



OASIS Committee Note

UBL 2.1 Abstract Syntax Notation 1 (ASN.1) Alternative Representation Version 1.0

Committee Note 03

13 March 2019

Specification URIs

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Additional artefacts:

This prose specification is one component of a Work Product that also includes:

- ASN.1 schemas and schema documentation:
 - <https://docs.oasis-open.org/ubl/UBL-2.1-ASN.1/v1.0/cn03/asn/>

The ZIP containing the complete files of this release is found in the directory:

- <https://docs.oasis-open.org/ubl/UBL-2.1-ASN.1/v1.0/cn03/UBL-2.1-ASN.1-v1.0-cn03.zip>

Related work:

This note is related to:

Universal Business Language Version 2.1. 04 November 2013. OASIS Standard. <http://docs.oasis-open.org/ubl/os-UBL-2.1/UBL-2.1.html>. Latest version: <http://docs.oasis-open.org/ubl/UBL-2.1.html>.

Abstract:

This committee note supplements the Universal Business Language version 2.1 XSD schema expressions with a suite of equivalent ASN.1 constraint expressions.

Status:

This is a Non-Standards Track Work Product. The patent provisions of the OASIS IPR Policy do not apply

This document was last revised or approved by the OASIS Universal Business Language TC on the above date. The level of approval is also listed above. Check the "Latest version" location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Technical Committee (TC) are listed at https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=ubl#technical.

Technical Committee members should send comments on this specification to the TC's email list. Others should send comments to the TC's public comment list, after subscribing to it by following the instructions at the "[Send A Comment](#)" button on the TC's web page at <https://www.oasis-open.org/committees/ubl/>.

See [Appendix A, Release Notes](#) for more information regarding this release package.

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When referencing this note the following citation format should be used:

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Table of Contents

1 Introduction	5
1.1 Overview	5
1.2 Terminology	5
1.2.1 Terms and Definitions	5
1.2.2 Symbols and Abbreviations	5
1.3 References	5
2 ASN.1 Representation of UBL Schemas	7
3 UBL 2.1 ASN.1 Schemas	8

Appendixes

A Release Notes	11
A.1 Availability	11
A.2 Status of this Release	11
A.3 Package Structure	11
A.4 Support	11
B Revision History	12
B.1 Changes from CN02 to CN03	12
C Acknowledgements	13

1 Introduction

1.1 Overview

The OASIS Universal Business Language (UBL) defines a generic XML interchange format for business documents that can be restricted or extended to meet the requirements of particular industries. Specifically, UBL provides the following:

- A suite of structured business objects and their associated semantics expressed as reusable data components and common business documents.
- A library of XML schemas for reusable data components such as “Address”, “Item”, and “Payment”—the common data elements of everyday business documents.
- A set of XML schemas for common business documents such as “Order”, “Despatch Advice”, and “Invoice” that are constructed from the UBL library components and can be used in generic procurement and transportation contexts.

This Committee Note provides an alternative non-normative representation of the UBL XML schemas for use in systems supporting Abstract Syntax Notation 1 (ASN.1), ISO/IEC 8825-1.

1.2 Terminology

1.2.1 Terms and Definitions

Document

A set of information components that are exchanged as part of a business transaction; for example, in placing an order.

XSD schema

An XML document definition conforming to the W3C XML Schema language [XSD1][XSD2].

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 [RFC2119].

1.2.2 Symbols and Abbreviations

ASN

Abstract Syntax Notation

IEC

International Electrotechnical Commission

ISO

International Organization for Standardization

XML

Extensible Markup Language [XML]

XSD

W3C XML Schema Language [XSD1][XSD2]

1.3 References

[ASN.1] *ITU-T X.680-X.683: Abstract Syntax Notation One (ASN.1), ITU-T X.690-X.693: ASN.1 encoding rules*

[RFC2119] *Key words for use in RFCs to Indicate Requirement Levels*

[XML] *Extensible Markup Language (XML) 1.0 (Second Edition)*, W3C Recommendation 6 October 2000

[XSD1] *XML Schema Part 1: Structures. Second Edition*. W3C Recommendation 28 October 2004

[XSD2] *XML Schema Part 2: Datatypes. Second Edition*. W3C Recommendation 28 October 2004

2 ASN.1 Representation of UBL Schemas

UBL 2.1 continues the practice, adopted at the beginning of the UBL effort, of creating its normative XML specifications using W3C Schema (XSD) syntax. Alternative representations of the same content are generated directly from the XSD and are intended to implement the same document instance constraints.

Alternative representations of the same content are technically non-normative.

The UBL ASN.1 specification provides an alternative schema definition for UBL documents in accordance with ITU-T X.680-X.693 [[ASN.1](#)]. The UBL ASN.1 specification defines the same UBL documents as the UBL XSD schemas that constitute the normative definitions of valid UBL documents. The UBL ASN.1 XML specification enables ASN.1 tools to be used for UBL transfers, and in conjunction with the ASN.1 Packed Encoding Rules, it provides a specification for an efficient binary encoding of UBL messages.

The ASN.1 modules were created using a tool from [OSS Nokalva](#) that conforms to ITU-T Recommendation X.694 | ISO/IEC 8825-5 for converting XSD Schema to ASN.1.

3 UBL 2.1 ASN.1 Schemas

This software-generated summary documentation file describes the contents of the ASN.1 schemas for UBL 2.1 in a human-readable format in HTML:

- [asn/summary2.1.html](#) - various indexes into the schema components
- [asn/ubl2.1.html](#) - the ASN.1 schema components
- [asn/styles.css](#) - visual display support stylesheet

The following ASN.1 schemas are for the UBL 2.1 document models:

- [asn/UBL-ApplicationResponse-2.1.asn](#)
- [asn/UBL-AttachedDocument-2.1.asn](#)
- [asn/UBL-AwardedNotification-2.1.asn](#)
- [asn/UBL-BillOfLading-2.1.asn](#)
- [asn/UBL-CallForTenders-2.1.asn](#)
- [asn/UBL-Catalogue-2.1.asn](#)
- [asn/UBL-CatalogueDeletion-2.1.asn](#)
- [asn/UBL-CatalogueItemSpecificationUpdate-2.1.asn](#)
- [asn/UBL-CataloguePricingUpdate-2.1.asn](#)
- [asn/UBL-CatalogueRequest-2.1.asn](#)
- [asn/UBL-CertificateOfOrigin-2.1.asn](#)
- [asn/UBL-ContractAwardNotice-2.1.asn](#)
- [asn/UBL-ContractNotice-2.1.asn](#)
- [asn/UBL-CreditNote-2.1.asn](#)
- [asn/UBL-DebitNote-2.1.asn](#)
- [asn/UBL-DespatchAdvice-2.1.asn](#)
- [asn/UBL-DocumentStatus-2.1.asn](#)
- [asn/UBL-DocumentStatusRequest-2.1.asn](#)
- [asn/UBL-ExceptionCriteria-2.1.asn](#)
- [asn/UBL-ExceptionNotification-2.1.asn](#)
- [asn/UBL-Forecast-2.1.asn](#)
- [asn/UBL-ForecastRevision-2.1.asn](#)
- [asn/UBL-ForwardingInstructions-2.1.asn](#)
- [asn/UBL-FreightInvoice-2.1.asn](#)

- [asn/UBL-FulfilmentCancellation-2.1.asn](#)
- [asn/UBL-GoodsItemItinerary-2.1.asn](#)
- [asn/UBL-GuaranteeCertificate-2.1.asn](#)
- [asn/UBL-InstructionForReturns-2.1.asn](#)
- [asn/UBL-InventoryReport-2.1.asn](#)
- [asn/UBL-Invoice-2.1.asn](#)
- [asn/UBL-ItemInformationRequest-2.1.asn](#)
- [asn/UBL-Order-2.1.asn](#)
- [asn/UBL-OrderCancellation-2.1.asn](#)
- [asn/UBL-OrderChange-2.1.asn](#)
- [asn/UBL-OrderResponse-2.1.asn](#)
- [asn/UBL-OrderResponseSimple-2.1.asn](#)
- [asn/UBL-PackingList-2.1.asn](#)
- [asn/UBL-PriorInformationNotice-2.1.asn](#)
- [asn/UBL-ProductActivity-2.1.asn](#)
- [asn/UBL-Quotation-2.1.asn](#)
- [asn/UBL-ReceiptAdvice-2.1.asn](#)
- [asn/UBL-Reminder-2.1.asn](#)
- [asn/UBL-RemittanceAdvice-2.1.asn](#)
- [asn/UBL-RequestForQuotation-2.1.asn](#)
- [asn/UBL-RetailEvent-2.1.asn](#)
- [asn/UBL-SelfBilledCreditNote-2.1.asn](#)
- [asn/UBL-SelfBilledInvoice-2.1.asn](#)
- [asn/UBL-Statement-2.1.asn](#)
- [asn/UBL-StockAvailabilityReport-2.1.asn](#)
- [asn/UBL-Tender-2.1.asn](#)
- [asn/UBL-TendererQualification-2.1.asn](#)
- [asn/UBL-TendererQualificationResponse-2.1.asn](#)
- [asn/UBL-TenderReceipt-2.1.asn](#)
- [asn/UBL-TradeItemLocationProfile-2.1.asn](#)
- [asn/UBL-TransportationStatus-2.1.asn](#)
- [asn/UBL-TransportationStatusRequest-2.1.asn](#)

- [asn/UBL-TransportExecutionPlan-2.1.asn](#)
- [asn/UBL-TransportExecutionPlanRequest-2.1.asn](#)
- [asn/UBL-TransportProgressStatus-2.1.asn](#)
- [asn/UBL-TransportProgressStatusRequest-2.1.asn](#)
- [asn/UBL-TransportServiceDescription-2.1.asn](#)
- [asn/UBL-TransportServiceDescriptionRequest-2.1.asn](#)
- [asn/UBL-UnawardedNotification-2.1.asn](#)
- [asn/UBL-UtilityStatement-2.1.asn](#)
- [asn/UBL-Waybill-2.1.asn](#)

The following schemas are not addressed directly for validation of a UBL document but are referenced from the document schemas in support of their requirements:

- [asn/CCTS_CCT_SchemaModule-2.1.asn](#)
- [asn/UBL-CommonAggregateComponents-2.1.asn](#)
- [asn/UBL-CommonBasicComponents-2.1.asn](#)
- [asn/UBL-CommonExtensionComponents-2.1.asn](#)
- [asn/UBL-CommonSignatureComponents-2.1.asn](#)
- [asn/UBL-SignatureAggregateComponents-2.1.asn](#)
- [asn/UBL-SignatureBasicComponents-2.1.asn](#)
- [asn/UBL-UnqualifiedDataTypes-2.1.asn](#)
- [asn/UBL-XAdESv132-2.1.asn](#)
- [asn/UBL-XAdESv141-2.1.asn](#)
- [asn/UBL-xmlsig-core-schema-2.1.asn](#)
- [asn/xsd.asn](#)

Appendix A Release Notes

A.1 Availability

Online and downloadable versions of this release are available from the locations specified at the top of this document.

A.2 Status of this Release

Release of this package to the public marks the beginning of its first public review of Committee Note 03. The UBL Technical Committee actively solicits input from the user community regarding this release. See [Status](#) at the beginning of this document for procedures to be used in submitting comments to the Committee. Note that in accordance with OASIS policies regarding intellectual property, the UBL TC *cannot* accept input from persons outside the UBL TC (including OASIS members) unless it is submitted via the comment list.

A.3 Package Structure

This OASIS Committee Note is published as a zip archive in the <https://docs.oasis-open.org/ubl/UBL-2.1-ASN.1-v1.0-cn03/> directory. Unzipping this archive creates a directory tree containing a master DocBook XML file (UBL-2.1-ASN.1-v1.0-cn03.xml), a generated hypertext version of this file (UBL-2.1-ASN.1-v1.0-cn03.html), a generated PDF version of this file (UBL-2.1-ASN.1-v1.0-cn03.pdf), and a number of subdirectories. The files in these subdirectories contain the various components of this release. A description of each subdirectory is given below. Note that while the UBL-2.1-ASN.1-v1.0-cn03.xml file is the “original” of this specification, it may not be viewable in all currently available web browsers.

asn

ASN.1 UBL 2.1 schemas and documentation

dbasn

DocBook documentation support files

Note that the files and directories in this package are named such that the contents of this package can be overlaid on top of the unzipped UBL 2.1 package contents without overwriting any files.

A.4 Support

UBL is a volunteer project of the international business community. Inquiries regarding UBL may be posted to the public ubl-dev list, archives for which are located at

<https://lists.oasis-open.org/archives/ubl-dev/>

Subscriptions to ubl-dev can be made through the OASIS list manager at

<https://www.oasis-open.org/mlmanage/index.php>

OASIS provides an official community gathering place and information resource for UBL at

<http://ubl.xml.org/>

Appendix B Revision History

B.1 Changes from CN02 to CN03

This release takes into account a corrigendum to Rec. ITU-T X.694 | ISO/IEC 8825-5 correcting some constraints in the ASN.1 XSD module (as expressed in [asn/xsd.asn](#)).

Appendix C Acknowledgements

The following persons contributed to the work of the committee during the preparation of this work product.

Todd Albers, Federal Reserve Bank of Minneapolis
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