UNITED NATIONS **E**

Economic and Social Council

Distr.
GENERAL

ECE/TRADE/CEFACT/2006/13
16 March 2006

ORIGINAL: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

COMMITTEE ON TRADE

Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

Twelfth session
Geneva, 22-24 May 2006
Item 11 of the provisional agenda

UN/CEFACT BUSINESS REQUIREMENTS SPECIFICATION "XML NAMING AND DESIGN RULES"[1][2]

Submitted by the UN/CEFACT Forum Management Group

Summary

Business Domain : Technical Specifications
Business Process : UN/CEFACT Open Development Process (ODP)
Version : 2.0
Date of TBG approval : 17 February 2006
Location: http://www.disa.org/cefact-groups/atg/downloads/index.cfm
Owing to its length, the full text of this specification cannot be issued as a UN/CEFACT Plenary document. However, it can be downloaded from the website at www.unece.org/cefact under "Technical Specifications" in the left column menu.

[1] This UN/CEFACT Technical Specification has been developed in accordance with the UN/CEFACT/TRADE/22 Open Development Process (ODP) for Technical Specifications. It has been approved by the UN/CEFACT Applied Technologies Group (ATG) for promulgation as a UN/CEFACT standard in accordance with Step 7 of the ODP.

[2] The present document was erroneously listed in the Provisional Agenda as document ECE/TRADE/CEFACT/2005/10/Add.1

EXECUTIVE SUMMARY

1. This UN/CEFACT Technical Specification has been developed in accordance with the UN/CEFACT/TRADE/22 Open Development Process (ODP) for Technical Specifications. It has been approved by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) Applied Technologies Group (ATG) for promulgation as a UN/CEFACT standard in accordance with Step 7 of the ODP.

2. The Technical Specification describes and specifies the rules and guidelines that will be applied by UN/CEFACT when developing XML schemas. It provides a way to identify, capture and maximize the re-use of business information expressed as XML schema components to support and enhance information interoperability across multiple business situations.

A. Scope and Focus

3. The Specification can be employed wherever business information is being shared or exchanged among and between enterprises, government agencies, and/or other organizations in an open and worldwide environment using XML schemas for defining the content of the business information payload.

4. It will form the basis for standards development work of technical experts developing XML schemas based on information models developed in accordance with the UN/CEFACT Core Components Technical Specification – Part 8 of the ebXML Framework (CCTS), version 2.01. The Core Components Technical Specification (CCTS) has subsequently been published as ISO/TS 15000-5 ebCCTS ebXML Electronic Business Extensible Mark-up Language, Part 5: ebCCTS ebXML Core Components Technical Specification, Version 2.01 (2003-11-15).

B. Audience

5. The primary audience for this UN/CEFACT – XML Naming and Design Rules Technical Specification are members of the UN/CEFACT Applied Technologies Group who are responsible for development and maintenance of UN/CEFACT XML schema. The intended audience also includes the wider membership of the other UN/CEFACT Groups who will participate in the process of creating and maintaining UN/CEFACT XML schemas.

6. Additional audiences are designers of tools who need to specify the conversion of user input into XML schemas representation adhering to the rules defined in this document. Additionally, designers of XML schemas outside of the UN/CEFACT Forum community may find the rules contained herein suitable as design rules for their own organization. Since the constructs defined in CCTS are consistent with UML classes, attributes, and associations, these design rules can easily be applied to non-CCTS constructs as well.

C. Structure of the Specification

7. The UN/CEFACT XML Naming and Design Rules Technical Specification has been divided into 6 main sections:

(a) Section 4 provides general information about the document itself as well as normative statements in respect to conformance.

(b) Section 5 provides information on the guiding principles applied in developing this specification as well as its dependency and relationship to CCTS. Furthermore, this section describes the approach taken to modularity in order to maximize the re-use of business information expressed as XML schema components and the general naming conventions applied. (Normative)

(c) Section 6 provides the general conventions applied with respect to the use of the XML schema language. (Normative)

(d) Section 7 provides detailed rules applicable to each of the schema modules defined by the modularity approach. (Normative)

(e) Section 8 provides guidelines and rules related to XML instance documents. (Normative)

(f) Section 9 provides use cases for code lists and identifier lists. (Informative)

8. The document also contains the following appendices:

(a) Appendix A Related Documents (Informative)

(b) Appendix B Overall Structure (Normative)

(c) Appendix C ATG Approved Acronyms and Abbreviations (Normative)

(d) Appendix D Core Component Type Schema Module (Normative)

(e) Appendix E Unqualified Data Type Schema Module (Normative)

(f) Appendix F Annotation Templates (Informative)

(g) Appendix G Mapping of CCTS Representation Terms to CCT and UDT Data Types (Informative)

(h) Appendix H Naming and Design Rules List (Normative)

(i) Appendix I Glossary (Informative)

D. Terminology and notation

9. The keywords MUST, MUST NOT, REQUIRED, SHALL, SHALL NOT, SHOULD, SHOULD NOT, RECOMMENDED, MAY, and OPTIONAL, when they appear in this document, are to be interpreted as described in Internet Engineering Task Force (IETF) Request For Comments (RFC) 2119[3] Wherever xsd: appears, this refers to a construct taken from the W3C XML schema specification. Wherever ccts: appears, this refers to a construct taken from the CCTS.

10. Example – A representation of a definition or a rule. Examples are informative.

11. [Note] – Explanatory information. Notes are informative.

12. [Rn] – Identification of a rule that requires conformance. Rules are normative. In order to ensure continuity across versions of the specification, rule numbers that are deleted will not be re-issued, and any new rules will be assigned the next higher number - regardless of location in the text.

13. Courier – All words appearing in `bolded courier font` are values, objects or keywords. When defining rules the following annotations are used:

(a) [ ] = optional

(b) < > = Variable

(c) | = choice

E. Related documents

14. Related documents referenced in this specification are listed in Appendix A.

F. Conformance

15. Applications will be considered to be in full conformance with this technical specification if they comply with the content of normative sections, rules and definitions.

[R 1]	Conformance shall be determined through adherence to the content of normative sections, rules and definitions.

G. Guiding principles

16. The following guiding principles were used as the basis for all design rules contained in this document:

(a) Relationship to UMM – UN/CEFACT XML Schema Defintion Language (XSD) Schema will be based on UMM metamodel adherent Business Process Models.

[3] Key words for use in RFCs to Indicate Requirement Levels - Internet Engineering Task Force, Request For Comments 2119, March 1997, http://www.ietf.org/rfc/rfc2119.txt

(b) Relationship to Information Models – UN/CEFACT XSD Schema will be based on information models developed in accordance with the UN/CEFACT – Core Components Technical Specification.

(c) Schema Creation– UN/CEFACT XML design rules will support schema creation through handcrafting as well as automatic generation.

(d) ebXML Use – UN/CEFACT XSD Schema and instance documents shall be easily usable within the ebXML framework and compatible with other frameworks to the maximum extent practicable.

(e) Interchange and Application Use – UN/CEFACT XSD Schema and instance documents are intended for business-to-business and application-to-application use.

(f) Tool Use and Support - The design of UN/CEFACT XSD Schema will not make any assumptions about sophisticated tools for creation, management, storage, or presentation being available.

(g) Legibility - UN/CEFACT XML instance documents should be intuitive and reasonably clear in the context for which they are designed.

(h) Schema Features - The design of UN/CEFACT XSD Schema should use the most commonly supported features of W3C XSD Schema.

(i) Technical Specifications – UN/CEFACT XML Naming and Design Rules will be based on Technical Specifications holding the equivalent of W3C recommended status.

(j) Schema Specification – UN/CEFACT XML Naming and Design rules will be fully conformant with W3C XML Schema Definition Language.

(k) Interoperability - The number of ways to express the same information in a UN/CEFACT XSD Schema and UN/CEFACT XML instance document is to be kept as close to one as possible.

(l) Maintenance – The design of UN/CEFACT XSD Schema must facilitate maintenance.

(m)Context Sensitivity - The design of UN/CEFACT XSD Schema must ensure that context-sensitive document types are not precluded.

(n) Relationship to Other Namespaces - UN/CEFACT XML design rules will be cautious about making dependencies on other namespaces.

(o) Legacy formats - UN/CEFACT XML Naming and Design Rules are not responsible for sustaining legacy formats.

INFORMATIVE TABLE OF CONTENTS

"XML Naming and Design Rules"

(The document can be downloaded at the following website:
http://www.unece.org/cefact)

- Schema Construct
- Namespace Scheme
- Imports and Includes

Reusable Aggregate Business Information Entities
- Schema Construct
- Namespace Scheme
- Imports and Includes
- Type Definitions
- Element Declarations and References

Annotation

Core Component Type
- Use of Core Component Type Module
- Schema Construct
- Namespace Scheme
- Imports and Includes
- Type Definitions
- Attribute Declarations
- Extension and Restriction
- Annotation

Unqualified Data Type
- Use of Unqualified Data Type Module
- Schema Construct
- Namespace Scheme
- Imports and Includes
- Type Definitions
- Attribute Declarations
- Extension and Restriction
- Annotation

Qualified Data Type
- Use of Qualified Data Type Module
- Schema Construct
- Namespace Scheme

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