
Elektronsko izdajanje računov - 3-3. del: Sintaksa povezav za medsektorske račune D16B v skladu z UN/CEFACT XML

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

Ta slovenski standard je istoveten z: CEN/TS 16931-3-3:2017

ICS:

35.240.63 Uporabniške rešitve IT v IT applications in trade
trgovini

SIST-TS CEN/TS 16931-3-3:2018 **en**

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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 16931-3-3

October 2017

ICS 35.240.20; 35.240.63

English Version

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

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

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 30 July 2017 for provisional application.

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

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European foreword

This document (CEN/TS 16931-3-3:2017) 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 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2014/55/EU.

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 16931-3-2:2017, *Electronic invoicing - Part 3 - 2: Syntax binding for ISO/IEC 19845 (UBL 2.1) invoice and credit note*
- CEN/TS 16931-3-3:2017, *Electronic invoicing - Part 3 - 3: Syntax binding for UN/CEFACT XML Cross Industry Invoice D16B*
- CEN/TS 16931-3-4:2017, *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 Official 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/IEC 9735 (UN/EDIFACT) (CEN/TS 16931-3-4).

By ensuring interoperability of electronic invoices, the European standard and its ancillary European standardisation 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 CEN Technical Specification (TS) 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, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 - 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.

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 [i.1]]

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

CEN/TS 16931-3-3:2017 (E)**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 standardisation body². For all published specifications and standards the Intellectual 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 & 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 recognised organisations are able to participate in the development and maintenance process.

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

Apart from Invoice (CII) implementations, UN/CEFACT standards are implemented within the US Department of Defense. Within the global GS1 Community UN/CEFACT XML is used (apart from EANCOM & 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 & 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 eInvoicing Platform (CHORUS)
- German B2B and B2C core invoice standard (ZUGFeRD)

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

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

Support to the implementers and users is provided through other standardisation 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 standardised approach the EN requirement to take into account the UN/CEFACT XML Cross Industry Invoice v. 2.0 and v.3.0³ is reached⁴.

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. It is advised to implement the interface using the second set of schemas (decoupled) 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 website⁵. 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 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.

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

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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 lists can 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/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 XPath 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	Level	Card.	BT	Desc.	DT	Path	Type	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	
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"

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ID	Level	Card.	BT	Desc.	DT	Path	Type	Card.	Match	Rules
						/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		
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		

ID	Level	Card.	BT	Desc.	DT	Path	Type	Card.	Match	Rules
BT-14	1	0..1	Sales order reference	An identifier of a referenced sales order, issued by the Seller.	0	/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.	0	/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.	0	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeDelivery/ram:DespatchAdviceReferencedDocument/ram:IssuerAssignedID	E	0..1		
BT-17	1	0..1	Tender or lot reference	The identification of the call for tender or lot the invoice relates to.	0	/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.	1	/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:AdditionalReferencedDocument/ram:IssuerAssignedID	E	0..1	CAR-2	Use for "Invoiced object identifier" with TypeCode "130" and ReferenceTypeCode
						/rsm:CrossIndustryInvoice/rsm:SupplyChainTradeTransaction/ram:ApplicableHeaderTradeAgreement/ram:AdditionalReferencedDocument/ram:TypeCode	E	0..1	CAR-2	Use for "Invoiced object identifier" with TypeCode "130" and