Core Component Discovery and Analysis

JCC has undertaken work to move forward the ebXML CC technical reports to UN/CEFACT technical specification status pending UN/CEFACT concurrence.

This document reflects enhancements identified by JCC.

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1 Status of this Document

This document contains information to guide in the interpretation or implementation of electronic business concepts.

Distribution of this document is unlimited.

The document formatting is based on the Internet Society’s Standard RFC format.
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3 Introduction

This document is dependent upon tools and developments available at the time of its writing. It is expected that there will be rapid development of new applications and tools that will facilitate the discovery and analysis of components and processes used in the interchange of business information.

The instructions in this document may clarify for teaching and learning purposes how to determine those business information processes and Core Components that will comprise a compliant electronic information exchange.

3.1 Summary of Contents of Document

This document lays out a detailed methodology for discovery and analysis of Core Components. This methodology is based on identified Business Processes and supports standardising such analysis. It describes the importance of cross-domain analysis of the resulting definitions in order to promote interoperability and includes examples illustrating multiple possible approaches.

3.2 Audience

The target audience for this document includes business people as well as information technology specialists supplying the content of, and applications that will employ, Core Components.

3.3 Related Documents

These include following documents:

Note: This chapter has to be updated after the incorporation of the former ebXML Core Components Technical Reports into the unique UN/CEFACT Core Components Technical Specification
4 Definitions

Note: This definition chapter shall be identically used throughout all UN/CEFACT electronic business documents. It is a fixed part of the documents’ boilerplates, that means it must not be altered within one document without altering the others accordingly.

4.1 Core Components

A Core Component is a building block for the creation of a semantically correct and meaningful information exchange ‘parcel’. It contains only the information pieces necessary to describe a specific concept (to be defined in a glossary).

There are three categories of Core Components: Basic Core Component, Core Component Type and Aggregate Component.
4.1.1 Basic Core Component (BCC)

This is the Core Component that represents a singular business concept with a unique business semantic definition. It may be constructed by using a Core Component Type. It may be used to create Aggregated Information Entities.

4.1.2 Core Component Type (CCT)

This is a Core Component that has no business meaning on its own. For example, date on its own has no business meaning, whereas the date of birth, the contact date, the delivery date express business meaning.

Core Component Types consist of one component that carries the actual content (Content Component) plus others that give extra definition to the content (supplementary component(s)). For example, if the content component carries “12” this has no meaning on its own. But “12 Kilometres” or “12 Euro” do have meaning.

4.1.3 Aggregate Core Component.

This is an information entity that contains two or more Core Components or Aggregate Core Components that together form a single business concept (e.g. postal address). Each Aggregate Core Component has its own unique business semantic definition.

Examples: account details party details.

An Aggregate Component must contain at least one Basic Core Component. (Do not aggregate aggregates only – in this case reuse existing aggregates one following the other. Aggregating Aggregate Core Components only means to have information of entities tied without adding additional informational value.)

4.2 Business Process

To do done Mike Adcock

4.3 Context

The addition of a semantic layer that describes the business use of an otherwise neutral set of Core Components.
5 Discovery and Analysis

5.1 Introduction
Discovery and Analysis consists of finding Core Components of Business Processes together with their context, either by research and analysis of business requirements or searching a repository.

5.2 Definitions specific for Discovery and Analysis
The following definitions apply to the:

- Documentation of the business process and data requirements.
- Determination of which business processes and/or their Core Components exist in a repository.
- Identification of business processes and/or their Core Components not yet included in a Repository.

- Context: When a business process is taking place, the context in which it is taking place can be specified by a set of contextual categories and their associated values. Context is used in two distinctive ways in the Discovery and Analysis process:
  - In the determination of exact business data requirements.
  - To provide a basis for harmonisation of cross domain requirements.

- Discovery: the process of searching, identifying and documenting the business data requirements for exchanging information between partners within a given context.
  - Discovery may include the harvesting of existing information.
  - It includes documenting both the common data requirements and the context(s) in which they are used.

- Analysis: the process of detailed examination of the discovered business data requirements:
  - In order to ensure that they are semantically correct.
  - Provide a solution that is harmonized across industries.
  - Encourage reuse in order to maximize interoperability.

- Approval
  Note: The Approval Process has to be defined according to the rules of eBTWB
5.3 Discovery and Analysis Process

These activities are initially performed by business specialists or teams to discover work already done. A harmonisation analysis team will prepare the submission for updates to the repository.

- **5.3.1 CC Documentation**
  - The documentation activity assists business specialists to express their electronic business information requirements in the format defined by UN/CEFACT.
  - It includes the collation of:
    - business process,
    - information requirements and
    - the context within which these requirements exist.

- **5.3.2 CC Harmonisation**
  - The harmonisation work will be performed by a harmonisation team which shall include specialists of every Domain Team. They need to provide the broad knowledge on different domains’ business processes and their relevant requirements.
  - The result of the harmonisation analysis work is:
    - semantically concise based on the electronic business requirements
    - cross-domain inter-operable
    - syntactically neutral
5.3.3 Prerequisites:

- A set of UN/CEFACT recognised business harmonisation procedures for the resolution of conflicts exists.
- A set of UN/CEFACT recognised rules for the definition of Core Components exists.
- A UN/CEFACT procedure exists for the addition or modification of repository information.

5.4 Discovering Existing or New Business Processes and Core Components

Search within an UN/CEFACT compliant repository for similar business processes and components.

Assumptions:

- A repository of UN/CEFACT compliant business process models (in UMM) is in place.
- A repository of UN/CEFACT compliant Core Components is in place.

The following flowcharts illustrate the different decision paths to take depending on whether or not the discovery activity identifies existing or new business processes and Core Components.
5.4.1 Business Process Discovery Activity

Legend:  
BP Business Process  
CC Core Component

BP Discovery

BP Documentation Reviewed

Same BP in Catalog?  
Yes  
No

Similar in Catalog?  
Yes  
No

Complete BP documentation to be added to the repository

Different context?  
Yes  
No

Document the variances that need to be resolved

Submit to next level

Document the new context that needs to be added

CC Discovery

Legend:  
BP Business Process  
CC Core Component
5.4.2 Core Component Discovery Activity

5.5 Harmonisation Analysis Activity

The harmonisation team will accept requests for the addition of new, or updates to existing, repository information. The purpose of harmonisation is to ensure consistency of business process models and Core Components across domains. Requests may be for business processes, Core Components, or both. The following flowcharts illustrate the decision paths to take depending on whether or not the discovery activity identifies existing or new business processes and Core Components.
5.5.1 Business Process Harmonisation Activity

Legend:  
BP Business Process  
CC Core Component
5.5.2 Core Component Harmonisation Activity

Legend:  BP Business Process  CC Core Component

Core Component Discovery and Analysis

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5.6 Rules for constructing and validating Core Components

Rule 1: Each Core Component Type, Basic or Aggregate Information Entity must have its own business semantic definition. The definition shall be developed first and the Dictionary Entry Name shall be extracted from it. Remarks can be used to further clarify the definition, to provide examples and/or to reference a recognised standard.

Rule 2: Within an aggregate, all embedded entities shall be related to the concept of the aggregate.

Rule 3: There shall be no semantic overlap between the Core Components embedded within the same aggregate.

Rule 4: The representation of the information in a Core Component of the Core Component Type “Code” should use a standard issued by a recognised standards body, whenever a standard exists. If international standards are not used a business driven justification shall be provided.

Rule 5: An aggregate information entity must contain at least one Basic Core Component.

Rule 6: For the purpose of exchanging information a practical compromise on the level of detail of a Basic Core Component is required. This compromise shall be based on the Business Need. There is no need to always have absolute detail, which decomposes a piece of information down to its lowest level.
6 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 design.
7 Contact Information

Note: Contact Information will be provided with the final document
Appendix A

**Discovery Example – Manufacturing Business Process**

   Describe the business process at a level of detail sufficient to identify the business information that is required.
   e.g. “A manufacturer wants to send a supplier his requirements for a certain product.”
   Then describe the business process to a level of detail that will identify the business information required.

2. Step 2. Break the business exchange into logical groupings (families) and name each group

3. Step 3. Take each family and break it down into smaller logical units
4. Step 4. Write down each detail item. Those items that can logically be further broken down are Aggregate Core Components. e.g. Address would need to be broken down further as it contains several Core Components.

5. Step 5. Continue the breaking down process until all the business entities have been identified down to the lowest business required levels.


7. Step 7 Once the Core Components for the specific business process have been documented, the Core Component Repository shall be reviewed to determine if these Core Components are already included.

Step 7a If included, then the two Core Components (the one on the CC Discovery Form and the one already in the Repository) shall be compared to determine if the one in the Repository meets the business requirements. This review shall also include all the information for each of the Basic Core Components listed for an aggregate.

Step 7b If the Core Components in the Repository does not meet the business needs, then comments on the problem shall be documented. This leads to the request of a new Core Component (see Step 8).

8. Step 8 If a Core Component is missing, then a request shall be prepared including the following information:
   • Core Component Type used (if applicable);
   • data type (if applicable);
   • category type;
   • definition;
   • proposed dictionary entry name according to the naming conventions
   • remarks,
   • synonyms,
   • indication of the requesting domain group.

9. Step 9 If a required aggregate is missing, then a request shall be prepared including the proposed name and definition plus a list of its embedded Core Components. In the cases where the embedded Core Components themselves are also newly identified then the appropriate level of information on each of these shall also be provided.