

UN/CEFACT – M+T-PDA/SPEC MessageConstruction– P1076

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(UN/CEFACT)

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SPECIFICATION DOMAIN

MESSAGE CONSTRUCTION GUIDELINES FOR CCBDA

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59 **1. About this document**

60 This guideline describes how to construct UN/CEFACT compliant XML messages according to
61 Core Component Business Document Assembly Technical Specification (CCBDA).

62

63 **1.1 Executive Summary**

64 For semantic interoperability in the field of Trade Facilitation and eBusiness, UN/CEFACT
65 Technical Specifications and Dictionaries should be used more widely in the world.

66 There are several standard messages published on the UN/CEFACT web site¹ which are
67 designed to be used widely including general purpose business information entities and code
68 lists.

69 The other hand, a user's application used within a trading partner's needs and can handle a part
70 of information of the standard message. This may cause difficulties among users especially
71 SMEs, such as;

- 72 (1) It needs a large size standard message for the small set of information used in user's
73 application.
- 74 (2) Each user application has to handle a set of information defined in the standard
75 message.
- 76 (3) A user cannot predict the usable set of information in the standard message
77 received.

78

79 Fortunately, we have the technical specification Core Component Business Document Assembly
80 (CCBDA) which enables defining a subset of the standard message.

81 In this guideline two types of message constructing approach based on CCBDA are introduced.

82 ➤ Document Centric approach

83 A collection of Message Business Information Entities (MBIEs) within a specific
84 business process, structured in such a way that it covers the business data exchange
85 needs. MBIE may be restricted based on the BIE registered in UN/CEFACT Core
86 Component Library (CCL) following the business needs.

87 ➤ Reference Data Model approach

88 A collection of Reference Business Information Entities (Reference BIEs) representing
89 the business information needs within a specific domain or sub-domain. This
90 collection is also known as "Context CCL" or "Contextualized subset of CCL".

91

¹ <http://www.unece.org/uncefact/mainstandards.html>

92 Furthermore, this guideline identifies user requirements for message construction and gives
93 solutions for those requirements as follows.

- 94 · Guidelines for identification MA
- 95 · Clear rules for restriction of BIE
- 96 · NDR related guidelines
- 97 · Rules for restricting code list
- 98 · Publication guidelines for MA based on CCBDA
- 99 · CCBDA template
- 100 · Facets for MBIEs
- 101 · Guidelines for interoperability
- 102 · Annotation Guidelines

103

104 **1.2 Status of this document**

105 This document will be developed in accordance with the UN/CEFACT/TRADE/22 Open
106 Development Process for Guidelines.

107 This version of the guideline is the initial draft for discussion in the project team.

108

109 **1.3 Revision history**

110

Version	Release	Date	Comments
0.1	Initial draft for the project team	2020-02-28	
0.2	Message Construction Guideline V0.2	2020-04-01	
0.3	Message Construction Guideline V0.3	2020-05-16	
1.0	Message Construction Guideline for CCBDA, Public Draft v1.0	2020-05-27	

111

112 **2. Project team**

113 **2.1 Disclaimer**

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

118

119 **2.2 Project team participants**

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129 **3. Introduction**

130 The main audiences for this guideline are primarily.

- 131 · XML message designers
- 132 · XML message tool developers

133

134 **3.1 Structure of this document**

135 This guideline covers the following 2 subjects, Message Construction Approach and User
136 Requirements and Solutions.

137 The Message Construction Approach chapter is introducing 2 types of message design methods,
138 Document Centric (DC) message and Reference Data Model (RDM) message.

139

140 The other chapters are identifying 9 subjects as follows.

- 141 · Guidelines for identification of MA
- 142 · Clear rules for restriction of BIE
- 143 · NDR related guidelines
- 144 · Rules for restricting code list
- 145 · Publication guidelines for MA based on CCBDA
- 146 · CCBDA template
- 147 · Facets for MBIEs
- 148 · Guidelines for interoperability
- 149 · Annotation rule

150

151 **3.2 Related Document**

- 152 · UN/CEFACT Core Components Technical Specification – Part 8 of the ebXML
153 Framework, Version 2.01

- 154 · UN/CEFACT Core Components Business Document Assembly Technical
155 Specification, CCBDA, version 1.0
- 156 · UN/CEFACT XML Naming and Design Rules for CCTS 2.01 Version 2.1
157 dated 27 May 2014
- 158 · UN/CEFACT Requirements Specification Mapping (RSM) Documentation Template
159 Guidelines Version 2.0, dated May 2012
- 160 · UN/CEFACT Code Management User Guide Version 1.0, dated March 2018

161

162 **3.3 Purpose and scope**

163 The guidelines introduce the method to design a XML user message using MA, MBIE and QDT
164 under the rules of CCTS, CCBDA and NDR.

165 **4. Message Construction Approach**

166 The UN/CEFACT have published several Standard Messages in XML Schema those which are
167 importing all the Reusable ABIEs of the published Core Component Library (CCL).

168 The Core Components Business Document Assembly (CCBDA) Technical Specification can be
169 employed wherever business information is being shared or exchanged amongst and between
170 enterprises, governmental agencies and/or other organizations in an open environment. This
171 environment can be of a worldwide scope or restricted to a specific business context (such as an
172 industry or region).

173 The UN/CEFACT published message assemblies (MA) can be customized by user communities
174 using the CCBDA methodology. This methodology can be applied on all message assemblies by
175 the Document Centric (DC) or the Reference Data Model (RDM) approach.

176

177 ➤ Document Centric (DC) approach: A collection of information used within a specific
178 business process, structured in such a way that it covers the business data exchange needs.
179 DC message may be published for a specific document by a specific industry domain group,
180 a specific local group or a specific user group using restricted BIEs according to the rules of
181 CCBDA.

182

183 ➤ Reference Data Model (RDM) approach: A collection of Reference Business Information
184 Entities (Reference BIEs) structured in such a way that it covers the business data exchange
185 needs within a specific domain which can be even further restricted by a particular industry
186 group, a specific local group or a specific user group according to the rules of CCBDA. The
187 main differences between the DC approach is that only Reference BIEs instead of Messages

188 BIEs are in scope. The business needs are reflected by contextualizing Reference BIEs. This
189 collection of Reference BIEs is also known as a “Context CCL” or “Contextualized subset
190 of the CCL”. Regarding the message assembly the same CCBDA rules are being applied, but,
191 as written, on the contextualized Reference BIEs instead of the Messages BIEs residing in
192 the CCL.

193

194 **4.1 Document Centric approach**

195 Document Centric (DC) message is constructed by Message Business Information Entities
196 (MBIEs) used in the target message for the specific industry, the local area or the specific user
197 group.

198 The Aggregate Business Information Entities (ABIEs) used in DC message may be the message
199 specific one, such as the ABIE qualified with message specific term (ex. CIOH_ Exchanged_
200 Document. Details where CIOH means Cross Industry Order Header).

201

202 **4.1.1 Document Centric Message construction step**

203 (1) UN/CEFACT Standard Message can be used as a template for assembling a Document
204 Centric Message.

205 (2) Select specific ABIEs in CCL used in the message accordance with the business process
206 needs defined by the user group (a business domain or a local industry).

207 (3) Define MBIEs for the selected Aggregate Business Entities (ABIEs), Associated Business
208 Information Entities (ASBIEs) and Basic Business Entities (BBIEs) according to the
209 CCBDA rules.

210 (4) All the MBIE XML statements may be specified in Root schema module or Internal schema
211 module according to the NDR rules.

212

213 **4.2 Reference Data Model approach**

214 The advantage of the Reference Data Model (RDM) approach is that an RDM draws on the overall
215 available Reference Aggregate Business Information Entities (ABIEs) within the UN/CEFACT
216 Core Component Library (CCL), creating a complete and focused subset specific to the needs of
217 a segment (particular industry domain group or sub-domain). An example of an UN/CEFACT
218 RDM is the Supply Chain Reference Data Model (SCRDM) covering the contract for the supply
219 of the goods. An RDM, which is a contextualized subset of the CCL, can also be based on another
220 contextualized subset of the CCL (a sub-RDM). The SCRDM and Multimodal Transport (MMT)
221 RDM are contextualized subsets of the Buy-Ship-Pay (BSP) RDM.

222 The basis of all data exchanges starts with a Core Component (CC) being qualified in order to
223 provide a business meaning (e.g. Reference BIE is CC “instructions” qualified with “handling”).

224 A Reference BIE can be double qualified, but an RDM merely uses double qualifiers as business
225 information entities are primarily being contextualized. An example of a double qualified
226 Reference BIE is “Referenced_ Logistics_ Transport Means”. The reason for this is a business
227 need for having two restricted versions available in a data exchange structure. One specifying all
228 details of a means of transport and another referencing only the necessary data, such as an
229 identification and type code of means of transport.

230 The type of restrictions can be:

- 231 • The number of attributes
- 232 • The number of associations
- 233 • The cardinality of attributes/associations

234

Note: The CCBDA (Core Component Business Document Assembly) specification does not use the term “Reference BIE” as used in the published CCL. It uses only the term Message BIE (MBIE). In the context of an RDM only Reference BIEs are used to build a data exchange structure (or message body). From an assembly perspective it is the same. The published Message BIE library only reflects the Reference BIEs being used in messages in relation to the document centric approach. Within this Message BIE Library, you will find a large number of document centric business information entities. These entities are built to be used within only a specific document (a.k.a. document centric), such as “CIOH_ Supply Chain_ Trade Agreement” which is only used in the Order. Unlike this, Reference BIEs are document independent and process driven and can be used in every possible data exchange structure.

235

236 Qualified Data Types (qDTs) cannot be restricted in the context of an RDM due to strict
237 inheritance as specified by CCTS rules. The Code Management User Guide describes solutions
238 for restriction code list values in case of the need for contextualizing qDT of a business entity.

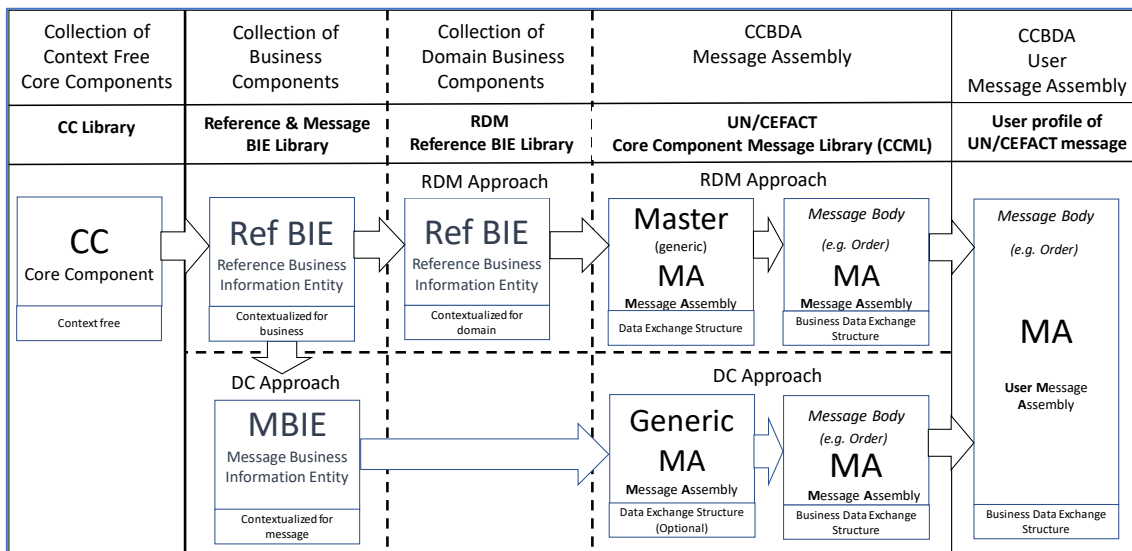


Figure 1: The use of BIEs within the Reference Data Model (RDM) and Document Centric (DC) approach

4.2.1 Domain Reference BIE

A “Domain Reference Business Information Entity” represents the business information needs within a particular domain (such as Supply Chain or Transport & Logistics) or sub-domain and is represented by contextualized ABIEs or BBIEs or ASBIEs. A collection of Domain Reference BIEs is a.k.a. an RDM or Context CCL. The context as expressed "scopes" the domain. Industry domain groups and other users can further restrict this subset and derived messages using CCBDA rules.

4.2.2 Domain Master Data Exchange Structure

A collection of information structured and contextualized in such a way that it covers the data exchange structure(s) required by users within a domain or sub-domain, such as Supply Chain. From the “Domain Master Data Exchange Structure” different “Business Data Exchange Structures” can be derived. The context as expressed "scopes" the domain. Industry domain groups and other users can further restrict this “Master Data Exchange Structure” to their needs.

4.2.3 Business Data Exchange Structure

Commonly, the needed restrictions on Reference Business Information Entities will be reflected by Domain Reference BIEs. Further restrictions can be realized within the Domain Master Data Exchange Structure and/or within the derived Business Data Exchange Structure(s). A CCBDA compliant model may serve as the computer readable part of an EDI Document Implementation Guideline. Due to the reusable aspect of a Reference BIE, it is obvious that restrictions to a Reference BIE will be applicable no matter the location(s) it is being used in a data structure.

263 Different information needs for the same Reference BIE within a data structure will end up in the
264 creation of a new Reference BIE (e.g. Header_ Trade Agreement and Line_ Trade Agreement).
265 Most UN/CEFACT published message assemblies are being customized by industry domain
266 groups using the CCBDA methodology. For their context (region, industry) they possibly need
267 more restrictions.
268

269 **5. User Requirements and Solution**

270 **5.1 Guidelines for identification of MA**

271 The identification of restricted version of MA can be user defined.

272

273 As an example: an identification of a restricted MA for DC message as follows.

274 **DCXXXX_YYYY_ZZZZ**

275 Where;

276 XXXX (4 digits) is the ID of 3055 (Code List Responsible Agency).

277 =>Ex."0413" UN/CEFACT Japan committee

278 YYYY (variable length text) is the Business Process name for the domain.

279 =>Ex."Agricultural Machine"

280 ZZZZ (variable length text) is the UNSM Name.

281 =>Ex."Order"

282

283 As an example: an identification of a restricted MA for RDM based message as follows.

284 **RDM-CCBDA-XXXXX-Message Structure – Version ID**

285 Where;

286 "RDM-CCBDA" is the fixed word.

287 XXXXX (variable length text) is the acronym of the message.

288 =>Ex."CIO" for Cross Industry Order.

289 => "Message Structure" is the fixed word.

290 Version ID is the identification of the version.

291

292 No identifiers for MBIEs are needed since they are unique within their context, i.e. the message.

293 As long as they are duly noted in the Requirement Specification Mapping (RSM), they are

294 accessible and cannot be confused with other MBIEs. It is however important to note the UN id

295 number for the ABIE from which it is derived.

296

297 **5.2 Clear rules for restriction of BIE**

298 Both a Message BIE (MBIE) and Reference BIE inherit the name, structure and definition from
299 the BIE registered in UN/CEFACT CCL on which they are based. For this reason, UN/CEFACT
300 will not register extensions of a definition requested by a industry domain group or sub-domain
301 or even user communities. A change of the definition requested by users will always invoke a
302 change request for the applicable CC and BIE in the CCL. Additional text added to the definition
303 are regarded as maintained by user communities within their libraries or guidelines.

304

Note: Restricting a definition

In order to keep the originally assigned definition of a BIE intact, users should inherit this definition. A user community (region or industry), may restrict the definition as long as the original semantic meaning does not get lost. Respecting the original definition will enhance interoperability.

305

306

307 **5.2.1 Restriction rules**

308 (1) Limitation rule for BBIEs and ASBIEs under the ABIE

309 **CCBDA[R05]:** An MBIE inherits its structure from the ABIE on which it is based. The set
310 of properties of an MBIE may be a subset of the set of properties of the ABIE on which it is
311 based.

312 (2) Limitation rule for occurrence of BBIE or ASBIE

313 **CCBDA[R11]:** An MBIE property may be a restriction of its inherited ABIE property in any
314 or all of the following ways:

- 315 a. A used optional property may be made mandatory.
- 316 b. An optional property may be not used.
- 317 c. A used optional or mandatory property may specify a lower number of maximum
318 occurrences but not lower than the minimum occurrences.

319 **5.2.2 Prohibited extensions**

320 Following MBIEs are not allowed.

- 321 • Adding BBIEs and/or ASBIEs to the published ABIE.
- 322 • Expand occurrence for BBIE or ASBIE.
- 323 • Remove existing qDT specified for BBIE.
- 324 • Additional qDT for the BBIE.

325 • Change the order of ABIE properties.

326

327 **5.3 NDR related guidelines**

328 The Core Component Business Document Assembly (CCBDA) technical specification provides
329 a mechanism for restricting ABIEs in order to assemble a single message.

330 **5.3.1 Internal Schema**

331 Messages in an XML context correspond to a root schema, and as such, the restricted ABIEs
332 would be declared in an internal schema. These ABIEs will be defined as `xsd:complexType` in an
333 internal schema module rather than in the reusable ABIE schema module. UN/CEFACT XSD
334 Schema may have zero or more internal schema modules.

335 **5.3.2 Document Centric message XML schema**

336 A UN/CEFACT internal schema module will contain schema constructs representing ABIEs that
337 are specific to a given root schema, such as restricted ABIEs created based on CCBDA. Internal
338 schema modules reside in the same namespace as their root schema.

339 Document centric approach has an assumption that each message has an unique set of MBIE,
340 MBBIE, ASMBIE and MDT (Message Data Type) such as restricted ABIEs, BBIEs and ASBIEs
341 and restricted Data Types (DTs) such as Qualified or Unqualified DTs. Those MBIEs, MBBIEs,
342 ASMBIEs and MDTs are strongly dependent MA and ASMA.

343 Document Centric approach prefers those MBIEs, MBBIEs, ASMBIEs, MDTs are included in the
344 root schema consisted depended MA and ASMA instead of internal schema.

345 **5.3.3 Reference Data Model approach XML schema**

346 A UN/CEFACT internal schema module will contain schema constructs representing ABIEs that
347 are specific to a given root schema, such as restricted ABIEs created based on CCBDA. Internal
348 schema modules reside in the same namespace as their root schema.

349 Reference Data Model approach has an assumption that each message is derived from a “Master
350 Data Exchange Structure” which is based on a contextualized collection of Reference BIEs.
351 During the message construction, these Reference BIEs are represented as MBIE, MBBIE,
352 ASMBIE and MDT (Message Data Type) which can be further restricted, Those MBIEs, MBBIEs,
353 ASMBIEs and MDTs are strongly dependent MA and ASMA.

354 Reference Data Model approach prefers those MBIEs, MBBIEs, ASMBIEs, MDTs are included
355 in the root schema consisted depended MA and ASMA instead of internal schema.

356 **5.3.4 Namespace Uniform Resource Identifiers**

357 To ensure consistency, each UN/CEFACT namespace will have the same general structure. This
358 namespace structure will follow the provisions of Internet Engineering Task Force (IETF)
359 Request For Comments (RFC) 2141 – URN Syntax. That specification calls for a standardized
360 URN syntax structure as follows: (phrases enclosed in quotes are REQUIRED):

361 <URN> ::= "urn:" <NID> ":" <NSS>

362 where :

363 <NID> = the Namespace Identifier

364 <NSS> = the Namespace Specific String.

365 The leading "urn:" sequence is case-insensitive.

366 The Namespace identifier determines the syntactic interpretation of the Namespace Specific
367 String.

368 Following this pattern, the UN/CEFACT namespace general structure for a namespace name
369 should be:

370 urn:un:unece:uncefact:<schematype>:<status>:<name>:<version>

371 Where:

372 · Namespace Identifier (NID) = un

373 · Namespace Specific String =

374 unece:uncefact:<schematype>:<status>:<name>:<version> with unece and
375 uncefact as fixed value second and third level domains within the NID of un
376 schematype = a token identifying the type of schema module:

377 data|process|codelist|identifierlist|documentation

378 status = the status of the schema as: draft|standard

379 name = the name of the schema module (using upper camel case) with periods, spaces,
380 or other separators and the words 'schema module' removed.

381 version = The major version number. Sequentially assigned, first release starting with
382 the number 1.

383

384 Namespaces for UN/CEFACT managed messages are well defined. However, Document centric
385 approach has an assumption that of other agencies such as Code list responsible agency coded in
386 3055 will manage their own messages based on CCBDA.

387 There may be two options for specifying the namespace:

388 1) Other agencies use their own namespace.

389 2) Extending Namespace Specific String as

390 unece:uncefact:3055:<agency code>:<schematype>:<status>:<name>:<version>

391 for 3055 registered agencies namespaces. Original Namespace Specific String is still

392 for UN/CEFACT managed messages.

393 **5.3.5 Annotation guidelines**

394 Users can decide whether or not to use to annotations within the message schemas. It means that
395 all annotation rules as [R92], [R113], [R115], [R116], [R129], [R130], [R148], [R149], [R161],
396 [R162], [R179] and [R197] in NDR are changed to be applied OPTIONAL. An annotation rule

397 as [R113] related ABIE MAY be applied to MBIE. An annotation rule as [R115] related BBIE
398 MAY be applied to MBBIE. An annotation rule as [R116] related ASBIE MAY be applied to
399 ASMBIE.

400 The advantage of annotations is that on implementation level the meaning of each element
401 etcetera is provided within the message schema. The disadvantage is the load of text being
402 present in the reusable business information entity schema. Users may decide to restrict the
403 number of annotations being included per MBIE to minimize this disadvantage.

404

405 **5.4 Rules for restricting or extending code list**

406 Handling the following requirements for code list is specified in *Code Management User Guide*.

- 407 · Restricted code list
- 408 · Extended code list
- 409 · Choosing or combining code list
- 410 · User-defined code list

411

412 **5.5 Publication guidelines for MA based on CCBDA**

413 **5.5.1 Publication format for UN Standard message**

414 Message assembly for UN/CEFACT standard message requires to define MA (Message
415 Assembly) and constructed ASMAs (Association Message Assembly). All the ABIEs referenced
416 by ASMAs are defined in the reusable ABIE module.

417

418 The UN/CEFACT MA may be published in a spread sheet form equivalent the following
419 Information model.

420

MA			
ID (1..1)		ASMA	ABIE (Top Level ABIE)
Version (1..1)		ID (1..1): ASMA UID	ID (1..1): ABIE UID
Name (1..1)	1..n	Name (1..1): ASMA DEN	1..1 Name (1..1): ABIE DEN
Definition (1..1)		Definition (1..1)	Definition (1..1)
Publication Comments (0..n)		Context Category(x) (0..1)	Publication Comments (0..n)
Context Category(x) (0..1)			Business Terms (0..n)
		*Note	Usage Rules (0..n)
		Context Category(x)	Context Category(x) (0..1)
		Business Process	Examples (0..1)
		Product	Short Name (0..1)
		Industry	
		Region(Geopolitical)	
		Official Constraint	
		Role	
		Supporting Role	
		System Constraints	

421
422
423
424
425

MA (Message Assembly)

MA is associating more than one ASMA.

ID (1..1)	The identifier of MA assigned by UN/CEFACT. (Note: Abbreviated message names are used in the UN/CEFACT schema library, such as CII-2 for Cross Industry Invoice version2.)
Version (1..1)	The version identifier assigned by UN/CEFACT, such as 1.0.
Name (1..1)	The dictionary entry name of MA shall consist of a meaningful object class term and optionally preceded by additional qualifier term(s), follows a dot, a space character, and the term Message. UN/CEFACT assigns standard name for the MA, such as “Cross Industry_ Order. Message”.
Definition (1..1)	The definition of the MA.
Publication Comments (0..n)	Any comments for publication of the MA.
Context Category (*) (0..1)	A group of one or more related values used to express a characteristic of a business circumstance. Eight context categories can be specified, such as Business Process, Product, Industry, Region (Geopolitical), Official Constraint,

426

427 ASMA (Association Message Assembly)

428 ASMA is an association, without any metadata. Therefore, the ASMA Class in the class
429 diagram is displayed with dotted line.

430 ASMA is an association of the MA with the top level ABIE without a property term. For the
431 Publication, it can be specified the top level ABIEs for the MA, instead of specifying the
432 ASMA independently.

433 ASMA is followed by one and only one ABIE (the top level ABIE).

434

ID (1..1)	The identifier of ASMA which is to be assigned by UN/CEFCT, such as CIO01 (Cross Industry Order association 01) or UN01008492 (UNID for associating ABIE).
Name (1..1)	The dictionary entry name (DEN) of the ASMA consists of the MA name without the term “. Message”, followed by a dot, a space character and the name of the associating ABIE (the top level ABIE).
Definition (1..1)	To specify the definition of the ASMA. The definition of the ASMA may be the same definition of the ABIE associated by the ASMA.
Context Category (*) (0..1)	A group of one or more related values used to express a characteristic of a business circumstance. Eight context categories can be specified, such as Business Process, Product, Industry, Region (Geopolitical), Official Constraint,

435

436 ABIE (Aggregate Business Information Entity)

437 ASMA is associating the top level ABIE in the reusable ABIE module in the targeted Core
438 Component Library.

439

ID (1..1)	The identifier of ABIE which is the UN Identifier (UNID) of the ABIE being associated the ASMA.
Name (1..1)	The dictionary entry name (DEN) of the ABIE being associated the ASMA.
Definition (1..1)	The definition of the ABIE being associated the ASMA.

Publication Comments (0..n)	Any comments for publication of the ABIE used for ASMA.
Business Terms (0..n)	Those terms are commonly used for day-to-day information exchange within this MA for the ABIE used for ASMA.
Usage Rules (0..n)	Any constraints that describe the specific conditions applicable for the ABIE used for ASMA.
Context Category (*) (0..1)	A group of one or more related values used to express a characteristic of a business circumstance. Eight context categories can be specified, such as Business Process, Product, Industry, Region (Geopolitical), Official Constraint,
Examples (0..1)	Examples can be specified.
Short Name (0..1)	A Short Name can be specified in the simplified form of Dictionary Entry Name for a better understanding of information entities.

440

441 **5.5.2 Publication format for Document Centric message**

442 Message assembly for Document Centric (DC) message requires to define MA (Message
443 Assembly) with constructed ASMAs (Association Message Assembly) and all the MABIEs which
444 are specified with required ASMBIEs and MBBIEs.

445 Those MA, ASMAs, MABIEs, ASMBIEs and MBBIEs are specified in the root schema module
446 and/or the internal schema module for the XML message schema.

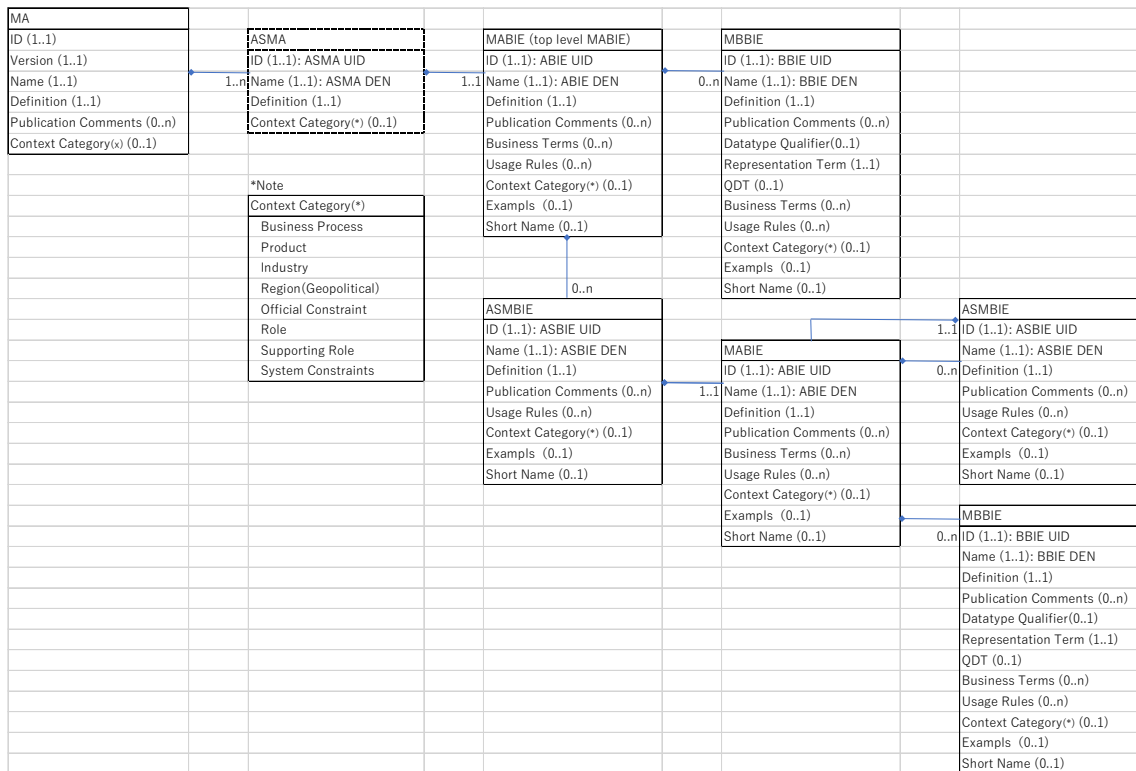
447

448 The DC MA may be published by the specific domain group which is recommended to be one of
449 code list responsible agencies registered in UNCL3035 code list.

450

451 The DC MA may be published in a spread sheet form equivalent the following class diagram.

452



453
454
455
456
457

MA (Message Assembly)

MA is associating more than one ASMA.

ID (1..1)	The identifier of MA, such as UN standard message name qualified by the specific domain group identifier.
Version (1..1)	The version identifier, such as Year plus release number.
Name (1..1)	DC message name which may specified accordance with the naming rule of MA for DC message (Refer 5.1 Guidelines for identification MA).
Definition (1..1)	The definition of the MA.
Publication Comments (0..n)	Any comments for publication of the MA.
Context Category (*) (0..1)	A group of one or more related values used to express a characteristic of a business circumstance. Eight context categories can be specified, such as Business Process, Product, Industry, Region (Geopolitical), Official Constraint.

458
459

ASMA (Association Message Assembly)

460 ASMA is an association, without any metadata. Therefore, the ASMA Class in the class
 461 diagram is displayed with dotted line.
 462 ASMA is an association of the MA with the top level MABIE without a property. For the
 463 publication, it can be specified the top level MABIEs for the MA, instead of specifying the
 464 ASMA independently.
 465 ASMA is followed by one and only one MABIE (the top level MABIE).
 466

ID (1..1)	The identifier of ASMA which is assigned by the specific domain group. It may be the UN Identifier (UNID) of the ABIE underlining the MABIE directly associated.
Name (1..1)	The dictionary entry name (DEN) of the ASMA consists of the name of MA, followed by a dot, a space character and the name of associating MABIE (the top level MABIE).
Definition (1..1)	To specify the definition of the ASMA. The definition of the ASMA may be the same definition of the MABIE associated by the ASMA.
Context Category (*) (0..1)	A group of one or more related values used to express a characteristic of a business circumstance. Eight context categories can be specified, such as Business Process, Product, Industry, Region (Geopolitical), Official Constraint,

467
 468 MABIE (Message Aggregate Business Information Entity)
 469 ASMA is associating the top level MABIE.
 470 MABIE has zero or many MBBIEs as it's property and is associating zero or many MABIEs
 471 through the related ASMBIEs.
 472 All the MABIEs, ASMABIEs and MBBIEs should be defined in the specification of the DC
 473 MA.
 474

ID (1..1)	The identifier of MABIE is the UN identifier (UNID) of the ABIE underlining the MABIE.
Name (1..1)	The dictionary entry name (DEN) of the ABIE underlining the MABIE.

Definition (1..1)	The definition of the ABIE underlining the MABIE.
Publication Comments (0..n)	Any comments for publication of the MABIE addition to the comments specified for the ABIE underlining the MABIE.
Business Terms (0..n)	Any business terms commonly used for day-to-day information exchange within this MA for the MABIE addition to the business terms specified for the ABIE underlining the MABIE.
Usage Rules (0..n)	Any constraints that describe specific conditions applicable for the MABIE addition to the usage rules specified for the ABIE underlining the MABIE.
Context Category (*) (0..1)	A group of one or more related values used to express a characteristic of a business circumstance. Eight context categories can be specified, such as Business Process, Product, Industry, Region (Geopolitical), Official Constraint.
Examples (0..1)	Examples can be specified.
Short Name (0..1)	A Short Name can be specified in the simplified form of Dictionary Entry Name for a better understanding of information entities.

475

476 ASMBIE (Association Message Business Information Entity)

477

ID (1..1)	The identifier of ASMBIE which is the UN Identifier (UNID) of the ASBIE underlining the ASMBIE.
Name (1..1)	The dictionary entry name (DEN) of the ASBIE underlining the ASMBIE.
Definition (1..1)	The definition of the ASBIE underlining the ASMBIE.
Publication Comments (0..n)	Any comments for publication of the ASMBIE addition to the comments specified for the ASBIE underlining the ASMBIE.
Usage Rules (0..n)	Any constraints that describe specific conditions applicable for the ASMBIE addition to the constraints specified for the ASBIE underlining the ASMBIE.
Context Category (*) (0..1)	A group of one or more related values used to express a characteristic of a business circumstance.

	Eight context categories can be specified, such as Business Process, Product, Industry, Region (Geopolitical), Official Constraint.
Examples (0..1)	Examples can be specified.
Short Name (0..1)	A Short Name can be specified in the simplified form of Dictionary Entry Name for a better understanding of information entities.

478

479 MBBIE (Message Basic Business Information Entity)

480

ID (1..1)	The identifier of MBBIE which is the UN Identifier (UNID) of the BBIE underlining the MBBIE.
Name (1..1)	The dictionary entry name (DEN) of the BBIE underlining the MBBIE.
Definition (1..1)	The definition of the BBIE underlining the MBBIE.
Publication Comments (0..n)	Any comments for publication of the MBBIE addition to the comments specified for the BBIE underlining the MBBIE.
Datatype Qualifier (0..1)	The datatype qualifier of MBBIE should be the same as specified for the BBIE underlining the MBBIE.
Representation Term (1..1)	The representation of MBBIE should be the same as specified for the BBIE underlining the MBBIE.
QDT (0..1)	The qualified datatype (QDT) of MBBIE should be the same as specified for the BBIE underlining the MBBIE.
Business Terms (0..n)	Any business terms commonly used for day-to-day information exchange within this MA for the MBBIE addition to the business terms specified for the BBIE underlining the MBBIE.
Usage Rules (0..n)	Any constraints that describe specific conditions applicable for the MBBIE addition to the usage rules specified for the BBIE underlining the MBBIE. The restriction of supplementary component for QDT and UDT can be specified in the Usage Rule.
Context Category (*) (0..1)	A group of one or more related values used to express a characteristic of a business circumstance. Eight context categories can be specified, such as

	Business Process, Product, Industry, Region (Geopolitical), Official Constraint.
Examples (0..1)	Examples can be specified.
Short Name (0..1)	A Short Name can be specified in the simplified form of Dictionary Entry Name for a better understanding of information entities.

481

482 **5.5.3 Streamlined presentation for Reference Data Model based messages**

483 The “Streamlined presentation of UN/CEFACT standards”² contains next to the UN/EDIFACT
484 messages a list of messages standards either based on a Reference Data Model, such as SCRDM
485 or MMT RDM, and based on the Message BIEs of the CCL, such as for Accounting and Audit.
486 The message schemas published on this based follow the rules of CCBDA described in this
487 document.

488

489 **5.6 RSM for CCBDA**

490 The document template guidelines of Requirement Specification Mapping (RSM) for Core
491 Component Business Document Assembly (CCBDA) is edited with reference to Requirement
492 Specification Mapping (RSM) Template Guide Version 2.0.

493

494 The document template guidelines of Requirement Specification Mapping (RSM) for Core
495 Component Business Document Assembly (CCBDA) is posted in Annex 2.

496

497 **5.7 Facets for MBIEs**

498 CCBDA[R26] If an MBIE contains any constraints then each constraint must contain one or
499 more of the following:

500

- the text of the constraint
- a reference identifier to a constraint defined in an external list of constraints if applicable
- a code defining the type of the constraint condition
- in the case of structured constraints, a code indicating the constraint language in which
504 the constraint is expressed

505

CCBDA[R27] An unstructured constraint shall have or refer to a free form text expression
506 that fully details the business requirements that it is addressing.

507

CCBDA[R28] A structured constraint shall have or refer to a formal constraint language
508 expression.

² <http://www.unece.org/uncefact/mainstandards.html>

509

510 **5.8 Assisting semantic interoperability**

511 There are several facets supporting to understand the meaning of the BIE in UN/CEFACT CCL, such
512 as Business Terms, Usage Rules and Context Categories. Those facts may be useful for designing a
513 message.

514 In addition to those CCL facets, 2 more facets are introduced in this guideline, Short Name and
515 Business Name.

516 **5.8.1 Business Terms**

517 *Business Information Entity Business Terms* are those terms that are commonly used for day-to-
518 day information exchanges within a given domain. As such, no specific naming rules apply to
519 *Business Terms*. Interoperability of *Business Terms* will be given by linking them to the formalized
520 names of the corresponding *Business Information Entity* dictionary entries.

521 Business Terms are specified on the level of the CCL. Industry domain groups can specify their
522 business terms on the level of the BIE and even on a lower level, the MBIE.

523 **5.8.2 Usage Rule**

524 A constraint that describes specific conditions that are applicable to the *Business Information*
525 *Entity*.

- 526 • Usage rule for BIE
- 527 • Usage rule for Qdt
- 528 • Usage rule for Constraint

529 The facets for MBIEs described in Section 5.7 can be specified in Usage Rule.

530

531 **5.8.3 Context Category**

532 A group of one or more related values used to express a characteristic of a business circumstance.

- 533 • *Business Process Context*
- 534 • *Product Classification Context*
- 535 • *Industry Classification*
- 536 • *Geopolitical Context*
- 537 • *Official Constraints Context*
- 538 • *Business Process Role Context*
- 539 • *Supporting Role Context*
- 540 • *System Capabilities Context*

541

542 **5.8.4 Short Name**

543 For a better understanding of information entities, the Short Name is introduced by UN/CEFACT
544 Library Maintenance group.

545 The short name is a user-friendly name for the dictionary entry name. It skips the use of dots or
546 underscores, object class name (the latter in case of a basic or association component). Besides,
547 abbreviations are used as much as possible in a short name (e.g. “Project_ Document.
548 Identification. Identifier” is shortened just by “ID”).

549 The data type is included in the short name if needed, for example when a basic component is
550 represented by multiply data types (e.g. “Project_ Note. Content. Text” will be shortened by
551 “Context Text” and “Project_ Note. Content. Code” will be shortened by “Content Code”).

552 The “Business Name” is a domain specific, contextualized short name given to a business
553 information entity (e.g. “Road Consignment” given for “Supply_ Chain Consignment”). The
554 business name is used within the RDM approach and can be used on different levels, such as
555 RDM Reference BIEs, the Reference BIEs used in the Master Data Exchange Structure or those
556 used in the Business Data Exchange Structure.

557 The short name can be regarded as a CCTS annotation.

558 **5.8.5 Business Name**

559 The “Business Name” is a domain specific, contextualized short name given to a business
560 information entity (for example “Road Consignment” used as business name “Supply_ Chain
561 Consignment” in a Road Consignment Message. The business name is used within the Reference
562 Data Model, but could also be used within the Document Centric approach. The business name
563 can be regarded as a new CCTS annotation.

564

<p>Note: The “Business Name” is not the same as the “Business Term”. The latter is a synonym and is being assigned at the lowest level of creation, the Reference BIE library within the Core Component Library (CCL). A business term is therefore process independent, whereas a business name is being used within a particular process, industry, user community etcetera.</p>
--

565

566

567

568

569 **6. Definition of Terms**

570 ***Business Data Exchange Structures***

571 A collection of information used within a particular business process, structured in such a way
572 that it covers the business data exchange needs (a.k.a. the “*Message Body*”). These structures can
573 be a complete business document, such as an invoice or a mini document (snippet) as a result of
574 a query e.g. on master data.

575 ***Business Name***

576 The “Business Name” is a domain specific, contextualized short name given to a business
577 information entity (e.g. “Road Consignment” given for “Supply_ Chain Consignment”). The
578 business name is used within the RDM approach and can be used on different levels, such as
579 RDM Reference BIEs, the Reference BIEs used in the Master Data Exchange Structure or those
580 used in the Business Data Exchange Structure.

581 ***Domain Master Data Exchange Structure***

582 A collection of information structured and contextualized in such a way that it covers the data
583 exchange structure(s) required by users within a domain or sub-domain, such as Supply Chain.
584 From the Domain Master Data Exchange Structure, one or more Business Data Exchange
585 Structures can be derived. The context as expressed "scopes" the domain. Industry domain groups
586 and other users can further restrict this “Master Data Exchange Structure” to their needs.

587 ***Domain Reference Business Information Entity (BIE)***

588 A “Domain Reference Business Information Entity” which is represented by a contextualized
589 ABIE or BBIE or ASBIE represents the business information needs within a particular domain
590 (such as Supply Chain or Transport & Logistics) or sub-domain. A collection of Domain
591 Reference BIEs is also known as an RDM or Context CCL. The context as expressed "scopes"
592 the domain. Industry domain groups and other users can further restrict this subset and
593 derived messages using CCBDA rules.

594 ***Message Assembly (MA)***

595 The body of a (business) message represented as an aggregation of different Aggregate Business
596 Information Entities (ABIE) structured in such a way that it covers the needs of users. MAs may
597 be based on more generic MAs. The result of a MA is a.k.a. message body or business data
598 exchange structure. The used ABIEs can be of type domain specific Reference BIEs (RDM
599 approach) or Message (Reference) BIEs (DC Approach).

600 ***Reference Data Model***

601 A collection of Reference Business Information Entities (Reference BIEs) representing the
602 business information needs within a particular domain or sub-domain. This collection is also
603 known as a “Context CCL” or “Contextualized subset of the CCL”.

604 ***Short Name***

605 A short name represents a brief version of a Dictionary Entry Name (DEN) as published in the
606 Core Component Library.

607

608

609 **Annex 1. Review of CCBDA Version 1.0**

610 1. Figure 4-2 (page 10)

611 ➤ The BDH is not clearly specified as mandatory in the text of the specification. Therefore
612 the cardinality of BDH in Figure 4-2 may be changed (1..1) to (0..1).

613 2. R16 (page 14)

614 ➤ There are 2 rules in R16. It leads some confusion between “cardinality of a supplementary
615 component and “number of supplementary components”.

616 3. Figure 5-1 (page 15)

617 ➤ There are no definition of <abstract>Message Property of Message Assembly in the text
618 of the specification. Remove the association between Message Assembly and Message
619 Property in Figure 5-1.

620 4. R20 (page 16)

621 ➤ The rule says that “inherits its name and definition”. Dose “name” mean “Dictionary
622 Entry Name” or other names, such as Short name or Business term?

623 5. R24 (page 16)

624 ➤ Add another rule for R24: Sequencing the properties of MABIE should keep the order of
625 the properties of the derived ABIE.

626 6. Constraints (page 17)

627 ➤ Line 389: Document Assembly should be Message Assembly.

628 But there are no rules for MA constraints (It should be defined in Figure5-1).

629

630

631 **Annex 2. Requirement Specification Mapping (RSM) for Core**

632 **Component Business Document Assembly (CCBDA)**

633 **Document Template**

634

635

636

637

638

639

640

641

642

REQUIREMENTS SPECIFICATION MAPPING

643

For Core Component Business Document Assembly

644

(RSM for CCBDA)

645

646

Documentation Template Guidelines

647

648

649

650

651

652

653

654

Version: 1.0

655

656

657

Release: 1.0

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686

687

688 **1 Introduction**

689 Requirement Specification Mapping (RSM) Document Template Guidelines Version 2.0 has
690 been published in 2012. This template is prepared for guiding to specify RSM for Core
691 Component Business Document Assembly (CCBDA) based on RSM Document Template
692 Guidelines Version 2.0.

693 This template excludes the topics related to update Core Component Libraries and the topics
694 of using code list. If the designated business document assembly requires adding the new Core
695 Components (CCs), the new Business Information Entities (BIEs) for underlining the
696 Message Business Information Entities (MBIEs) and/or changing CCs, BIEs for underlining
697 MBIEs, RSM Document Template Guidelines Version 2.0 can be referenced. Using code list,
698 RSM Document Template Guidelines Version 2.0 and Code Management User Guide
699 Version 1 can be referenced.

700 1.1 Audience

701 The main audiences for this document are the potential authors of individual RSM for
702 CCBDA. These are primarily the UN/CEFACT business and IT experts who are responsible
703 for specifying the business requirements for e-business solutions in a specific domain and for
704 furthering the development of solutions compliant to the relevant standards. Authors may
705 include other standards bodies or users and developers in developed or developing economies.
706

707 1.2 Reference Documents

708 Knowledge and application of the following standards is crucial to the development of quality
709 business requirements specifications. Other key references are shown in the appropriate part
710 of the document.

711

712 UN/CEFACT. Techniques and Methodologies Group (TMG). UN/CEFACT's
713 Modelling Methodology (UMM): UMM Meta Model Core Module. (Candidate for
714 2.0). 2009-01-30.

715

716 UN/CEFACT Techniques and Methodologies Group (TMG) UN/CEFACT's
717 Modelling Methodology (UMM): UMM Meta Model Foundation Module
718 (Candidate for 2.0) 2009-01-30.

719

720 Formal definitions of many of the technical terms used in this RSM for CCBDA guideline may

721 be found in the above references but for convenience some key definitions are included in
722 Annex 1 of this document.

723

724 UN/CEFACT Core Components Technical Specification – Part 8 of the ebXML
725 Framework dated 15 November 2003 Version 2.01 - (CCTS 2.01)

726 UN/CEFACT – Core Component Technical Specification *Technical Corrigendum*
727 Version 2.01 (Corr. 1) dated 12 February 2007 (CCTS 2.01 Corr.1)

728 UN/CEFACT Core Components Data Type Catalogue Version 2.1 dated 2008-04-
729 08 (CCDTC 2.1)

730 UN/CEFACT XML Naming and Design Rules Version 2.0, dated 17 February 2006
731 (NDR 2)

732 UN/CEFACT UML Profile for Core Components (UPCC), Version 1.0, Final
733 Specification, 2008-01-16

734 UN/CEFACT UML Profile for Core Components (UPCC), Version 3.0

735 UN/CEFACT Requirement Specification Mapping (RSM) Document Template
736 Guidelines Version 2.0, dated May 2012

737 UN/CEFACT Code Management User Guide Version 1, dated 2017

738

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

741

742 The following Technical Specifications are at the time of the writing of this document not
743 finalized, but are all highly relevant to the contents of this document and are referred to herein.

744

745 UN/CEFACT Context Methodology

746

747 UN/CEFACT XML For CCTS

748

749

750

751 2 Template Guidelines

752 The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD,
753 SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL, when they appear in this
754 guideline, are to be interpreted as described in Internet Engineering Task Force (IETF)
755 Request For Comments (RFC) 2119.1

756

757 Throughout this document the term ‘core component’ includes Core Component (CC),
758 Business Information Entity (BIE) and Data Type (DT) – see Definition of Terms.

759 2.1 Document History

760 A document history SHOULD be provided and SHOULD detail all the changes that have
761 been applied with each new version/release of an RSM for CCBDA. The history SHOULD
762 provide the following information:

- 763 • Date last modified
- 764 • Phase
- 765 • Status

766

767 **Table 1: Example Document History**

768

Phase	Status	Date Last Modified

769

770 2.2 Change Log

771 A change log SHOULD be provided and SHOULD detail all the changes that have been
772 applied with each new version/release of an RSM for CCBDA. The log SHOULD provide the
773 following information:

- 774 • Date of change
- 775 • Version
- 776 • Paragraphs affected
- 777 • Summary of the change
- 778 • Author

780 **Table 2: Example Change Log**

781

Date of Change	Version	Paragraph Changed	Summary of Changes	Author

782

783 2.3 Purpose and Scope

784 The RSM for CCBDA SHOULD identify the scope:

- 785 ➤ Messages and message models
- 786 ➤ Models covering common data elements used across different messages
- 787 ➤ Reference models

788 and identify where this project fits in to the wider business domain.

789 In the case of projects in the International Supply Chain, the RSM for CCBDA SHOULD be
 790 positioned with respect to the international supply chain reference model (BUY-SHIP-PAY
 791 process model).

792 In other domains, reference MAY be made to industry or sector models.

793 2.4 Target Solution

794 The RSM for CCBDA SHOULD state the technical (syntax) solution(s) resulting from this
 795 specification, for example XML, EDIFACT or both.

796

797 The transformation from this RSM for CCBDA into the target solutions will be defined by
 798 the relevant naming and design rules (e.g. UN/CEFACT XML Naming and Design Rules).

799

800 In some cases, the deliverables specified within this RSM for CCBDA may only be additions
 801 to the Core Component Library. Messages might not be defined in this RSM for CCBDA but
 802 might be defined by other organisations.

803 2.5 Business Requirements Summary

804 The functional requirements of a collaborative business project are documented in a Business
 805 Requirements Specification (BRS) that specifies the Business processes and the business data
 806 that is to be exchanged. The BRS provides the input to a Requirements Specification
 807 Mapping (RSM) for CCBDA.

808

809 Business requirement details, including all the UMM artefacts, SHOULD be found in the
810 project related BRS or MAY be found in other referenced documents. The following tables
811 and diagrams SHOULD be provided to summarise the key requirements.
812

813

814 **3 Business Processes, Information Envelopes and Authorised Roles**

815

816 **Table 3: Example Business Process Table**

817

818 **Business Process Name:** Tendering

819

Information Envelope Name	UMM Business Transaction Name	Authorised Role Requester Name	Authorised Role Responder Name	Collaboration Requirements Name	Collaboration Realisation Name
Invitation to Tender	Issue Invitation To Tender	Invitation to Tender Requester	Invitation To Tender Receiver	Tendering	Tendering
Tender	Submit Tender	Tender Provider	Tender Receiver		
Receipt Notice		Tender Receiver	Tender Provider		
Tender Response	Respond To Tender	Tender Responder	Response Receiver		

820 **4 Business Partner Types and Authorised Roles**

821

822 **Table 4: Example Collaboration Realization Table**

823

824 **Collaboration Realisation Name:** Tendering

825

Authorised Role Name	Business Partner Type Name
Invitation To Tender Requester	Procuring Organisation
Invitation To Tender Receiver	Tendering Organisation
Tender Provider	Tendering Organisation
Tender Receiver	Procuring Organisation

Tender Responder	Procuring Organisation
Response Receiver	Tendering Organisation

826

827

828 **5 Conceptual Model**

829 A conceptual model identifies, in business terms, the main Entity Classes and their attributes
830 for each of the Business Entities that are referred to in the information exchange(s) that occur
831 in the Domain. It MUST be shown in the form of a class diagram OR be documented in
832 tabular form.

833

834 *Example-Conceptual Model for Invoice Business Entity*

835

836

837 **Table 5: Example Entities and Attributes Table**

838

839 **Entities and Attributes Table: INVOICE**

840

Entity Class Name	Attribute Name	Attribute Description	Attribute Type e.g. Text, Number, Date
Invoice	Invoice Number	The identifying number of the invoice.	Identifier

	Invoice Date	The date the invoice was issued.	Date Time
	Order Reference	A reference to the original order.	Text
Line Item	Line Item Number	The identifying number of the line item.	Identifier
Product	Product id	The identifier of the product.	Identifier
	Product Name	The name of the product.	Text
	Country of Origin	The country where the product originated.	Identifier
Etc			

841

842 5.1 Information Mapping

843 **5.1.1.1 Referenced CCL**

844 When mapping the information requirements outlined in the BRS, modellers should review
845 the latest CCL and re-use core components where these are available. If, after examination of
846 the latest CCL, the modeller requires additions or changes to the CCL. During the
847 harmonization process the change requests will be considered against the whole CCL and may
848 lead to suggestions for the re-use or modification of existing core components.

849 **5.1.1.2 Message Business Information Entity Model**

850 The Message Business Information Entity Model (shown in Diagram 4) is a canonical data
851 model that is a UMM compliant formalisation of the (conceptual) information model in the
852 BRS, using core components.

853

854 The canonical data model will be used as the basis for the transformation into the required
855 technology solution. It will be depicted in the RSM for CCBDA documentation in two forms;
856 the pictorial form (UML class diagram) and as an associated model interchange file such as
857 an XML Metadata Interchange (XMI) format.

858

859 The canonical data model contains all the business information requirements found in the
860 conceptual data model class diagram as a result of the transformation of these requirements
861 into existing and if needed, candidate Message Business Information Entities (MABIEs,

862 MBBIEs, ASMBIEs).

863

864 **5.1.1.3 New and Changed Components**

865 Information about the new and changed components (Aggregate Business Information
866 Entities, Basic Business Information Entities and Association Business Information Entities)
867 SHOULD be identified here. The relationship between the proposed Business Information
868 Entities (BIEs) and the information requirements identified in the Business Requirements
869 Summary of the RSM for CCBDA SHOULD be highlighted.

870

871 Message Business Information Entity (MBIE) specified in the RSM for CCBDA SHOULD
872 be compliant to the underlining BIE in the latest version of Core Component Library (CCL)
873 accordance with the rules specified in Core Component Business Document Assembly
874 (CCBDA).

875

876 **5.1.1.4 New and Changed Data Types**

877 Information on the new and changed Qualified Data Types (UN/CEFACT Technical
878 Specifications Version 2) SHOULD be identified here. The relationship between the
879 proposed data types and any data type requirements identified in the Business Requirements
880 Summary of the RSM for CCBDA SHOULD be highlighted.

881

882 **5.1.1.5 Presentation**

883 Each RSM for CCBDA SHOULD contain one or more diagrams detailing the Message
884 Business Information Entities (MBIEs) identified as part of the solution. While a single
885 diagram detailing all of the MBIEs may be desirable, it is recognized that in many cases a
886 single diagram may be unreadable due to the number of Message Aggregate Business
887 Information Entities (MABIEs) and the associations between them. In such cases, it is
888 advisable to provide multiple diagrams, broken down in a logical fashion. One way of
889 organizing the diagrams can be around the messages. Modellers SHOULD ensure that the
890 diagrams are organized to provide complete coverage of the entities that are part of the
891 solution.

892

893 Information about the content models of the Message Business Information Entities (MBIEs)
894 of which the underlining BIEs are the new and changed business information entity
895 components SHOULD be presented in the form of Class Diagrams showing at least the

896 Message Aggregate Business Information Entity (MABIE), and its properties (Message Basic
897 Business Information Entities (MBBIEs) and its Association Message Business Information
898 Entities (ASMBIEs)), and relevant cardinalities.

899

900 In respect of UN/CEFACT projects the class diagrams SHOULD where possible follow the
901 conventions described in the UML Profile for Core Components (UPCC) Technical
902 Specification Version 1.0. The number of components shown on a diagram and the size of the
903 class diagrams is at the discretion of the author of the RSM for CCBDA. Good modelling
904 practice should be adopted.

905

906 The class diagrams SHOULD only show the relationship between Message Business
907 Information Entities (MBIEs). A detailed definition of each of the MBIEs is the same as the
908 definition of the underlining Business Information Entity (BIE) provided in CCL. If necessary,
909 some explanatory texts can be added to the definition of the underlining BIE in the class
910 diagram.

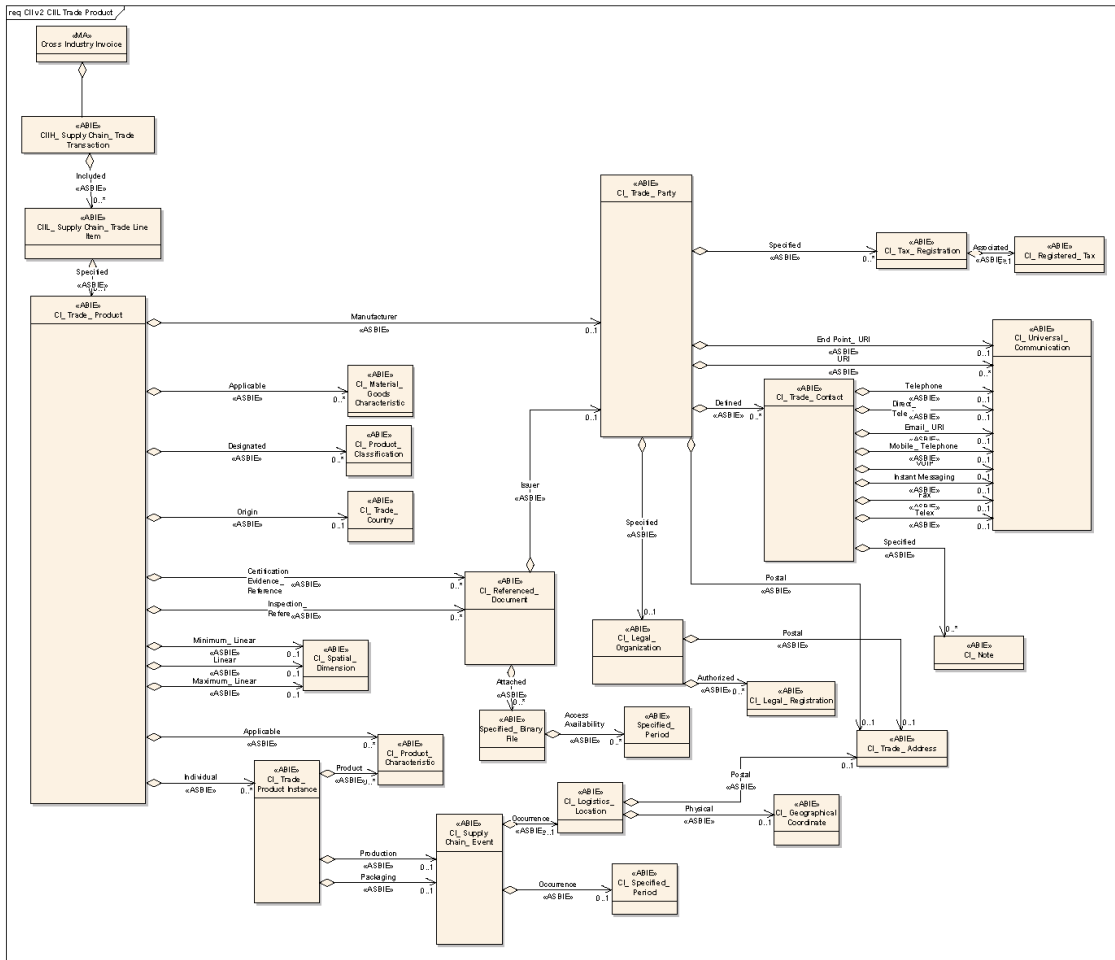
911

912 **5.1.1.6 Examples**

913 In the diagrams, Message Aggregate Business Entity (MABIE), Message Basic Business
914 Entity (MBBIE) and Association Message Business Entity (ASMBIE) are presented as
915 Aggregate Business Entity (ABIE), Basic Business Entity (BBIE) and Association Business
916 Entity (ASBIE).

917 **Diagram 1: Example MABIE Diagram**

918



919

920

Occurrence	Element/Attribute	
	ABIE	CI_Trade_Product. Details
0 .. 1	BBIE	CI_Trade_Product. Identification. Identifier
0 .. 1	BBIE	CI_Trade_Product. Global_ Identification. Identifier
0 .. 1	BBIE	CI_Trade_Product. Seller Assigned_ Identification. Identifier
0 .. 1	BBIE	CI_Trade_Product. Buyer Assigned_ Identification. Identifier
0 .. 1	BBIE	CI_Trade_Product. Manufacturer Assigned_ Identification. Identifier
0 .. unbounded	BBIE	CI_Trade_Product. Name. Text
0 .. 1	BBIE	CI_Trade_Product. Trade_ Name. Text
0 .. 1	BBIE	CI_Trade_Product. Description. Text
0 .. 1	BBIE	CI_Trade_Product. Type. Code
0 .. 1	BBIE	CI_Trade_Product. Net Weight. Measure
0 .. 1	BBIE	CI_Trade_Product. Gross Weight. Measure
0 .. 1	BBIE	CI_Trade_Product. Drained_ Net Weight. Measure
0 .. 1	BBIE	CI_Trade_Product. Brand_ Name. Text
0 .. 1	BBIE	CI_Trade_Product. Sub-Brand_ Name. Text
0 .. unbounded	BBIE	CI_Trade_Product. Product Group. Identifier
0 .. 1	BBIE	CI_Trade_Product. Area Density. Measure
	Definition:	The measure of the area density, such as paper density in grams per square metre (gsm), of
0 .. 1	BBIE	CI_Trade_Product. Colour. Code
0 .. unbounded	BBIE	CI_Trade_Product. Colour_ Description. Text
0 .. unbounded	BBIE	CI_Trade_Product. Use_ Description. Text
0 .. unbounded	BBIE	CI_Trade_Product. Designation. Text
0 .. unbounded	BBIE	CI_Trade_Product. End Item_ Name. Text
0 .. 1	BBIE	CI_Trade_Product. Latest_ Product Data Change. Date Time
	Definition:	The date, time, date time, or other date time value of the latest change in the product data for
0 .. unbounded	BBIE	CI_Trade_Product. End Item_ Type. Code
0 .. 1	BBIE	CI_Trade_Product. Variable Measure. Indicator
	Definition:	The indication of whether or not instances of this CI trade product have a variable measure.
0 .. unbounded	ASBIE	CI_Trade_Product. Applicable. CI_Product_ Characteristic
0 .. unbounded	ASBIE	CI_Trade_Product. Applicable. CI_Material_ Goods Characteristic
0 .. unbounded	ASBIE	CI_Trade_Product. Designated. CI_Product_ Classification
0 .. unbounded	ASBIE	CI_Trade_Product. Individual. CI_Trade_Product Instance

0 .. unbounded	ASBIE	CI_Trade_Product. Certification Evidence_ Reference. CI_Referenced_ Document
0 .. unbounded	ASBIE	CI_Trade_Product. Inspection_ Reference. CI_Referenced_ Document

Occurrence	Element/Attribute
0 .. 1	ASBIE CI_Trade_Product. Origin. CI_Trade_Country
0 .. 1	ASBIE CI_Trade_Product. Linear. CI_Spatial_Dimension
0 .. 1	ASBIE CI_Trade_Product. Minimum_Linear. CI_Spatial_Dimension
0 .. 1	ASBIE CI_Trade_Product. Maximum_Linear. CI_Spatial_Dimension
0 .. 1	ASBIE CI_Trade_Product. Manufacturer. CI_Trade_Party
0 .. 1	ASBIE CI_Trade_Product. MSDS_Reference. CI_Referenced_Document
0 .. unbounded	ASBIE CI_Trade_Product. Additional_Reference. CI_Referenced_Document
0 .. unbounded	ASBIE CI_Trade_Product. Information. CI_Note
0 .. 1	ASBIE CI_Trade_Product. Brand Owner. CI_Trade_Party
0 .. 1	ASBIE CI_Trade_Product. Legal Rights Owner. CI_Trade_Party
0 .. unbounded	ASBIE CI_Trade_Product. Presentation. Specified_Binary File

921

922 5.2 Logical Message Structure

923 An RSM for CCBDA can contain the definitions of one or more message structures. For each
924 message structure there SHOULD be a message assembly definition. An RSM for CCBDA
925 MUST only contain messages that share the same context.

926 6 Message Assembly³

927 The purpose of this section of the RSM for CCBDA is to describe the content or business
928 information payload of each message by showing the top level MABIEs that connect to the
929 root of the message.

930

931 If messages are a required deliverable of this RSM for CCBDA then this section SHOULD
932 contain a simple diagram for each message showing the root of the message assembly and
933 associations to the 'first level ABIEs'. However these diagrams MAY show the whole message
934 but in this case the root of the messages MUST be clear.

935

936 A table SHOULD be included that shows how the Information Envelopes identified in the
937 BRS are realised by the Message Assemblies (MA) defined in this section.

³ This section of the guidelines will be subject to change after publication of the Core Component Document Assembly Technical Specification.

938

939 A Message Assembly table MUST be provided as an Appendix to the RSM for CCBDA so
940 that syntax specific messages can be constructed.

941

942 Message Assemblies SHOULD be shown in a diagrammatical form (UML Class Diagram or
943 equivalent) in addition to a Message Assembly table.

944

945 If a class diagram is provided then the following rules apply.

946

947 • If only the top level MABIEs are shown in Message Assembly (MA) diagrams then
948 child MABIEs SHOULD be shown in the Business Information Entity Diagrams in
949 the next section.

950

951 • The MA diagrams MUST show a single MA (stereotyped UML class or equivalent)
952 that represents the message.

953

954 • The MA diagrams MUST show the cardinality of the associations (ASMAs) between
955 the MA (stereotyped UML class or equivalent) and the top level MABIE classes.

956

The Property Terms on the ASMAs MUST be shown if used.

957 **7 Message Business Information Entities Used**

958 This section SHOULD provide a complete listing of MABIEs required for all the messages
959 defined in this RSM for CCBDA showing the MABIEs, Properties and Associations, their
960 Dictionary Entry Names and cardinalities. It is a summary of the structure only. Full
961 definitions SHOULD either be contained in the Core Component Library Submission (for
962 new or changed components) or in the existing Core Component Library. Changed/New BIEs
963 underlining MBIEs SHOULD be highlighted in the listing.

964

965 This section MAY include diagrams to show the complete message structure but alternatively
966 a message model MAY be provided with a viewer or HTML output.

967

968 **Table 6 Message Assembly Realization Table**

969

BRS «InformationEnvelope» Name	RSM «MA» Name
Invoice	Cross Industry Invoice

--	--

970

971

972 7.1 Message Library Update

973 **8 Message Assembly Submission**

974 Messages SHOULD be provided in accordance with the Core Component Business
975 Document Assembly (CCBDA) specification. Refer to that document for examples.

976 8.1 Definition of Terms

977 Any terms used within the RSM that may be ambiguous or may have specific sector or usage
978 meanings SHOULD be defined in this section in order to ensure clarity during the
979 development of each technological solution.

980

Source: OMG (Object Management Group) UML Specification (refer http://www.omg.org)	
Association:	The semantic relationship between two or more classifiers that specifies connections among their instances. An association may represent <i>an aggregation</i> (i.e., a whole/part relationship). In this case, the association-end attached to the whole element is designated, and the other association-end of the association represents the parts of the aggregation. <i>Composite aggregation</i> is a strong form of aggregation, which requires that a part instance be included in at most one composite at a time and that the composite object has sole responsibility for the disposition of its parts. This means that the composite object is responsible for the creation and destruction of the parts. If a composite object is destroyed, it must destroy all of its parts. It may remove a part and give it to another composite object, which then assumes responsibility for it.
Cardinality:	The number of elements in a set.
Class diagram:	A class diagram shows the static structure of the information model, in particular, the things that exist, their internal structure, and their relationships to other things. A class diagram does not show temporal information. It is a diagram that shows a collection of declarative (static) model elements, such as classes, types, and their contents and relationships.
Class:	A description of a set of objects that share the same attributes, operations, methods, relationships, and semantics.
Constraint:	A semantic condition or restriction.
Datatype:	A descriptor of a set of values that lack identity and whose operations do not have side effects. Datatypes include primitive pre-defined types and user-definable types. Predefined types include numbers, string and time. User definable types include enumerations.
Enumeration:	A list of named values used as the range of a particular attribute type. For example, RGBColor = {red, green, blue}.
Generalization:	A taxonomic relationship between a more general element and a more specific element. The more specific element is fully consistent with the more general element (it has all of its properties, members, and relationships) and may contain additional information.

Source: OMG (Object Management Group) UML Specification (refer http://www.omg.org)	
Multiplicity:	A specification of the range of allowable cardinalities that a set may assume. Multiplicity specifications may be given for roles within associations, parts within composites, repetitions, and other purposes. Essentially a multiplicity is a (possibly infinite) subset of the non-negative integers.
Relationship:	A semantic connection among model elements. Examples of relationships include associations and generalizations.
Role:	The named specific behaviour of an entity participating in a particular context.
Stereotype:	A type of modelling element that extends the semantics of the metamodel. Stereotypes must be based on certain existing types or classes in the metamodel. Stereotypes may extend the semantics, but not the structure of pre-existing types and classes.

983

984

Source: Core Components Technical Specification Version 2.01	
<i>Aggregate Business Information Entity</i> (ABIE)	A collection of related pieces of business information that together convey a distinct business meaning in a specific <i>Business Context</i> . Expressed in modelling terms, it is the representation of an <i>Object Class</i> , in a specific <i>Business Context</i> .
<i>Aggregate Core Component</i> (ACC)	A collection of related pieces of business information that together convey a distinct business meaning, independent of any specific <i>Business Context</i> . Expressed in modelling terms, it is the representation of an <i>Object Class</i> , independent of any specific <i>Business Context</i> .
<i>Association Business Information Entity</i> (ASBIE)	A <i>Business Information Entity</i> that represents a complex business characteristic of a specific <i>Object Class</i> in a specific <i>Business Context</i> . It has a unique <i>Business Semantic</i> definition. An <i>Association Business Information Entity</i> represents an <i>Association Business Information Entity Property</i> and is associated to an <i>Aggregate Business Information Entity</i> , which describes its structure. An <i>Association Business Information Entity</i> is derived from an <i>Association Core Component</i> .
<i>Association Core Component</i> (ASCC)	A <i>Core Component</i> which constitutes a complex business characteristic of a specific <i>Aggregate Core Component</i> that represents an <i>Object Class</i> . It has a unique <i>Business Semantic</i> definition. An <i>Association Core Component</i> represents an <i>Association Core Component Property</i> and is associated to an <i>Aggregate Core Component</i> , which describes its structure.
<i>Basic Business Information Entity</i> (BBIE)	A <i>Business Information Entity</i> that represents a singular business characteristic of a specific <i>Object Class</i> in a specific <i>Business Context</i> . It has a unique <i>Business Semantic</i> definition. A <i>Basic Business Information Entity</i> represents a <i>Basic Business Information Entity Property</i> and is therefore linked to a <i>Data Type</i> , which describes its values. A <i>Basic Business Information Entity</i> is derived from a <i>Basic Core Component</i> .
<i>Basic Core Component</i> (BCC)	A <i>Core Component</i> which constitutes a singular business characteristic of a specific <i>Aggregate Core Component</i> that represents an <i>Object Class</i> . It has a unique <i>Business Semantic</i> definition. A <i>Basic Core Component</i> represents a <i>Basic Core Component Property</i> and is therefore of a <i>Data Type</i> , which defines its set of values. <i>Basic Core Components</i> function as the <i>Properties</i> of <i>Aggregate Core Components</i> .
<i>Business Context</i>	The formal description of a specific business circumstance as identified by the values of a set of <i>Context Categories</i> , allowing different business circumstances to be uniquely distinguished.

Source: Core Components Technical Specification Version 2.01	
<i>Business Information Entity (BIE)</i>	A piece of business data or a group of pieces of business data with a unique <i>Business Semantic</i> definition. A <i>Business Information Entity</i> can be a <i>Basic Business Information Entity (BBIE)</i> , an <i>Association Business Information Entity (ASBIE)</i> , or an <i>Aggregate Business Information Entity (ABIE)</i> .
<i>Core Component (CC)</i>	A building block for the creation of a semantically correct and meaningful information exchange package. It contains only the information pieces necessary to describe a specific concept.
<i>Core Component Type (CCT)</i>	A <i>Core Component</i> , which consists of one and only one <i>Content Component</i> that carries the actual content plus one or more <i>Supplementary Components</i> giving an essential extra definition to the <i>Content Component</i> . <i>Core Component Types</i> do not have <i>Business Semantics</i> .
<i>Data Type</i>	Defines the set of valid values that can be used for a particular <i>Basic Core Component Property</i> or <i>Basic Business Information Entity Property</i> . It is defined by specifying restrictions on the <i>Core Component Type</i> that forms the basis of the <i>Data Type</i> .

985

Source: Core Components Technical Specification Version 3.0	
<i>Association Business Information Entity (ASBIE) Property</i>	An association business information entity property is a business information entity property for which the permissible values are expressed as a complex structure, represented by an aggregate business information entity.
<i>Association Core Component (ASCC) Property</i>	An association core component property is a core component property for which the permissible values are expressed as a complex structure, represented by an aggregate core component.
<i>Business Information Entity (BIE) Property</i>	A business information entity property is a business characteristic belonging to the Object Class in its specific business context that is represented by an aggregate business information entity.
<i>Basic Core Component (BCC) Property</i>	A basic core component property is a core component property for which the permissible values are expressed by simple values, represented by a data type.
<i>Business Data Type</i>	A business data type is a data type consisting of one and only one business data type content component that carries the actual content plus zero or more business data type supplementary components giving essential extra definition to the business data type content component. Business data types have business semantics.

