



Creating A Single Global Electronic Market

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Core Component Overview

Version 1.05

ebXML Core Components

10 May 2001

14 **1 Status of this Document**

15 This Technical Report document has been approved by the Core Component Project
16 Team and has been accepted by the ebXML Plenary.

17

18 This document contains information to guide in the interpretation or implementation of
19 ebXML concepts.

20

21 Distribution of this document is unlimited.

22

23 The document formatting is based on the Internet Society's Standard RFC format.

24

25 This version:

26 www.ebxml.org/specs/ccOVER.pdf

27

28 Latest version:

29 www.ebxml.org/specs/ccOVER.pdf

30

31 *Previous versions were entitled "Core Component and Business Process Overview"*

32 **2 ebXML participants**

33 We would like to recognize the following for their significant participation to the
34 development of this document.

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68 **4 Introduction**

69 Business partners collaborate to do business with each other by linking their operational
70 business processes. Business processes are linked by the exchange of business
71 information, in agreed sequences and within agreed timeframes, between business
72 partners.

73
74 The discovery of business processes builds a picture of requirements, identifying the
75 sequence, timing and purpose of each exchange. Detailed examination of the business
76 processes reveals the individual pieces of business information (entities) that need to be
77 exchanged and at what stage.

78
79 The discovery activity is conducted within each industry sector by specialists within that
80 sector. When the results of discovery are analysed across the different industries, a
81 pattern of common process and common information component requirements can be
82 detected.

83
84 The papers covered by this overview describe the activities of business information
85 discovery and analysis, and describe the concepts of re-using common components to
86 meet specific business needs.

87 **5 Background**

88 The objective of the ebXML Core Components Project Team is to define a process, by
89 which information components can be discovered, catalogued in sufficient detail and
90 analysed to identify which components are core components. The creation of such a
91 catalogue will enable interoperability across industries that utilize electronic commerce.
92

93 To achieve this goal it is necessary to recognize that:
94

- 95 • Many business processes are fundamental in that they are used in many, if not all,
96 industries. Procurement, Payment, and Shipping are examples of common
97 business processes.
98
- 99 • In many cases, detailed business information requirements, for example those
100 used when identifying a product, are the same, similar or analogous across
101 industries.
102
- 103 • Within the progression of a business process, for the same trading partners/trading
104 community, there is again significant commonality in the information
105 requirements. What is considered product, how it is identified and described, etc.,
106 remains consistent across the duration of that business process.

107 **6 Overview**

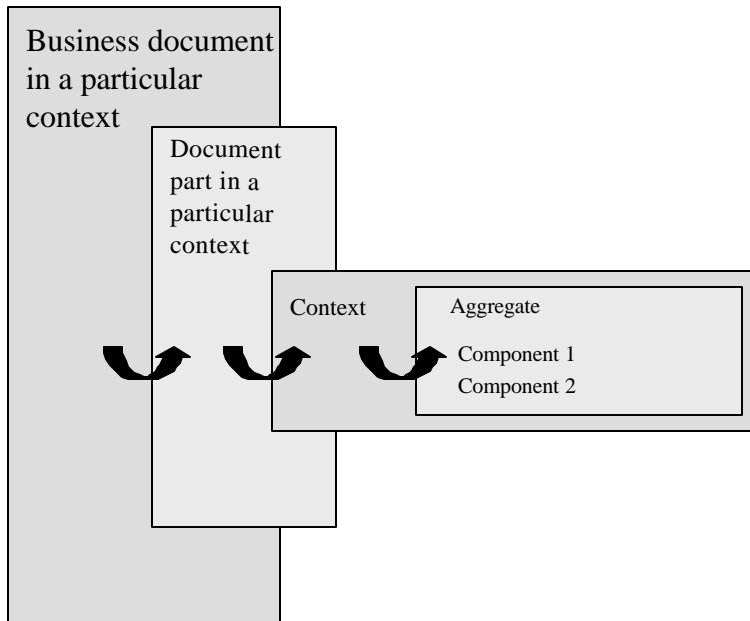
108 The business process determines characteristics of the business document payload. For
109 example, if the business process is ordering then the order information must specify
110 details about the order itself (payment, delivery, references to external business
111 agreements, etc.). There are certain characteristics of the Order Document, which
112 typically do not vary across industries, while other details (such as those required because
113 of product type) will vary dramatically.

114
115 Business documents, by their very nature, communicate a semantically complete business
116 thought: *who, what, when, where* and *why*. The *what* in electronic business terms is
117 typically the product. It is widely recognized that products are goods or services. Goods
118 are manufactured, shipped, stored, purchased, inspected, etc., by parties. Services are
119 performed by parties, and may involve goods and/or parties. Parties can be either
120 organizations or individuals, and can be associated with other parties, and products. And
121 these products have events associated with them, inspections, transportation, building,
122 sale, etc.

123
124 Within ebXML this problem is addressed in the Core Component architecture by a
125 combination of structured information and the use of context. This structure uses a series
126 of layers, designed to take into account commonality across industry business process.
127 Further the structure is designed to support specialization based on the specific use of
128 contexts. Context is the description of the environment within which use will occur. For
129 example, if one was to say that “someone was pounding on my car with a hammer”, the
130 response is very different depending whether it is a repair shop or a neighbourhood youth.
131 Context is what is used to direct interpretation.

132 **7 Conceptual Picture of Core Components**

133 This figure illustrates how core components can be constructed into document parts in the
 134 context of particular business information requirements. These parts can then be sewn
 135 together into business documents.
 136



137
 138 A component is a ‘building block’ that contains pieces of business information, which go
 139 together because they are about a single concept. An example would be *bank account*
 140 *identification*, which consists of *account number* and *account name*.
 141

142 Core components are components, which appear in many different circumstances of
 143 business information and in many different areas of business. A core component is a
 144 common or “general” building block that basically can be used across several business
 145 sectors. It is therefore context free.
 146

147 Re-use is the term given to the use of common core components when they are used for a
 148 specific business purpose. The purpose is defined by the combination of contexts in
 149 which that business purpose exists. Each context specific re-use of a common component
 150 is catalogued under a new business information name ‘that uses core component X’.
 151

152 A domain component is specific to an individual industry area and is only used within
 153 that domain. It may be re-used by another domain if it is found to be appropriate and
 154 adequate for their use, and it then becomes a core or common component.
 155

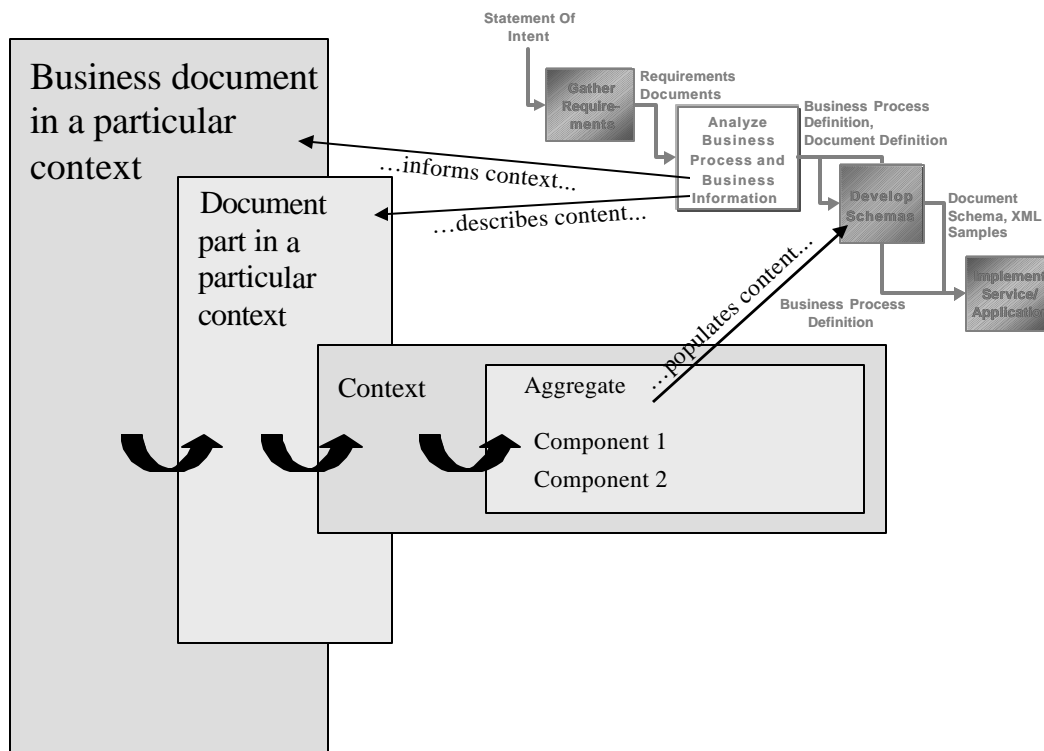
156 Components can be built together into aggregates.
 157

158 As described above for components, aggregated components can be common
 159 components. These are generic and can be used across several business sectors. They can
 160 be re-used for a specific business purpose, defined by a combination of contexts. Each
 161 context specific re-use of a common aggregate component is catalogued under a new
 162 business informant name ‘that uses core component X’.

163
 164 There are also domain specific aggregated components.

165
 166 Aggregates and components can be gathered into ‘document parts’. These are useful
 167 assemblies which can individually satisfy a business process’s requirement for
 168 information, or which may be ‘sewn together’ in a structured way to achieve the same.
 169 For example, the structured combination may be to satisfy a business process’s need for
 170 information presented in a particular way for efficiency of processing.

171
 172 An individual document part and the ‘sewn together’ parts, come at increasingly domain-
 173 specific and context-specific levels. They form documents or partial documents that
 174 satisfy a business process or a part of a business process.



175
 176 This figure illustrates how core components can be built into business documents by
 177 explicitly linking components with the ebXML Business Process Worksheets, and the
 178 underlying modelling approach. The top right-hand corner of the figure comes from
 179 figure 8.4-1 in the Business Process Overview document.
 180

181 Note that in this instance document parts are pieces of business information required to
182 satisfy a particular business process, from a specific contextual viewpoint.

183 **8 Relationship between Core Component papers**

184 **8.1 Summary**

185 Within this paper there are two levels of explanation, one, describing a conceptual picture
186 of the ebXML Core Components architecture and the other providing an overview
187 explaining the relationship between the following documents.

188

189 **8.1.1 Technical Reports**

190 These documents have been approved by the Core Component Project Team and have
191 been accepted by the ebXML Plenary.

192

193 **8.1.1.1 Guidelines**

194 These documents contain information to guide in the interpretation or implementation of
195 ebXML concepts.

196

- 197 ▪ [ebCCNAM] Naming Convention for Core Components Ver 1.04
- 198 ▪ [ebCCD&A] Core Component Discovery and Analysis Ver 1.04
- 199 ▪ [ccCTLG] Guide to the Core Component Dictionary Ver 1.04
- 200 ▪ [ebCNTXT] Context and Re-Usability of Core Components Ver 1.04
- 201 ▪ [ebCCDOC] Document Assembly and Context Rules Ver 1.04

202

203 **8.1.1.2 Catalogues**

204 These documents contain foundation material based on ebXML Technical Specifications
205 or Reports.

206

207 While the contents of the following catalogues represent the cross-domain results of work
208 by the Core Components Project Team they are not recommended for adoption as is.
209 They are examples to illustrate the implementation of the respective Core Components
210 methodologies and will be subject to further analysis and extension and are consequently
211 incomplete.

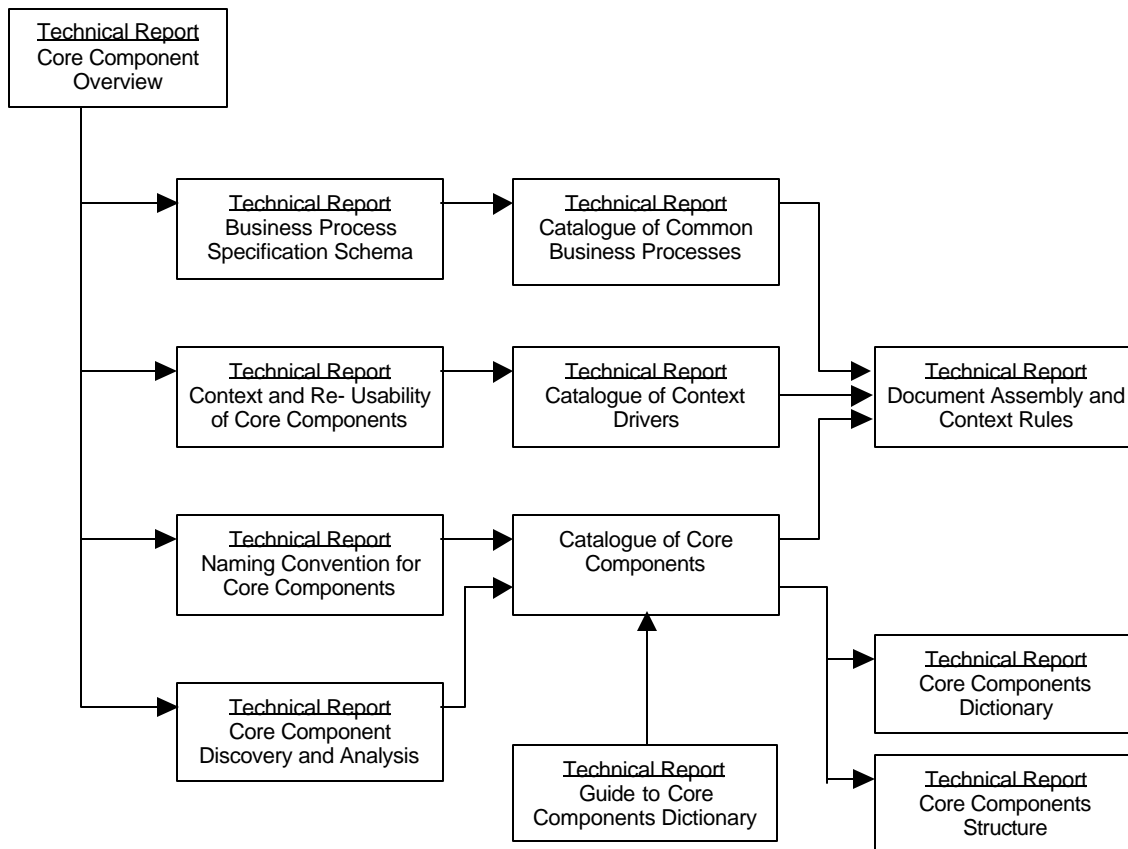
212

- 213 ▪ [ccSTRUCT] Core Component Structure Ver 1.04
- 214 ▪ [ccDICT] Core Component Dictionary Ver 1.04
- 215 ▪ [ccDRIV] Catalogue of Context Drivers Ver 1.04

216

217 **8.2 Relationship overview**

218 The diagram that follows illustrates the relationships between the papers listed above.



219
220

221 The “Business Process Specification Schema” is included in the above figure to illustrate
222 the interrelationships between the results of the Core Components and Business Process
223 activities.

224

225 The “Context and Re-usability of Core Components” document builds upon the key
226 premises and highlights the concepts/benefits gained through the use of a consistent
227 methodology. Furthermore, it emphasises the re-use of previously defined Components.
228 The “Catalogue of Context Drivers” document is the key to successful identification and
229 re-usability of what has been previously defined. It should be used as reference material
230 to clarify context and re-usability of Core Components.

231

232 The “Document Assembly and Context Rules” document is a roadmap to assist the reader
233 in establishing and maintaining deployment of core components.

234

235 The “Naming Convention for Core Components” and “Core Component Discovery and
236 Analysis” documents will enable the generation of entries into the “Catalogue of Core
237 Components”. This is not a complete listing of all the entities required to support all
238 business processes. It is presented in this set of papers via two extracts “Core Component
239 Dictionary” and the “Core Component Structure”. These show the result of the work at
240 the present state at the time of publication. Details of the meta data about each

241 information entry in the catalogue is described in the document “Guide to Core
242 Component Structure and Dictionary”.
243

244 **9 Executive Summary of Core Component Papers**

245 **9.1 Naming Convention for Core Components**

246 This document describes the rules for naming ebXML Core Components and Business
 247 Processes. These rules are based on the guidelines and principles described in document
 248 ISO 11179 (Guidelines for Structured Naming Conventions).

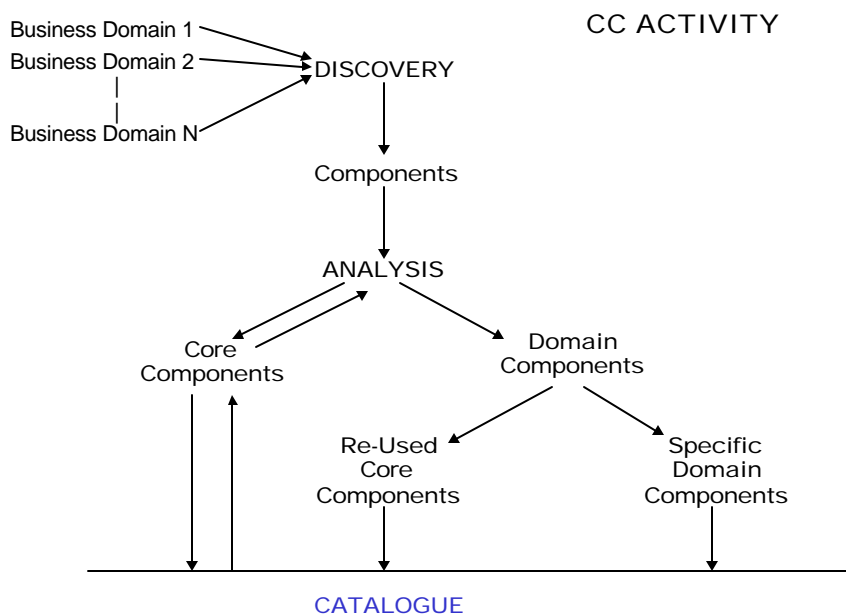
249
 250 In addition to the naming convention rules that lead to a Dictionary Entry Name, the
 251 document also provides rules for creating definitions and establishes the principle of
 252 synonyms. This principle covers the instances where a commonly used business term
 253 equates to a well-formed Dictionary Entry Name.

255 **9.2 Core Component Discovery and Analysis**

256 Business information experts in each domain area, using appropriate techniques for
 257 extracting, gathering, and recording their “discovered” Core Components conduct the
 258 discovery activity. For each Core Component a precise definition is established, together
 259 with any additional material pertinent to the specific domain.

260
 261 To ensure cross-domain harmonization for each “discovered” component, a
 262 comprehensive and consistent analysis needs to be conducted by a harmonisation team of
 263 domain experts and by a technical assessment team.

265 The processes by which a catalogue of Core Components is created and maintained are
 266 shown in the following diagram:



268 **9.3 Guide to the Core Component Dictionary**

269 This document describes the information contained in the documents [ccDICT] Core
270 Components Dictionary Ver 1.04 and the [ccSTRUCT] Core Component Structures Ver
271 1.04 that are a result of the initial analysis of core components that have been submitted
272 by domain groups.
273

274 **9.4 Context and Re-Usability of Core Components**

275 This document describes the need for, and the application of, context classifications and
276 core components, together with an overview of how they can be used. It gives examples
277 of some of the common problems resulting from a lack of semantic interoperability, and
278 how a context-based system can help solve them. It also proposes some architectural
279 approaches to how the automation of context-driven document assembly could be
280 achieved.
281

282 **9.5 Document Assembly and Context Rules**

283 This document describes the building of business document schemas from core
284 components, and the modification of the core components for use in business documents.
285 This process involves the extension and restriction of the core data structures into data
286 structures specific to the business purpose for which they will be used.
287

288 Context classifications are employed to identify the specific use of the business data. A
289 formal set of rules for tying specific context drivers to exact modifications of the core
290 components is provided, along with formal rules for referencing and assembling core
291 components prior to modification. XML document type definitions (DTDs) are provided
292 for use in automated processing of these languages.
293

294 An XML DTD is also provided to illustrate an output format termed a “semantic
295 interoperability document” that describes semantic relationships among the modified
296 components, before they are bound to a particular syntax for describing the document
297 format (such as a schema).
298

299 Sample instances are provided for the Assembly Rules, the Context Rules, and the
300 semantic interoperability document.
301

302 **9.6 Core Component Structure**

303 The Core Component Structure document is a view on the catalogue of core components
304 in its current state detailing a selected number of example core components and their
305 attributes. It is expected that in the future live queries against a registry containing a full
306 set of accredited core components will be possible. This document gives a preview of
307 how such a query result might look.
308

309 **9.7 Core Component Dictionary**

310 The Core Components Dictionary is divided into sections and each section begins with
311 the information on the applicable category and Core Component Type. Each section
312 contains additional information for the listed core components.
313

314 **9.8 Catalogue of Context Drivers**

315 This document provides a catalogue of context drivers. It describes the categories of
316 business context descriptors that have been identified as the most critical for facilitating
317 the maximum re-use of Core Components and Business Process models.

318
319 The document contains context definitions, the sources of classification value lists, and a
320 pictorial model of Core Component and Context Descriptor Relationships.
321

322 10 Disclaimer

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

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