicative reporting requirements. This is also evident in non-automated, paper-based systems where Trade is required to provide highly redundant forms.

1 Traders include importers, exporters, carriers, brokers, freight forwarders, etc.
2 United Nations Trade Data Element Directory 2005/ ISO 7372:2005
3 Elements from the UNTDED have been used according the WCO Data Model standards as much as possible

1. 介绍

单一窗口环境是一个复杂的技术问题，但如果事先不通过政治和非 IT 事项的检查，它是无法奏效的。

请确保对政策、法律和行政框架进行分析和整理后，再去研究技术方面的选项。

许多国家在设计和发展自动化系统，建立信息与数据要求时。监管机构之间，政府之间通常很少进行协调和磋商。因此，贸易商[1]必须遵守各式各样的电子信息和表格，这导致了成本的增加，而且数据在很多情况下失去了准确性。

单一窗口环境为电子信息不同的问题提供了解决方案，并且能够提升数据使用的准确定（如果使用类似 WCO 数据模型的国际标准）。

2. 范围

本指南的范围是：

- 为单一窗口环境开发人员提供可以用来实现数据协调的工具。国际标准化的数据元素名称、定义、UNTDED[2] 的标签和格式[3]；

- 为单一窗口使用者提供工具，此工具基于正在开发或已经实施单一窗口的国家已经成功采用的最佳实践。

3. 益处

对于政府和商界，使用非标准化、因国而异和 / 或因机构而异的数据在成本和准确性方面效率很低。政府必须维护或发展针对特定机构的系统，而贸易商必须开发和维护各种接口，以面对这些冗余和重复性的报告要求。这个问题在非自动化的基于纸张的系统中也非常明显，贸易商被要求提供高度重复性的表格。

1 贸易商包括：进口商、出口商、承运人、报关行、货运代理人等

2 United Nations Trade Data Element Directory, 联合国贸易数据元素目录 2005/ISO 7372:2005

3 UNTDED 中的元素已经尽可能按照 WCO 数据模型中的标准进行了使用

The situation is especially critical for large global traders who must interact with many Customs Administrations and many other government agencies. The cost and complexity of meeting these requirements is staggering. Not only large global traders but also SMEs[4] will benefit as well.

The use of international standards in data and messaging for export, transit transactions and import, where the same data and messages can be submitted to all government agencies including Customs will be the core foundation of a Single Window environment. The use of the WCO Data Model will ensure compatibility among government agencies' reporting requirements and will enable the exchange and information sharing among relevant government agencies including Customs, resulting in greater facilitation towards Trade.

As governments begin the development of a standardised, multi-agency data set there might be a concern about the number of data elements. To keep the number of data requirements as small as possible, the intent is to include in the standardised data set only that information which the agencies are currently allowed to collect, the "need-to-have-list" of information requirements.

The discovery of redundancy of data that would be revealed during the data harmonisation process and the ensuing standardisation, often results in reduction of data requirements.

Another benefit is the stability a standardised set of data requirements provides. The outcome of the data harmonisation must be a maximum set of data requirements for the export, transport and import of goods when crossing borders. Governments should not require any information outside of the standard data set. It is important to note that most of the data requirements of the WCO Data Model are Conditional. National Governments will use the WCO Data Model with its maximum data set to derive its National all_of_government border crossing data model.

4 Recommendation

It is recommended that governments considering the development or developing a Single Window environment should initiate the data harmonisation and standardisation process. It is also recommended that countries that have a Single Window in place and not executed a data harmonisation would also conduct such a harmonisation. These guidelines sets forth the steps governments should implement in the harmonisation process as follows:

对于跟许多海关和政府机构打交道的大型全球贸易商来说，这个问题尤其关键。为了满足这些要求所花费的成本以及复杂性是难以想象的。不光是大型全球贸易商，SMEs4也遭受了影响。

单一窗口环境的核心基础在于，进出口和转关贸易中使用国际数据和信息标准时，同样的数据和信息可以提交给包括海关在内的所有政府机构。使用 WCO 数据模型可以确保与其他政府机构报告要求的兼容性，而且支持包括海关在内的相关政府机构间的信息交换和共享，进而对贸易产生更大的便利。

随着各国开始进行标准化发展，各机构可能会对数据元素的数量有所担忧。为了尽量减少数据要求的数量，应该仅把各机构目前允许收集的信息纳入标准数据集，形成一个信息要求的“必备清单”。

冗余的数据会在数据协调的过程中被发掘出来，最终结果是数据要求的减少。

另一个益处是标准化数据要求集提供的稳定性。数据协调的成果必然是形成一个服务于进出口及转运贸易的最大化数据要求集。政府不应该要求标准数据合集之外的任何信息。需要注意的是，大部分 WCO 数据模型中的数据要求是有条件的。政府会使用 WCO 数据模型中的最大化数据合集去建立他们的全政府跨境数据模型。

4. 建议

对于那些考虑建立和发展单一窗口环境的政府，WCO 建议他们启动数据协调和标准化流程。WCO 还建议那些已经有单一窗口系统并且未执行数据协调的国家也能够实施此类协调工作。本指南为政府实施协调工作制定了以下流程：

4 Small and Medium Enterprises, 中小型企业

1. Identify the lead agency and dedicating staff to conduct the harmonisation,
2. Inventory current trade agency data and information requirements from automated systems and forms,
3. Nationally harmonise data and information inventory
4. Identify redundancies by comparing data definitions
5. Harmonise the information and data requirements inventory to the international WCO Data Model standards.

5 Guidelines on Single Window Data Harmonisation

5.1 Introduction

These guidelines are designed to assist Governments and Trade in harmonising and standardising government international trade information and data requirements in order to develop and implement a Single Window environment. These guidelines are based upon best practices and Single Window environment implementations and may be used in conjunction with UN/CEFACT Recommendation 33.

These guidelines will provide details on policy and organisation matters necessary to achieve the aimed harmonisation. They also provide tools that governments can employ to facilitate the harmonisation process, details on domestic harmonisation, and the eventual harmonisation of domestic requirements to the WCO Data Model

5.2 Objective

The objective of data harmonisation in comparison with the WCO Data Model is to eliminate redundancies in required data and duplication in the submission of trade data to Government authorities such as Customs and other regulatory agencies. The ultimate outcome should be one set of standardised data requirements and standardised messages that fully comply with the WCO Data Model. Within cross border transactions Trade will provide the required WCO Data Model data elements by submitting standardised messages to meet government requirements for, export, transit and import. This will facilitate trade, reduce costs and make it feasible to provide more timely and accurate information.

a. 确定牵头机构和专员进行协调；

b. 从自动化系统和表格中盘点现有的贸易机构数据和信息要求；

c. 在全国范围内统一数据和信息清单；

d. 通过比较数据的定义来去除多余的数据；

e. 协调信息和数据要求以符合 WCO 数据模型的标准。

5. 单一窗口数据协调指南

5.1 介绍

本指南旨在帮助政府和贸易商协调和规范国际贸易的信息和数据要求，以发展和实施单一窗口环境。本指南基于最佳实践和已经实现的单一窗口环境，并可能结合“联合国贸易便利化和电子商务中心（UN/CEFACT）”给出的第 33 条建议一同使用。

为了达到协调的目的，本指南提供了必要的政策和组织事项细则。指南同样提供了政府可以用来实施协调流程的工具和国内协调的细节。最终的协调结果将与 WCO 数据模型达成统一。

5.2 目标

协调数据并与 WCO 数据模型做比较的目的是消除所需数据中的冗余部分，消除向政府机构例如海关和其他监管机构重复提交数据。最终结果应该是形成一个与 WCO 数据模型完全符合的标准数据要求和标准信息合集。在进口、出口和转关等跨境交易活动中，贸易商会通过上传标准化的信息，提供所需 WCO 数据模型中的数据元素以满足政府的监管要求。这将促进贸易活动并降低成本，使贸易商能够提供更加及时和准确的信息。

5.3 Harmonisation Policy, Organisation, and Communication

5.3.1 Harmonisation Policy

UN/ECFACT Recommendation 33 lists key factors in establishing a successful Single Window environment. All of these factors are critical for the development of a Single Window environment. A strong lead agency is critical to a successful outcome of the harmonisation process. It is the lead agency that will be responsible for drafting the planning and committing the resources necessary.

5.3.2 Organisation

It is best to have a project team executing the data harmonisation process. The project team members must have extensive knowledge of international trade procedures specifically the area of regulatory information requirements. The harmonisation project team should also include data architects[5] and Business Process modellers. It is also helpful to dedicate a person to serve as a liaison to the participating agencies. This liaison serves as a conduit for information to and from the lead agency. Also, the participating agencies must identify a primary contact to for organising the agency's data inventory and harmonisation.

5.3.3 Communication

Communication of the harmonisation policy, procedures, and steps is critical. After organising the harmonisation project team, the next step is to hold a series of meeting and briefings for all participating agencies to clearly define the roles and responsibilities of the harmonisation project team. After this "kick-off" briefing the agency participants should understand the overall process by which data harmonisation will be accomplished, the purpose of one-on-one meetings with the data architects and business process modellers. They should also identify the work sessions the agency should participate in and the approach planned for these work sessions. Needless to say that the participants are well aware of agency's responsibilities

5.4 Data Harmonisation process steps

Data harmonisation is an iterative process of capturing, defining, analysing, and reconciling regulatory information requirements. It is highly unlikely that any government will be able to achieve harmonisation of all agencies at one time. Governments should consider prioritising agencies and agencies' requirements. The

5 A data architect in tis scenario is a person responsible for making sure a Goverment's strategic goal is created or optimised through the use of WCO Data Model standards.

5.3 协调政策，组织和沟通

5.3.1 协调政策

UN/CEFACT 第 33 条建议给出了建立一个成功单一窗口环境所需的关键要素清单。所有这些要素对于发展单一窗口环境都是至关重要的。一个强有力的领导机构对于协调流程能取得圆满成果来说意义重大。领导机构将会负责起草计划和保证必要的资源。

5.3.2 组织

最好建立一个执行数据协调流程的项目小组。小组成员必须具有广博的国际贸易流程知识，尤其在监管信息要求领域。协调项目小组还应该包括数据架构师[5]和业务流程建模师。为参与机构指派一名联络员也是非常有帮助的，联络员是领导机构与其他机构间进行信息传递的重要渠道。同时，参与机构必须确定一名组织数据清单和数据协调的主要联系人。

5.3.3 沟通

对协调政策、流程和步骤的沟通是至关重要的。成立协调项目小组的下一步即为所有参与机构组织一系列会议和简报，明确界定协调项目小组的角色和责任。通过听取简报，参与机构可以了解到哪些数据协调可以实现，和与数据架构师 / 业务流程建模师进行一对一会议的目的。他们也应明确各自应该参加的工作会议和实施会议的方法 approach planned for these work sessions。不用说，参与者们很清楚各机构的职责。

5.4 数据协调流程的步骤

数据协调是一个采集、定义、分析和协调监管信息要求的迭代过程。任何政府能够在同一时间实现各机构间的协调是几乎不可能的。各政府应该优先考虑部分机构和机构

5 在此情况下，数据架构师通过使用 WCO 数据模型标准来保证政府的策略目标能够实现或优化

prioritisation of requirements could be based on volume, revenue, supply chain security, etc. For example, every international trade transaction requires information for Customs, transportation, and statistics and may be considered as the first tier of agencies.

The selection of an agency could be based on its willingness and desire to participate in the Single Window.

The important point is that after completing the first tier of agencies, the Data Harmonisation process steps have to be repeated as additional agencies participate and as additional requirements are identified.

5.4.1 The Data Harmonisation process steps are defined as follows:

5.4.1.1 Data Capturing

Data Capturing means making an inventory of identified regulatory agencies' requirements. This can be accomplished in a number of ways such as the reviewing of agencies' forms, automated systems data requirements, regulations, etc. This includes the data element name, data element definition, representation (format or code), when the information is required (declaration, release, clearance) and citation of the relevant authority to collect, validate and view the information. This information can be aggregated in an Excel spreadsheet or work sheets from any other software tool.

5.4.1.2 Defining

Defining the information requirement is critical. While information is identified by name, the data element definition -what information is conveyed by using that data element- is more important.

5.4.1.3 Analysing

The process of analysing the information consists of gathering similar data element names and having a full understanding of the definition and the information required.

5.4.1.4 Reconciling

This is the final step in which there is agreement to use one data element name, a common definition, common code, and standard messaging reconciled with the WCO Data Model standard.

的要求。对要求的优先考虑可以基于体量、收益（revenue）和供应链安全。例如，每笔跨境交易都需要海关、运输工具和统计数字的信息，那么各机构可以优先考虑这些因素。

机构的选择可以基于其参加单一窗口项目的意愿和愿望。

重要的一点是在完成了机构的第一层要求后，如果有其他机构参与进来或确定了其他要求，数据协调流程的步骤需要重复走一遍。

5.4.1 数据协调流程的步骤定义如下：

5.4.1.1 数据采集

数据采集的意思是给已经确定的监管机构要求编一份清单。有多种方法可以实现数据采集，比如对机构的各种表格、自动化系统数据要求和规定进行复查。包括数据元素的名称、定义、表述（形式或代码）、何时需要（申报、放行、清关）和收集 / 验证 / 审查信息的相关当局的引证。这些信息可以在任何软件的 Excel 电子表格或工作表中进行汇总。

5.4.1.2 定义

对信息要求进行定义是极其重要的。当信息根据名称进行鉴别时，数据元素的定义（使用哪个数据元素转送什么信息）变得非常重要。

5.4.1.3 分析

分析信息的过程是收集相似的数据元素名称并充分理解其定义和所需信息。

5.4.1.4 协调

最后的协调工作会形成一份使用统一数据元素名称、定义、代码和标准信息格式（与 WCO 数据模型协调后）的协议。

6 Specific illustrations of the Data harmonisation process steps:

6.1 Capturing

In order to capture data elements and other information requirements developers of a Single Window environment can begin by reviewing forms. If the country has an automated trade processing system, data elements can be found by using the systems' logical data model. Initially, data can be arranged on a worksheet. The worksheet should contain the following information: data element name, data element description (definition), domain the data element belongs to, representation (alpha, numeric, or alpha-numeric, number of positions, delimiter), domain (code list), mode of transport (marine, air, rail, road), process (export, transit, import), whether it is used for conveyance, crew, cargo or goods (more specific than cargo) or equipment and the data source (exporter, carrier, importer, customs broker, driver, agent, bank, insurance company, psi company,etc).

Another important element is the legal authority to collect the data. It needs to be filed whether the agency is authorised to collect and/or view the data, the source of the legal authority (law, regulation, executive order, etc.) and the expiry date of such authority.

Recommended worksheet columns are as follows:

- Agency data element number - A reference number for the data element.

- Data element name - The name of the data element being defined. The naming of the data element should reflect the common business terminology used by the agency, not a computer related name

- Data element description - A description of the data element with as much detail as possible.

- Representation - The data type can be either N (Numeric), A(Alpha) or AN Alphanumeric and the number of positions as well as whether a delimiter – floating or non-floating- is needed).

- Data domain - If the data element has a discrete list of values or a range of values, provide the list, range or a reference to the list or range. For example, the data element country could be restricted to the values in the ISO country code table.

6. 数据协调流程步骤的具体说明

6.1 采集

单一窗口环境开发者可以从审查各种表格开始，以采集数据元素和所需要的信息。如果一个国家有自动化贸易处理系统，那么可以通过使用系统的逻辑数据模型找到数据元素。初始阶段时可以在工作表上对数据进行整理。工作表应该包含以下信息：数据元素名称、数据元素描述（定义）、数据模型所属的域、数据表现（字母、数字、字母－数字、位置数、分隔符）、域（代码列表）、运输方式（海运、空运、铁路、公路）、程序（进口、出口、转关）、是否用于运输工具、船员、所装货物和货物本身（比货物本身更具体）或装备和数据源（出口商、承运人、进口商、报关行、司机、代理人、银行、保险公司、psi company 等）。

另一个重要的元素是收集数据的法律权限。应该对某机构是否被授权收集和／或审查数据，以及法律依据（法律、规章、行政命令）和此类权限的有效期进行备案。

推荐的工作列表栏如下：

· 数据元素号 -- 数据元素的索引号;

· 数据元素名称 -- 被定义的数据元素的名称。名称应该反映机构使用的常规业务术语，而不是与计算机相关的名称;

· 数据元素描述 -- 尽可能详尽地描述数据元素;

· 数据元素的表现 -- 以数字、字母、数字 - 字母方式、位置数、是否需要分隔符（浮动或非浮动）表示的数据类型;

· 数据域 -- 如果数据元素有离散值列表或值范围，那么请将列表、范围或参考提供给 WCO 数据模型（provide the list, range or a reference to the list or range）。例如，the data element country 可能受限于 ISO 国家代码表中的值;

• Mode of transport - Indicate the mode of transport (road, air, marine, rail, pipeline, cable) for which the element is used.

• Process - Indicate if required for export, transit processes or import.

• Category of use - Indicate if required for conveyance, crew, cargo, goods, or equipment.

• Legal permission to collect or view - This information identifies whether the agency is legally permitted to collect or view this element. If authority allows collections, enter the word COLLECT, otherwise please enter VIEW

• Source of legal authority - Cite the source of authority to collect or to view. The authority may be derived from a specific form, a regulation, legislative mandate, MOU[6] or other. Please cite all legal authorities that apply if there are multiple sources. Do not provide the text of the citation.

• Expiration date of legal authority - Provide the date on which the legal permission to view or collect the data expires for the agency. Specify N/A[7] if this authority doesn't expire.

• Data source - Indicate if the information is provided by Trade, Government, or derived from other sources. <Trade> indicates the data is filed by Trade, <Government> indicates the data is created by a regulatory agency. An example of the latter would be the findings from an investigation. If unsure, enter a letter <U> here for unknown. <Derived> data is calculated by or extracted from a reference file, e.g. the rate of duty could be extracted from a Harmonised Tariff file or derived by the computer system from a combination of one or more other data elements.

• Trade Source - Indicate the trading partner who is the usual source or provides the data. If the data source attribute is <Trade> please identify which party in the transaction is responsible for filing the data element. Suggested values are <T> (importer, exporter, broker, forwarder, etc.). <C> (carrier) or <TC>. If unsure, enter a letter <U> here for unknown

• Timing, when data is required and provided - Identify the point of the transaction's lifecycle at which the agency expects have access to the data element. Suggested values are: <PRE-ARRIVAL>, <ARRIVAL>, <RELEASE>,

6 Memorandum Of Understanding

7 Not Applicable

· 运输方式 -- 表明元素的运输方式（公路、航运、海运、铁路、管道、电缆）；

· 程序 -- 对进口、出口或转关运输有要求时注明；

· 使用的类目 — 对运输工具、船员、货物和设备有要求时注明；

· 收集或查看的法律权限 -- 此项信息说明了某机构是否在法律上被允许收集或查看某元素。如果允许其收集，请键入 “COLLECT”，否则请键入 “VIEW”；

· 法律权限的来源 -- 引用允许收集或审查数据的权利依据。权利可能来自于一个具体形式、规章、立法授权、MOU 或其他来源。如有多个来源，请引述所有相关法律权限，但不要提供引文的正文；

· 法律权限的失效日期 -- 提供某机构收集或查看数据的法律权限到期日。如果该权限不会失效则注明 N/A

· 数据来源 -- 如果信息来自贸易商、政府或其他源头时请做注明。< 贸易商 > 表示数据由贸易商提供，< 政府 > 表示数据由监管机构提供。若来源不明，请键入表示未知（unknown）的 <U>。< 派生 Derived> 数据是从参考文件中引用或提取的，例如，税率可能是从协调关税文件中提取的，也可能是由计算机系统结合一个或多个其他数据元素而得到的；

· 贸易商来源 — 注明贸易伙伴是一般来源还是提供信息的。如果数据来源的属性是 < 贸易商 >，请确认谁是负责整理数据元素的那一方。建议值有：<T>（进口商、出口商、报关行、货代等）；<C>（承运人）或 <TC>。如果不确定，请键入字母 <U> 表示未知；

· 需要和提供数据的时机 -- 确定机构希望在一个交易期内的哪几个时间点能够访问数据元素。建议值有：< 运抵前 >、< 已运抵 >、< 放行 >、< 清关 >、< 放行后 > 或

<CLEARANCE> <POST RELEASE> or <DATAWAREHOUSE> etc.). If unsure, enter a letter <U> here for unknown.

• Agency flow source - If the "Data Source" is <Gopvernment>, identify the agency that creates this element.

• Remarks/Comments - Free form text that can be used to annotate the data element in any way

Upon receipt of the worksheet survey from the agencies, the data harmonisation project team must aggregate or merge the agency responses into a comprehensive worksheet. The following is an abbreviated representative sample of this aggregation.

NAME	DESCRIPTION	TYPE	SOURCE	MODE
Port of Unloading	Location where goods are removed from the ship	4 digit proprietary code	Carrier	Ship
Port of unlading	Airport where consignment is taken off the airplane	4 digit proprietary code	Carrier	Air
Domestic Port of Unloading	Domestic port where merchandise is removed mode of transport	4 digit proprietary code UNLOCODE	Carrier Broker Importer	Air, Rail, Ship, Truck
Domestic Port of Unlading	Domestic airport where consignment is taken off the airplane	UNLOCODE	Carrier	Air
Foreign Port of Unloading	Foreign port where merchandise is unloaded from the conveyance	5 digit proprietary code	Carrier Exporter	Air, Rail, Ship, Truck
Foreign Port of Unlading	Foreign airport where consignment is taken off the airplane	5 digit proprietary code UNLOCODE	Carrier	Air, Ship

Illustration 1 - Sample aggregation of results of agency survey

6.2 Defining and Analysing

This is the responsibility of the data harmonisation project team to conduct the analysis of these elements. The analysis of these six elements revealed a similarity of names (unlading or unloading) were minor variations in the definitions, With regard to "domestic" or "foreign"; the essence of the definition is the location where the

<DATAWAREHOUSE> 等，如果不确定，请键入字母 <U> 表示未知;

·Agency flow source-- 如果“数据来源”是 <Gopvernment>, 请确定是哪个机构创建了该元素;

· 备注 / 评论 -- 以自由文本格式为数据元素添加注释。

收到机构提供的调查工作表后，数据协调项目小组必须将其汇总或合并成一张完整的工作表。以下是此类汇总的代表性样本（缩写）。

名称	描述	类型	来源	运输方式
卸货港 Port of Unloading	货物从船上卸下的地址	4 位专有代码	承运人	船运
卸货空港 Port of unlading	货物从飞机上卸下的机场	4 位专有代码	承运人	航运
国内卸货港 Domestic Port of Unloading	商品被卸下的国内港	4 位专有代码 UNLOCODE	承运人 代理人 进口商	空运、铁路、船运
国内卸货空港 Domestic Port of Unlading	货物从飞机上卸下的国内机场	UNLOCODE	承运人	航运
国外卸货港 Foreign Port of Unloading	商品被卸下的国外港	5 位专有代码	承运人 出口商	空运、铁路、船运、卡车运输
国外卸货空港 Foreign Port of Unlading	货物从飞机上卸下的国外机场	5 位专有代码 UNLOCODE	承运人	空运、船运

图 1：机构调查结果的样本汇总

6.2 定义与分析

数据协调项目小组的责任是对这些元素进行分析。对上述六个元素的分析显示了某些相似的名称（unlading or

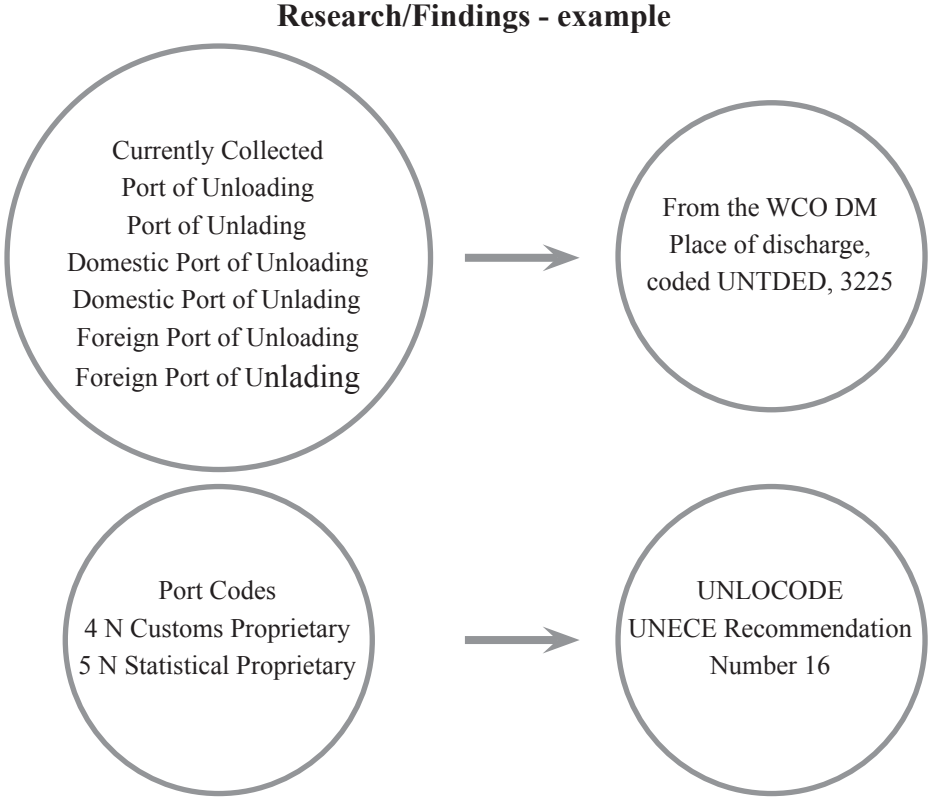
goods are removed from the conveyance. It was determined that the terms "unlading" and "unloading" were synonyms. It was determined that the terms "foreign" and "domestic" could be defined by the type of transaction. An export would show a foreign location and an import would show a domestic location.

The analysis also revealed that there were three different coded representations of the element, a four-digit code, a five-digit code, and the UNLOCODE[8].

6.3 Reconciling

The first step is to reconcile and to arrive at one name. Given the result of the analysis that unloading and unlading are synonyms, it was determined to use the term "unlading." Since foreign or domestic can be determined by function (export or import transaction) these words could be eliminated. The reconciled name is "port of unlading." After agreeing to the term "port of unlading," this was checked against the international standard of the UNTDED. Port of unlading is not a UNTDED term. The UNTDED term is "place of discharge." The issue of coded representation was resolved by agreement to adopt the international standard of the UNLOCODE.

The following illustration portrays the harmonisation and standardisation detailed above.



8 United Nations Location Code

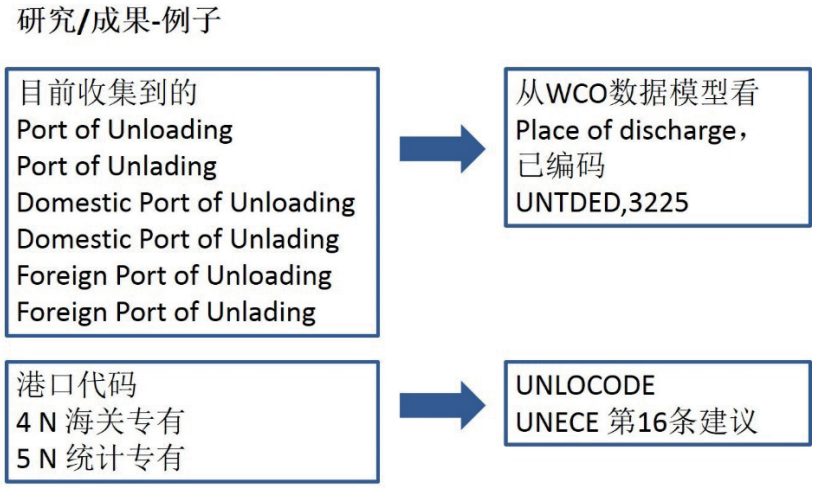
unloading）在定义时会出现的细微变化。在提到“国内”或“国外”时，其定义的本质是货物从运输工具中卸下的地点。可以确定的是“unlading”和“unloading”是同义词。同样的，可以靠交易种类来区分“国外”和“国内”。出口显示国外地点，进口显示国内地点。

分析还显示，元素有三种不同的编码显示形式：四位代码，五位代码和 UNLOCODE[8]。

6.3 协调

第一步是协调并达成统一命名。分析结果显示“unloading”和“unlading”是同义词，那么就应该把“unlading”作为统一后的术语。由于国外或国内可以通过功能（进口、出口、转关）来确定，这些词可以被消除。协调后的名称是“卸货港 port of unlading”。在同意使用“卸货港 port of unlading”这个术语后，需要与 UNTDED 国际标准中的相应内容作对照。对照后发现 UNTDED 中的术语是“卸货处 place of discharge”而非“卸货港 port of unlading”。此时，应该使用 UNLOCODE 中的国际标准来解决编码表达不同的问题。

下图详细描绘了协调和标准化处理过程



The lead agency data harmonisation team can undertake much of this work taking the WCO data Model as the foundation, but these decisions must be verified and agreed on by the stakeholder participating agencies. Should there be a requirement not available in the WCO Data Model, the WCO Data Model can be amended.

Given the broad range of data requirements it is more efficient to focus these meetings on specific ranges of data element. One such way to establish these focus groups is using the data element categories of the UNTDED. The use of this categorisation can also be included in the spreadsheet to sort the elements.

- Group 1: Documentation references (0001-1699)
- Group 2: Dates, times, periods of time (2000-2799)
- Group 3: Parties, addresses, places, countries (3000-3799)
- Group 4: Clauses, conditions, terms, instructions (4000-4799)
- Group 5: Amounts, charges, percentages (5000-5799)
- Group 6: Measures, identifiers, quantities (other than monetary) (6000- 6799)
- Group 7: Goods and articles: descriptions and identifiers (7000-7799)
- Group 8: Transport modes and means, containers (8000-8799)
- Group 9: Other data elements (Customs, etc.) (9000-9799)

Continuing with the example of "place of discharge" a meeting of the agencies interested in Group 3 data elements: Parties, addresses, places, countries (3000-3799) took place. The agencies agreed that the term "place of discharge" and the UN/LOCODE coded representation as expressed in the WCO Data Model would meet their requirements. Accordingly, these six data elements were replaced by one, and two coded representations were replaced by one.

7 The size of the standard data set

As governments and their trade communities begin to develop a Single Window environment, there is an understandable concern about the size of the data set. While

以 WCO 数据模型作为基础，领导机构的数据协调小组可以承担大部分的工作。但这些决定必须经过参与机构的认证和同意。若 WCO 数据模型中没有相应的要求，那么可以对数据模型进行修改。

鉴于数据要求的范围十分广泛，把关注点放在特定的数据元素范围内将更加高效。建立这些专题小组（focus groups）的一种方法是使用 UNTDED 中的数据元素类别。在电子表格中也可以参考 UNTDED 中的类别对元素进行分类。

第 1 小组：文件单证的引用（0001-1699）

第 2 小组：日期，时间，时段（2000-2799）

第 3 小组：参与方，地址，位置，国家（3000-2799）

第 4 小组：条款，条件，术语，说明（4000-4799）

第 5 小组：金额，费用，百分比（5000-5799）

第 6 小组：措施 Measures，标识符，数量（非货币）（6000-6799）

第 7 小组：货物和商品：描述和标识符（7000-7799）

第 8 小组：运输方式和手段，集装箱（8000-8799）

第 9 小组：其他数据元素（例如：海关）（9000-9799）

继续以“place of discharge”为例，所有对第 3 小组数据元素感兴趣的机构召开了一次会议，认为“place of discharge”一词和 WCO 数据模型中表述的联合国位置代码符合他们的要求。相应的，这六个数据元素被一种表述方式所取代，两个代码也被替换成一个。

7. 标准数据集的大小

随着政府和商界开始发展单一窗口环境，人们关心数据集的大小是可以理解的。虽然数据集可能会很大，但它会成为贸易商可能需要提供的最大数据集。需要传递给贸易商

the data set may be large, the intention is that it will be the maximum set of data that Trade may have to provide. The important message to deliver to Trade is that the entire data set will never be required for any one transaction. This WCO Data Model based standard data set covers all transactions (export, national transit and import), all modes (air, maritime, road and rail), and all requirements of all cross border activities related agencies. It is logically and logistically impossible to require all of the data for any one transaction.

As noted in the example of "place of discharge" as given in these guidelines, the elimination of redundancy and duplication actually resulted in a net reduction. Six elements were reduced to one and three coding schemes were reduced to one.

8 Impact on Legacy Systems

One problem that Single Window developers may encounter is the effect of the use of the international WCO Data Model standards on legacy systems. For example, if a country uses proprietary coding for locations, legacy systems (screening, targeting, accounting, etc.) are based on the proprietary codings. Until there is an overall conversion to the new data element names and codes, countries and traders may have to implement translation capabilities. This translation must convert the new, international WCO Data Model standards and translate these to the WCO Data Model data element names familiar to users and into those codes used in the legacy systems.

的一个重要信息是，任何一笔交易从来都不需要使用全套数据集。这个基于 WCO 数据模型的数据集覆盖了所有类型的交易（进口、出口、转关），所有运输方式（空运、海运、陆运和铁运）和所有跨境管理机构的所有要求。从逻辑上来说，不可能要求单笔交易提供所有的数据。

如 “place of discharge” 的例子中所示，消除冗余和重复的名称实际上导致了净量的减少。六个元素减少到了一个，三个编码方案减少到了一个。

8. 对遗留系统的影响

单一窗口开发人员可能会遇到的一个问题是使用 WCO 数据模型标准对遗留系统产生的影响。例如，如果一个国家使用专有位置编码，遗留系统（扫描、布控、账目）是基于专有代码表的。在系统根据新的数据名称和代码完成整体转换前，政府和贸易商可能需要采取一些转化手段，把 WCO 数据模型标准中新出现的数据元素名称转化为用户熟悉的名称，把 WCO 数据模型中的代码转化为可以在遗留系统中使用的代码。

Cross-border Transactions on the Fast Track

跨境交易的快车道

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 two 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 customs automation and Electronic Data Interchange (EDI) infrastructure.

Generally speaking these projects have yielded tangible outcomes, with varying degrees of success in terms of trade data being made available to decision-makers, improved cycle times for cargo and vessels, and greater accountability. Nevertheless, a vast amount of work still remains to be done. Countries vary greatly in the levels they have achieved in this field, and new projects are being taken up. Moreover there are new developments in the area of border regulation, which also create a demand for fresh initiatives.

Electronic 'Single Window' services delivery is now being demanded in several countries. Based on the principle of joined-up 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 trade and the different government departments involved in cross-border regulatory procedures. In addition, new demands on supply chain security and facilitation have emerged, leading to the establishment of the WCO SAFE Framework of Standards. In the light of these developments, new initiatives are underway, involving the development of new automated systems or substantial upgrades to existing systems.

The emerging business architecture that flows from these developments will face a diverse array of challenges. Project leaders will need to address different possibilities with regard to project scope, business process design, international standards, handling of legacy assets etc. The basic data structures, however, do not vary significantly across contexts as they represent the unvarying truth about the core business. In such a scenario, WCO Data Model Version 3.0 can be very helpful in providing the key elements of the solution.

This booklet provides a brief introduction to WCO Data Model Version 3.0. It explains the scope of the Model, its relationship with other international instruments such as the Revised Kyoto Convention, and its alignment with widely used international standards. The booklet is aimed at project leaders and Information Technology

前言

各国政府已经意识到在低效和繁琐的国际贸易流程下经济的快速增长是不可能实现的。过去二十年内，国际贸易的现代化和跨境监管流程越来越受到业界的重点关注。各国已在海关自动化和电子数据交换系统（EDI）这样的国家项目上投入了大量资源。

总体来说这些项目已取得了切实的成果，贸易数据已经可以提供给决策者作参考、项目提升了货物和船只的周期时间（cycle times）。然而，仍然有大量的工作需要去做。各国在这个领域所取得的成绩差别非常大，也都在执行各自新的项目。此外在边境管理方面又有了新的发展计划，由此便产生了对新举措的需求。

目前一些国家对建立电子“单一窗口”服务有强烈需求。基于协作政府服务（joined-up government services）的原则，单一窗口环境具有提供转型优势的潜力，暨简化和统一参与到跨境监管程序的贸易成员与政府各部门之间的接触点（touch-points）。另外，对于供应链安全和便利化的新需求已经出现，这导致了世界海关组织贸易安全与便利标准框架的建立。鉴于这些项目的发展，新的举措正在进行中，包括涉及新自动化系统的开发或对现有系统的大量升级。

从这些发展中产生的新兴业务构架将面临非常多的挑战。项目领导者需要解决项目范畴、业务流程设计、国际标准、遗留资产的处置等各式各样的问题。然而，原始数据的结构是不会有显著差异的，因为他们代表了核心业务中不变的真理。在这种情况下，世界海关组织数据模型 3.0 版可以非常有助于提供解决方案中的关键要素。

本文包含对 3.0 版本数据模型的介绍，解释了模型的适用范围，模型与其他国际文书例如修订版京都公约的关系，

architects from Customs administrations and other cross-border regulatory agencies. The World Customs Organization hopes that this booklet will create a proper understanding of the value of the WCO Data Model as an indispensable instrument in projects that address modernization of regulatory agencies including Customs.

A. Background

Over the years, core customs automated systems and Electronic Data Interchange (EDI) facilities have been developed and operated based on national requirements. These requirements arose from national legislation and local operational needs. The need to follow international data standards was also widely recognized. The UN Trade Data Element Directory (UN/TDED) and United Nations'EDI for Administration, Commerce andTransport (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. UN/EDIFACT standard electronic messages for customs purposes, e.g., CUSDEC for the import and export goods declaration, CUSCAR for the cargo manifest, etc., did represent an organized approach in this area. Customs administrations contributed to the development of these electronic messages which, over the years, grew into very complex structures. There were no underlying conceptual data models governing the ongoing maintenance of these messages.

The trade and transport community continued to seek simplification of data requirements for international trade transactions, on account of government regulations at the border. It was argued that the global harmonization and simplification of procedures could be achieved by simplifying the underlying data requirements of government agencies.

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 a non-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.

The G7 believed that this standardization and reduction of data would improve the flow of goods across international borders and reduce costs and complexities associated with meeting government requirements. As part of this project, harmonized data sets for the G7 countries were developed for each of the basic customs

以及与其他国际通用标准的对接情况。本文瞄准的对象是海关管理部门和其他跨境监管机构中的项目领导者和信息技术架构师。世界海关组织希望通过本文为数据模型的价值建立正确的理解，使其作为一个不可缺少的工具来实现监管机构的现代化（包括海关）。

A. 背景

多年以来，核心海关自动化系统和电子数据交换系统（EDI）已经根据国家的要求进行开发和运行。这些要求来自于国家法律和当地的运营需求，需要遵循国际数据标准也得到了广泛的认可。联合国贸易数据元素目录（UN Data Element Directory, UN/TDED）和联合国行政、商业和运输电子数据交换系统（UN/EDIFACT）在许多国家被广泛使用。

尽管使用了很多国际标准，但海关领域里的国际数据字典却不存在。UN/EDIFACT 海关电子信息（CUSDEC 服务于进出口货物申报、CUSCAR 负责货物舱单）代表了此领域中一种有组织的方式。海关管理部门为这些电子信息系统（近年来已经发展成为非常复杂的系统）的发展做出了贡献。没有基本的概念数据模型来调节和维护这些系统。

基于政府在边境管理方面的规定，贸易和运输界一直在追求国际贸易数据要求的简化。人们普遍认为，全球协调和程序简化可以通过简化政府机构的基本数据要求来实现。

1996 年七个世界最大经济体的政府首脑坚定地认为混乱，冗余和非标准的数据系统已经成为一项非关税贸易壁垒。因此，海关专家组得以建立。G7 海关专家小组的任务是规范并减少满足海关需求数据量。

G7 相信这种标准化进程和对于数据的简化能够提升货物在国际间的流转，减少成本和复杂性。作为项目的一部分，针对海关的每一个基本流程而设计的 G7 国家协调数据集得

procedures, with the emphasis on minimizing the data requirements by elimination, simplification and standardization.

The WCO Data Model project is a continuing endeavour towards customs standardization initiated by the G7.The G7 work was taken over by theWorld Customs Organization (WCO) in 2001, and was known as Version 1.0 of the WCO Customs Data Model.

Through transparent Data Maintenance Request (DMR) procedures, the Data Model content was broadened and deepened in stages, with inputs from a number of WCO Member administrations. The coverage of business processes was enlarged, and more sophisticated modelling techniques (such as UML2) were employed. Electronic messaging guidelines were produced in UN/EDIFACT and XML specifications, based on common underlying syntax-neutral structures derived from the WCO Data Model.

WCO Customs Data Model Version 2.0 was published in 2005. Version 3.0 of the WCO Data Model was released at the end of 2009.

At its June 2009 Sessions, the WCO Council adopted a Recommendation on the use of the WCO Data Model.

A.1 What is new in Version 3 of the WCO Data Model?

One of the main differences between Versions 2 and 3 of the Data Model is that Version 3 specifically includes, for the first time, information required by other cross-border regulatory agencies besides Customs to meet their reporting needs.
Government-to-Business (G2B) messaging is included in Version 3, and greater consideration is given to support for Extensible Mark-up Language (XML) usage.

The Data Model now includes data to specifically support other, or partner cross-border regulatory agency information for agricultural goods, hazardous waste and food safety, for example. A much broader coverage of transit procedures has been introduced. The Convention on Facilitation of International Maritime Traffic and International Ship and Port Facility Security (ISPS) reporting requirements have also been taken into account in Version 3.

WCO Data ModelVersion 3.0 incorporates the‘SingleWindow’and the‘cross-border whole-of-government’ approach, catering not only for the legal requirements of customs, but also for those of partner cross-border regulatory agencies. Therefore,

以开发，通过消除、简化和标准化，把数据要求做到最小化是该数据集的重点关注内容。

WCO 数据模型是一个由 G7 国家发起的朝着海关现代化目标持续稳步推进的项目。自 2001 年起，G7 的工作由世界海关组织全面接管，并于当年发布 1.0 版 WCO 数据模型。

通过透明的数据维护请求流程，许多 WCO 成员积极录入数据信息，使数据模型的内容在不同阶段得到了扩展和深化。业务流程的覆盖范围逐渐扩大，更加复杂的建模技术（例如：UML2）得到了应用。基于源自 WCO 数据模型中常用的中性语法结构，产生了 UN/EDIFACT 和 XML（政府对企业的信息以及支持可扩展标记语言）中的电子信息指南。

WCO 数据模型 2.0 版于 2005 年发布，后于 2009 年年底推出了 3.0 版。

在其 2009 年的会议上，世界海关组织理事会通过了关于使用数据模型的建议。

A.1 世界海关组织数据模型 3.0 版本中有哪些新内容？

2.0 版本和 3.0 版本之间最大的不同在于，除了海关要求的信息外，3.0 版本第一次着重引入了其他跨境监管机构要求的信息以满足他们的汇报需要。

3.0 版本包含政府对企业（G2B）的报文发送，并对支持可扩展标记语言的使用给予了更大的考虑。

模型目前涵盖的数据特地为跨境伙伴监管机构提供了农产品、有害废物和食品安全方面的信息。扩大了过境手续的覆盖范围。3.0 版还考虑到了《便利国际海上运输公约》和《国际船舶和港口设施安全》中的报告要求。

3.0 版数据模型包含了“单一窗口”和“跨境全政府通力合作”方式，不仅符合海关的法律要求，而且也满足跨境合作监管机构的要求。因此，3.0 版不再使用“海关”这个

Version 3 no longer includes the word ‘Customs’ in its name.

Making the Data Model less customs-centric has introduced the possibility of meeting a much broader range of cross-border regulatory reporting requirements, thus broadening the potential for the use of the WCO Data Model.

Finally, WCO Data Model Version 3.0 includes a Message Implementation Guideline for the new EDIFACT Government Cross-Border Regulatory message (GOVCBR), which was developed by the Data Model Project Team to represent the entire requirements for the “Whole-of-Government Single Window”for cross-border release of goods, containers, and means of transport..

B. What is the WCO Data Model?

The WCO Data Model is a maximum set of carefully combined and harmonized data requirements derived from cross-border regulation. These requirements are mutually supportive and will be updated on a regular basis to meet the procedural and legal needs of cross-border regulatory agencies such as customs, controlling export, import and transit transactions.

The WCO Data Model is based on the Revised Kyoto Convention which requires customs administrations to request minimal data to ensure compliance with customs laws. Customs administrations will therefore at most require the data elements they have listed for each customs procedure in the respective data sets. These self-imposed limits discourage future increases in data requirements.

The discipline of using the WCO Data Model ensures that any new data requirement for Cross-border Regulatory procedures follows a thorough analysis of the need and decision taking into account international standards. It should also consider the Trade’s ability to provide the information in the normal course of its business.

B.1 A harmonized data set

Information and documentation are key elements in the control of international cross-border trade. In today’s interconnected electronic environment, controls increasingly include the advance transmission of data to customs as well as Customs-to-Customs information exchange in order to provide the necessary level of security as well as acceptable release times.

名字。

“让数据模型不以海关为中心”引入了满足更广泛的跨境监管报告要求的可能性，从而扩大了使用 WCO 数据模型的潜力。

最后，3.0 版数据模型包含了一个“政府跨境监管信息电子数据交换 (GOVCBR EDIFACT)”实施指南，该 GOVCBR EDIFACT 由数据模型项目团队开发并代表单一窗口中政府作为一个整体为跨境货物、集装箱和运输工具的放行所作的要求。

B. 世界海关组织数据模型是什么？

WCO 数据模型是跨境贸易监管中所需要的数据要求的合集，其中的数据均通过精心的组合和协调而生成。这些要求会相互间支持并定期更新以符合跨境监管机构例如：海关、进出口和过境交易管理部门的程序和法律需要。

WCO 数据模型的产生基于修订版京都公约，公约要求海关管理部门收集极少的数据以确保遵守海关法律。因此海关管理部门会要求贸易商提供每个海关流程里最基本的数据元素。这些强加于自身的限制条件会阻碍未来数据要求的增长。

基于 WCO 数据模型的使用原则，如果要加入任何与跨境监管流程有关的新数据要求都必须通过需求与决策分析，同时要考虑贸易商在其正常业务流程中提供信息的能力。

B. 1 一个协调统一的数据集

信息和单证是国际跨境贸易管理中的关键要素。在当今互联的电子环境中，为了提供必要的安全级别和可接受的放行时间，海关管理工作越来越多地包含了数据的提前传送和海关与海关间的信息交换。

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

B.2 Based on Business Process & Information Modelling

Business Process and Information Modelling ensures a proper basis for designing and developing information systems and electronic messages. Business Process Modelling is also key to analysing and optimizing business processes.

The WCO Data Model includes the analysis and modelling of the customs procedures and processes contained in the Revised Kyoto Convention using use-case diagrams and activity diagrams and descriptions. Based upon this analysis, illustrative scenarios for customs business processes are developed.

In the WCO Data Model, information flows from customs as well as from other cross-border regulatory agencies have been categorized and brought together in 'class diagrams' and modelled using the Unified Modeling Language (UML).

B.3 Whole-of-Government Cross-Border Regulatory Approach

Taking on board current Whole-of-Government Cross-Border Single Window developments, the WCO Data Model can:

- Provide all competent control agencies with a common platform for regulatory data exchange thus enabling early sharing of information.

- Offer international traders a simplified interface with customs and multiple government agencies as well as a single access point to carefully focused, fully comprehensive regulatory requirements.

- Enhance 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 customs using the GOVCBR.

- Enable customs to build up inter-agency operational links and practices that will offset or minimize the operational costs, investments and staff normally associated with border controls.

协调和标准化数据集，和包含国际代码标准的电子信息是企业对政府（B2G）、政府对企业（G2B）以及政府对政府（G2G）间信息共享的关键要素。

B.2 基于业务流程和信息建模

业务流程和信息建模为信息系统及电子信息的设计和开发提供了合适的基础。业务流程建模也是分析和优化业务流程的关键。

WCO 数据模型使用用例图、活动图和具体的描述对海关流程进行分析和建模。基于这种分析，开发了针对海关业务流程的方案说明（illustrative scenarios）。

在 WCO 数据模型里，海关及其他跨境监管机构的信息流被分类、汇集在“类图（class diagrams）”中，并通过统一建模语言进行建模。

B.3 全政府通力合作（Whole-of-Government）的跨境监管方式

根据全政府跨境单一窗口发展的现况，WCO 数据模型可以：

· 向有决定权的管理机构提供一个公用的平台进行监管数据的交换，从而保证信息的早期共享;

· 给国际贸易商、海关和多国政府机构提供一个简化的界面和单一的接入点，以便聚焦在全面的综合监管要求上;

· 设立对商业经营者的最低要求来加强风险管理，所有与跨境监管机构有关的重要数据可以通过 GOVCBR 系统单次向海关提交来获得;

· 使海关建立机构间的操作联系和实践，以抵消和削减运营成本、投资和与边境管理有关的工作人员

C. Why do I need to know about the WCO Data Model?

As the lead resource on procedures and the main business interface for IT staff, why do I need to know about the WCO Data Model?

C1 It helps create the blueprint for a modern customs system

The WCO Data Model, as a conceptual data model for customs business and cross-border regulation, helps establish the blueprint for a modern information system. Along with generic use cases and activity diagrams, the standard electronic messages define, at a very high level, the system data inputs and outputs.

These artifacts constitute high-level specifications for customs business. While real automated systems are built based on specifications derived from national legislation and local operational needs, software applications for customs and cross-border regulatory agencies should as far as possible be based on international standards.

The WCO Data Model was developed on the basis of a detailed exploration of data-oriented structures pertinent to customs and border regulations. This was accomplished through a formal process of defining and describing data elements and their interrelationships. These data elements were tabulated according to business processes that used them. Abstractions for representing and accessing the data were developed and described through a range of models assembled using the Unified Modeling Language (UML). These UML class models include an overall model and others that are specific to different customs procedures. These were then exploited for the production of industry-strength UN/EDIFACT and XML messaging guidelines.

WCO Data Model Version 3 is neutral as regards the type of automated information system that runs it. It can be implemented on any kind of computer hardware or software platform and is technique-independent.

C.2 It is the core of the Cross-Border Regulatory Single Window

A major aspect of modern customs forward thinking is the notion of Co-ordinated Border Management (CBM), and within that concept the Whole-of-Government Cross-Border Single Window is a key enabler.

C. 我为什么需要了解 WCO 数据模型？

C.1 帮助建立现代海关系统的蓝图

WCO 数据模型作为海关业务和跨境监管的概念性数据模型，可以帮助建立现代信息系统蓝图。以及通用用例和活动图（generic use cases and activity diagrams）、标准电子信息定义、系统数据的输入和输出。

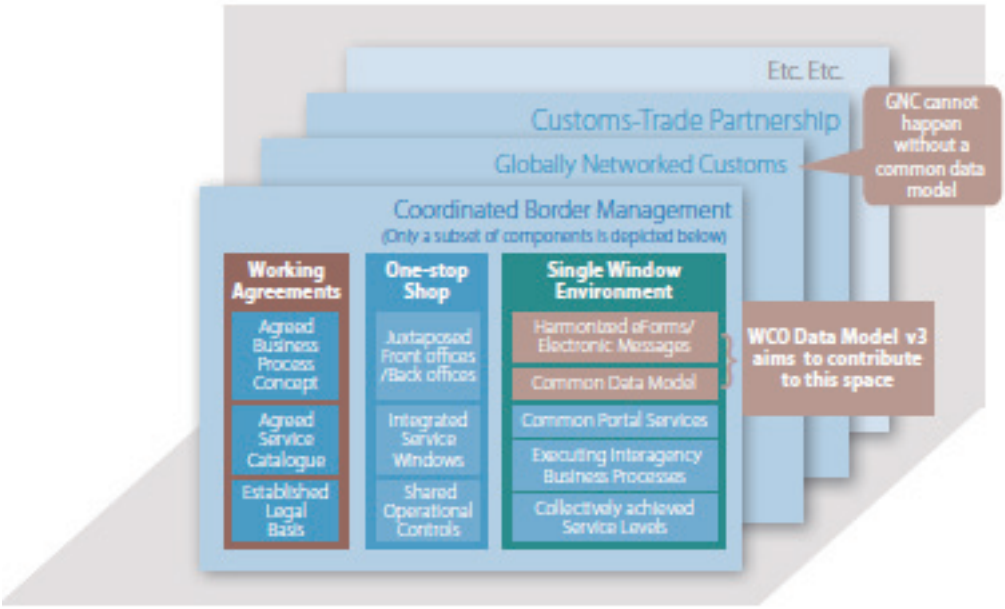
这些工具构成了海关业务的高级规范，而真正的自动化系统是建立在国家法律和当地业务需求之上，海关和跨境监管机构的应用软件应该尽可能基于国际标准。

WCO 数据模型建立在对海关和边境规定相关的数据导向性结构的详细探索之上，这是通过定义和描述数据元素的正式过程来完成的。根据与其相关的业务流程，这些数据元素被制成表格。使用统一建模语言（UML），系统开发了表示和访问数据的抽象化概念。UML 模型包括了整体模型和针对不同海关流程的其他模型。

WCO 数据模型 3.0 版是一个中立系统，他可以在任何计算机硬件或软件平台上运行，并且在技术上是独立的。

C.2 它是跨境监管单一窗口的核心（core of the Cross-Border Regulatory Single Window）

现代海关一个重要的前瞻性思维是协调边境管理（CBM），在这个概念之内，全政府跨境单一窗口是一个关键的推动者。

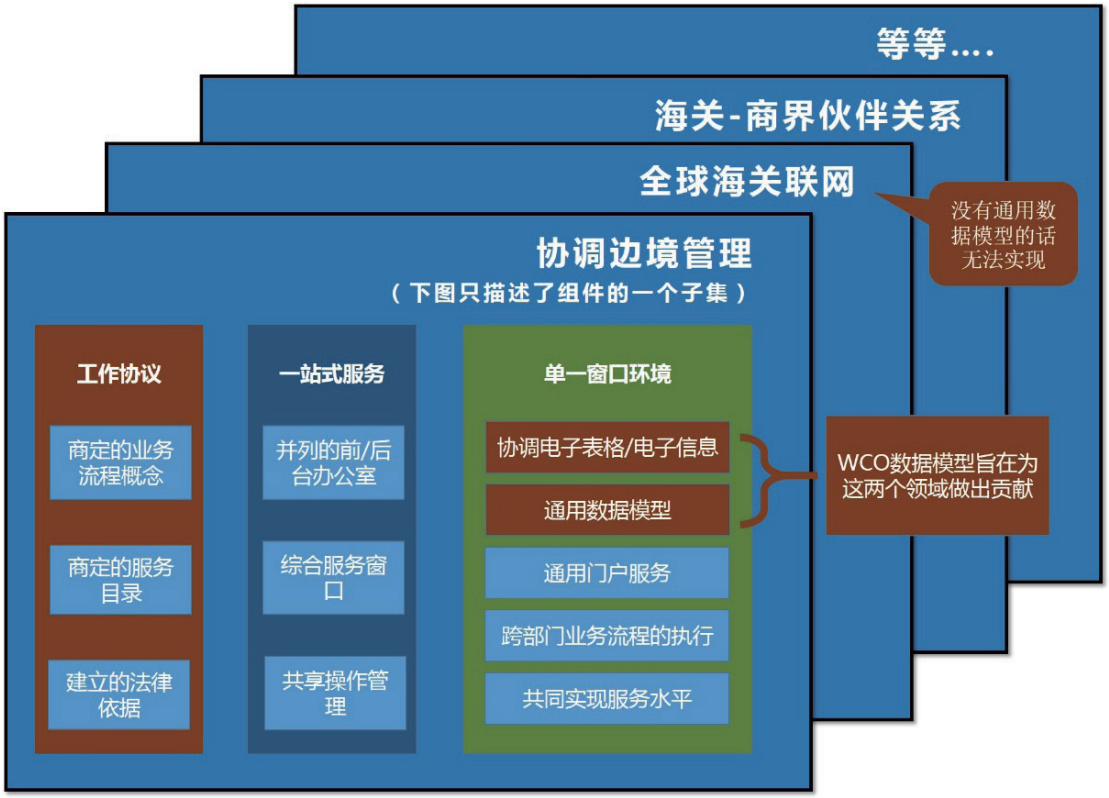


WCO Data Model Version 3.0 is the solution for optimized electronic data exchange, providing a global standard for whole-of-government cross-border data requirements for the release and clearance of goods; the result is a saving on costs and time for governments and for the trade community.

It promotes the concept of 'single submission' of data – or one piece of information to be submitted only once to the cross-border regulatory agencies. The objective should be to obtain and use 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. The WCO Data Model positions itself as the universal language for cross-border regulatory data exchange.

C.3 It is a complete toolbox

The WCO Data Model is a toolbox containing material that can be used for a variety of purposes. As shown in this diagram, the WCO Data Model consists of several components. These components serve to make it clear that the Data Model is not a single monolithic entity, rather it is a complex interrelated set of discrete components. Each component needs to be analysed and understood to fully appreciate the Data Model.

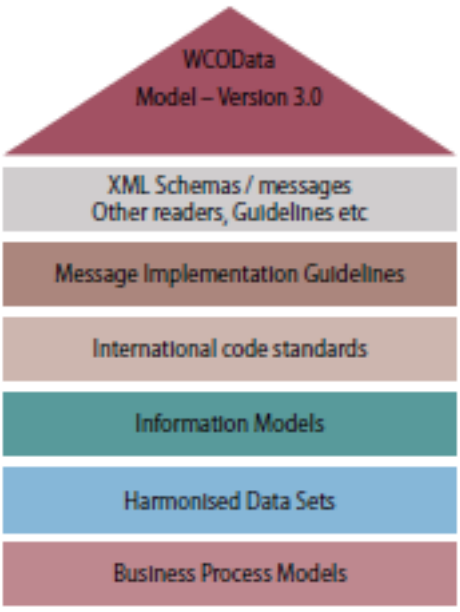


WCO 数据模型 3.0 版是优化电子数据交换的解决方案，模型为全政府跨境数据要求下货物的放行和清关提供了一个全球化标准，其结果为政府和商界节约了成本和时间。

模型促进了“单次提交数据”的概念，或者说是一条信息只需向跨境监管部门提交一次。其目标应该是从处于最佳位置的相关方那里收集和使用数据。数据应在供应链中最早的那个时间点获取。WCO 数据模型把自身摆在“跨境监管数据交换的通用语言”的位置上。

C.3 它是一个完整的工具箱

WCO 数据模型是一个工具箱，其中包含的原料有多种多样的用途。如图所示，WCO 数据模型由几个部分组成。这些部分清晰地指出了数据模型并不是单一的实体，而是一个复杂且相互关联的分立元件。每一部分都需要进行分析和理解以便充分了解数据模型。



At one level, the WCO Data Model is a comprehensive dictionary of data required to exchange and support customs processes and regulatory information needed for several partner cross-border regulatory agencies. This data dictionary is organized as the data set for Export, Import, Transit, Conveyance and Response.

With a view to reducing and rationalizing the data requirements of different procedures, the WCO Data Model is the basis for an agreed maximum data set.

At another level it is a technical model, systematically developed to reflect the relationships between the different pieces of information. These technical models are stepping stones to the development of data structures for the real business.

As mentioned earlier in this brochure, the WCO Data Model includes analysis and modelling of the customs procedures and processes contained in the Revised Kyoto Convention using use-case diagrams and activity diagrams and descriptions. Based upon this analysis, illustrative scenarios for customs business processes are developed.

Information flows from customs, as well as from other cross-border regulatory agencies have been categorized and brought together in superclasses and class diagrams, and modelled using UML. These models can be used at national level as reference models during the development of automated systems. Normally, similar models are developed to establish the architectural design of automated systems.

The models help business analysts to understand and discover relationships between data coming from different processes in the international supply chain. The WCO

从某种层面上来看，WCO 数据模型是一个全面的数据词典，跨境监管部门所需的海关业务流程数据和监管信息数据进行交换和支持。这本数据词典按照出口、进口、转运、运送和响应分为不同的子集。

为了减少和理顺不同流程的数据要求，WCO 数据模型是一个大家共同接受的最大数据集。

从另一种角度看，它是一个被系统性地开发出来以反映不同信息间关系的技术模型。这些技术模型是实际业务的数据结构得以发展的垫脚石。

如前面所述，WCO 数据模型使用用例图、活动图和说明，对海关业务流程进行分析和建模。基于这种分析，开发出了海关业务流程的方案说明。

来自海关和其他跨境监管机构的信息流被分为超类（superclasses）和类图（class diagrams），并用 UML 进行建模。在国家层面上这些模型可以作为建立自动化系统的参考模型。通常情况下，相似的模型会被用在自动化系统的结构设计上。

Data Model helps database designers to discover and identify those relationships that must be reflected in the databases.

Lastly, the WCO Data Model contains standardized electronic messages along with detailed implementation guidelines and other supporting documentation.

C.4 It is the basis for GOVCBR

The new UN/EDIFACT message called GOVCBR, or Government Cross-Border Regulatory message, brings together all the data needed for customs and cross-border regulatory agencies;

- It provides the totality of data requirements, giving implementers flexibility to design electronic messages to suit different business needs related to legal requirements for cross-border transactions.

- It makes it possible to implement the concept of single submission (a piece of information will be submitted once within one transaction).

- It covers messages for export, conveyance, cargo, import and transit reporting, as well as response messages from a cross-border regulatory agency.

- Application developers using GOVCBR will have to maintain mapping of just one
message-type in stead of multiple message-types, such as CUSDEC, CUSCAR, etc.

- GOVCBR also caters for the exchange of information, nationally and internationally, between regulatory agencies.

See Appendix 1

Cross-border regulatory agencies have specified business forms in their regulations. These forms need to be completed and submitted by traders, for all transactions that must satisfy these regulatory requirements. A Single Window implementation looks at these requirements from a holistic perspective and suggests designs for rationalized forms and the organization of a harmonized set of requirements. Such re-organization is driven by the principle that each piece of information is submitted only once within one transaction. The WCO Data Model provides a clear basis for a Regulatory

模型可以帮助业务分析师理解和发掘国际供应链中不同流程的数据之间的关系。WCO 数据模型帮助数据库设计人员发现和鉴别那些必须在数据库中反映出来的关系。

最后，WCO 数据模型包含了标准化的电子信息，详细的实施指南，以及其他支持性文件。

C.4 它是“政府跨境监管信息电子数据交换系统”（GOVCBR）的基础

联合国行政、商业和运输电子数据交换系统（UN/EDIFACT）又被称为“政府跨境监管信息电子数据交换系统”（GOVCBR）”，或者政府跨境监管信息。它集合了所有海关和跨境监管机构所需要的数据；

·它提供了所有的数据需求，并给予实施者充分的灵活性来涉及电子信息，以适应与跨境交易法律要求相关的不同业务需求。

·它让单次提交的概念（一份信息在单次交易中只需提交一次）得以实施。

·它覆盖了出口、运输、货物、进口和中转报告的信息，以及来自跨境监管机构的响应消息。

·使用 GOVCBR 的程序开发人员只需维护一种消息类型的绘制（mapping），而不是多种消息类型，例如 CUSDEC，CUSCAR 等。

·GOVCBR 同样可以满足国内和国际间信息交换的需求。

基于 WCO 数据模型的整体层次图，见附件一

跨境监管机构有针对各项法规的具体业务表格，这些表格需要由贸易商填写并提交，所有交易必须满足监管要求。单一窗口的实施从全面的角度来看待这些要求，并建议合理化形式的设计，以及将所有的要求进行协调并重新组织。这种重新组织的行为受“一份信息在单次交易中只需提交一

Message in which such an arrangement is facilitated, and GOVCBR is the structure that carries this message.

C.5 It comes with XML specifications

XML specifications and guidelines help implement the XML variant of the GOVCBR and other XML messages for cargo reporting, goods declarations etc.

- XML Schemas and XML Message Implementation Guidelines provide documentation that can help build XML message instances that are consistent with the Data Model.

- Re-usable components of XML Schemas include documentation from the WCO Data Model, which can be used for validation purposes. This is aimed at simplifying message processing by promoting re-use of schema components.

C.6 It facilitates regulatory data harmonization

Data used by customs administrations and border regulatory agencies originates from different parts of the world in the course of trade and transport transactions. In an international transaction, the same data is used in different systems across the world, from one end of the supply chain to the other.

This includes data about goods being traded, parties involved, documents required, means of transport and transport equipment, as well as locations and times of significant events that take place along the supply chain. Over the years, systems developed in this field have always strived to minimize, if not completely eliminate, the re-keying of data.

Information and documentation are key elements in the control of international cross-border transactions. In today's interconnected electronic environment these controls increasingly include advance transmission of data to Customs. In order to provide the necessary level of security as well as acceptable release times, possibilities are foreseen for Customs-to-Customs (G2G) information exchange.

Advance transmission implies the submission of data before the arrival of goods or, in some cases, before goods are placed in the container that will carry them. For reliable and accurate advance information, it is essential to use international standards.

次”的原则所驱动。WCO 数据模型为监管信息提供了一个明确的基础，GOVCBR 便是承载这个信息的结构。

C.5 它带有可扩展标记语言（XML）中的规范

XML 规范和指南有助于执行 GOVCBR 的 XML 变量以及其他货物报告、货物申报等事项相关的 XML 信息。

- XML 架构和 XML 信息实施指南中的参考文件可以帮助建立与数据模型一致的 XML 消息实例。

- XML 架构中可重复使用的组件包含了 WCO 数据模型中的参考文件，这些部件可用作验证。通过促进架构组件的再利用，达到简化信息处理流程的目的。

C.6 它促进了监管数据的协调

海关和边境管理机构所使用的数据来自世界各地的贸易和运输交易过程中。在国际交易中，从供应链的一端到另一端同一份数据被世界各地不同的系统所使用。

这包括了与货物、当事人、所需文件、运输方式和运输设备、供应链中重要事件发生的时间和地点相关的数据。这些年来，此领域中开发出来的系统一直都在努力减少数据的重复键入。

信息和单证是国际跨境交易管理的核心要素。在当今互联的电子环境下，这些管理越来越讲求向海关提前转送数据。为了提供必要的安全水准和可接受的放行时间，海关和海关之间将会有交换信息的可能。

提前转送意味着在货物到达前或装货前提交数据。为了保证提前转送的数据是可靠并准确的，非常有必要使用国际标准。

The Data Model Project Team developed guidelines to support Single Window Data Harmonization.

C.7 It explains the use of international standards for codes

International code standards enable communication to take place where ordinary spoken or written language is difficult or impossible. The alternative to using coded information is free text, which opens possibilities for errors.

Codes represent data in a way which is more resistant to errors in transmission or storage, or allows the same information to be sent with fewer characters, more quickly and less expensively. In order to ensure that information keeps the same content during its transmission and transfer into databases, it is necessary to agree on common codes between sender and receiver.

Systems that do not use codes will not be able to provide accurate data for their business processes. This is because free text data is susceptible to minor typographical errors, making it unsuitable for developing computerized routines. For instance, risk profiles cannot be developed easily for business entities, commodities or logistics locations that are not represented by codes.

WCO Data Model Version 3.0 provides comprehensive information about how to obtain these codes and handle them in databases, not just for customs but also for a variety of other government agencies.

C8 It was developed with Trade's involvement

The WCO Data Model has not been developed in isolation. Participants from the Trade and Transport community and from other cross-border regulatory agencies have assisted with the development of Version 3. Simplifying cross-border regulation will result in reduced costs and lower cycle times. This is the reason why Trade has contributed enthusiastically to the WCO Data Model.

Trade and Transport organizations as well as partner cross-border regulatory agencies will remain involved in the future management and maintenance of the WCO Data Model.

Interested parties from the business community are encouraged to join with representatives of participating administrations in reviewing the WCO Data Model, in

数据模型项目小组开发了一个指南以支持单一窗口数据协调。

C.7 它解释了国际标准代码的使用

当使用普通的口语或书面语言很难或不可能交流时，国际代码标准让这种交流变得可能。编码信息的替代使用方式是自由文本，但自由文本为错误的产生提供了可能性。

在传输或储存时，代表数据的编码有更强的抵抗错误的能力，它允许使用较少的字符发送相同的信息，更快更便宜。为了保证信息的内容在传输和转送至数据库的过程中不变，信息的传送者和接受者有必要商定一个共同的代码。

不使用代码的系统将无法为其业务流程提供准确的数据，因为自由文本数据对小的印刷错误非常敏感，不适用于计算机程序的开发。例如对于不能用代码表示的业务实体、商品或物流中心来说，开发风险概况（risk profiles）是非常不易的。

WCO 数据模型 3.0 版对于如何收集和在数据库中处理这些代码提供了全面的信息，不仅仅是为了海关，而且是为其他各种政府机构。

C.8 数据模型的建立由商界共同参与

WCO 数据模型没有被孤立地发展。来自贸易、交通和其他跨境监管机构的人士共同参与到了 3.0 版本的开发中。简化跨境监管规定可以减少成本并降低周期时间（cycle times）。这是贸易界人士满腔热情地投入到 WCO 数据模型开发的原因。

贸易运输组织和跨境监管机构伙伴将继续参与 WCO 数据模型的管理和维护。

WCO 鼓励商界人士派代表参与到检验数据模型的管理

order to improve subsequent versions where possible.

D. Relationship with other international instruments

How does WCO Data Model Version 3.0 relate to other international instruments governing trade & transport?

D.1 Revised Kyoto Convention

The Revised Kyoto Convention provides the basis for listing out customs procedures for the WCO Data Model. This diagram shows the customs procedures as described in the revised Kyoto Convention and its Guidelines.

See Appendix 2

The diagram shows the different possibilities for customs procedures to occur in sequence. When a conveyance arrives in the customs territory, goods have to be placed under a customs procedure. This may be followed by those goods being placed under another customs procedure before they are released and cleared for free circulation.

Documentation in the WCO Data Model provides an understanding about business processes that are associated with some of the main customs procedures. The WCO Data Model considers data requirements in the light of a background knowledge of all customs procedures.

D.2 SAFE Framework of Standards

The role of customs has undergone a transformation over the years. Even where countries are compelled to remain focused on revenue mobilization, supply chain security initiatives and public health and safety regulations have become extremely important.

WCO developed the SAFE Framework of Standards (SAFE FOS). The desire to secure and facilitate trade is demonstrated by the commitment and willingness shown by WCO Members to implement this Framework of Standards.

The SAFE Framework of Standards includes advance reporting. The WCO Data Model takes into account this requirement and contains structures that can be used for advance electronic reporting under SAFE FOS.

Using WCO Data Model Version 3.0, electronic messages can be created to enable end-

工作中去，以尽可能改良后续的版本。

D. 与其他国际文书的关系

WCO 数据模型 3.0 版与其他管理贸易与交通的国际文书有怎样的关系？

D.1 修订版京都公约

修订版京都公约为 WCO 数据模型提供了列出海关手续的依据。下图为修订版京都公约和其指南中所描述的海关流程。

见附件二图

该图标显示了按序状况下海关流程的不同可能性。运输工具抵达海关辖区后，货物必须置于海关管理程序之下。在接受放行和能够自由流通之前，货物有可能进入另一个海关流程。

WCO 数据模型中的文件单证可以帮助使用者理解与一些主要海关手续相关的业务流程。WCO 数据模型充分考虑了所有海关手续的背景知识下的数据需求。

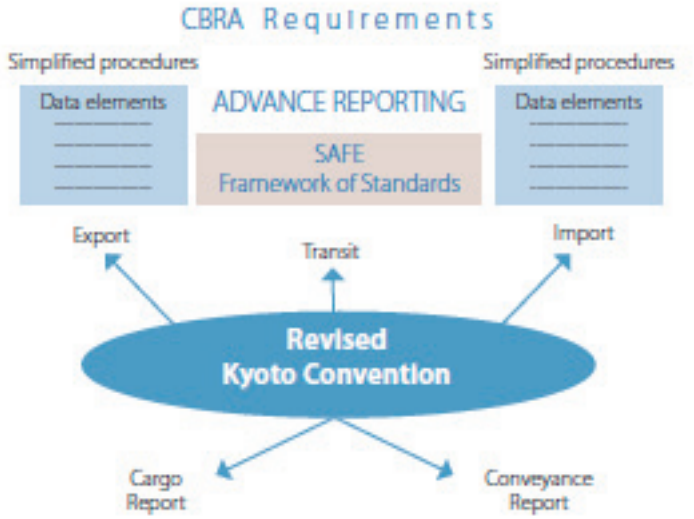
D.2 贸易安全与便利标准框架（SAFE）

这些年来海关的角色经历了转型。虽然各国被迫继续关注于税收收入，但供应链安全举措、公共健康和安全法规已经变得极为重要。

贸易安全与便利标准框架包含了提前申报。WCO 数据模型将此要求考虑在内，此外还包含了在框架之内可以用作预先电子申报的结构。

使用 3.0 版的 WCO 数据模型时，可以创建电子信息以实现端到端的集装箱跟踪、例如，根据美国港口安全法，进口商和承运人有义务提交 “10+2” 要求的相关材料，这些

to-end container tracking. For example under the United States Safe Ports Act, importers and carriers are obliged to file what are popularly referred to as '10+2' requirements. These requirements have been mapped to the WCO Data Model Version 3.0.



D.3 IMO FAL & SOLAS Conventions

The International Maritime Organization (IMO) is responsible, inter alia, for determining international obligations in respect of marine safety. This includes documentation pertaining to the certification of seafarers, vessels & safe operation of vessels. Reporting requirements arise out of these obligations, including cargo and security reporting.

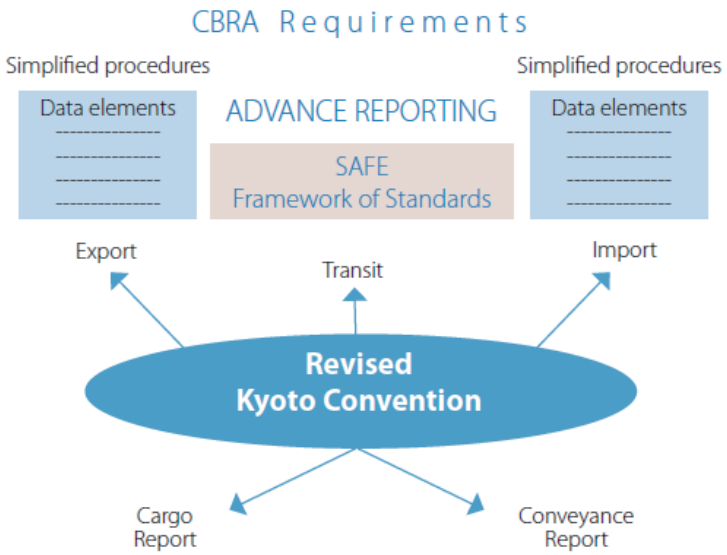
Security and safety in the maritime world are governed through the Safety of Life at Sea (SOLAS) Convention. In recent years this Convention has been amended to strengthen the security of vessels and port facilities through the International Ship and Port Facility Security Code (ISPS Code).

IMO FAL Convention governs the reporting aspects of the Ship/Port interface by the use of FAL forms (1 to 7) providing the global basis for declarations for cargo, conveyance, bunker fuel, ship's stores, etc.

WCO Data Model Version 3.0 takes into account the requirements of security and ship reporting under the FAL and SOLAS Conventions and ISPS.

D.4 Other international conventions

要求已经体现在了 WCO 数据模型 3.0 版本中。



D.3 国际海事组织的《便利国际海上运输公约》和《国际海上人命安全公约》

国际海事组织（IMO）负责确定海洋安全方面的国际义务。包括与海员、船舶和船舶安全操作证明有关的单证，并制定与此义务有关的报告要求（包括货物和安全报告）。

《国际海上人命安全公约》（SOLAS）负责全球海事安全事宜，近年来为了提升船舶和港口设施的安全水平，SOLAS 公约引入了《国际船舶和港口设施保安规则》（ISPS Code），其内容得到了完善和改进。

国际海事组织的《便利国际海上运输公约》负责管理船舶 / 港口方面的报告，公约为货物、船用燃料、船员生活供给等事项的申报提供了全球性的基础。

3.0 版 WCO 数据模型考虑到了《便利国际海上运输公约》、《国际海上人命安全公约》和《国际船舶和港口设施保安规则》中对于安保和船舶报告的要求。

D.4 其他国际公约

Convention on International Civil Aviation

The International Civil Aviation Organization (ICAO) creates standards for international air navigation. Annex 9 to the Chicago Convention contains several provisions dealing with the Standards and Recommended Practices (SARPs) on Facilitation (FAL) relating to, inter alia, customs and immigration procedures, including standards for electronic reporting of aircraft, their cargo, passengers and crew. It also manages a number of code lists concerning air transport. Airline declarations for cargo based on ICAO Convention requirements are fully covered by the WCO Data Model.

WTO Valuation Rules

The WTO Agreement on Customs Valuation establishes a system for the valuation of goods for customs purposes.

This system requires certain data concerning a transaction, in order that automated systems can correctly apply the principles enshrined in the WTO Valuation rules.

The WCO Data Model aims to accurately capture and organize this data as part of the import and export declaration.

HS Convention (International Convention on the Harmonized Commodity Descrip-tion and Coding System, 1983) (Customs Co-operation Council)

In terms of the objectives of this Convention, the WCO Data Model recommends the adoption of the HS code for the collection, comparison and analysis of trade statistics; these activities are facilitated by reducing the expense incurred in redescribing, reclassifying and recoding goods from one classification to another.

However, where other cross-border regulatory agencies require other classification schemes to operate in their specific area of decision-making, the WCO Data Model makes it possible to report classifications according to those schemes.

TIR Convention (Customs Convention on the International Transport of Goods under cover of TIR Carnets, 1975) (UN/ECE)

The TIR Convention applies to the transport of goods in road vehicles, including containerized cargo that moves across one or more frontiers. The WCO Data Model

国际民用航空公约

国际民航组织（ICAO）创建了国际航行规划（international air navigation）标准。芝加哥公约的附件 9 包含了应对标准和建议办法中关于海关和入境手续（包括飞机、货物、乘客和机组人员的电子报告标准）的若干规定。同时他还管理着许多关于航空运输的代码列表。基于国际民航组织公约要求的航空货运申报已被 WCO 数据模型全面覆盖。

世界贸易组织估价规则

WTO 海关估价协定建立了一个海关货物估价系统。

此系统对相关交易的某些数据做出了要求，以保证自动化系统能正确地应用 WTO 估价协定中的原则。

WCO 数据模型的目的是准确地捕捉并组织这些与进出口申报相关的数据。

HS 公约（商品名称及编码协调制度的国际公约）

就公约的目的而言，WCO 数据模型建议采用 HS 编码进行贸易统计工作的收集、比较和分析；通过削减将物品重新描述、分类和改变编码而产生的费用，以上活动得到了推进。

然而，另一些跨境监管机构要求在特定的决策领域内使用他们自己的分类方法，世界海关组织的这个数据模型为此提供了实现的可能。

国际公路运输公约 TIR（公约单证册下的国际货物运输海关公约，1975，UN/ECE）

TIR 适用于公路车辆的货物运输，包括跨越一个或多个边境的集装箱货物。WCO 数据模型已与“电子国际公路运输公约”要求保持一致。

has been aligned with the 'electronic TIR' requirements.

The Transit section of WCO Data Model Version 3.0 comprehensively covers 'eTIR' specifications.

Rules regarding Dangerous Goods

The WCO Data Model promotes the use of international standards laid down in or derived from the Recommendations of the Committee of Experts on the Transport of Dangerous Goods of the United Nations Economic and Social Council (UN/ECE)

However, where national regulations require additional classification regarding naming, documentation, labeling or packing, the WCO Data Model enables the delivery of such additional information required by the relevant national regulatory or handling agencies.

Other international conventions

WCO Members, as well as representatives of international organizations brought in cross-border regulatory requirements based on international conventions, agreements and projects such as the International Convention on Plant Protection, the Basel Convention on Hazardous Waste, the Wassenaar Arrangement, the e-Cert project, etc.

E. What about other international data standards?

The WCO Data Model is consistent with other international standards such as the United Nations Trade Data Elements Directory (UNTDED), and will be aligned with UN/CEFACT's Core Component Library (CCL).

E.1 UN CEFACT Standards

ebXML and UN/CEFACT Core Component Library

Also included in the WCO Data Model are recommendations for the development of XML messages. ebXML, as the only widely accepted XML standard, was recommended by the WCO Data Model Project Team as the standard for developing the WCO XML specifications.

- ebXML is a modular suite of specifications that enables enterprises to conduct

WCO 数据模型 3.0 版中的转关运输全面覆盖了电子公约中的各项规格。

与危险品有关的规则

WCO 数据模型促进了联合国经济社会理事会（UN/ECE）危险货物运输专家委员会建议使用的国际标准。

然而，一些国家要求对物品的名称、单证、贴标和包装进行额外的分类，WCO 数据模型允许此类额外信息（相关国家监管机构和经办机构要求的）的传输。

其他国际公约

WCO 成员和其他国际组织代表在各类国际公约、协定和项目（例如：国际植物保护公约、有害废物巴尔塞公约、瓦森纳协定、电子证书项目等）的基础上引入了跨境监管要求。

E. 其他国际数据标准是什么情况呢？

WCO 数据模型与其他国际标准例如联合国贸易数据元素目录保持一致，未来还会跟联合国贸易便利化与电子业务中心（UN/CEFACT）的核心组件库进行协调。

E.1 联合国 CEFACT 标准

电子商务扩展标记语言（ebXML）和联合国贸易便利化与电子业务中心（UN/CEFACT）核心组件库

WCO 数据模型为可扩展标记语言的发展提供了建议。ebXML 作为唯一被广泛认可的可扩展标记语言（XML）标准，由 WCO 数据模型推荐作为开发 WCO 可扩展标记语言规格的标准。

business on the internet. It also describes how XML technologies can be used for creating and exchanging messages. ebXML is considered to be more affordable than traditional EDI solutions.

• With regard to the business content of electronic messages in XML format, ebXML is backed by UN/CEFACT, the global body standardizing ebXML message content specifications. ebXML works on the core components of messages and business process models.

• The WCO participates in the UN/CEFACT standardization processes for core components. The WCO Data Model is being aligned with, and incorporated in the UN/CEFACT Core Component Library.

UN/ CEFACT Recommendations

The WCO Data Model recommends the use of UN/CEFACT Recommendations such as:

• Rec. No.3 Use of ISO Country code - code for representation of names of countries

• Rec. No.5 Abbreviations of INCOTERMS º Rec. No.9 Alphabetic code for the representation of currencies

• Rec. No.16 LOCODE - Code for ports and other locations

• Rec. No.17 PAYTERMS - Abbreviations for terms of payment

• Rec. No.19 Code for Modes of Transport

• Rec. No.20 Code for Units of Measurement used in international trade

• Rec. No.21 Codes for types of cargo, packages and packaging materials

UN/ EDIFACT Messaging Standards

Previous versions of the WCO Data Model catered for UN/EDIFACT standard-based messages such as CUSCAR (Customs cargo report message), CUSDEC (Customs declaration message) and CUSREP (Customs conveyance report message). WCO

·ebXML 是一个能让企业在互联网上开展业务模块化规格套件。它还描述了如何使用 XML 技术来创建和交换信息。ebXML 被认为比传统的 EDI 方案更实惠。

· 关于 XML 格式中电子信息的业务内容，edXML 得到了联合国贸易便利化与电子业务中心的支持，包括全球 ebXML 标准内容说明， edXML 重点关注信息的核心组件和业务流程模型。

·WCO 参与建设了 UN/CEFACT 核心部件的标准化流程。WCO 数据模型正在与 UN/CEFACT 核心组件库进行对标和融合。

UN/ CEFACT 的建议

WCO 数据模型推荐使用 UN/ CEFACT 中的建议，比如：

建议三 使用 ISO 国家代码 — 代表国家名称的代码

建议五 国际商会国际贸易术语解释通则的缩写

建议九 表示货币的字母代码

建议十六 LOCODE— 港口和运输地点代码

建议十七 PAYTERMS— 支付条款的缩写

建议十九 运输方式代码

建议二十 国际贸易计量单位代码

建议二十一 货物、包装和包装材料种类代码

行政，商务和运输业用电子数据交换（UN/ EDIFACT）的信息传送标准

早期版本的 WCO 数据模型满足了 UN/ EDIFACT 基于标准的报文要求，比如：海关货物报告报文（CUSAR）、海关申报报文（CUSDEC）和海关运输报告报文（CUSREP）。经过升级的 3.0 版 WCO 数据模型已经成为了全政府跨境单一窗口的核心。基于 3.0 版开发出来的政府跨境监管信息电

Data Model Version 3 has been developed to be the kernel of a Whole-of-Government Cross-Border Single Window. The GOVCBR as developed from Version 3, will eventually make the CUSXXX messages superfluous.

GOVCBR makes it feasible to comply with the key element of a Single Window, namely to send a piece of information only once within one cross-border transaction. GOVCBR allows regulatory agencies to create and specify electronic messages from the same structure to any cross-border situation involving the release of goods, containers or conveyances.

For the use of the GOVCBR message, Message Implementation Guidelines (MIGs) form part of the WCO Data Model. Using these guidelines, customs administrations can implement import and export declarations, cargo and conveyance reports, transit declarations and response messages. In a Single Window environment, each message can carry information needed by partner cross-border regulatory agencies also.

UN/EDIFACT works with the help of internationally agreed structures or building blocks of messages. During the development process for WCO Data Model Version 3.0, the Project Team developed around 450 new codes and these were submitted to the UN/EDIFACT Board for inclusion in the standard code lists.

E.2 ISO Standards

Several International Standards Organization (ISO) standards have been recommended for use in WCO Data Model Version 3.0.

They include: Country code (ISO 3166), Currency code (ISO 4217), Dates, times, periods of time (ISO 8601), Trade Data Elements (UNTDED - ISO 7372).

F. What problems will the WCO Data Model help solve?

Project managers for a large customs or Single Window system often face questions in regard to the precise definition of the scope of the project. Any such system is usually built to serve for a 7-12 year time-period.

On the one hand, the scope of the system has to be clearly circumscribed in order to cover all the functionalities currently required, so that stakeholders can understand its implications for project resources and project outcomes. On the other hand, the scope must be broad enough to deliver an architectural blueprint that can accommodate

子数据交换（GOVCBR）系统最终会让各类海关报文变得多余。

GOVCBR 使得遵循单一窗口的关键元素变得可能，即一份信息在跨境交易中只需发送一次。在涉及货物、集装箱或运输工具放行的跨境情境中，GOVCBR 允许监管机构创建并指定来自同一个结构中的电子信息。

GOVCBR 中的报文实施指南是 WCO 数据模型的一部分。通过使用该指南，海关可以执行进出口申报、货物运输报告、过境申报和响应消息。在单一窗口环境中，每条消息都可以携带跨境伙伴监管机构需要的信息。

UN/ EDIFACT 借助于国际商定的结构或信息模块进行工作。在 WCO 数据模型 3.0 版的开发过程中，项目小组创建了约 450 个新的代码，并呈交至 UN/ EDIFACT 委员会的标准代码列表中。

E.2 ISO 标准

一些国际标准化组织（ISO）中的标准已经被推荐使用在 3.0 版的 WCO 数据模型里。

它们包括：国家代码（ISO 3166），货币代码（ISO 4217），日期、时间、时段（ISO 8601），贸易数据元素（UNTDED - ISO 7372）。

F. WCO 数据模型可以帮助解决什么问题？

大型海关或单一窗口系统的项目管理者经常面对关于项目范围的确切定义的问题。任何此类系统的服务年限通常为 7-12 年。

一方面，必须明确界定系统的范围以覆盖当前所需的所有功能，如此以来利益相关方可以体会 WCO 数据模型对项目资源和项目成果的影响。另一方面，模型的范围必须足

future enhancements over the long term, without necessitating too many changes.

To overcome these concerns, solution providers have advocated different architectural approaches. The software architecture provides a way to define what software components would be built, and how these components could be scaled up to meet future requirements. Software runs on data, which represents the 'unvarying truth' about a business. The kind of data a particular type of business will require depends to a very large extent on the nature of the business, and to a limited extent on the business processes employed or the geography they are employed in.

The WCO Data Model is a comprehensive collection of data requirements from the cross-border regulatory domain. It provides the blueprint for data that will run on any kind of system in this domain. Establishing the correct architectural blueprint for data early on in a project leads to a more holistic design of data objects, including databases, that meet the information needs of all the cross-border regulatory agencies which are partners in the project.

The WCO Data Model relies on the high-level business processes described in the Revised Kyoto Convention. These business processes underpin a number of customs procedures. The WCO Data Model also takes into account the needs of several cross-border regulatory agencies.

In order to ensure that the architectural solution will be comprehensive and scalable, it is necessary to start a project with a complete set of data requirements, a complete list of business processes, customs procedures and relevant cross-border regulatory agencies' requirements.

F.1 Implementing Single Window Business Processes

Government departments are entrusted with the responsibility for enforcing regulations at the border. Each department has prescribed its own forms, which require Trade to submit information at different stages.

Duplicate submission of information occurs when cross-border regulatory agencies do not share with each other information received in the course of trade or transportation events. For example, to apply for a license, a trader is required to provide information about the product, the importing parties and supplying parties etc. This information is repeated in customs declarations for import or export.

Duplicate submission of information, which carries a risk of errors, can be avoided by building systems requirements that acknowledge these redundancies. The data harmonization methodology provided as part of the WCO Data Model documentation

够广泛，以形成一个能适应未来长期增长而不需要做过多改动的建筑蓝图。

为了克服这些顾虑，方案提供者倡导使用不同的架构方法。软件体系结构提供了一个方法来规定哪些软件组件应该被建立，以及如何对这些组件进行扩展以满足未来的需求。数据代表了一项业务“不变的真理”，而软件的运行靠的就是这些数据。特定业务模式需要的数据类型在很大程度上取决于业务的性质，并部分取决于所他们采用的业务流程或区域特点。

WCO 数据模型是一个全面的跨境监管领域数据要求集。它为将在该领域中的任何系统上运行的数据提供了蓝图。在项目前期阶段建立正确的蓝图结构有助于对数据目标进行更全面的设计，以满足项目中所有跨境伙伴监管机构的信息需求。

WCO 数据模型的建立依靠于修订版京都公约中所描述的高级业务流程。这些流程巩固了海关业务程序。WCO 数据模型还考虑了几个不同跨境监管机构的需求。

为了保证结构方案的全面性和可扩展性，非常有必要在获得完整的数据要求、完整的业务流程表、海关程序及相关监管机构要求的情况下启动该项目。

F.1 实施单一窗口业务流程

政府部门肩负着在边境执行法规的责任，每个部门都有自己的表格并要求贸易商在不同的阶段提交信息。

当跨境监管机构彼此间不分享在贸易或运输活动中收到的信息时，信息会面临重复提交。比如当申请一份许可证时，贸易商被要求提供关于产品、进口商和供应商的信息。此信息在海关进出口申报中是重复使用的。

多次提交信息有产生错误的风险，此时可以通过建立容

helps identify these redundant pieces of information and alert business analysts to the possibilities of simplification.

The GOVCBR message structure provides a methodology for devising different electronic messages based on the same underlying structure to be used at different stages of crossborder trade & transport flows. Different cross-border regulatory agencies can work with the superset of information that GOVCBR represents. In this way these agencies can organize their business processes to cause minimum inconvenience to Trade and yet execute all regulatory procedures.

Overlaps in the information submitted are sometimes unavoidable, but should be kept to a minimum. Any overlap should either be used to retrieve linked-up information, or for a deliberately designed double-check.

The chart below shows the possible business processes that the WCO Data Model Version 3.0 can serve.

	GOVCBR STRUCTURE PROVIDES NUMEROUS POSSIBILITIES
1	**Designed as part of WCO DM Version 3** Goods Declaration for Imports & Exports Transit Declarations Two step goods Declaration for Imports & Exports (simplified procedures) Cargo Reports for Imports & Exports Conveyance Reports Government Response to above declarations/ Reports
2	**Mapped to WCO DM Version 3** Advance Export Goods declarations (SAFE) Advance Cargo Declarations (SAFE)
3	**Other messages providing security & logistics information** Container Status Tracking (For Logistics & Security) Monitoring & Control of Vessel Movements Transport means security reporting
4	**Out of scope of Version 3 but may be catered for** Requesting regulatory requirement details Quota registration and utilization Application for License Permit, Certificate or Authorisation License utilization reports
5	**Other messages based on the WCO Data Model (not on GOVCBR)** Messages for maintaining codelists and Identifier master data Requesting tax computation & tax regimes details Duty tax fee payable & payment confirmation messages Long-term trade contracts registration – example project imports Advance ruling applications for commodity classification or valuation or origin

纳这些多余动作的系统要求来避免重复提交。作为 WCO 数据模型的一部分，数据协调机制可以帮助鉴别这些多余的信息，并把简化操作的可能性提供给业务分析师。

GOVCBR 信息结构为区分不同的电子信息提供了方法，这些用在不同跨境贸易 / 运输阶段的电子信息基于同样的底层结构。不同的跨境监管机构可以利用 GOVCBR 提供的信息扩展集进行工作。通过这种方式，各机构可以合理地组织他们的业务流程，把给贸易带来的不便降到最低，并完成监管流程。

提交的资料中产生重叠的内容有时候无法避免，但应该把重叠水平降到最低。任何重叠都应用于相关信息的检索，或特地设计的复核工作。

下表显示了 WCO 数据模型可以提供的业务流程

GOVCBR 结构提供了无数的可能性	
1	设计成为 WCO 数据模型 3.0 版的一部分 进出口货物申报 过境申报 进出口货物两步申报（简化程序） 进出口货物报告 运输工具报告 政府对上述声明 / 报告的答复
2	与 WCO 数据模型 3.0 版的映射 出口货物提前申报（SAFE） 货物提前申报（SAFE）
3	提供安全及物流信息的其它消息 集装箱状态跟踪（针对物流与安全） 船舶运动的检测与控制 运输方式的安全报告
4	不属于 3.0 版本的范围但可以满足: 索取监管要求的细节 配额登记与使用 许可证、证书或授权的申请 许可证使用的情况报告
5	其他基于 WCO 数据模型的信息（不是基于 GOVCBR） 维护代码列表和标识符主数据的消息 请求税收计算和税制细则 应付税款和支付确认信息 长期贸易合同登记—实例进口项目 货物分类、估价和原产地的预裁定申请

F.2 Complex requirements of partner cross-border regulatory agencies

Different government departments responsible for specific regulations and/or the control of different commodity/product groups often require different attributes of the traded goods to be reported. The product characteristics that are of interest to the agriculture department may be different from those for the mines & minerals and food safety departments.

WCO Data Model Version 3.0 has a precise solution for all such situations. The data structure pertaining to Commodity is very elaborate, and can accommodate extremely complex requirements of customs and other government departments.

These data structures help in implementing complex types of fiscal and regulatory policies on commodities. Such restrictions may not be based on the HS code alone but on other classification schemes, identification schemes or even characteristics of the commodity. These structures can help define and collect statistical data in order to meet the most complex demands of other government agencies.

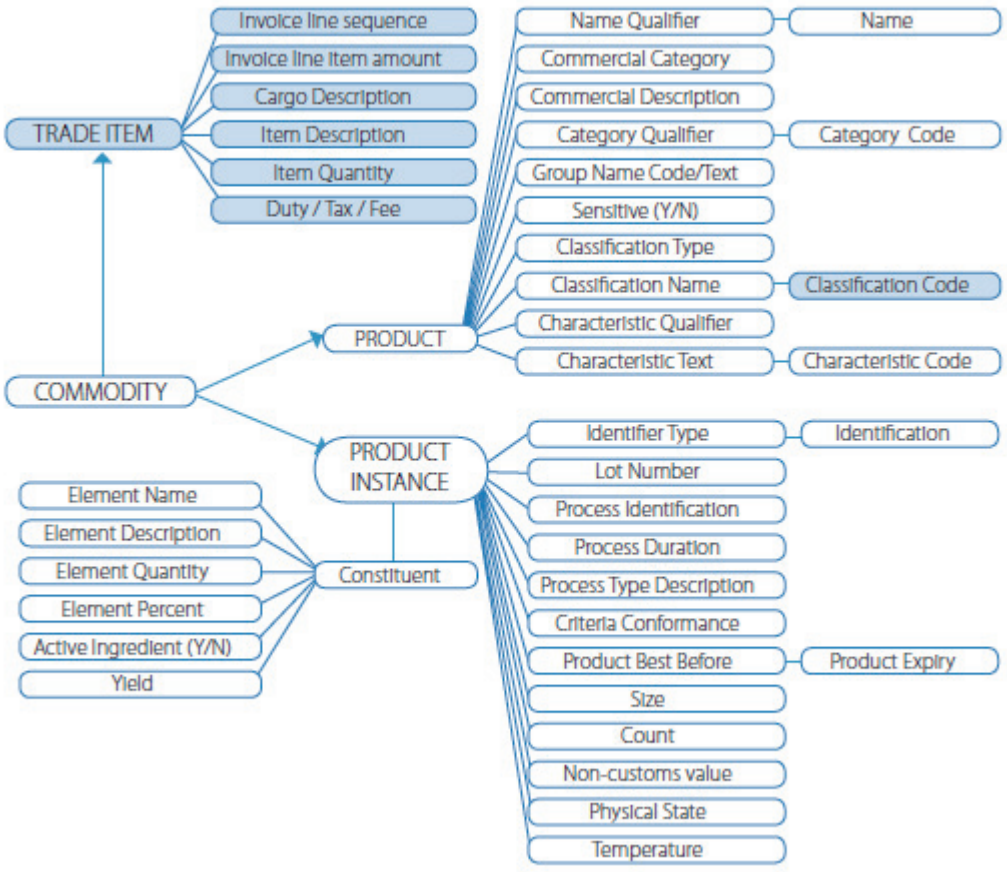


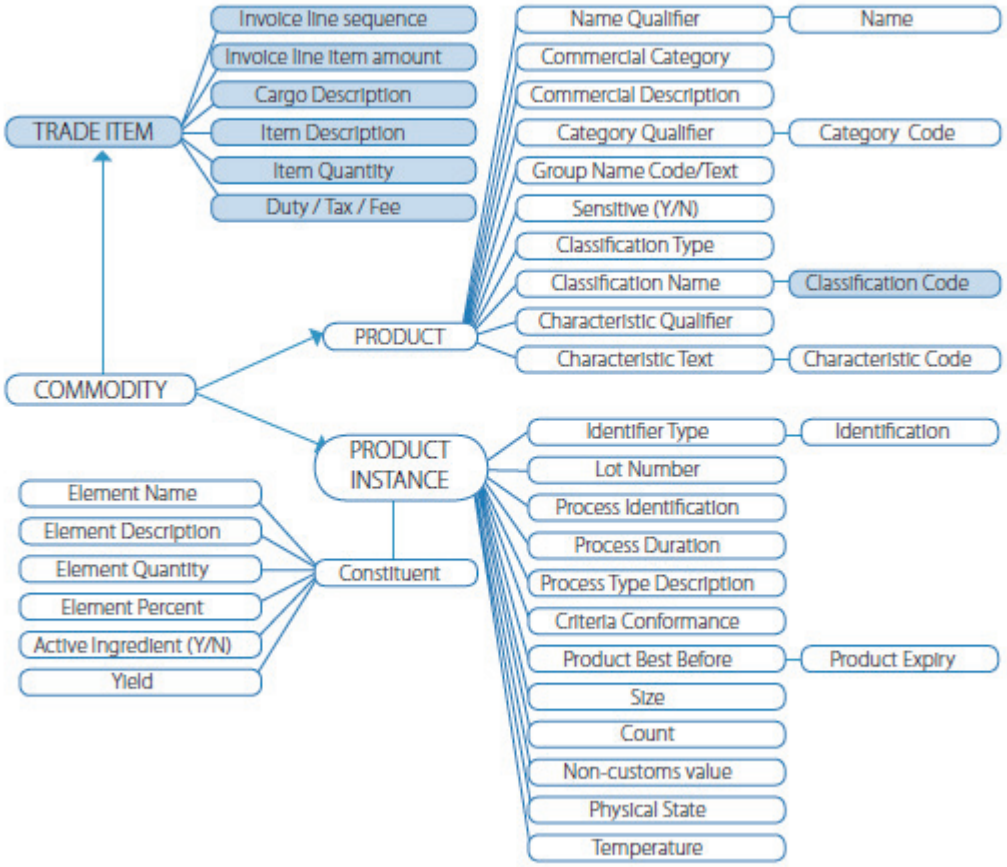
Figure: Commodity details in the WCO Data Model

F. 2 跨境伙伴监管机构的复杂要求

负责监管和 / 或管理不同货物 / 产品的各政府部门通常要求贸易商提供交易货物的不同属性。同样一件产品，农业部感兴趣的产品特性可能不同于矿山 / 矿产和食品安全部门。

WCO 数据模型 3.0 版对所有这些情况都有清晰的解决方案。与商品有关的数据结构非常精细，并能适应海关和其他政府机构异常复杂的要求。

这些数据结构有助于复杂的商品财政和监管政策类型的实施。此类限制可能不单单是基于商品编码，而是基于其他分类方案、识别方案，甚至是商品性质。这些结构有助于定义和收集统计数据，以满足其它政府监管机构的复杂要求。



图示：WCO 数据模型中的商品详情

The above diagram shows the complexity of data requirements that may be specified by cross-border regulatory agencies in regard to a commodity. The details that are normally available in invoices are highlighted in light-blue. Cross-border regulatory agencies may require other information, which may vary depending upon the commodity being traded.

For example, in the case of an automobile, the focus for the transportation department may be on the emission and fuel efficiency considerations, where Commodity Characteristics qualifiers and Commodity Characteristics Text or Code can be used to specify detailed information (e.g. engine type, fuel type, fitment of a catalytic converter, emission norm certification, fuel efficiency certification, driving side etc). A country that runs a special program to encourage environment friendly automobile imports may like to have data very specific to these characteristics that impact tax treatment. In such a situation, the WCO Data Model would be of immense value in facilitating automated clearance.

As another example, in regard to food safety, it is possible to use the attributes such as 'Product expiry date', Best Before date, Brand name', 'fanciful name' (using commodity name qualifier and commodity name, percentage alcohol (constituent element name & element percent) to determine compliance with food safety regulation.

F.3 Quality of data for effective risk management systems

Very often, the failure of risk management solutions can be attributed to poor data quality. Improvement of data quality begins with the adoption of widely accepted international data standards. The use of coded data as opposed to non-coded data represents a big step towards improving data quality.

The documentation on the WCO Data Model provides information about the possible use of codes for every data element that can be codified. It also provides ideas that help reduce the re-keying of data, thereby reducing the opportunity for errors to creep in. The accuracy of data improves the effectiveness of targeting.

When dealing with high-risk areas, customs administrations would like to obtain more precise data in the declarations, but do not have the scope within existing forms and messages to capture such data. The aggregation of data required by partner cross-border regulatory agencies may result in improved targeting for all the authorized parties concerned. The WCO Data Model can help optimize these requirements and enhance targeting capability.

上图显示了跨境监管机构对于商品数据要求的复杂性。发票中常用的细节用浅蓝色做了突出显示。跨境监管机构可能要求其他信息，这些信息可能因所交易的商品而异。

以汽车为例，交通运输部门的关注点可能在排放与燃料效率，此时商品特性限定符和商品特性文本或代码可以用来描述商品的详细信息（例如：发动机类型、燃料类型、催化式排气净化设备、排放标准认证、燃料效率认证等）。一个鼓励进口环保汽车的国家可能更需要与这些特性（影响税收待遇）紧密相关的数据。此状况下 WCO 数据模型对促进自动清关有巨大价值。

以食品安全作为另一个例子，可以使用其产品属性，比如：“产品过期日”，此期日期前最佳，品牌名称，商品别名来判断是否符合食品安全条例。

F.3 有效风险管理系统的数据质量

风险管理方案的失败常常归因于低质量的数据。提升数据质量始于采用广泛接受的国际数据标准。使用编码数据相对于非编码数据是提高数据质量的重要一步。

对于每个可以进行编码的数据元素，WCO 数据模型中的文件提供了可能使用的代码信息。模型同样提供了一些思路来帮助减少数据的重复键入，从而减少出错的机会。数据的准确性提高了布控效率（effectiveness of targeting）。

海关在处理高危领域的问题时希望从申报中获得更加精确的数据，但在现有的表单和信息中没有捕获这些数据的范围。跨境伙伴监管机构要求的数据合集能够提升所有授权方的布控水平。WCO 数据模型有助于优化这些要求并增强布控能力。

Needless to say, the combination of advance reporting as referred to in sections B2, C4 and D2 above, and good data quality will give any risk management system the wherewithal to operate very efficiently. This of course allows cross-border regulatory agencies to "do their homework"before the actual consignment arrives. The exchange of information between regulatory agencies as referred to earlier in this brochure will lead to co-ordinated actions.

F.4 Complex schemes for duties, taxes & fees

There is a need for software applications that accurately compute duties, taxes and fees by type, by correctly applying different regimes to each of these duties/taxes/fees. Each one – and there can be a fairly complex array of duties, taxes and fees - must be correctly computed in strict accordance with the method prescribed in the legal text that authorizes its imposition.

Certain commodities have very complex duty and tax structures (alcohol/spirits and motor vehicles are usually cited as examples). These are based on intricate pieces of legislation that are not always drafted in such a away as to make life easy for the programmers!

Tax structures may be based on product characteristics that go beyond the specificity provided for by the HS tariff classification code. Also, it is often difficult to make the declaration reflect that the regime claimed is correct in respect of the commodity.

The WCO Data Model has a structure for a goods declaration that can help solve these kind of problems.

G. Implementing WCO Data Model Version 3.0

The WCO Data Model will probably be implemented at the national level in a cross-border Single Window environment. It can also be implemented without Single Window considerations. Greater benefits will be derived from the WCO Data Model if implementation takes into account scenarios involving bilateral or multilateral data exchange. Implementation should take place only after close consultation with Trade.

What is often forgotten is that the Data Model can also be used by application software developers who provide software solutions to the trade and transport sectors. After all, the data that customs need is provided by the businesses that engage in international trade and transport activities. It is recognized that implementation will

不用说，提前报告（上文 B2、C4 和 D2 中提到的）与良好的数据质量相结合，是任何风险管理系统能够高效运行的重要保障。这允许跨境监管机构在实际货物到达前就“做好他们的家庭作业”。监管机构之间的信息交换将导致协调工作的产生。

F.4 关税和其他税费的复杂方案

按照类型，通过正确应用关税 / 商业税 / 费用的不同方案来精确计算关税和其他税费时，需要使用软件程序。每项费用 -- 相当多且复杂的关税 / 商业税 / 费用 -- 都必须严格按照授权征税的法律文本中规定的方法正确计算。

某些商品有非常复杂的关税和税费结构（酒精类饮料 / 烈酒和机动车被认为是典型代表）。这都是建立在错综复杂的法律条文之上，而不是仅仅为了是的程序员编程方便而拟定。

税费结构可能基于产品的特性，一些特性超越了税则分类代码中提供的特异性。同时，让货物申报完全准确反映商品各个方面属性也时常是一件困难的事情。

WCO 数据模型中的货物申报结构可以帮助解决此类问题。

G. WCO 数据模型的实施

WCO 数据模型可能在国家级跨境单一窗口的环境中得到实施，也可以在不考虑单一窗口的状态下实施。如果引入多变和双边的数据交换，那么 WCO 数据模型的实施会带来更大的益处。只有在与商界充分磋商后才可以进行实施工作。

人们经常忽略了为贸易和运输提供解决方案的软件开发者也可以使用数据模型。毕竟海关需要的数据是由与国际

happen over a period of time requiring flexibility from all parties.

G.1 In the context of a new project

A new software project for the development of a Single Window environment or a core application for customs automation is ideally positioned to fully implement the WCO Data Model. The WCO Data Model documentation is of immense value to such projects.

To build an automated system, the software developer requires detailed specifications. While such specifications will have to conform to national legislation and regulatory requirements, this is also an opportunity to conduct a detailed examination of international standards that can be taken on board. Most frequently, it is not the legal requirements but local practices and conventions that stand in the way of the adoption of international standards.

Large systems of this kind are usually built to last 7 to 12 years. Therefore, these systems must be built on the basis of a blueprint that covers the widest requirements. The WCO Data Model is based on many years' collective experience of several Member administrations, plus input from partner cross-border regulatory agencies. The Data Model contains the essential ingredients that add up to a set of comprehensive specifications.

In particular, a new project can benefit from:

- the comprehensive list of customs procedures, essentially flowing from the Revised Kyoto Convention.
- the coverage of requirements arising out of international conventions related to crossborder reporting.
- data structures that help carry the most intricate pieces of information that any government agency might conceivably need, regarding cargo, goods, means of transport and their crew.
- the GOVCBR structure that helps define messages in a flexible manner for use in a whole-of-government cross-border Single Window environment.
- the collection of internationally used code lists that greatly facilitate data transmission and data use.
- UML models that describe the intricate relationships between data. These relationships provide input for building sustainable operational databases. The illustration below shows the relationship between a conceptual data model and

贸易和运输活动有紧密联系的商界提供的。人们普遍认为模型的实施将在一段时间后进行，需要各方有一定灵活性。

G.1 在一个新项目的背景下

在理想状态下，一个新的单一窗口环境软件开发项目或一个海关自动化核心程序的定位是为了全面实施 WCO 数据模型。WCO 数据模型对此类项目来说有巨大的价值。

为了建立自动化系统，软件开发者需要了解规范详情。虽然这些规范必须符合国家立法和法律要求，但同时这也是一个检验国际标准能否实施的机会。多数情况下，阻碍国际标准实施的不是法律要求，而是当地的常规和惯例。

此类系统的建成通常需要 7 到 12 年。因此，这些系统必须建立在覆盖最广泛要求的蓝图的基础上。WCO 数据模型就是建立在会员国多年的集体经验之上，外加跨境伙伴监管机构的投入。数据模型包含了由必要元素组成的一套综合性规范。

一个新项目尤其可以从以下内容中获益：

· 海关流程的完整列表，根本上是来源于修行版京都公约；

· 与跨境报告有关的国际公约中提出的需求范围（coverage of requirements）；

· 数据结构 -- 帮助传输政府机构可能需要的关于货物、商品、运输工具和船员的复杂信息；

· GOVCBR 结构 -- 以灵活的方式规定消息，以便在全政府跨境单一窗口环境中使用；

· 国际上使用的代码列表合集，大大方便了数据的传输和使用；

· 描绘数据之间复杂关系的统一建模语言（UML）模型。这些关系帮助建立可持续运行的资料库。下图显示了概念

physical database design.

‘Data Modelling’ & Database Design	
Domain // Conceptual Identify domain entity types, attributes • Establish standard naming conventions • Map with industry domain models — International data standards • Data definitions • Data representations • Code lists • Choose modelling techniques — Entity-Relationship Diagrams — UML Models • Identify relationships — Industry domain standards — WCO UML Model • Develop external messages — International Standard messages / EDIFACT/ XML **Database Design // Physical** • Apply data model patterns (object-relational?) • Detailed design - Data definition in the database – assigning keys etc. • Normalize – De-normalize — (Balance between low data redundancy and high performance)	WCO DATA MODEL

G.2 To help improve an existing system

Generally, customs administrations are using systems that are based to some extent on international data standards. Every administration faces requests for the incorporation of new business requirements. To manage these change requests, a formal change-control procedure is recommended. Sometimes, change requests present opportunities to implant modications that make the software application compliant with the WCO Data Model.

If an administration is planning substantial enhancements to its current software, this may be an opportunity to make the application achieve compliance with the WCO Data Model.

Sometimes, however, the current software application may not be able to accommodate these changes. Even where they are considered feasible, there are

数据模型和物理数据库设计之间的关系。

“数据建模”& 数据库设计	
域 // 概念 确定域的实体类型，属性 · 建立标准命名规则 · 与行业领域模间的映射 ---- 国际数据标准 · 数据定义 · 数据的表示 · 编码列表 · 选择建模技术 ---- 实体关系图 ---- 统一建模语言模型 · 确定关系 ---- 行业领域标准 ----WCO 统一建模语言模型 · 开发外部信息 ---- 国际信息标准 /EDIFACT/ 可扩展标记语言 数据库设计 // 物理的 · 应用数据模型模式（对象关系？） · 详细设计 - 数据库中的数据定义 - 分配密匙 · 规范化 - 反规范化 ----（低数据冗余和高性能之间的平衡）	WCO 数据模型

G.2 帮助改进现有系统

一般来说海关使用的系统在某种程度上是基于国际数据标准的。每个管理部门都面临着将新的业务需求纳入进来的请求。为了管理这些变更请求，需要有一个正式的变更管理程序。有时变更需要引入修改机制，使软件程序符合 WCO 数据模型。

如果管理部门计划对现有的软件进行实质性的改进，那么这将是一个很好的机会使应用程序实现与 WCO 数据模型的合规性。

但有些时候，现有的软件程序可能无法容纳这些改变。即便可行，这种变化通常伴随着巨大的风险和成本。预计实施新的变更请求所需的时间和工作量通常是错误且复杂的。

usually high risks and costs associated with such changes that are large and complex. Estimations of the time and effort required to implement new change requests are usually incorrect and complicated. In such situations, the development of a completely new software application may be worth considering.

G.3 How to use the WCO Data Model?

In the case of a new project, or where a substantial software upgrade is envisaged, certain activities may be undertaken. (In this regard please refer to the WCO Single Window & Data Harmonization Guidelines -http://www.wcoomd.org/files/6.SW_files/Data_Harmonisation.pdf)

A national database should be developed, comprising the following:

- A high-level reference model of business processes associated with the cross-border regulation of goods, means of transport, crew and transport equipment.

- National regulations, laws & codes that govern the cross-border movement of goods, means of transport, crew and transport equipment.

- List of government agencies interested in border regulation.

- Cross-border regulatory forms along with the associated business processes.

- Regulatory data in electronic messages.

- Code lists that are in use for all these forms.

- Data elements used in procedures and administrative data. These should be checked from the operational databases.

- Production of mapping between these data elements and the WCO Data Model, UNTDED & UN/CEFACT - Core Component Library (CCL).

- Use of WCO Data Model definitions, representations and code lists in national implementation.

- Use of the WCO's EDIFACT and XML Message Implementation Guidelines

- Use of extensions to the WCO Data Model, if this is absolutely unavoidable.

在这样的情况下，建立一个全新的软件应用程序可能是值得考虑的。

G.3 如何使用 WCO 数据模型？

在创建新项目，或对现有软件进行大幅度升级时可以实施某些活动。（在这方面请参考 WCO 单一窗口 & 数据协调指南 --http://www.wcoomd.org/files/6.SW_files/Data_Harmonisation.pdf）

开发国家数据库需要包含以下内容：

· 一个与货物、运输工具、船员和运输设备的跨境管理相关的高水平业务流程参考模型;

· 管理跨境货物、运输工具、船员和运输设备的国家法律法规;

· 对边境管理感兴趣的政府机构名单;

· 跨境监管使用的表格以及相关业务流程;

· 电子信息中的管制数据;

· 用于所有这些表单的代码列表;

· 用于流程和管理数据的数据元素，数据元素应该从操作数据库中以资校核;

· 这些数据元素和 WCO 数据模型间产生的映射（Production of mapping between these data elements and the WCO Data Model），UNTDED & UN/CEFACT— 核心组件库;

· 在国家实施过程中使用 WCO 数据模型的定义、陈述和代码列表;

· 使用世界海关组织的“商业和运输电子数据交换系统（EDIFACT）”和“可扩展标记语言（XML）信息实施指南”;

· 使用扩展的 WCO 数据模型，如果这是绝对少不了的。

Submit data maintenance requests to the WCO Data Model Project Team at the earliest opportunity.

G.4 Who should be concerned with the national data harmonization process?

Experts on regulatory procedures

- Responsible for prescribing regulatory forms for trade and taxation
- Who ensure that procedures conform to domestic legislation & international conventions

Business analysts

- Who examine data objects (holders of data) and the way these objects work with the business rules that govern the use of the data
- Concerned with the data required for each process

Business intelligence specialists

- Interested in corporate metadata
- Who understand what is needed for building high-quality risk profiles

Database architects/ designers

- Dealing with the Conceptual Data Model which is the basis for Physical database implementations
- Involved in a model-driven software development programme

EDI and XML specialists

- Involved in the development and implementation of electronic messages

G.5 What about the maintenance of the WCO Data Model?

WCO Member administrations have agreed that changes to the WCO Data Model will have to follow strict control 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 country and that the information cannot be derived from an existing data element in the Data Model. Changes and additions should be required by at least two Members.

New versions of the WCO Data Model will be issued every five years. The next version, Version 4.0, is scheduled for the end of 2014. In the meantime, Service Packs will be issued to ensure that known errors are rectified and incorporate new

尽早向 WCO 数据模型项目小组提交数据维护请求。

G.4 谁应该关心国家数据协调进程？

监管程序专家

· 负责制定贸易和税收的监管形式

· 保证程序符合国内法律和国际公约

业务分析员

· 负责审核数据对象（包括拥有者）以及此类数据在使用当中遵守数据使用商业规则的情况

· 关注每个过程所需的数据

商业智能专家

· 对企业元数据感兴趣

· 理解建立高质量风险概况所需的东西

数据库架构师 / 设计师

· 处理概念数据模型，概念模型是物理数据库实现的基础

· 参与到模型驱动类的软件开发项目

EDI 和 XML 专家

· 参与到电子信息的建设和实施

G.5 关于 WCO 数据模型的维护

WCO 的成员政府认为对 WCO 数据模型做出改变需要遵循严格的管理程序。例如，当希望加入新的数据元素时，只有判定该元素对于申请国来说确实是至关重要的才能加入。而且信息不能派生自数据模型中已经存在的数据元素。

新的 WCO 数据模型将会每五年发行一次。下次的 4.0 版预计会在 2014 年年底发布。WCO 将同时发布服务包，以保证已知的错误得到修正，并吸收基于立法变更、安全需求等产生的新要求。为了使这些要求并入数据模型，上

requirements based on changes to legislation, security requirements etc. In order to have these requirements incorporated in the Data Model, the afore-mentioned procedure will be followed.

Where to obtain more details

More information on the WCO Customs Data Model, and access to national and regional contact points, are available on the WCO web site: http://www.wcoomd.org/sw.htm

Contacts at the WCO Secretariat:

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ger.diepens@wcoomd.org

Mr. S.P. Sahu
Technical Officer
Tel.: +32 2 209 9321
SP.Sahu@wcoomd.org

World Customs Organization
Rue du Marché, 30
1210 Brussels, Belgium
Fax: +32 2 209 9493

述流程将会得到跟进。

哪里可以获得更多信息

您可以在以下网站获取 WCO 海关数据模型的更多信息:
http://www.wcoomd.org/sw.htm

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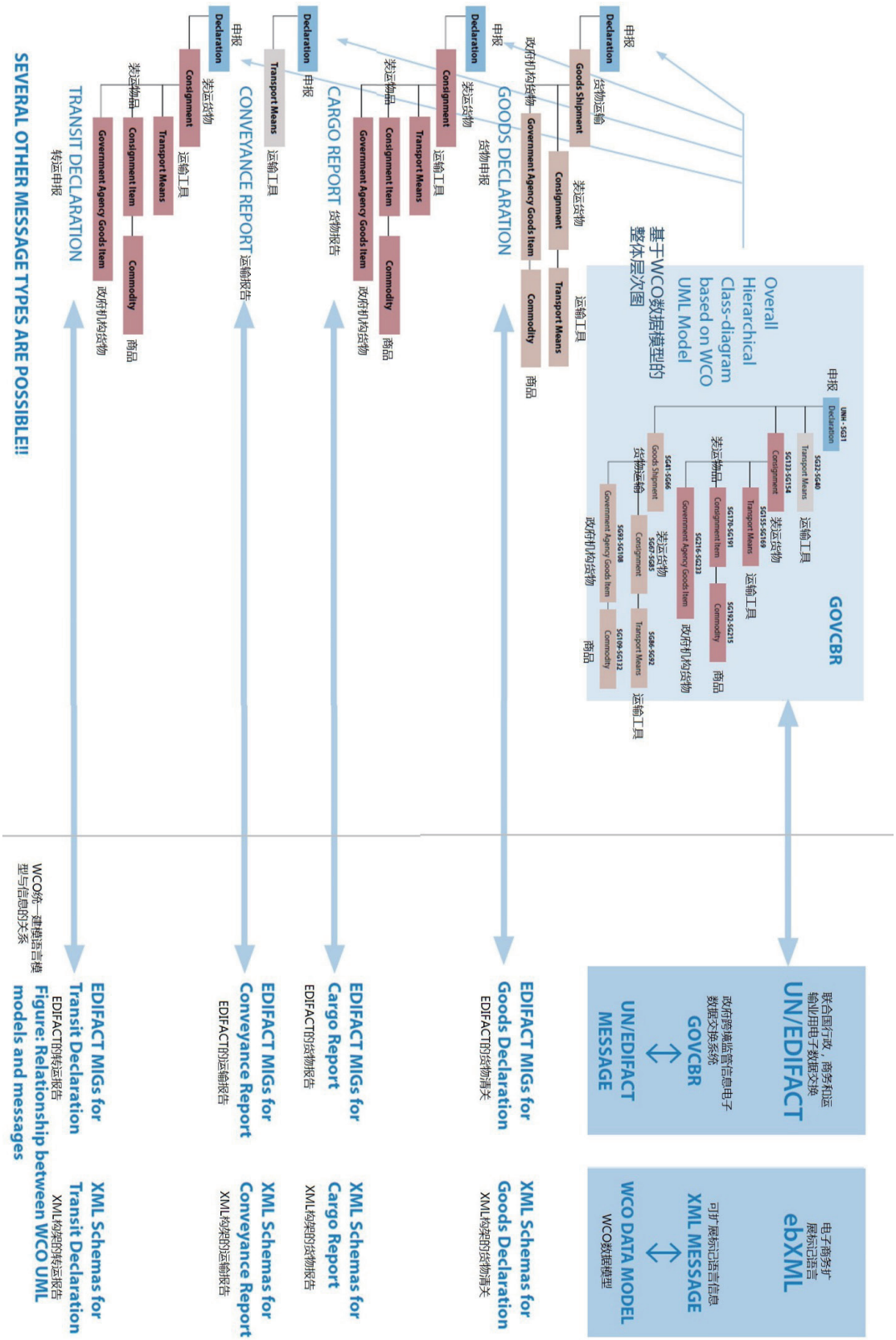
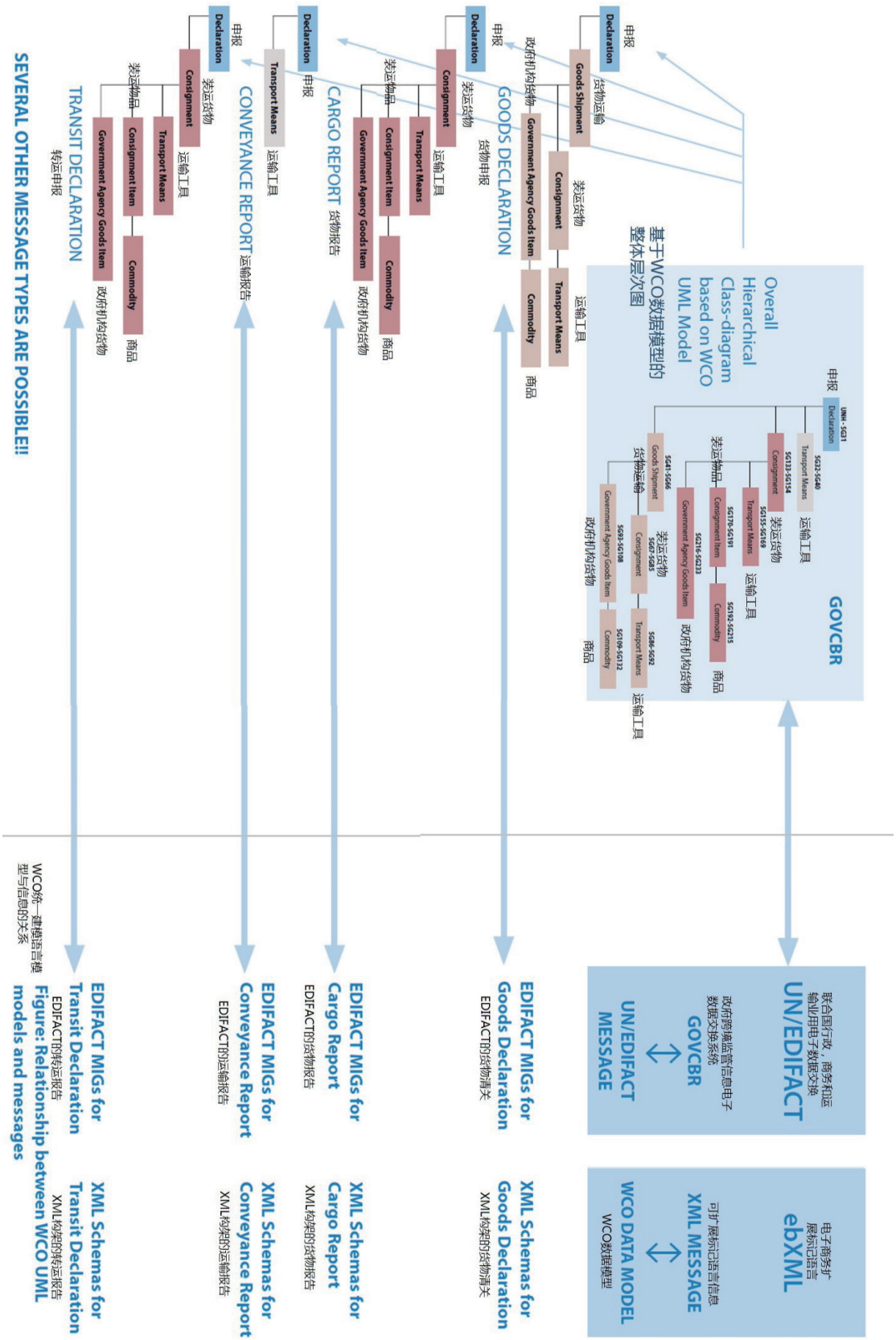
世界海关组织
Rue du Marché, 30 1210 布鲁塞尔 比利时
传真: +32 2 209 9493

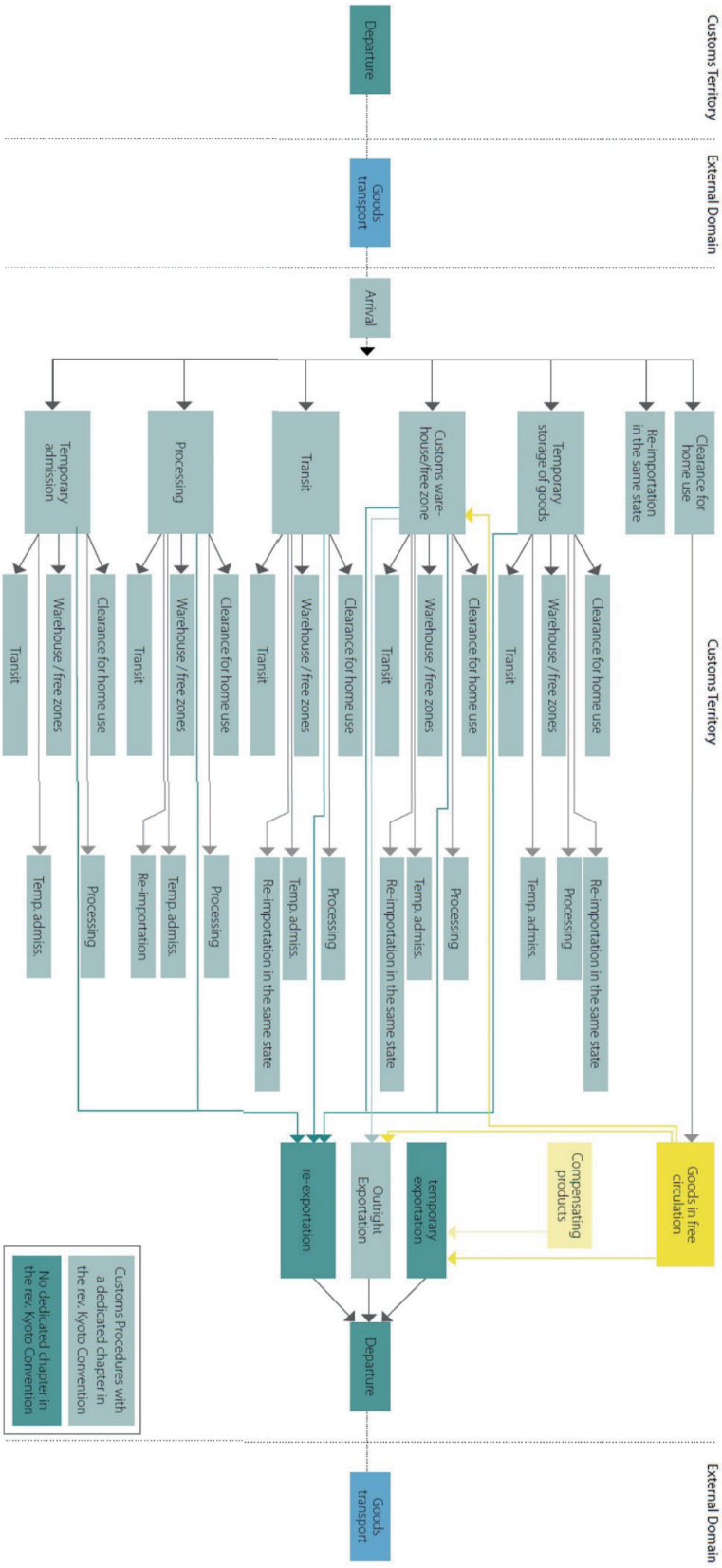
Appendix 1


申报
Declaration
货物运输
Goods Shipment
装运货物
Consignment
运输工具
Transport Means
政府机构货物
Government Agency Goods Item
商品
Commodity
装运物品
Consignment Item
转运申报
Transit Declaration
Overall Hierarchical Class-diagram based on WCO UML Model
基于WCO数据模型的整体层次图
GOVCBR
UN/EDIFACT
联合国行政，商务和运输业用电子数据交换
政府跨境监管信息电子数据交换系统
GOVCBR
UN/EDIFACT MESSAGE
ebXML
电子商务扩展标记语言
可扩展标记语言信息
XML MESSAGE
WCO DATA MODEL
WCO数据模型
GOODS DECLARATION
货物申报
CONVEYANCE REPORT 运输报告
CARGO REPORT 货物报告
TRANSIT DECLARATION
EDIFACT MIGs for Goods Declaration
EDIFACT的货物清关
EDIFACT MIGs for Conveyance Report
EDIFACT的运输报告
EDIFACT MIGs for Cargo Report
EDIFACT的货物报告
EDIFACT MIGs for Transit Declaration
EDIFACT的转运报告
XML Schemas for Goods Declaration
XML构架的货物清关
XML Schemas for Conveyance Report
XML构架的运输报告
XML Schemas for Cargo Report
XML构架的货物报告
XML Schemas for Transit Declaration
XML构架的转运报告
SEVERAL OTHER MESSAGE TYPES ARE POSSIBLE!!
WCO统一建模语言模型与信息的关系
Figure: Relationship between WCO UML models and messages

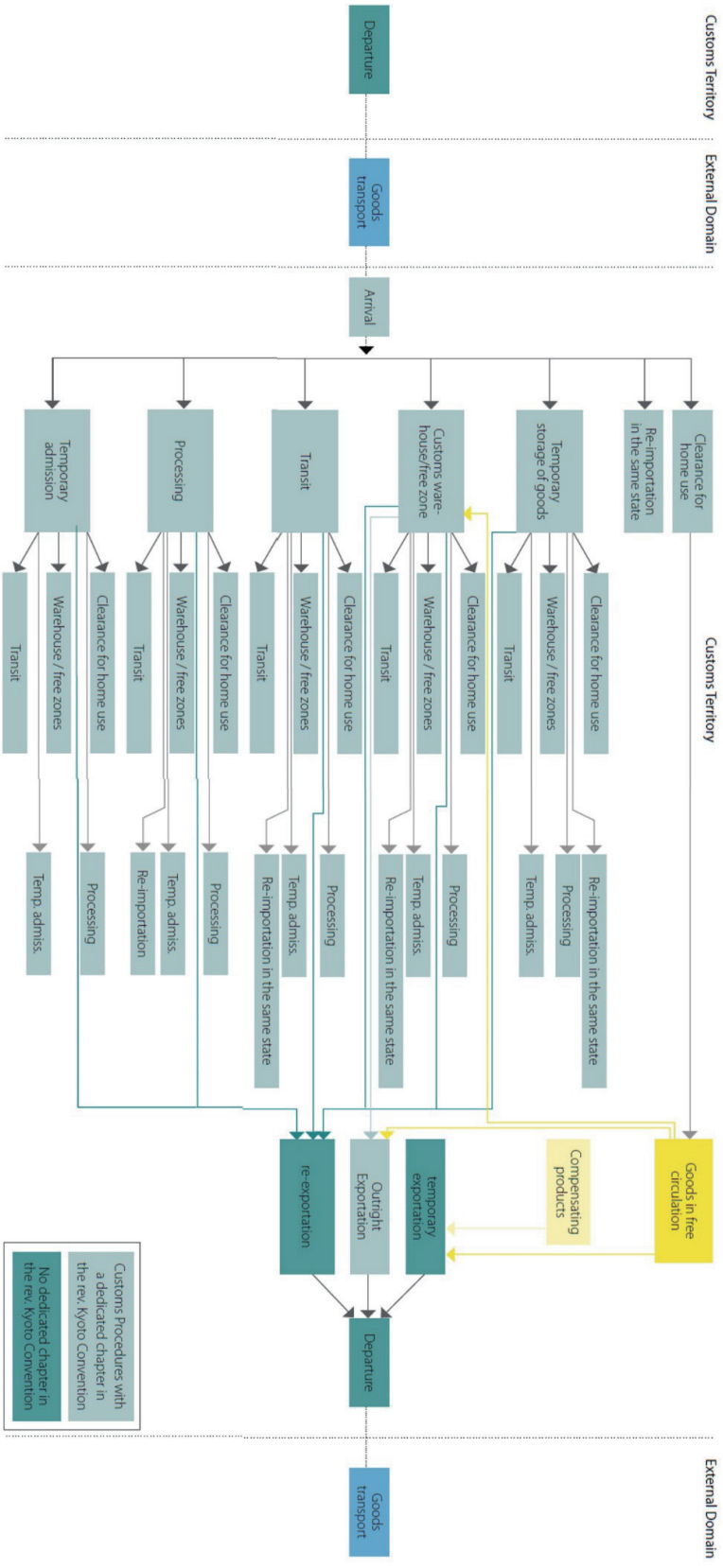
附件一：基于 WCO 数据模型的整体层次图



Appendix 2


Customs Territory
External Domain
Departure
Goods transport
Arrival
Temporary admission
Processing
Transit
Customs ware-house/free zone
Temporary storage of goods
Re-importation in the same state
Clearance for home use
Transit
Warehouse / free zones
Clearance for home use
Temp. admiss.
Re-importation
Re-importation in the same state
Processing
re-exportation
Outright Exportation
temporary exportation
Compensating products
Goods in free circulation
Customs Procedures with a dedicated chapter in the rev. Kyoto Convention
No dedicated chapter in the rev. Kyoto Convention

附件二


Customs Territory
External Domain
Departure
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Processing
Re-importation
Re-importation in the same state
Compensating products
Goods in free circulation
re-exportation
Outright Exportation
temporary exportation
Customs Procedures with a dedicated chapter in the rev. Kyoto Convention
No dedicated chapter in the rev. Kyoto Convention
Customs Territory
External Domain
Departure
Goods transport

WCO Data Model Connects Trade Stakeholders

WCO 数据模型链接贸易利益相关方

In recent years, there has been increased activity around the WCO Data Model among WCO Members and international organizations. But if most Customs IT systems seem to be, by and large, compatible with the Model, the question of their full conformity remains open. This article presents the latest information available on the adoption of the Model by WCO Members as well as future developments of this major WCO tool.

Over the years, core Customs automated systems and Electronic Data Interchange (EDI) facilities have been developed and operated based on national requirements. These requirements arose from national legislation and local operational needs. Even though all Customs administrations require the same information on the same goods, a multitude of forms, data elements and electronic templates were adopted in various countries at different points in time, resulting in non-uniform, non-standard usage and handling of information.

International standards for electronic data requirements, such as the UN Trade Data Element Directory (UN/TDED) and the UN EDI for Administration, Commerce and Transport (UN/EDIFACT), were developed but they were core and generic – not tailor made for Customs. There were no international data dictionaries in existence for the Customs domain that would both harmonize and simplify Customs data requirements.

If UN/EDIFACT standard electronic messages for Customs purposes, such as CUSDEC for the import and export goods declaration and CUSCAR for the cargo manifest, did represent an organized approach in this area, there were no underlying conceptual data models governing the ongoing maintenance of these messages.

To respond to the challenge of non-standard systems of data, the WCO developed a Data Model. It contains a collection of carefully selected items of information – referred to as data elements – that are standardized, based on globally accepted norms, and organized in order to minimize the effort and cost to trade. The Model explains the business of Customs in terms of data submitted by traders and transporters for clearing goods across borders.

To explain the flow of data between trade and government, the WCO Data Model relies on the pattern of procedures followed globally by Customs, which are described in the WCO Revised Kyoto Convention. The most recent version of the Model – version 3.0 – goes a step further and covers data requirements of other government agencies for their respective border procedures.

近年来，WCO 成员和各类国际机构围绕 WCO 数据模型实施了多种措施。但大部分国家的海关 IT 系统没有与数据模型完全兼容。本文揭示了 WCO 成员实施数据模型的现状，和这一重要 WCO 工具未来的发展。

过去几年，基于国际要求的核心海关自动化系统和电子信息数据交换系统（EDI）得到了大幅度的发展。这些国际要求来自国家立法和当地的运营需求。虽然针对同一件物品各个海关要求的信息是相同的。但各国还是采用了各自的表格、数据元素和电子系统，这导致了非统一、非标准化的信息处理模式。

国际电子数据要求标准在近些年也得到了发展，比如联合国贸易数据元素目录（UN/TDED）和联合国政商运电子数据交换系统（UN/EDIFACT），但这些系统具有普遍性，并非为海关量身定做。还没有针对海关领域的国际数据字典能够统一并简化海关数据要求。

如果服务于海关目的的 UN/EDIFACT 确实代表了此领域内一种有组织的做法，就像 CUSDEC（关税申报单）之于进出口货物申报，和 CUSCAR（海关出口货物报文平台）之于货物舱单，过去并没有潜在的概念数据模型来持续地维护这些信息。

为了应对数据系统的非标准化，WCO 开发了数据模型。它包含了精心选出的信息项目合集。信息代表了那些经标准化处理并基于全球公认准则，为了减少贸易成本而形成的数据元素。模型根据贸易商和运输商在跨境货物清关时提交的数据解释了海关业务。

为了解释贸易商和政府间的数据流动，WCO 数据模型依赖于全球海关采遵循的流程模式，这些模式在 WCO 修订版京都公约中有过描述。最新的 3.0 版模型向前更近了一步，并覆盖了其他政府机构在各自边境管理流程中的数据要求。

Renewed interest

In recent years, there has been increased activity around the WCO Data Model among WCO Members and international organizations.

The launch of Version 3.0 of the Model and the efforts undertaken by the WCO to encourage more and more countries to adopt the instrument produced results: most governments are clear about the benefits of rationalization and simplification of regulatory information and the value of harmonizing data across border agencies in the context of a Single Window.

This renewed interest has also arisen from:

- The growth in the number of projects to establish Single Window solutions.

- The entry into force in several countries of a mandate on advance cargo reporting, notably via the implementation of Authorized Economic Operator (AEO) programmes.

- The fact that providers of information technology (IT) solutions for regulatory trade compliance are trying to build 'pipelines' to support the seamless flow of trade data.

- The WCO initiative on Globally Networked Customs which envisages close cooperation between Customs administrations through real-time exchange of commercial information.

In all these initiatives, the WCO Data Model, which provides an 'end-to-end' view of regulatory information in the international supply chain, is a key enabler for governments and trade.

Who is adopting the Model?

Directors General of Customs often ask the question about the number of countries that are 'implementing' the WCO Data Model, that is to say who is adopting the specifications of the Model. Unfortunately, this is not a question the WCO can answer with certainty yet.

Information collated by the WCO suggests that different countries are at different stages of adopting the Data Model. This was assessed by WCO experts through

新的兴趣

过去几年，WCO 成员和各类国际机构围绕 WCO 数据模型实施了多种措施。

3.0 版模型的发布，以及 WCO 鼓励更多国家采用此工具已经取得了一些成果：大多数政府明白了合理化和简化监管信息所带来的好处，以及单一窗口环境下跨境机构间协调数据的价值。

新的兴趣也从以下几方面产生：

· 单一窗口项目数量的增长;

· 提前货物申报在部分国家的生效，尤其是通过经认证经营者（AEO, Authorized Economic Operator）项目的实施;

· 监管贸易合规的信息技术供应商正在尝试建立一种“管道”，以支持贸易数据的无缝流动;

· 按照 WCO 倡导的全球海关联网中的设想，可以通过商业情报的实时分享来实现海关与海关间的紧密合作;

所有这些举措中，WCO 数据模型是为政界和商界提供“端到端”国际供应链信息的关键推动者。

谁在采用这个模型？

海关署长经常会问有多少国家实施了 WCO 数据模型，也就是说谁正在实施模型中的具体要求。然而，这不是一个 WCO 能准确回答的问题。

WCO 整理出的信息显示，不同的国家处在实施数据模型的不同阶段。这项评估是 WCO 专家通过分析能力建设领域的任务而得出的。此外，20 到 30 人的 WCO 数据模型项目小组定期提供了模型在各国的实施状态。

近期，WCO 实施了一项针对全球单一窗口发展的调查，结果显示 60 份回应中有 25 个已经采用了 WCO 数据模型。

capacity building field missions. Moreover, the 20 to 30 delegates of the WCO Data Model Project Team provide briefs periodically on the status of adoption of the Model in their respective countries.

Recently, the WCO conducted a global survey on Single Window developments, which revealed that 25 of the 60 respondents have adopted a version of the WCO Data Model. In addition, based on information shared by UNCTAD with the WCO, and analysis carried out by both organizations, it appears that the 'ASYCUDA World's system broadly uses data elements that are in line with Version 3.0 of the WCO Data Model.

> The WCO Data Model provides an 'end-to-end' view of regulatory information in the international supply chain and is a key enabler for governments and trade.

It is, however, impossible to make an informed assessment until formal conformance testing is carried out by experts on a country-by-country basis and validated independently. The assessment would typically involve semantic comparisons between national data sets, code lists and information structures with those recommended by the WCO Data Model.

What does adoption involve?

Adopting the WCO Data Model means replacing or modifying information models, which are at the core of any IT system.

The ideal time for any party to adopt the WCO Data Model is when new systems development or large-scale overhaul is taking place. It is indeed possible for countries to make gradual, incremental changes to their software applications to bring them in line with the WCO Data Model. Such changes can be brought in at the time when routine software upgrades are being performed, for example.

The WCO Data Model has been developed as the maximum framework. Therefore, countries need not adopt the Model in toto, but may customize it to create profiles that are in full conformity with national legislation and make adjustments within the constraints of existing data policies and practices.

One has to be aware of the impact of the modification made in a Typical IT system that is connected to other IT systems belonging to international trade stakeholders. Customs administrations share information with all participants in the clearance process, such as other government agencies, banks, or port authorities. It is therefore a whole

此外，从联合国贸易与发展会议（UNCTAD）与 WCO 分享的信息以及双方的分析报告来看，海关数据自动化系统（ASYCUDA）广泛使用了与 WCO 数据模型 3.0 版中一样的数据元素。

WCO 数据模型是为政界和商界提供“端到端”国际供应链信息的关键推动者

然而，直到专家们对不同的国家进行达标性测试前，做出准确的评估是不现实的。评估通常涉及国际数据集、代码列表，和信息结构与 WCO 中建议的相关内容的语义比较。

实施通常涉及哪些内容？

实施 WCO 数据模型意味着替换或修改原有的信息模型，这是任何 IT 系统的核心。

任何一方实施 WCO 数据模型的理想时间是新系统开发或对旧系统进行大规模检修的时候。国家会对他们所使用的软件程序进行循序渐进的更改，使它们符合 WCO 数据模型中的要求。例如，对软件进行常规升级的时候可以引入这些变化。

经过升级的 WCO 数据模型已经成为了一个最大的框架。因此，各国不必完全采用模型的全部内容，而是根据自身情况创建完全符合国家立法的配置文件，并且在现有数据政策和实践的约束下做出调整。

各国必须意识到在典型的 IT 系统中做出调整时，对国际贸易利益相关方的关联系统所带来的影响。海关需要跟清关流程的所有参与者，包括政府机构、银行或港务共享信息。因此整个业界都要接受改变。为了解决兼容性的问题，

community that will have to adopt the changes. To deal with issues of compatibility, interfaces that are called 'translators' or 'adaptors' will have to be set up.

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

In order to adopt the WCO Data Model within its information systems, a country needs to assess its current state of alignment with the instrument. This assessment is a step-by-step activity to be carried out with support from facilitators who are experts on information standards, including the WCO Data Model. The assessment would help place the country's data model into one of three categories, namely 'non-conformant', 'compatible' and 'conformant'. The table above provides the broad implications of each category.

Countries that are non-conformant should replace their IT systems, countries that are compatible should gradually implement the Model, and countries that are conformant should publish statements illustrating how their national model conforms to the WCO Data Model. For this purpose, the WCO has developed data harmonization guidelines aimed at producing national data sets that can work like a correlation table, which can be used as a statement of conformance.

Transparency and collaboration

应该建立“翻译”和“适配”机制。

为了在信息系统中实施 WCO 数据模型，一个国家需要评估其现有系统与数据模型能否契合。此类评估工作需要由信息标准专家和 WCO 数据模型专家分步骤实施。评估有助于将该国的数据模型分为三类，即“非一致的”、“兼容的”和“一致的”。下表详细描述了三个种类的内容：

非一致的	兼容的	一致的
· 使用专有数据结构 · 没有遵循国际标准 · 与 WCO 数据模型有过多的偏差 · 不可能满足数据交换要求 · 贸易商直接输入是主要的方式 · 贸易商的操作和维护成本高昂 · 参与海关与海关信息交换时面临障碍 · 无法开发单一窗口	· 很大程度上遵循了 WCO 数据模型标准，但在使用上有一些变化 · 用法的变化可以通过较小但是很重要的调节工作来克服，例如“翻译”或“适配”机制 · 适配机制越多，贸易商操作和维护软件的成本就越高 · 不会阻止国家参与国际数据交换，但可能部分受制于昂贵和复杂的工作环境 · 单一窗口的发展牵扯到严峻的挑战和高水平的努力	· 为了信息交换的目的，遵循 WCO 数据模型 · 国家模型近乎是 WCO 数据模型的真子集 · 与 WCO 数据模型的偏差是不存在或不重要的 · 翻译和适配机制不扮演重要角色 · 贸易商通过信息的重复使用节约成本并获取低成本的合规解决方案 · 促进该国在全球海关网络中的参与度 · 促进单一窗口环境的建设

非一致的国家应该替换其 IT 系统，兼容的国家应该逐步实施数据模型，一致的国家应该发布声明以展示他们是如何符合 WCO 数据模型的。为了达到这个目的，WCO 已经开发了一份数据协调指南，帮助国家制作一份能像相关表那样运作的数据集，该数据集可以用作一致性声明。

透明性和协作性

海关管理部门在海关系统和单一窗口系统的电子接口上发布详细信息，贸易商和运输商根据其自身情况建立 IT

Invariably, Customs administrations publish detailed information on the electronic interfaces to their Customs and Single Window systems, allowing trade and transport actors to build their respective IT systems to interchange regulatory and operational data. Even though this type of information is publicly available, knowledge about functioning national systems is still very local and is limited to a few consultants who sell their services to enterprises that provide software solutions to local traders and brokers. Alignment of national systems with the WCO Data Model would render this type of information in globally recognizable notations and references.

The direct beneficiaries would be software solution providers who could simplify and rationalize their software solutions for international trade. Internal software development and maintenance costs could be reduced when the complex, country specific requirements are rationalized into a package of requirements based on the WCO Data Model which will, while varying from country to country, still greatly simplify the effort involved in the management of requirements. This will encourage software providers to develop packages that can be used around the world.

Indirect benefits will occur to traders who will not only have access to cheaper software solutions but also be able to reuse upstream information in the supply chain, thus reducing time and the direct costs of regulatory reporting.

Collaboration between governments and software providers would bring down the costs of acquisition of information for all users. The users of the WCO Data Model should work closely to supply commonly used technical information to each other for mutual advantage. Interested parties could come together to solve business and technical challenges through the adoption of the Data Model, and thereby take advantage of technological advancements to further speed-up the deployment of IT solutions.

Derived products

The WCO Data Model Project team has developed several ‘profiles’ from the WCO Data Model. These profiles are forms, templates or other regulatory documents that are produced automatically by the system. For example, the Single Administrative Document, forms used by the International Maritime Organization (IMO) Convention on Facilitation of International Maritime Traffic, templates for electronic TIR Carnets and similar regulatory documents are being produced as profiles of the Data Model. The calculation of the value of a transaction is also covered. Additionally, it will help in ensuring uniform interpretation of the WTO Agreement on Customs Valuation.

系统，与海关交换监管和运营数据。尽管此类数据是公开可用的，但了解国家系统运作的仅仅是当地人，和为当地贸易商和代理商提供软件服务的咨询商。向 WCO 数据模型看齐，可以使此类信息变为在全球范围内可以识别的符号和参考。

直接受益人将是那些简化和改进他们国际贸易软件方案的软件供应商。当复杂的、特定于国家的具体化需求基于 WCO 数据模型被合理地组织成一揽子要求时，内部软件的开发和维护费用便会降低。这将鼓励软件供应商开发适用于全球的方案。

非直接的好处将会体现在贸易商身上，他们不仅能够获取更便宜的软件方案，而且能够重复使用供应链中的上游信息，从而减少在监管报告上花费的时间和直接成本。

政府和软件供应商之间的合作可以为所有使用者降低信息采集的成本。WCO 数据模型的使用者们应该紧密合作，为彼此提供常用的技术资料，互惠互利。通过实施数据模型，利益相关方应该聚在一起共同解决商业和技术方面的挑战，从而利用技术方面的优势进一步加速 IT 解决方案的发展。

衍生产品

WCO 数据模型小组已经开发了一系列“ 文档 ”。这些文档包括表格、模板或其他系统自动生成的监管文件。例如：《国际海事组织便利国际海上交通公约》中使用的单一行政文件和表格，国际公路运输协定通行证的电子模板和相似的监管文件，其中也包含了交易货物的价值估算。此外，这将有助于确保对《WTO 海关估价协定》的统一解释。

Future development

Future development of the WCO Data Model involves publication of annual releases aimed at overcoming problems reported by individual countries adopting the Model. In relation to any new versions, it has been suggested that there should be no big-bang approach but rather an annual incremental growth of the Data Model.

It is recognized that adding any new functionality to the WCO Data Model should be based on agreed criteria, for example it should simplify reporting for trade, or it should remove obstacles that prevent a country from adopting the Model. In other words, projects to update the Data Model will be takenup in manageable, annual cycles. Such an approach would further deepen the engagement of countries interested in upgrades.

Experts anticipate that the WCO Data Model will remain stable since no major change is foreseen to the core of the Model, even as new functionalities and features are added.

More information

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未来的发展

未来 WCO 数据模型的发展涉及年度报告的发布，此举旨在攻克各个国家在实施模型时出现的问题。对于任何一版数据模型来说，人们建议它不要有爆炸式的改变，而是保持固定的增长率逐年改进。

应该承认，向 WCO 数据模型中添加任何新的功能应该基于协定准则。例如，应该简化贸易报告，或去除那些妨碍一国实施数据模型的障碍。换句话说，对数据模型的升级工作应该以可控的、周期性的方式进行。此类工作将进一步深化对升级感兴趣的国家的参与度。

专家预测 WCO 数据模型将保持稳定的状态，因为即便加入新的功能及特点，也未预见到模型的核心会发生重大变化。

更多信息

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