TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

# CEN/TS 16931-3-2

June 2020

ICS 35.240.20; 35.240.63

Supersedes CEN/TS 16931-3-2:2017

English Version

# Electronic invoicing - Part 3-2: Syntax binding for ISO/IEC 19845 (UBL 2.1) invoice and credit note

Facturation électronique - Partie 3-2 : Liaison de syntaxe pour ISO/IEC 19845 (UBL 2.1) Factures et les notes de crédit

Elektronische Rechnungsstellung - Teil 3-2: Umsetzung in die Syntax ISO/IEC 19845 (UBL 2.1) Rechnung und Gutschrift



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.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**



Ref. No. CEN/TS 16931-3-2:2020 E

# Contents

Page

## European foreword

This document (CEN/TS 16931-3-2:2020) 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 16931-3-2:2017.

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, including a methodology to be applied in the real environment
- CEN/TR 16931-6:2017, Electronic invoicing - Part 6: Result of the test of the European standard with respect to its practical application for an end user - Testing methodology

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, 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 [5] 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 [5], 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 16931-3-2 defines the binding of the core elements of the invoice to ISO/IEC 19845 (UBL 2.1). 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 UN/CEFACT XML (CEN/TS 16931-3-3) 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 UBL 2.1 syntax (ISO/IEC 19845). 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/IEC 19845, *Information technology — Universal business language version 2.1 (UBL v2.1)*

# 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 [5]]

**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 UBL 2.1

## 4.1 Introduction

The Universal Business Language (UBL) is developed by the OASIS open standards consortium. OASIS is a non-profit, international consortium that drives the development, convergence and adoption of open standards for the global information society.

UBL is designed to provide a universally understood and recognized syntax for legally binding business documents and to operate within a standard business framework such as ISO 15000 (ebXML) to provide a complete, standards-based infrastructure that can extend the benefits of existing EDI systems to businesses of all sizes. UBL is freely available to everyone without legal encumbrance or licensing fees.

UBL is widely used around the world for procurement (e.g. ordering and electronic invoicing), sourcing (e.g. tendering and catalogues), replenishment (e.g. managed inventory) and transportation and logistics (e.g. waybills, forwarding instructions, and intermodal freight management). UBL provides the standards for the PEPPOL (Pan European eProcurement Online) network and public procurement initiatives in Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Spain, Sweden, and UK (NHS).

Version 2.1 of UBL has been approved for release as an ISO and IEC International Standard, and given the designation 'ISO/IEC 19845:2015'.

UBL schemas are modular, reusable, and extensible in XML-aware ways. As the first standard implementation of ebXML Core Components Technical Specification 2.01, the UBL Library is based on a conceptual model of information components known as Business Information Entities (BIEs). These components are assembled into specific document models such as invoice and order. These document models are then transformed in accordance with UBL Naming and Design Rules into W3C XSD schema syntax. This approach facilitates the creation of UBL-based document types beyond those specified in this release.

## 4.2 Data types

As stated, UBL messages are constructed using reusable Business Information Entities. The (data) typing mechanism in UBL also relies heavily on reuse of generic components, both within UBL, but also on the Core Component Technical Specification. Typically this has the following structure:

— The message specification (the invoice XSD) imports schema that specifies all the reusable Business Information Entities (expressed as XML elements);

— The message is constructed by using these BIE's;