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UNITED NATIONS CENTRE FOR TRADE FACILITATION
AND ELECTRONIC BUSINESS (UN/CEFACT)

Supply Chain Reference Data Model
REQUIREMENTS SPECIFICATION MAPPING
(SCRDM-RSM)

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1 About this document

This Supply Chain Reference Data Model Requirement Specification Mapping for the (SCRDM-RSM), in combination with the SCRDM Business Requirement Specification (SCRDM-BRS), provides the framework for any cross-border transport-related business and government domains to specify their own specific information exchange data requirements whilst complying with the overall process and data structures.

This document and the SCRDM-BRS, are documents positioned at a high level giving a clear view of the data requirements supporting the business and regulatory processes, the involved business areas, the main parties and the information involved.

The SCRDM project is to develop, publish and maintain a business standard which can be applied by countries, regions or industries to provide the definitions of contextualised supply chain data exchange structures which can be integrated into software solutions for traders, agents, banks, Customs and Other Governmental Authorities etc. The SCRDM is a reference data model based on the UN/CEFACT Core Component Library (CCL). The UN/CEFACT Core Components Business Document Assembly Technical Specification (CCBDA) solution referenced in this specification presents a methodology for developing business documents being shared or exchanged amongst and between enterprises, governmental agencies and/or other organizations in an open environment. This environment can be of a worldwide scope or restricted to a specific Business Context (such as an industry or region).

Derivation from the SCRDM reference data model based on the business information framework ensures that each SCRDM-based paper or electronic document specification will be an individual implementation of a document development 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 document technology that best meets their business requirements and technology capabilities and also provides a migration path for the adoption of new technologies.

The closely related Multi Modal Transport Reference Data Model (MMT RDM)¹ is a cross-domain project of the Transport & Logistics Domain within the Ship Program Development Area (PDA).

1.1 Status of this document

This document has been developed in accordance with the Revised Open Development Process ECE/TRADE/C/CEFACT/2016/17 for Guidelines and approved for publication by the UN/CEFACT Bureau.

Version	Release	Date	Comment
1.0.0.1	Internal draft	2016-August-01	Initial
1.0.0.2	Draft	2016-December-15	Final

1.1 Revision history

1.2 Document context

The SCRDM artefacts are published as reference Business Information Entities (BIEs). These artefacts have been specified in the business requirements lists of each supply chain process document (such as ordering). These requirement lists are mapped to elements of data in the SCRDM, and named “Supply Chain Reference BIEs”. This document, the SCRDM-RSM, specifies a generic structure from which different documents can be derived.

¹ At this moment under development

Business Data Exchange Structures will be derived from the SCRDM by applying CCBDA. Not all RSMs listed in below figure have been created yet.

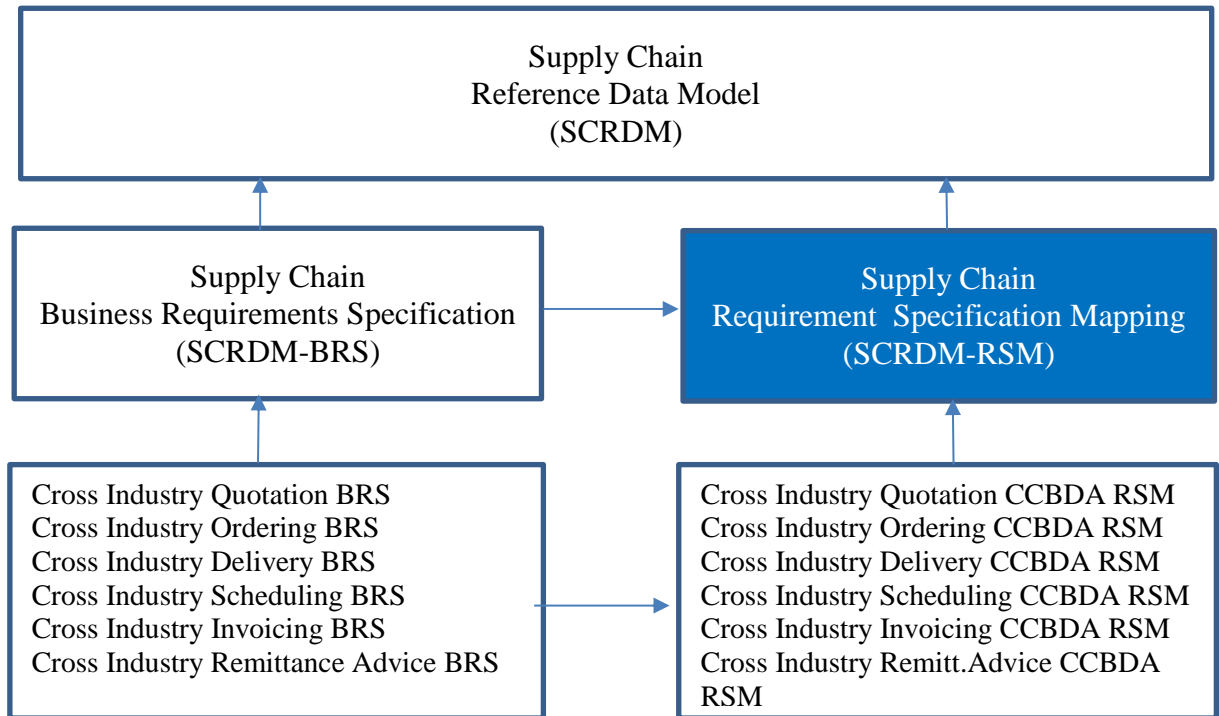


Figure 1 Document context²

² At this moment only the CI Invoicing CCBDA RSM has been published
15 December 2016 1.0.0.2

2 Project Team

2.1 Disclaimer

The views and specification expressed in this document are those of the authors and are not necessarily those of their employers. The authors and their employers specifically disclaim responsibility for any problems arising from correct or incorrect implementation or use of this technical specification.

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3 Introduction

The main audiences for this document are primarily the UN/CEFACT business and Information Technology (IT) experts who are responsible for specifying creating or changing existing UN/CEFACT reference data models, the business requirements for e-business solutions in a specific domain and for furthering the development of solutions as relevant standards. Other audiences may include other standards bodies or users and developers in developed or developing economies.

A deep knowledge of data modeling would be helpful in reading and understanding this document.

The information described in this manual is aimed at:

- UN/CEFACT community
- Corporate and Government Chief Technology Officers and their staff
- Business process modellers
- Business data modellers
- Application developers

3.1 Related Documents

- UN/CEFACT White Paper - Reference Data Model (RDM) (Draft v1.0.0.2).
- UN/CEFACT Reference Data Model (RDM) Guideline (Draft v1.0.0.2).
- UN/CEFACT Supply Chain Reference Data Model Business Requirement Specification (SCRDM-BRS) (Draft v1.0.02).
- UN/CEFACT SCRDM Master Structure and Subset of CCL D16B (Context CCL) (Draft v1.0.0.2).
- UN/CEFACT Core Component Library D16B³.
- UN/CEFACT Techniques and Methodologies Group (TMG) UN/CEFACT's Modelling Methodology (UMM): UMM Meta Model Foundation Module (Candidate for 2.0) 2009-01-30.
- UN/CEFACT Core Components Technical Specification – Part 8 of the ebXML Framework dated 15 November 2003 Version 2.01 - (CCTS 2.01).
- UN/CEFACT – Core Component Technical Specification Technical Corrigendum Version 2.01 (Corr. 1) dated 12 February 2007 (CCTS 2.01 Corr.1).
- UN/CEFACT XML Naming and Design Rules Version 2.1, dated 27 May 2014 (NDR 2.1).
- UN/CEFACT Core Components Business Document Assembly Technical Specification (CCBDA) version 1.0 27 June 2012.
- UN/ESCAP UNNExT UNECE Data Harmonization and Modelling Guide for Single Window environment, version 2012, ST/ESCAP/2619.
- UNTDED United Nations Trade Data Elements Directory 2005 (UNTDED)

³ For the initial publication, the latest published CCL is D16B
15 December 2016 1.0.0.2

- UNECE - Recommendation No. 1 – United Nations Layout Key for Trade Documents.
- UNECE - Recommendation No. 33 Recommendation and Guidelines on establishing a Single Window.
- UNECE - Recommendation No. 34 – Data Simplification and Standardization for International Trade.
- UN/CEFACT BRS Cross Industry Quotation, version R1.00.12.
- UN/CEFACT BRS Cross Industry Ordering, version 1.00.09.
- UN/CEFACT BRS Cross Industry Delivery, version 1.00.13.
- UN/CEFACT BRS Cross Industry Scheduling, version 1.00.09.
- UN/CEFACT BRS Cross Industry Invoicing, version: 2.00.06.
- UN/CEFACT BRS Cross Industry Remittance Advice, version: 1.00.01.
- UN/CEFACT CCBDA Requirement Specification Mapping (RSM) Cross Industry Invoicing, version: 1.0.

Formal definitions of many of the technical terms used in this RSM guideline may be found in the above references but for convenience some key definitions are included in section 6 of this document.

In this document the set of CCTS 2.01 / CCTS 2.01 Corr.1 / NDR 2 / CCDTC 2.1 specifications are referred to as "UN/CEFACT Technical Specifications Version 2".

The SCRDM has been created from the artefacts, semantics used in RSMs⁴ belonging to the above specified BRSs. The document centric artefacts were the basis for the development of the non document, process driven SCRDM artefacts, which are published in the CCL.

3.2 Purpose and scope

This section describes the aspects of the international purchase and supply chain covered by the SCRDM and relates to the SCRDM-BRS.

The extent and limits of the requirement specification mapping described in this document have been developed in such a way that it allows application of SCRDM-based implementations of national, regional or industry specific cross-border scenarios. In addition, only a high-level requirements specification mapping has been made. The detailed requirement mappings can be found in each of the RSMs made for different Standard Business Exchange Structures. SCRDM data restrictions (SCRDM Context CCL) have been achieved by applying CCBDA on the published CCL. By this, restrictions on SCRDM Context CCL level will be applicable for all Standard Business Exchange Structures derived from the SCRDM.

The business goals of this document are:

- To support easy interchange of information models within the Supply Chain and between different domains.
- To facilitate the use of the UN/CEFACT standardized and harmonized semantic framework.

⁴ At this moment, only the Cross Industry Invoice CCBDA RSM has been developed from the SCRDM

- To encourage the use of UN/CEFACT CCTS 2.01 compliant information models.
- To support alignment between UN/CEFACT RDMs.
- To support UN/CEFACT CCBDA implementation.

3.3 Target Solution

The objective of this SCRDM-RSM is to describe, at a high level, the requirements specification mapping for the reference data model supporting the business and regulatory processes involved in the supply chain.

4 Requirement Specification Mapping

4.1 Trade/Transport/Customs Party Roles

There are potentially many parties participating in the cross-border international supply chain. These parties can be grouped into four main categories as indicated in the table below:

Table 1 Party Roles

Sales Order Contract	Transport Service Contract	Definition	Can Be Mapped To:
Seller	Original Consignor/ Original Shipper	The party selling goods or services as stipulated in a Sales Order Contract.	Header_ Trade Agreement. Seller. Trade_ Party
			Line_ Trade Agreement. Seller. Trade_ Party
			Supply Chain_ Consignment. Consignor. Trade_ Party
			Header_ Trade Delivery. Ship From. Trade_ Party
			Line_ Trade Delivery. Ship From. Trade_ Party
Buyer	Final Consignee/Ultimate Consignee	The party to whom goods are sold services as stipulated in a Sales Order Contract.	Header_ Trade Agreement. Buyer. Trade_ Party
			Line_ Trade Agreement. Buyer. Trade_ Party
			Header_ Trade Delivery. Ship To. Trade_ Party
			Line_ Trade Delivery. Ship To. Trade_ Party
	Transport Services Buyer (Consignor or Consignee)	The buyer of transport services as stipulated in a Transport Service Contract.	Supply Chain_ Consignment. Consignee. Trade_ Party
			Supply Chain_ Consignment. Consignor. Trade_ Party
	Transport Services Provider (Carrier or Freight Forwarder)	The provider i.e. seller of transport services as stipulated in a Transport Service Contract.	Line_ Trade Agreement. Carrier. Trade_ Party
			Supply Chain_ Consignment. Carrier. Trade_ Party
			Supply Chain_ Consignment. Freight Forwarder. Trade_ Party
	Consignor	The party consigning goods as stipulated in a Transport Service Contract.	Supply Chain_ Consignment. Consignor. Trade_ Party
	Consignee	The party receiving a consignment of goods as stipulated in a Transport Service Contract.	Supply Chain_ Consignment. Consignee. Trade_ Party
	Carrier	The party which provides transport services.	Line_ Trade Agreement. Carrier. Trade_ Party
			Supply Chain_ Consignment. Carrier. Trade_ Party
	Freight Forwarder	The party undertaking the forwarding of goods by	Supply Chain_ Consignment. Freight Forwarder. Trade_

Sales Order Contract	Transport Service Contract	Definition	Can Be Mapped To:
		provision of transport, logistics, associated formalities services etc.	Party
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.	Header_ Trade Agreement. Buyer. Trade_ Party
			Line_ Trade Agreement. Buyer. Trade_ Party
			Header_ Trade Delivery. Ship To. Trade_ Party
			Line_ Trade Delivery. Ship To. Trade_ Party
			Supply Chain_ Consignment. Customs Import Agent. Trade_ Party
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.	Header_ Trade Agreement. Seller. Trade_ Party
			Line_ Trade Agreement. Seller. Trade_ Party
			Header_ Trade Delivery. Ship From. Trade_ Party
			Line_ Trade Delivery. Ship From. Trade_ Party
			Supply Chain_ Consignment. Customs Export Agent. Trade_ Party
Invoicee		The party to whom an invoice is issued.	Header_ Trade Settlement. Invoicee. Trade_ Party
			Line_ Trade Settlement. Invoicee. Trade_ Party
Invoice issuer		The party who issues an invoice.	Exchanged_ Document. Issuer. Trade_ Party
Intermediary		The party acting as an agent for, or on behalf of, the consignee with respect to the customs import or export procedures for this supply chain consignment.	Supply Chain_ Consignment. Customs Import Agent. Trade_ Party
			Supply Chain_ Consignment. Customs Export Agent. Trade_ Party
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.	Supply Chain_ Consignment. Consignee. Trade_ Party
			Supply Chain_ Consignment. Consignor. Trade_ Party

4.2 Trade/Transport/Customs Locations

Table 2 Locations

Sales Order Contract	Transport Service Contract	Definition	Can Be Mapped To
Pick-up Place	Despatch Party	The party where goods are collected or taken over by the transport services provider. Operational term is "Pick-up Place".	Line_ Trade Delivery. Actual_ Pick-Up. Supply Chain_ Event
Place of Positioning	Delivery Party	The party to which goods should be delivered by the transport services provider. Operational term is "Place of Positioning".	Line_ Trade Delivery. Confirmed_ Delivery. Supply Chain_ Event
Ship From	Original Despatch Party	The party from whom goods will be or have been originally shipped.	Header_ Trade Delivery. Ship From. Trade_ Party Line_ Trade Delivery. Ship From. Trade_ Party
Ship To	Final Delivery Party/Ultimate Delivery Party	The party to whom goods will be or have been ultimately shipped.	Header_ Trade Delivery. Ship To. Trade_ Party Line_ Trade Delivery. Ship To. Trade_ Party

4.3 Class Diagram Buy Ship Pay – Transport – Customs

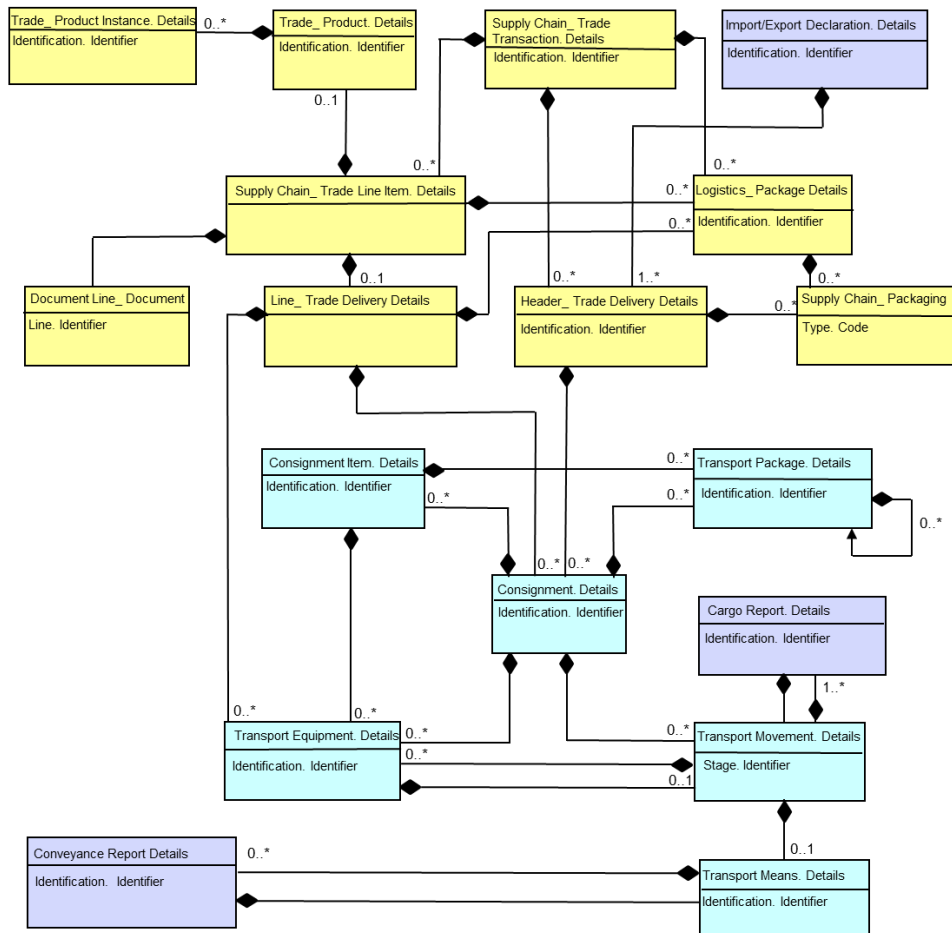


Table 3 Class Diagram Buy Ship Pay / Transport / Customs

- Supply Chain Related Entities
- Transport Related Entities
- Customs Related Entities

The diagram shows the main entities of the reference models of Supply Chain, Transport and Customs and the relationships between them. Most entities have an optional rather than mandatory relationship because entities in a reference data model can be optional in one or more derived data exchange structures. Although each domain has its own view on information, the above diagram is based on the assumption that information exchanged in the Buy-Ship-Pay has a degree of similarity with Transport and Customs information entities. Commonly, information used in trade is more detailed than in the Transport or Customs domain.

Table 4 Relationships / Similarity Entities

Supply Chain (Buy/Pay)	Transport (Ship)	Customs
Supply Chain_ Trade Line Item. Details	Consignment Item. Details	Commodity. Item. Details Consignment. Item. Details
Logistics_ Package Details	Transport Package. Details	N/A
Consignment. Details	Consignment. Details	Cargo Report. Details Consignment. Details
Consignment Item. Details	Consignment Item. Details	Consignment Item. Details
Transport Movement. Details	Transport Movement. Details	Cargo Report. Details Conveyance Report Details
Transport Means. Details	Transport Means. Details	Transport Means. Details
Transport Equipment. Details	Transport Equipment. Details	Transport Equipment. Details
Supply Chain_ Trade Line Item. Details	Consignment Item. Details	CAGI. Details
Header_ Trade Delivery Details	Consignment. Details	Import/Export Declaration. Details

4.4 Master Data Exchange Structure

The SCRDM Master Data Exchange Structure contains the overall structure for all Business Data Exchange Structures derived of or to be derived from the SCRDM. The Context CCL and Master are the basis of the SCRDM.

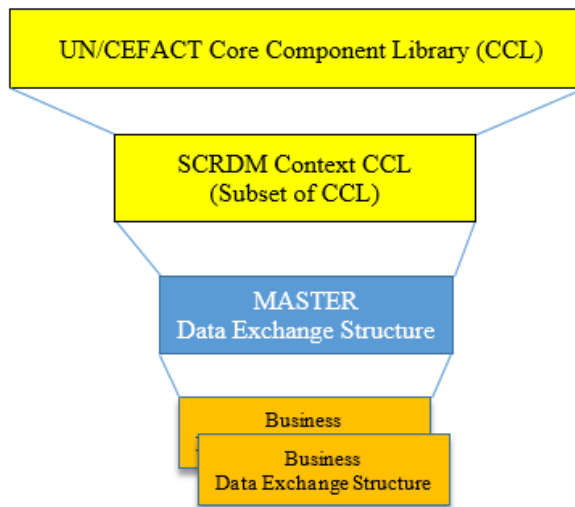


Figure 2 Concept of SCRDM

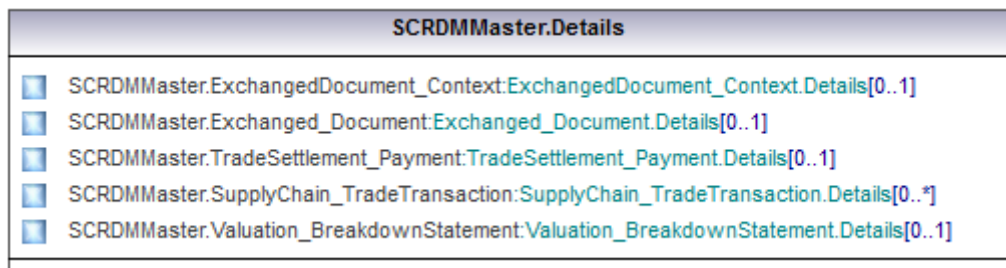


Figure 3 Class Diagram SCRDM Master

The Aggregate Business Information Entity (ABIE) Supply Chain Trade Transaction can be regarded as the most important ABIE in the SCRDM Master. It covers elements of data on agreements, deliveries and payment, specified as Association Business Information Entities (ASBIEs).

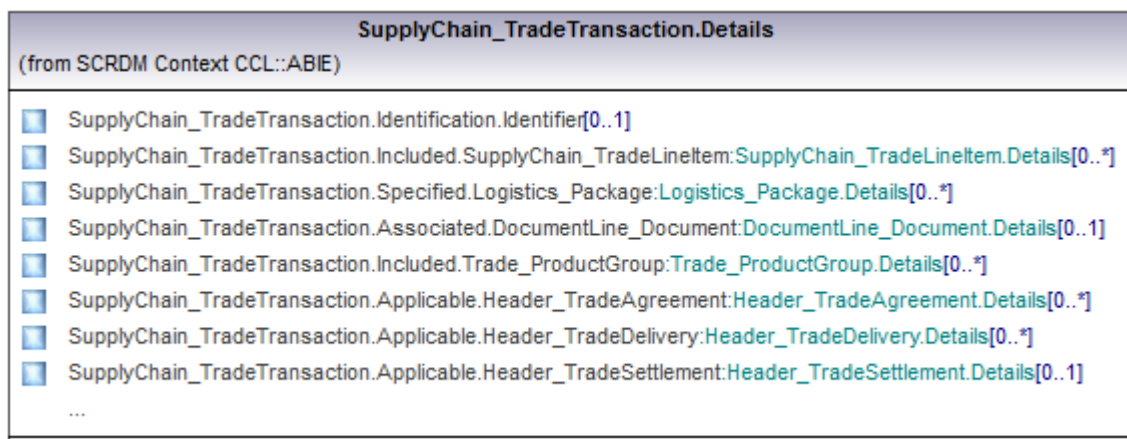


Figure 4 Class Diagram Supply Chain Transaction

The ABIE “Trade Settlement _Payment” is currently only used within the Business Data Exchange Structure named “Remittance Advice document”.



Figure 5 Class Diagram Trade Settlement_Payment

The content of the ABIEs Exchanged Document Context and Exchanged Document can be found in the published SCRDM Context CCL. The ABIE Valuation Breakdown Statement is currently only used in the invoicing process.

4.5 Core components UN/CEFACT Registry version used



This RSM is based on the SCRDM Subset Context CCL⁵ based on the latest published CCL.

4.6 Draft Core Component reference

All the business data required to meet the requirements of SCRDM are defined in the SCRDM-BRS and published on the UN/CEFACT website. All the BIEs required to meet the business requirements are defined as part of this document and published on the UN/CEFACT website.

⁵ For the initial publication, the latest published CCL is D16B
15 December 2016 1.0.0.2

5 Additional information

SCRDM Master Structure and Subset of CCL			HTML	HTML compressed
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6 Definition of terms

Term	Definition
Business Data Exchange Structure	A collection of information used within a particular business process, structured in such a way that it covers the business data exchange needs. These structures can be a complete business document, such as an invoice or a mini document (snippet) as a result of a query e.g on master data.
Consignment item	An item within a consignment of goods separately identified for transport and customs purposes.
Consignment	A separately identifiable collection of goods items to be transported or available to be transported from one consignor to one consignee via one or more modes of transport where each consignment is the subject of one single transport contract.
Conveyance Report	A Conveyance Report permits the transfer of data from a carrier to a Customs administration for the purpose of meeting Customs reporting requirements in respect of the means of transport on which cargo is carried.
Custom Cargo Report	Documents by which movements of goods are reported to Customs at a place of export, import or transit.
Document Line_ Document	A collection of data for a line on a piece of written, printed or electronic matter that provides information or evidence.
Header_ Trade Delivery	Shipping arrangements and movement of products and or services including despatch and delivery at a header level.
Import/Export Declaration	Documents by which consignments of goods are declared for either export or import Customs clearance, conforming to the layout key set out at Appendix I to Annex C.1 concerning outright exportation to the Kyoto convention (WCO).
Line_ Trade Delivery	Shipping arrangements and movement of products and or services including despatch and delivery at a line level.
Logistics_ Package	A self-contained wrapping or container within which goods can be contained for logistics purposes, such as a box or a barrel which can be filled, partially filled or empty.
Master Data Exchange Structure	A collection of information structured in such a way that it covers the data exchange structures required by users within the Reference Data Model domain, such as the Supply Chain. From the Master Data Exchange Structure different Business Data Exchange Structures can be derived.
SCRDM Context CCL	A subset of the CCL which includes the ABIEs used within the Supply Chain. The properties of the ABIEs have been restricted as appropriate in order to be applicable for all Business Documents derived from SCRDM.
Supply Chain_ Packaging	Any material with which supply chain goods are packaged, such as a box or bubble wrap.

Term	Definition
Supply Chain_ Trade Line Item	A collection of information specific to an item being used or reported on for supply chain trade purposes.
Supply Chain_ Trade Transaction	A group of supply chain trade line items, trade agreement, trade delivery and trade settlement details.
Trade_ Product	Any tangible output or service produced by human or mechanical effort or by a natural process for trade purposes.
Trade_ Product Instance	An individual trade product or batch of similar trade products produced by human or mechanical effort or by a natural process.
Transport Equipment	A piece of equipment used to hold, protect or secure cargo for logistics purposes.
Transport Means	The devices used to convey goods or other objects from place to place during logistics cargo movements.
Transport Movement	The conveyance (physical carriage) of goods or other objects used for transport purposes.
Transport Service Order	See consignment
Transport_ Package	A self-contained wrapping or container within which goods can be contained for transport purposes, such as a box or a barrel which can be filled, partially filled or empty.