
Elektronsko izdajanje računov - 4. del: Smernice o interoperabilnosti elektronskih računov na prenosni ravni

Electronic invoicing - Part 4: Guidelines on interoperability of electronic invoices at the transmission level

Elektronische Rechnungsstellung - Teil 4: Leitfaden über die Interoperabilität elektronischer Rechnungen auf der Übertragungsebene

Facturation électronique - Partie 4: Lignes directrices relatives à l'interopérabilité des factures électroniques au niveau de la transmission

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Ta slovenski standard je istoveten z: CEN/TR 16931-4:2017

ICS:

03.100.20	Trgovina. Komerzialna dejavnost. Trženje	Trade. Commercial function. Marketing
35.240.63	Uporabniške rešitve IT v trgovini	IT applications in trade

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en,fr,de

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TECHNICAL REPORT

CEN/TR 16931-4

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

July 2017

ICS 35.240.63; 35.240.20

English Version

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über die Interoperabilität elektronischer Rechnungen
auf der Übertragungsebene

This Technical Report was approved by CEN on 14 May 2017. It has been drawn up by the Technical Committee CEN/TC 434.

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (CEN/TR 16931-4:2017) 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.

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 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*;
- FprCEN/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*.

Introduction

The European Commission states 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 [2] on electronic invoicing in public procurement aims at facilitating the use of electronic invoices by economic operators when supplying goods, works and services to public administrations (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 [2], 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 Directive 2014/55/EU;
- it is in conformance with the appropriate mapping defined in the applicable subpart of CEN/TS 16931-3 (all parts).

The Standardization Request issued by the European Commission in connection with Directive 2014/55/EU requested that CEN should also develop Guidelines on interoperability of electronic invoices at the transmission level, taking into account the need of ensuring the authenticity of the origin and the integrity of the electronic invoices' content, to be given in a Technical Report (TR)

The Guidelines cover interoperability at the transmission level for invoices based on the core invoice model and its syntax representations to and from the involved trading and supporting parties. They could also be applied more widely to cover the transmission of electronic invoices rendered in other standards and formats i.e. they are invoice content and format neutral.

The Guidelines for interoperability at the transmission level (the Guidelines) are intended to guide all stakeholders who make use of e-Invoicing within the European Union (EU) and the European Economic Area (EEA), and Switzerland. They are addressed to trading parties, service and software providers in relation to the transmission methods or network solutions they use or support, in order to encourage the adoption and further development of good practices, recommendations and standards for the transmission level. This is intended to promote efficient, cost effective and widely available e-Invoicing practices and services.

It is expected that some groups of stakeholders, such as small and medium-sized businesses (SMEs) and smaller contracting authorities, may find these Guidelines inherently technically challenging and inaccessible at a practical level. This is recognized, and consequently it is important that at a context-specific level e.g. at Member State or Sector level, policy-makers, larger contracting authorities, SME representative and municipal associations, supportive government agencies, professional advisers, and service and solution providers take responsibility to guide such organizations in relation to these Guidelines. It is by the nature of the Guidelines that the provision of further specific guidance for SMEs and smaller contracting authorities could not be done at a European level, but rather at national and sector-specific level,

It is recommended that the Guidelines set out herein are adopted by market participants, in such a way that separate and competing approaches, solutions and networks find common ground at the

transmission level, and on the basis of which trading parties are able to reach the maximum number of their counterparties in a convenient manner. The Guidelines leave as many aspects as possible as a matter of choice or in the competitive domain by only focusing on those features of transmission that are essential to establishing interoperability.

It is envisaged that a large number of network and network-based solution instances will subscribe to and adopt the Guidelines. There is a clear separation between the Guidelines and the design and implementation of individual network and transmission solutions, which range from use of the 'open' Internet through virtual private Networks and managed services. The Guidelines are neutral as to the individual interoperability models that the market develops and uses to accelerate the mass adoption of e-Invoicing.

The following EU stakeholders have been consulted in addition to the Members of CEN/TC 434 and their supporting National Standards Organizations (NSOs):

- European Multi Stakeholder Forum on e-Invoicing;
- European Commission units responsible for EU Large Scale Pilots, in particular e-SENS – DIGIT, DG CONNECT, DG GROW, and for the Connecting Europe Facility (CEF) in particular the Digital Service Infrastructure for e- Delivery;
- OpenPEPPOL Association;
- European E-invoicing Service Providers Association (EESPA).

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1 Scope

This Technical Report recommends a set of Guidelines to ensure interoperability at the transmission level to be used in conjunction with the European Norm (EN) for the semantic data model of the core elements of an electronic invoice and its other associated deliverables. The Guidelines are by nature non-prescriptive and non-binding.

These Guidelines take into account the following aspects:

- 1) recommending best practices for use at the transmission level;
- 2) supporting interoperability between all the parties and systems that need to interact and within the various operating models in common use;
- 3) ensuring a level playing field for the various operating models and bi-lateral implementations and for the use of existing and future infrastructures, which support e-Invoicing;
- 4) promoting a common terminology and non-proprietary standards for transmission and related areas;
- 5) ensuring the authenticity of origin and integrity of electronic invoice content;
- 6) providing guidance on data protection, on the enablement of format conversion, and on e-invoice legibility, including the use of a readable visual presentations, as required;
- 7) providing guidance for identification, addressing and routing;
- 8) identifying requirements for robust legal frameworks and governance arrangements;
- 9) recognizing the roles of trading parties, solution and service providers and related infrastructure providers.

The Objectives of the Guidelines are:

- 10) to support the implementation of the EU Directive 2014/55/EU on e-Invoicing and the core invoice model;
- 11) to propose best practices and recommendations for standards to enable electronic exchange of e-Invoices and related data between participants by providing a basis for interoperability at the transmission level, based on common requirements and scenarios;
- 12) to facilitate Straight Through Processing (STP) by the key actors in the supply chain (Buyers, Sellers, Tax Authorities, Agents, Banks, Service and Solution Providers, etc.);
- 13) to provide a set of non-prescriptive and non-binding Guidelines and recommendations that are applicable to all common operating models for e-invoice exchange and transmission whilst also providing recommendations specific to each of the common operating models.

To accomplish these objectives, the Guidelines are based on the following Requirements and Guiding Principles:

- 14) the need to cover the transmission of e-invoices and related documents from the system of the sending trading party to the system of the receiving trading party, including transmission issues for any intermediary platforms;

- 15) the need to allow any seller in any European (EU, EEA and Switzerland) country to deliver invoices to any buyer in any location in another European country (EU, EEA and Switzerland);
- 16) the need to support all common invoicing processes and modes of operation;
- 17) the need to be compatible with the current legislative and regulatory environment for the exchange of e-Invoices and related data;
- 18) the need to support the European Norm and other commonly accepted content standards;
- 19) the need to ensure that other document exchanges beyond e-Invoicing can be supported;
- 20) the need to establish clear boundaries between the collaborative and competitive domains;
- 21) the need to enable competition between business models, solutions and service providers and foster innovation;
- 22) the need to ensure that European supply chains remain an integrated and competitive part of the global economy;
- 23) the need to promote network effects leading to the development of critical mass as e-Invoicing becomes the dominant mode of invoicing (network effects result in a service becoming more valuable as more trading parties use it, thus creating a virtuous circle and further momentum for adoption).

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The following items are considered to be in the competitive domain and therefore out of scope of the Recommendations:

- 24) Private entity space: the private entity space meaning the internal functionality or behaviour of any individual sender and receiver of invoices and their solution and service providers.
- 25) Schemes and community solutions: as described above, the creation of these Guidelines for interoperability at the transmission level is considered to be a collaborative activity. Individual schemes, operating models, networks and network-based solutions at a European, national, global, or sector level are considered as lying in the competitive domain for the purposes of these Guidelines.
- 26) Choice of networks and technical solutions: the usage of any particular network or technical solution by any community or bilateral pair of service providers is a private competitive matter.
- 27) Service offerings: the actual utilization of the Guidelines in relation to a commercial service offering is a commercial activity and therefore out of scope.
- 28) Business integration: the integration of services with other processes, systems or solutions is in the competitive domain, as is storage and archiving.
- 29) Pricing: pricing and contractual arrangements in any form are in the competitive domain.
- 30) Legal and tax compliance: steps taken to ensure compliance with legal and tax requirements are private obligations of taxable persons.

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2 Normative references

Not applicable.

3 Terms and definitions

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

3.1 transmission

delivery (including sending and receiving), presentation or the 'making available' of invoices in a timely and secure manner between trading parties and any third parties acting on their behalf

3.2 bilateral model

model in which the transmission takes place on a direct connection basis between the trading parties

3.3 three-corner model

model in which a single service provider acts on behalf of both the supplier and the buyer to offer e-Invoicing and other supply chain services

3.4 four-corner model

model in which the seller and buyer each have their own service provider, which in turn inter-operate with each other, either on the basis of bilateral agreements, or as part of a multilateral network

3.5 interoperability

ability of disparate and diverse organizations to interact towards mutually beneficial and agreed common goals, involving the sharing of information and knowledge between the organizations, through the business processes they support, and by means of the exchange of data between their respective ICT systems

3.6 network and network-based solution

physical or virtual electronic network based on a specification and a contractual framework, in which multiple parties engage in electronic transmission

3.7 service or solution provider

intermediary party, which provides facilities or tools for the transmission of e-invoices and other documents and messages

3.8 trading party

party which may either be the invoice sender or receiver being the parties engaged in the supply and receipt of goods and services

3.9 structured format for an electronic invoice

invoice that has been issued, transmitted and received in a structured code electronic format, often based on mark-up, which allows for its automatic and electronic processing

3.10**unstructured format for an electronic invoice**

invoice that has been issued as a document containing information that is purely alpha-numeric in nature or represents an image, capable of being read by a human, but not automatically processed

4 The challenge of interoperability at the transmission level**4.1 Definition of Interoperability**

The European Interoperability Framework (EIF) defines interoperability as “...the ability of disparate and diverse organizations to interact towards mutually beneficial and agreed common goals, involving the sharing of information and knowledge between the organizations, through the business processes they support, and by means of the exchange of data between their respective Information, Computer and Technology (ICT) systems” [3].”

The goal of interoperability is to allow information to be presented in a consistent manner between business systems, regardless of technology, application or platform. It thus provides organizations with the ability to transfer and use information across multiple technologies and systems by creating commonality in the way that business systems share information and processes across organizational boundaries. Such processes should not involve the end-user in onerous initiation and operational processes.

In a heterogeneous business environment actors do not need to know in detail how another actor operates within its internal environment; however, the existence of business agreements that set out a common collaborative way of working together is vital.

Interoperability can be identified on four different levels:

- 1) legal interoperability;
- 2) business and organizational interoperability;
- 3) process interoperability- semantic;
- 4) technical interoperability- syntax and transmission (the latter being the subject of these Guidelines).

At the transmission level, there is a focus on the methods and practices through which delivery, presentation or the ‘making available’ of invoices are conducted in a timely and secure manner. This includes related requirements such as validation, signing, encryption, the enablement of format conversion but not issues concerning invoice content or message payload. The focus is on the delivery or presentation of e-invoices and related documents from the system of the sending trading party to the system of the receiving trading party, including transmission issues for any intermediary platforms.

4.2 The current market reality for e-Invoicing

As essential context for developing relevant Guidelines for the transmission level it is important to understand the current market reality for e-Invoicing across Europe.

Trade involves many types of trading party (e.g. businesses of all sizes, consumers and government agencies) trading with each other. A lack of interoperability between the many trading parties and the operating models they use for the electronic transmission of trade information could, if not addressed, inhibit participation by important market segments such as small businesses and smaller contracting authorities; it will also create barriers to reach, which is the ability of one entity to forward electronic business documents to another in a safe and predictable manner.