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Elektronsko izdajanje računov - 3-3. del: Povezava sintakse za UN/CEFACT XML Cross Industry Invoice D16B

Electronic invoicing - Part 3-3: Syntax binding for UN/CEFACT XML Industry Invoice D16B

Elektronische Rechnungsstellung - Teil 3-3: Umsetzung in die Syntax UN/CEFACT XML Cross Industry Invoice D16B

Facturation électronique - Partie 3-3 : Correspondance syntaxique pour les factures intersectorielles - Schéma XML D16B UN/CEFACT

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Electronic invoicing - Part 3-3: Syntax binding for UN/CEFACT XML Industry Invoice D16B

Facturation électronique - Partie 3-3 : Liaison de syntaxe pour UN/CEFACT XML Facture industrielle D16B

Elektronische Rechnungsstellung - Teil 3-3: Umsetzung in die Syntax UN/CEFACT XML Cross Industry Invoice D16B

This Technical Specification (CEN/TS) was approved by CEN on 11 November 2019 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

European foreword

This document (CEN/TS 16931-3-3:2020) has been prepared by Technical Committee CEN/TC 434 “Electronic invoicing”, the secretariat of which is held by NEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 16931-3-3:2017.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document is part of a set of documents, consisting of:

— EN 16931-1:2017, *Electronic invoicing - Part 1: Semantic data model of the core elements of an electronic invoice*

— CEN/TS 16931-2:2017, *Electronic invoicing - Part 2: List of syntaxes that comply with EN 16931-1*

— CEN/TS 16931-3-1:2017, *Electronic invoicing - Part 3 - 1: Methodology for syntax bindings of the core elements of an electronic invoice*

— CEN/TS 16931-3-2:2020, *Electronic invoicing - Part 3 - 2: Syntax binding for ISO/IEC 19845 (UBL 2.1) invoice and credit note*

— CEN/TS 16931-3-3:2020, *Electronic invoicing - Part 3 - 3: Syntax binding for UN/CEFACT XML Cross Industry Invoice D16B*

— CEN/TS 16931-3-4:2020, *Electronic invoicing - Part 3 - 4: Syntax binding for UN/EDIFACT INVOIC D16B*

— CEN/TR 16931-4:2017, *Electronic invoicing - Part 4: Guidelines on interoperability of electronic invoices at the transmission level*

— CEN/TR 16931-5:2017, *Electronic invoicing - Part 5: Guidelines on the use of sector or country extensions in conjunction with EN 16931-1, methodology to be applied in the real environment*

— CEN/TR 16931-6:2017, *Electronic invoicing - Part 6: Result of the test of EN 16931-1 with respect to its practical application for an end user*

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The European Commission estimates that "The mass adoption of e-invoicing within the EU would lead to significant economic benefits and it is estimated that moving from paper to e-invoices will generate savings of around EUR 240 billion over a six-year period"[1]. Based on this recognition "The Commission wants to see e-invoicing become the predominant method of invoicing by 2020 in Europe."

As a means to achieve this goal, Directive 2014/55/EU [3] on electronic invoicing in public procurement aims at facilitating the use of electronic invoices by economic operators when supplying goods, works and services to the public administration (B2G), as well as the support for trading between economic operators themselves (B2B). In particular, it sets out the legal framework for the establishment and adoption of a European standard (EN) for the semantic data model of the core elements of an electronic invoice (EN 16931-1).

In line with Directive 2014/55/EU [3], and after publication of the reference to EN 16931-1 in the Oficial Journal of the European Union, all contracting public authorities and contracting entities in the EU will be obliged to receive and process an e-invoice as long as:

— it is in conformance with the semantic content as described in EN 16931-1;

— it is represented in any of the syntaxes identified in CEN/TS 16931-2, in accordance with the request referred to in paragraph 1 of article 3 of the Directive 2014/55/EU;

— it is in conformance with the appropriate mapping defined in the applicable subpart of CEN/TS 16931-3.

The semantic data model of the core elements of an electronic invoice – the core invoice model – as described in EN 16931-1 is based on the proposition that a limited, but sufficient set of information elements can be defined that supports generally applicable invoice-related functionalities.

This CEN Technical Specification CEN/TS 16931-3-3 defines the binding of the core elements of the invoice to the Cross Industry Invoice of UN/CEFACT XML. Other subparts of this CEN Technical Specifications define the binding method (CEN/TS 16931-3-1) and map the core invoice model to other syntaxes such as ISO/IEC 19845 (UBL 2.1) (CEN/TS 16931-3-2) and ISO 9735 (UN/EDIFACT) (CEN/TS 16931-3-4).

By ensuring interoperability of electronic invoices, the European standard and its ancillary European standardization deliverables will serve to remove market barriers and obstacles to trade deriving from the existence of different national rules and standards – and thus contribute to the goals set by the European Commission

[1] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0712:FIN:en:PDF.

1 Scope

This document specifies the mapping between the semantic model of an electronic invoice, included in EN 16931-1 and the Cross Industry Invoice in the UN/CEFACT XML syntax. For each element in the semantic model (including sub-elements or supplementary components such as Identification scheme identifiers) it is defined which element in the syntax is to be used to contain its information contents. Any mismatches between semantics, format, cardinality or structure are indicated.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16931-1, *Electronic invoicing — Part 1: Semantic data model of the core elements of an electronic invoice*

ISO 4217, *Codes for the representation of currencies*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
electronic invoice
invoice that has been issued, transmitted and received in a structured electronic format which allows for its automatic and electronic processing

[SOURCE: Directive 2014/55/EU [3]]

3.2
semantic data model
structured set of logically interrelated information elements

3.3
information element
semantic concept that can be defined independent of any particular representation in a syntax

3.4
syntax
machine-readable language or dialect used to represent the information elements contained in an electronic document (e.g. an electronic invoice)

3.5
business term
label assigned to a given information element which is used as a primary reference

3.6
core invoice model
semantic data model of the Core elements of an electronic invoice

3.7
core elements of an electronic invoice
set of essential information elements that an electronic invoice may contain in order to enable cross-border interoperability, including the necessary information to ensure legal compliance

3.8
identifier
character string used to establish the identity of, and distinguish uniquely, one instance of an object within an identification scheme from all other objects within the same scheme

Note 1 to entry: An identifier may be a word, number, letter, symbol, or any combination of those

3.9
identification scheme
collection of identifiers applicable for a given type of object governed under a common set of rules

4 Syntax binding to the UN/CEFACT XML Cross Industry Invoice D16B

4.1 Introduction

One part of the basis for the European Core Data Model are the CEN MUG CWAs which are a subset of Cross Industry Invoice (CII). UN XML standards are developed within UN/CEFACT. This guarantees an international focus, openness in the process and free usage, as this is the mission of UN/CEFACT and the policy of UNECE as a global standardization body[2]. For all published specifications and standards the Inetelctual Property Rights (IPRs) are owned by the UN and as such are open for free use by everyone. UN/CEFACT XML and all underlying standards (i.e. Core Component Methodology, Library, Message Assembly, XML Naming and Design Rules) are maintained on a regular basis by UN/CEFACT, within the United Nations framework of the Economic and Social Council, the United Nations Economic Commission for Europe (UNECE). The maintenance process is documented, applied and governed. All relevant procedural documents are available. Open participation for all interested stakeholders is ensured through the national delegations, which are usually connected to the national standards bodies. Also recognized organisations are able to participate in the development and maintenance process.

UN/CEFACT standards are actively used worldwide in various sectors like Agriculture, Transport and Logistics, B2G EProcurement and cross-sector applicationsin different regions (APAC, US, Europe, LatAm).

Apart from Invoice (CII) implementations, UN/CEFACT standards are implemented within the US Department of Defence. Within the global GS1 Community UN/CEFACT XML is used (apart from EANCOM and GS1 XML) in several countries worldwide. In other industries and domains CII and UN/CEFACT syntax has been adopted as well, e.g. Japan, Taiwan (Single Window for reference WCO DATA MODEL and UN/CEFACT XML and UNTDED) or Korea (cross industry tax e-invoice is obligation of law).

CII, as part of cross-sector supply chain processes is implemented in various European countries, e.g.

— French Public eInvocing Platform (CHORUS)

[2] See www.cen.eu, www.unece.org/cefact.html

— German B2B and B2C core invoice standard (ZUGFeRD)

UN/CEFACT provides the relevant standards and guidelines on their website.

Support to the implementers and users is provided through other standardization bodies (e.g. CEN, GS1), user communities, experts who are members of a national delegation at UN/CEFACT, etc. which building their recommendations/guidelines upon published UN/CEFACT standards.

UN/CEFACT offers the CCBDA CCL message assembly methodology as guideline on how to modify the underlying data model to enable subsetting. Applying the respective naming and design rules the syntax becomes restricted or extended.

CCBDA supports message assembly and message contextual customisation based on the Reference ABIE Library of the CCL. It is important to explain that extension is supported within the bounds of those reference ABIEs and, of course, submissions to extend any ABIE can be submitted to Library Maintenance for future inclusion. The aim is a controlled mechanism on extensions in order to facilitate interoperability.

Using this standardized approach the EN requirement to take into account the UN/CEFACT XML Cross Industry Invoice v.2.0 and v.3.0[3] is reached[4].

In order to take the most current version of the Cross Industry Invoice into account to be prepared best possible to support an easy, sustainable and effective implementation of the EN using the Cross Industry Invoice the Syntax mapping is done to Cross Industry Invoice version 100 (release D16B SCRDM). This version contains two sets of schemas. One with coupled code list modules that allow a one-step validation for the UN/CEFACT Standard; the second with decoupled code list modules. For syntax binding of EN 16931-1 electronic invoices, the second set of schemas (decoupled) shall be used to get a fully backwards compatible and stable implementation that enables a system to take future code list updates into account.

4.2 Data types

Data Types and relevant Codelists for the Cross Industry Invoice can be found in the Requirement Specification Mapping (RSM) document at the UNECE website[5]. The following additional rules are applied:

— For the udt:DateTimeType only the DateTimeString choice shall be used. For the corresponding attribute @format the codelist UN/CEFACT 2379 is applied.

— The mapping of the SDM only code “102” (YYYYMMDD) shall be used. In a scenario with applied extensions the two additional formats 610 (YYYYMM) and 616 (YYYYWW) can be used as well.

4.3 Codes and identifiers

As UN/CEFACT XML fully supports the codelists referenced by the Semantic Data Model (SDM) the corresponding codes to the semantic requirements of the latest published listscan be used without any additional mapping. For the following codes lists special rules are applied:

— ISO 4217 (Currencies): The alpha-3-representation shall be used. The currency shall only be given on document level in /rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/

[3] See C(2014) 7912 final, ANNEX 1, p.5

[4] See CCTS 2.01 & CCBDA 1.0 & NDR 2.1 Artefacts at http://www.unece.org/tradewelcome/un-centre-for-trade-facilitation-and-e-business-uncefact/outputs/technical-specifications/

[5] https://www.unece.org/cefact/rsm/rsm_index.html

ram:ApplicableSupplyChainHeaderTradeSettlement/ram:InvoiceCurrencyCode. Only if a different TaxCurrencyCode is to be used the currency code shall be given at the appropriate element.

— BT-8 (Value added tax point date code). While the model defines a restriction of UNTDID 2005, CII supports in the mapped to element a restriction of UNTDID 2475 as follows.

Table 1 — Codes

Semantic model	Code in UNTDID 2005	Code for CII in UNTDID 2475
Invoice document issue date	3	5
Delivery date, actual	35	29
Paid to date	432	72

4.4 Mapping the Invoice model

In the following table the semantic data model of the EN 16931-1 is mapped to the corresponding XPaths of the Cross Industry Invoice 100 (D16B) message structure. The cardinality column for the syntax represents the cardinality as it is defined by UN/CEFACT to illustrate differences between the semantic data model and the respective syntax. The cardinality of the data model is taken into account by the corresponding validation artefacts.

Table 2 — Semantic model to UN/CEFACT syntax elements mapping (normative)

ID	Leve	Card	BT	Desc.	DT	Path	Typ	Card	Match	Rules
BT-1	1	1..1	Invoice number	A unique identification of the Invoice.	I	/rsm:CrossIndustryInvoice/rsm:ExchangedDocument/ram:ID	E	1..1		
BT-2	1	1..1	Invoice issue date	The date when the Invoice was issued.	D	/rsm:CrossIndustryInvoice/rsm:ExchangedDocument/ram:IssueDateTime/udt:DateTimeString	E	1..1		@format = ”102”
						/rsm:CrossIndustryInvoice/rsm:ExchangedDocument/ram:IssueDateTime/udt:DateTimeString/@format	A			Only value “102”
BT-3	1	1..1	Invoice type code	A code specifying the functional type of the Invoice.	C	/rsm:CrossIndustryInvoice/rsm:ExchangedDocument/ram:TypeCode	E	0..1	CAR-2	
BT-5	1	1..1	Invoice currency code	The currency in which all Invoice amounts are given, except for the Total VAT amount in accounting currency.	C	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:InvoiceCurrencyCode	E	0..1	CAR-2	
BT-6	1	0..1	VAT accounting currency code	The currency used for VAT accounting and reporting purposes as accepted or required in the country of the Seller.	C	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:TaxCurrencyCode	E	0..1	CAR-2	

ID	Leve	Card	BT	Desc.	DT	Path	Typ	Card	Match	Rules
BT-7	1	0..1	Value added tax point date	The date when the VAT becomes accountable for the Seller and for the Buyer in so far as that date can be determined and differs from the date of issue of the invoice, according to the VAT directive...	D	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:ApplicableTradeTax/ram:TaxPointDate/udt:DateString	E	1..1	STR-2	@format = ”102”
						/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:ApplicableTradeTax/ram:TaxPointDate/udt:DateString/@format	A			Only value “102”
BT-8	1	0..1	Value added tax point date code	The code of the date when the VAT becomes accountable for the Seller and for the Buyer.	C	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:ApplicableTradeTax/ram:DueDateTypeCode	E	0..1	STR-2	
BT-9	1	0..1	Payment due date	The date when the payment is due.	D	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:SpecifiedTradePaymentTerms/ram:DueDateDateTime/udt:DateTimeString	E	1..1		@format = ”102”
						/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeSettlement/ram:SpecifiedTradePaymentTerms/ram:DueDateDateTime/udt:DateTimeString/@format	A			Only value “102”
BT-10	1	0..1	Buyer reference	An identifier assigned by the Buyer used for internal routing purposes.	T	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:BuyerReference	E	0..1		

ID	Leve	Card	BT	Desc.	DT	Path	Typ	Card	Match	Rules
BT-11	1	0..1	Project reference	The identification of the project the invoice refers to.	O	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:SpecifiedProcuringProject/ram:ID	E	1..1		Use “Project reference” as default value for Name.
						/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:SpecifiedProcuringProject/ram:Name	E	1..1		Use “Project reference” as default value for Name.
BT-12	1	0..1	Contract reference	The identification of a contract.	O	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:ContractReferencedDocument/ram:IssuerAssignedID	E	0..1		
BT-13	1	0..1	Purchase order reference	An identifier of a referenced purchase order, issued by the Buyer.	O	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:BuyerOrderReferencedDocument/ram:IssuerAssignedID	E	0..1		
BT-14	1	0..1	Sales order reference	An identifier of a referenced sales order, issued by the Seller.	O	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:SellerOrderReferencedDocument/ram:IssuerAssignedID	E	0..1		
BT-15	1	0..1	Receiving advice reference	An identifier of a referenced receiving advice.	O	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeDelivery/ram:ReceivingAdviceReferencedDocument/ram:IssuerAssignedID	E	0..1		
BT-16	1	0..1	Despatch advice reference	An identifier of a referenced despatch advice.	O	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeDelivery/ram:DespatchAdviceReferencedDocument/ram:IssuerAssignedID	E	0..1		

ID	Leve	Card	BT	Desc.	DT	Path	Typ	Card	Match	Rules
BT-17	1	0..1	Tender or lot reference	The identification of the call for tender or lot the invoice relates to.	O	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:AdditionalReferencedDocument/ram:IssuerAssignedID	E	0..1		Use for “Tender or lot reference ” with TypeCode “50”
						/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:AdditionalReferencedDocument/ram:TypeCode	E	0..1		Use for “Tender or lot reference ” with TypeCode “50”
BT-18	1	0..1	Invoiced object identifier	The identification of the call for tender or lot the invoice relates to.	I	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:AdditionalReferencedDocument/ram:IssuerAssignedID	E	0..1	CAR-2	Use for “Invoiced object identifier ” with TypeCode “130” and Reference TypeCode
						/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:AdditionalReferencedDocument/ram:TypeCode	E	0..1	CAR-2	Use for “Invoiced object identifier ” with TypeCode “130” and Reference TypeCode
BT-18–1	2	0..1	Scheme identifier	The identification scheme identifier of the Invoiced object	S	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:AdditionalReferencedDocument/ram:ReferenceTypeCode	E	0..1		