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Buy-Ship-Pay reference data model —

Part 1:
Business requirements specification (BRS)

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Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by the United Nations Economic Commission for Europe (UNECE) - United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) [as "Buy-Ship-Pay Reference Data Model" (v1.0, Approved by UN/CEFACT Bureau on 13 August 2019)] and drafted in accordance with its editorial rules. It was assigned to Technical Committee ISO/TC 154, *Processes, data elements and documents in commerce, industry and administration*, and adopted under the "fast-track procedure".

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The UN/CEFACT BUY-SHIP-PAY Reference Data Model (BSP-RDM) bridges two domains within the International Supply Chain Programme Development Area (PDA), namely the Transport and Logistics Domain and the Supply Chain and Procurement Domain, providing a unifying framework, consolidating the constituent data models of these two domains by addressing any overlaps between the concepts used in their different contexts.

UN/CEFACT has been working on Reference Data Models (RDMs) for International Supply Chains and Multi-Modal Transport. These two RDMs share a same base of components from the UN Core Component Library (UN CCL), which are interlinked but used differently due to differences in context and semantics between the international sales and transport contracts, information exchanges and business practices.

In the concept of RDM, as outlined by the UN/CEFACT White Paper on RDM approved in April 2017, these are complete and focused subsets specific to the needs of a particular domain. The context messages are then subset data exchange structures definitions of the RDMs.

For maintenance purposes, if the current two RDMs are developed separately, any changes in one will require changes to the other. A higher level RDM as the Buy-Ship-Pay (BSP) thereby facilitates their use and maintenance.

Therefore, the goal is to create an intermediate subset of the UN CCL focusing on the shared aspects across the international supply chain and transport-logistics chains. This document is expected to benefit modelers and developers for Collaborative Information Exchanges by facilitating an intermediate subset of the UN CCL, which both the International Supply Chain RDM and the Multi-Modal Transport RDM are based on.

The UN/CEFACT international standardisation process delivers and is composed of three (3) parts:

— Part 1: Business Requirement Specification (BRS)

— Part 2: Core Components Business Document Assembly (CCBDA) Data Model

— Part 3: Syntax

This document is the first part of the BSP RDM standardisation set of outputs. The objective of this document is to describe the requirements for a generic Reference Data Model (RDM), generalizing the concepts of the Multi-Modal Transport Reference Data Model (MMT-RDM) and the Supply Chain Reference Data Model (SCRDM), leading to the development, publishing and improving the maintenance of a Business Standard, which can be applied by country and regional administrations and industries.

Therefore, the BSP-RDM in combination with the UN/CEFACT International Supply Chain Reference Model (ISCRM) BRS describes a generic reference data model and provides a framework to accommodate the requirements of:

a) cross-border supply chain trade related transactions, including government domain needs for their own specific information exchanges;

b) supporting the transport-related processes involved in the cross-border supply chain and covering the involved business areas at a high-level, the main parties and the information involved;

whilst complying to and fostering the adoption of the overall processes and data structures as these have been developed in UN/CEFACT.

Hence, the BSP-RDM provides the definitions of contextualized trade and transport-related data exchange structures mapping paper documents which can be integrated into end-to-end software solutions for Traders, Carriers, Freight Forwarders, Agents, Banks, Customs, Other Governmental Authorities etc.

The BSP-RDM project (of UN/CEFACT) follows the practice of all referenced projects, adopting a holistic approach to develop a reference data mode. This model is based on the widely used UN/CEFACT Core Component Library (CCL), which is also used by other standards such as GS1. The BSP-RDM project aims to bring together the data exchange requirements of international multimodal transport processes,

including related trade, insurance, customs and other regulatory documentation requirements based on the integration of trade facilitation and e-Business best practices.

Derivative information exchange specifications can be developed to support the requirements of conventional UN/CEFACT data exchange structure formats for UN-aligned paper documents, UN/EDIFACT or UN/CEFACT XML messages, and information exchanges to support web-based processes such as those required for Single Windows implementations.

The UN/CEFACT BSP-RDM framework will be used to generate Business Standard(s) which will include paper and electronic document structures as data exchanges which have been derived from the BSP-RDM. Derivation from this reference data model ensures that each BSP paper or electronic document data structures specification is an individual implementation of a methodology which follows the aligned concepts described in UNECE Recommendation 1, the UN Layout Key (UNLK).

This ensures that trading partners can choose the type of data exchanges technology that best meets their business requirements and technology capabilities and also provides a migration path for the adoption of new technologies.

Further, the BSP-RDM accommodates the additional requirements generated by contemporary integration approaches, which deploy RESTful APIs and JSON-LD data exchanges and specifications, these to be accounted in the follow-up phase of the Requirements Specifications Mappings (RSMs) following the UN/CEFACT CCBDA process, and the generation of the message definitions.

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent.

ISO takes no position concerning the evidence, validity, and scope of this patent right.

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those in the patent database. ISO shall not be held responsible for identifying any or all such patent rights.

Buy-Ship-Pay reference data model —

Part 1:
Business requirements specification (BRS)

1 Scope

The scope and limitations of the business processes described in this document have been developed to enable the application of the Buy-Ship-Pay business standard for implementations of national, regional, trade sector or modal specific cross-border scenarios.

NOTE Only the high-level process descriptions are referenced in this document in order that the detailed process analysis of the subset scenarios can provide the detailed process requirements in further individual Business Requirements Specifications (BRSs).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

UN/CEFACT Multi-Modal Transport (MMT) Reference Data Model

UN/CEFACT Supply Chain Reference Data Model (SCRDM)

UN/CEFACT International Freight Forwarding BRS

UN/CEFACT Modelling Methodology (UMM) v2.0

ISO 15000-5:2014, *Electronic Business Extensible Markup Language (ebXML) — Part 5: Core Components Specification (CCS)*

UN/CEFACT Core Component Library D18B

ISO 7372, *Trade data interchange — Trade data elements directory*

UN/CEFACT TBG1- BRS Cross Industry – Supply Chain - Invoice Process - CEFACT/Forum/2006/… – Revision 1.1

UN/CEFACT Integrated Track and Trace Multi Modal Transport BRS

UN/CEFACT Smart Containers BRS

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Abbreviation

UNECE	United Nations Economic Commission for Europe
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
BRS	Business Requirements Specification
BSP	Buy – Ship – Pay
RDM	Reference Data Model
ISCRM	International Supply Chain Reference Model
SCRDM	Supply Chain Reference Data Model
MMT	Multi-Modal Transport
CCBDA	Core Components Business Document Assembly
BIE	Business Information Entity
UCR	Unique Consignment Reference
CCL	Core Component Library
RSM	Requirements Specifications Mapping
UNTDED	United Nations Trade Data Element Directory
WTO	World Trade Organization
WCO	World Customs Organization
TBT	Technical Barriers to Trade
PDA	Programme Development Area
UNLK	United Nations Layout Key
UMM	UN/CEFACT Modelling Methodology
TBG	Trade and Business Processes Group
OECD	Organization of Economic Cooperation and Development
UCR	WCO Customs Unique Consignment Reference
TUCR	Trade Transaction level Unique Consignment Reference
HUCR	House consignment level Unique Consignment Reference
MUCR	Master consignment level Unique Consignment Reference
TSP	Transport Service Provider
TSC	Transport Service Consumer
OGA	Other Government Agency
CMR	Convention On The Contract For The International Carriage Of Goods By Road
CIM	Convention Concerning International Carriage of Goods by Rail

5 ISCRM vs. BSP

5.1 ISCRM

The International Supply Chain Reference Model (ISCRM, see[2]) covers processes from the recognition of the customer's need for a product or service to the fulfilment of the order by the supplier and the resulting financial settlement. In addition to the business processes associated with cross-border trading it also incorporates the necessary logistical and cross-border regulatory activities which may be required by intermediaries and authorities. This is illustrated in the following Use-Case diagram (Figure 1)

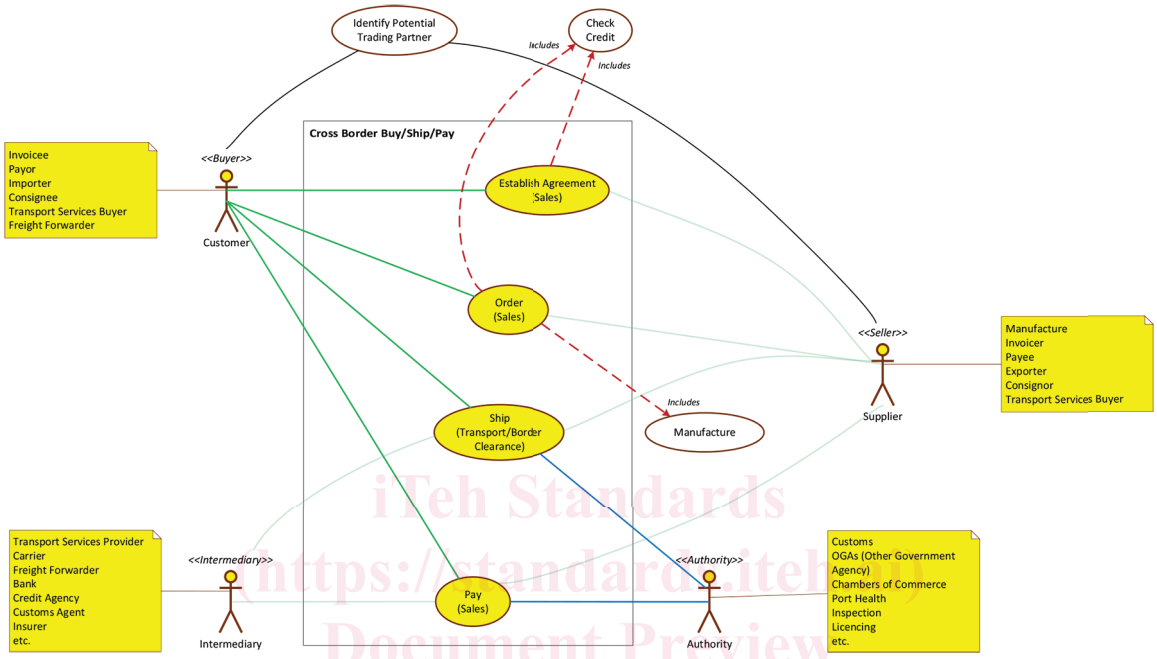

Figure 1 — International Supply Chain Model, Roles, and Services (Use Cases)

The overall scenario is described in the ISCRM. ISCRM introduces several actors and roles as they appear in Figure 1, of which the main are:

— **Buyer:** The party stipulated as the party to whom goods or services are sold. The primary role of the customer as specified in a sales order contract is the buyer, while other possible roles include the final / ultimate Consignee, Transport Services Buyer, Importer, Invoicee and Payor.

— **Seller:** The party stipulated as the supplier of goods or services. The primary role of the supplier as specified in the sales order contract is the seller and other possible roles include the original Consignor / Shipper, Transport Services Buyer, Manufacturer, Exporter, Invoice issuer and Payee.

— **Intermediary:** Within the international purchase and supply chain, an intermediary can be any party who provides services to support either the sales order contract or the transport service contract. The possible roles of an intermediary include the Transport Service Provider (e.g. Carrier, Freight Forwarder), Financial institution including Banks, Credit Agency, Insurer, Customs Agent, etc.

— **Authority:** An authority provides authorization associated with any conventions or regulations applicable to the trading of goods within the international purchase and supply chain. The possible roles of an authority include border control authorities (e.g. Customs), Permit/Licensing Issuing Authorities and Port Authorities including Port Health, Inspection, Chambers of Commerce, Other Governmental Authorities (OGA), etc.

More specific definitions of party roles which are engaged in cross-border transactions, from the above set are:

— **Importer:** The party who makes, or on whose behalf a customs clearing agent or other authorized person makes, an import declaration. This may include a person who has possession of the goods or to whom the goods are consigned.

— **Exporter:** The party who makes, or on whose behalf the export declaration is made, and who is the owner of the goods or has similar rights of disposal over them at the time when the declaration is accepted.

— **Transport service buyer:** The party stipulated as the buyer of transport services in a transport service contract. The transport service buyer role may be performed by either the consignor or the consignee depending on the terms of delivery specified in the associated sales order contract.

— **Transport service provider:** The party stipulated as the seller of transport services in a transport service contract. The transport service seller role is an intermediary role as described above.

— **Invoice Issuer (Invoicer):** The party who issues an invoice.

— **Invoicee:** The party to whom an invoice is issued.

In ISCRM, the use cases for the cross-border business collaborations can be defined via the following main and supportive top-level processes:

a) Main processes:

— **Establish Agreement:** A buyer issues a request for quotation to sellers for a product or service. Sellers respond or send unsolicited quotes to a potential buyer. The buyer negotiates with selected sellers to agree on the terms for a contract agreement. (in the scope of BSP)

— **Order:** The buyer recognizes a need for a product or service and places an order under a contract agreement. The seller receives the order and provides a response. (in the scope of BSP)

— **Ship:** The seller dispatches (ships) the products according to the specified terms of trade. All transport arrangements are made and executed and the requirements laid down by the relevant authorities are met. Invoice (demand for payment) is raised. The buyer receives the product or service. (in the scope of BSP)

— **Pay:** A demand for payment is received. The payor makes the payment, and the payee receives the payment according to the agreed terms of trade. (in the scope of BSP)

b) Supportive processes:

— **Identify potential trading partner:** The buyer looks for potential sellers and the seller looks for potential buyers. (out of the scope of BSP)

— **Check credit:** A seller initiates query on the credit worthiness of the prospective buyer. An intermediary may respond with credit status. (out of the scope of BSP)

— **Manufacture:** When the use case is about a manufactured product, the seller places an order for the manufacturing of that product to a manufacturer, to meet customer's order. The manufacturer confirms the planned delivery date when the product is available for shipping. (out of the scope of BSP)

To the above, it must be noted that supply chain is a system including raw material vendors, suppliers, manufacturers, warehousing, transportation, distributors, retailers and end customers, involving logistics, business flow, information flow, capital flow and other processes. To this end, the user classification and process may be different in different service scenarios and trade terms.

Hence, when a Freight Forwarder acts as an agent for the seller and represents the cargo interests, its legal status is equivalent to that of the seller. In such cases, it does not need to be treated separately as a Freight Forwarder. Additionally, the role of NVOCC (Non-Vessel Operating Common Carrier) should be considered. In the trade of raw materials, semi-finished products, and finished products, the manufacturer can function both as an importer and as an exporter.