7   **UNITED NATIONS**
8   **CENTRE FOR TRADE FACILITATION AND ELECTRONIC BUSINESS**
9   **(UN/CEFACT)**

10 **METHODOLOGY AND TECHNOLOGY PROGRAMME DEVELOPMENT AREA**

15 **PROCEDURES FOR REFERENCE DATA MODEL (RDM)**
16 **& ASSOCIATED ARTEFACTS PUBLICATION**

33 **SOURCE:**   **Procedures for RDM & Associated Artefacts Publication Project Team**
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35 **STATUS:**   **Public Draft v1.0.0.8**

Table of Contents

95 # 1 About this document

96
97 ## 1.1 Status of this document

98
99 This document has been developed in accordance with the UN/CEFACT/TRADE/22 Open
100 Development Process for Guidelines and approved for publication by the UN/CEFACT Bureau.
101
102 ## 1.2 Revision history
103

Version	Release	Date	Comment
1.0.0.1	Internal draft	2016-August-01	Initial
1.0.0.2	Draft	2016-December-15	For revision by Project Team
1.0.0.3	Draft	2016-December-29	Including comments from Project Team call on 2016-December-15
1.0.0.4	Draft	2017-January-09	Internal Review
1.0.0.5	Draft	2017-January-16	Including comments from Project Team call on 2017-January-12
1.0.0.6	Draft	2017-January-22	Including comments from Project Team call on 2017-January-19
1.0.0.7	Draft	2017-January-26	Including comments from Project Team call on 2017-January-26
1.0.0.8	Draft	2017-February-01	Review by Project Team

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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.

2.2   Project Team Participants

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3   Introduction

The main audience for this document is primarily:

- UN/CEFACT community

3.1   Structure of this document

- Section 4: Publication Requirements
- Section 5: Publication Procedures of Reference Data Models
- Section 6: Definition of Terms

3.2   Related Documents

- Revised Open Development Procedures, 10 February 2016 (ODP)
- UN/CEFACT Reference Data Model Guideline[1].
- UN/CEFACT Supply Chain Reference Data Model Business Requirement Specification (SCRDM-BRS)[2].
- UN/CEFACT Supply Chain Reference Data Model Requirement Specification Mapping (SCRDM-RSM)[2]
- UN/CEFACT SCRDM Master Structure and Subset of CCL (Context CCL)[2]

3.3   Purpose and scope

The business goals of this green paper are

- to define how to the functional requirements, publication formats and publication procedures relevant for the publication of Reference Data Model artefacts.

The process for the publication of Reference Data Models takes account of the following aspects:

- Relationship with the underlying CCL
- Validation rules for publication formats
- Production of the publication bundle
- Maintenance of RDM[2]

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[1] All versions published after the adoption date of these procedures.
[2] Reference Data Model

4 Publication Requirements

4.1 Functionality

The publication formats support the functionalities:

- R01 Publication of the RDMs subset of the CCL
- R02 Reference to the underlying CCL BIE[3]
- R03 Presenting the content of the underlying CCL BIE
- R04 Presenting the RDM in a hierarchical manner
- R05 Advanced searching capabilities
- R06 Presenting information in a business/technical view
- R07 Presenting restrictions made on different levels
- R08 Machine-processable information

The capability to meet the requirements depends on the chosen publication format (see paragraph 4.4).

R01 Publication of the RDM's subset of the CCL

The publication contains the fields mentioned in the specification of the publication content (section 4.2). The CCL subset has been defined by the relevant RDM.

R02 Reference to the underlying CCL BIE

The reference is expressed as the "Unique UN Assigned ID" which is inherited from the information of the BIE of the underlying CCL.

R03 Presenting the content of the underlying CCL BIE

The content of the underlying CCL BIE is presented by linking the RDM BIE to the content of the underlying CCL BIE using hyperlinks or a copy of the underlying CCL BIE along with the RDM BIE.

R04 Presenting the RDM in a hierarchical manner

The business information in a RDM is structured by a Master Structure. The Business Information Entities of the RDM can be Basic Business Information Entities (BBIE), Association Business Information Entities (ASBIE), or Aggregate Business Information Entities (ABIE). The Master Structure of the RDM is presented by using a hierarchy from top to bottom. The hierarchy can be shown by unfolding entities.

R05 Advanced searching capabilities

Users of a RDM must be able to find the appropriate Business Information Entity as easy as possible. The main search fields are:

- Business name
- ID
- Dictionary entry name (DEN)
- Definition

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[3] Business Information Entity

201   R06 Presenting information in a business/technical view

202   For business analysts and modelers information should be presented in a way they can easily
203   understand or recognize. The presentation using business names is best suited for these users, as
204   the presentation using dictionary entry names is more suitable for technical users. Both ways are
205   presented in the RDM.

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207   R07 Presenting inheritance of restrictions made on different levels

208   An important aspect of the RDM are restrictions applied to the BIEs of the underlying CCL. One
209   example for restrictions is the choice of a limited number of artefacts (BBIEs or ASBIEs).
210   Restrictions can be applied on different levels: on the highest level, on the BIE of the CCL or on
211   the BIE of the RDM CCL. Therefore the RDM shall indicate at what level the restrictions are
212   defined.

213

214   R08 Machine-processable information

215   Users may want to re-use provided business information in a RDM without re-typing the
216   information. The RDM is therefore provided as well in a machine-processable format.

217

4.2   Publication Content

219   The RDM shall be published as a "Master Structure and Subset of the CCL[4]" indicating the
220   version of the underlying CCL. The following information items should be supported by the
221   publication formats for holding the information for each BIE of the RDM when available:

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Nr.	Information Item	Definition/Explanation	Mandatory
1	Status CCL	Indicates for each BIE of the RDM whether or not there is a difference between the published version of the underlying CCL and the previous version ADD = Add CHG = Change DEP = Deprecated	Conditional
2	Status Subset CCL	Indicates for each BIE of the RDM whether or not there is a difference between the published version of the RDM subset of the CCL and the previous version of the RDM ADD = Add CHG = Change DEP = Deprecated	Conditional
3	Unique UN Assigned ID	"Unique UN Assigned ID" of the BIE of the underlying CCL	Yes
4	ABIE/ BBIE/ ASBIE	Indication of the type of the BIE.	Yes

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[4] The subset of the CCL is also known as the "Context Core Component Library (Context CCL)".

Nr.	Information Item	Definition/Explanation	Mandatory
5	Dictionary Entry Name	The unique official name of a Business Information Entity	Yes
6	Definition	The unique semantic meaning of a Business Information Entity.	Yes
7	Business Name[5]	An alternative simplified name for each Business Information Entity for use by modelers.	Yes
8	Usage Rule(s)	Rules which describe how and/or when to use a Business Information Entity.	No
9	Example(s)	An illustration of the use of a BIE.	No
10	Publication comments	Additional explanatory information published in the CCL.	No
11	TDED	Identifier to link to a specific data element in the United Nations Trade Data Elements Directory (UNTDED).	No
12	Object Class Term Qualifier(s)	A word or group of words which help define an object class.	No
13	Object Class Term	The name of a logical data grouping to which a data element or association belongs.	Yes
14	Property Term Qualifier(s)	A word or group of words which help define an object class property.	No
15	Property Term	A semantically meaningful name for a characteristic of an object class.	No
16	Datatype Qualifier(s)	Qualifier for the datatype of a Basic Business Information Entity.	No
17	Representation Term	The datatype, such as numeric or text, of a Business Information Entity.	Mandatory for BBIE.
18	Qualified Data Type UID	Unique UN Assigned ID.	No
19	Associated Object Class Term Qualifier(s)	A word or group of words which help define an associated object class	No
20	Associated Object Class	The name of an object class associated from the Business Information Entity Object Class as a complex characteristic.	No
21	Occurrence Min	Minimum occurrence of the Business Information Entity in the RDM.	Mandatory for BBIE and ASBIE.
22	Occurrence Max	Maximum occurrence of the Business Information Entity characteristic (data element or association) in the RDM.	Mandatory for BBIE and ASBIE.

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[5] The "business name" is a new information item in the CCL. It must not be confused with the "business term".

225 ### 4.3   Publication Formats

226   The Reference Data Model shall be published in the following formats:

227   1. PDF
228   2. Excel
229   3. HTML
230   4. Compressed HTML

231   1. The **PDF format** is fully based on an internal Word-format that is not published. A template
232   for the structure of the PDF format is described in annex 1[6].

233   2. The **Excel format** is a subset of the columns provided in the full CCL publication, but it has
234   two new column: "Status of Subset CCL" and "Status of the CCL". This first one indicates
235   whether or not there is a difference between the published version of the RDM subset of the
236   CCL and the previous version. The second one is equal to the present CCL column named
237   (ADD/CHG/DEP/WDR[7]). A template for the structure of the excel format is described in
238   annex 2[8].

239   3. The **HTML format** is described in annex 3[9].

240   4. The **Compressed HTML format** is described in annex 4[10].

241   The high level Business Requirement Specification (BRS) and Requirement Specification
242   Mapping (RSM) are part of the publication of the RDM and have to be updated when any changes
243   made in the Reference Data Model impact the high-level business requirements, business
244   artefacts and definitions of the high level BRS and RSM. The high level BRS/RSM are published
245   as PDF documents.

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[6] See annex 1
[7] ADD = Added, CHG = Changed, DEP = Deprecated, WDR = Withdrawn
[8] See annex 2
[9] See annex 3
[10] See annex 4

4.4 Mapping of Functionality to the different Publication Formats

The full list of functional requirements cannot be fulfilled by every publication format. The following table maps the functional requirements to the different publication formats:

Functional Requirements

Formats	R01 Publication of the RDM's subset of the CCL	R02 Reference to the underlying CCL BIE	R03 Presenting the content of the underlying CCL BIE	R04 Presenting the RDM in a hierarchical manner	R05 Advanced searching capabilities	R06 Presenting information in a business and/or technical view	R07 Presenting inheritance of restrictions made on different levels	R08 Machine-processable information
PDF	✓	✓	-	-	-	✓	-	-
Excel	✓	✓	-	-	-	✓	-	✓
HTML	✓	✓	-	✓	-	✓	-	-
Compressed HTML	✓	✓	-	✓	✓	✓	-	-

Figure 1 Mapping of Functionality to the different Publication formats

Green	: Desirable and currently possible
Orange	: Desirable but not yet possible
Grey	: Not desirable in this format
R03 Orange	: When the CCL is published in the HTML format they could be linked to show underlying CCL.
R05 Green	: Depending on Compressed HTML viewer tools being used.
R07 Orange	: When the CCL is published in the HTML format they could be linked to show restrictions made on different levels.

263 # 5 Publication Procedures of Reference Data Models

264

265 The publication procedures of Reference Data Models are the responsibility of the Library
266 Maintenance Focal Point to produce the publication formats.

267 # 6 Definition of Terms

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Term/Acronyms	Definition
ABIE	Aggregate Business Information Entity
ASBIE	Association Business Information Entities
BBIE	Basic Business Information Entities
BIE	Business Information Entity
BRS	Business Requirement Specification
BRS-SCRDM	Business Requirement Specification for the Supply Chain Reference Data Model
CCBDA	Core Components Business Document Assembly
CCL	Core Component Library
CCTS	Core Component Technical Specification
DEN	Directory Entry Name
ODP	UN/CEFACT Open Development Process
RDM	Reference Data Model
RSM	Requirement Specification Mapping
RSM-SCRDM	Requirement Specification Mapping for the Supply Chain Reference Data Model
SCRDM	Supply Chain Reference Data Model
TDED	Trade Data Elements Directory
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UNECE	United Nations Economic Commission for Europe
UNTDED	United Nations Trade Data Elements Directory

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Annex 1: Publication format PDF

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Introduction (title page) template

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CEFACT – BP/[RDM] – P[no] /CCYY
Draft
CEFACT/DD/MMM/CCYY

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

[PDA ACRONYM] PROGRAMME DEVELOPMENT AREA
[DOMAIN NAME] DOMAIN ([DOAMIN ACRONYM])

[RDM NAME] ([RDM ACRONYM])
MASTER STRUCTURE AND SUBSET OF CCL [VERSION] (CONTEXT CCL)

SOURCE: [RDM Acronym] Project Team
DATE: DD Month CCYY
STATUS: Draft v[version no]

Disclaimer (Updated UN/CEFACT Intellectual Property Rights Policy – ECE/TRADE/C/CEFACT/ 2010/20/Rev.2)
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Master Structure[11] and Context CCL BIE template

Occurrence	Element/Attribute	Business Name	TDED	qDT
	[4. BIE Type] [5. DEN of ABIE]			
	[5. Dictionary Entry Name of BBIE/ASBIE]	[7.Business Name]	[11. TDED]	[18.qDT ID]
[21/22]	[6. Definition]			
	Unique UN assigned ID: [3. Unique UN Assigned ID] Status subset CCL : [2. Status subset CCL] Status CCL : [1. Status CCL] Example(s) : [9. Example(s)] Usage Rule(s) : [8. Usage Rule(s)] Publication Comments : [10. Publication Comments]			

Page [no] of [no]   Date: DD-MM-CCYY

Editor's remark: red numbers are field numbers which will not be in the output of this publication format. They correspond with the fields listed in section 4.2 Publication Content. Field numbers 12 till 17 and 19 till 20 are part of the DEN (Dictionary Entry Name) and are not specified as separate fields. Field numbers 1 till 3 and 8 till 10 will only be present if data is available.

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[11] For the Master structure only the root ASBIEs will be specified. The full structure is available in HTML and compressed HTML format.

Annex 2: Publication format Excel

Introduction template sheet

[Version]	**[RDM name] ([RDM Acronym])**
	Master Structure
	The UN/CEFACT [Version] Master Structure for [RDM Acronym] contains only the BIEs on the highest level of the Reference Data Model. The full hierarchical structure can is presented in the HTML format.
	Context Core Component Library
	The UN/CEFACT [Version] Conext Core Component Library (CCL) [RDM Acronym] contains:
	UN/CEFACT Context CCL BIE All reference BIEs of the Context CCL as harmonised by the Methodology & Technology Library Maintenance Focal Point, presented in an alphabetic order.

Master Structure template sheet

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Status CCL [version]	Status Subset CCL [version]	Based on Unique UN Assigned ID	ABIE/ BBIE/ ASBIE	Dictionary Entry Name	Definition	Business Name	Usage Rule(s)	Example(s)	Publication comments	TDED	Object Class Term Qualifier(s)	Object Class Term	Property Term Qualifier(s)	Property Term	Datatype Qualifier(s)	Representation Term	Qualified Data Type UID	Associated Object Class Term Qualifier(s)	Associated Object Class	Occurrence Min	Occurrence Max
			ABIE		Aggregate Business Information Entity																
			BBIE		Basic Business Information Entity contained within the ABIE																
			ASBIE		Associated (Aggregate) Business Information Entity, associated with the ABIE																

Context CCL BIE template sheet

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Status CCL [version]	Status Subset CCL [version]	Based on Unique UN Assigned ID	ABIE/ BBIE/ ASBIE	Dictionary Entry Name	Definition	Business Name	Usage Rule(s)	Example(s)	Publication comments	TDED	Object Class Term Qualifier(s)	Object Class Term	Property Term Qualifier(s)	Property Term	Datatype Qualifier(s)	Representation Term	Qualified Data Type UID	Associated Object Class Term Qualifier(s)	Associated Object Class	Occurrence Min	Occurrence Max
			ABIE		Aggregate Business Information Entity																
			BBIE		Basic Business Information Entity contained within the ABIE																
			ASBIE		Associated (Aggregate) Business Information Entity, associated with the ABIE																

Editor's remark: red numbers are field numbers which will not be in the output of this publication format. They correspond with the fields listed in section 4.2 Publication Content.

353 # Annex 3: Publication format HTML

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355 ## Introduction template

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> ### [RDM]: Master and subset of CCL [version] (Context CCL)
>
> Start Structure Components
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> ### [RDM] Master. Details
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> Issue date: [DD-MM-CCYY]
> **Disclaimer**
> (Updated UN/CEFACT Intellectual Property Rights Policy – ECE/TRADE/C/CEFACT/ 2010/20/Rev.2)
> ECE draws attention to the possibility that the practice or implementation of its outputs (which include but are not limited to Recommendations, norms, standards, guidelines and technical specifications) may involve the use of a claimed intellectual property right.
>
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>
> ECE does not accept any liability any possible infringement of a claimed intellectual property right or any other right that might be claimed to relate to the implementation of any of its outputs.
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> ⌃ ◁ ▷
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> [RDM] Master   Print date: DD-MM-CCYY

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374 **Master Structure template**

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379 Editor's remark: red numbers are field numbers which will not be in the publication format. They

380 correspond with the fields listed in section 4.2 Publication Content.

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403 ## Context CCL BIE template[12]
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420 Editor's remark: red numbers are field numbers which will not be in the output of this publication
421 format. They correspond with the fields listed in section 4.2 Publication Content.
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[12] The menu option 'Components' is named 'Supporting objects' within the navigation bar (left side). The components are listed in an alphabetic order.

423   **Annex 4: Publication format Compressed HTML**

424

425   **Introduction template**   **: see HTML format previous annex**

426   **Master Structure template**   **: see HTML format previous annex**

427   **Context CCL BIE template[13]**   **: see HTML format previous annex**

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429   Advanced Search Capabilities depend on the Compressed HTML format file (CHM) reader[14].

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431   Possible search options are:

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433   -   and/or/near/not

434   -   "search previous results"

435   -   "match similar words"

436   -   "search titles only"

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438   Additional features may be: storing pages as favorites

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[13] The menu option 'Components' is named 'Supporting objects' within the navigation bar (left side).

[14] For example: Microsoft HTML Help reader