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

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

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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).

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).

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.

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.

By addressing cooperation to create interoperability at all levels including transmission, all trading parties (suppliers and buyers) and service providers should be better able to work with their counter-parties. The European economy will benefit in terms of cost effectiveness from the results of standardization, while at the same time continuing to benefit from a vigorous competitive market for e-Invoicing solutions.

The following is the current market reality in the general landscape for e- Invoicing services and provides context for the creation of the Guidelines:

Relative immaturity: whilst e-Invoicing technologies have been maturing for some time, the trend towards e-Invoicing adoption and the development of supporting services is still relatively young and most actors are in a build-up phase. The market for supporting services has developed to help trading parties overcome business and technical complexity and any perceived uncertainty in the legal environment. Geographic regions and countries are at varying stages of maturity in terms of e-Invoicing adoption. Many heterogeneous and incompatible e-Invoicing processes and transmission methods have evolved and have been adopted in the market. The trust equation for electronic business between users and between service providers and users is still emerging and business models are still developing.

Fragmentation: The use of multiple standards for invoice content and multiple transmission methods creates complexity and may be impeding the achievement of critical mass. Format conversion services provided by service providers shield users from these underlying problems. Many trading parties engage in bilateral connections using humanly generated unstructured formats, such as PDFs, but the usage of unstructured formats leads to suboptimal processes due to the resultant absence of end-to-end business process automation. Structured formats make possible significant benefits from automated processing, but where such formats are in use, they often use sector-specific or local formats and transmission channels.

The needs of smaller businesses: Small business is not fully engaged with e-invoicing at this stage. Many are required to participate in e-Invoicing based on the automation of supply chains by larger enterprises or invoice other SMEs and individuals using PDFs. Efforts are needed to provide easy to use tools, transmission methods and other capabilities to enable full participation by SMEs, preferably without involving software installation and maintenance.

Operating models: Direct (bilateral) connections are common. However, many invoice exchanges are intermediated using 'Three-Corner' models, often cloud-based, in which buyers and sellers participate in various communities by being connected to a number of separate service platforms. This is common in the automated supply chain segment especially but not exclusively B2B. 'Four-Corner' models involving connections between service providers are being increasingly deployed.

At the current stage in the development of e-Invoicing, the following are therefore the principal examples of operating models:

— bilateral, peer-to-peer, hub and spoke, and Electronic Data Interchange (EDI) models, whereby transmission takes place via a direct or point to point connection between the trading parties;

— three-corner model whereby a single service provider or network acts on behalf of both the supplier and the buyer to offer e-Invoicing and other supply chain services;

— four-corner model whereby 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.

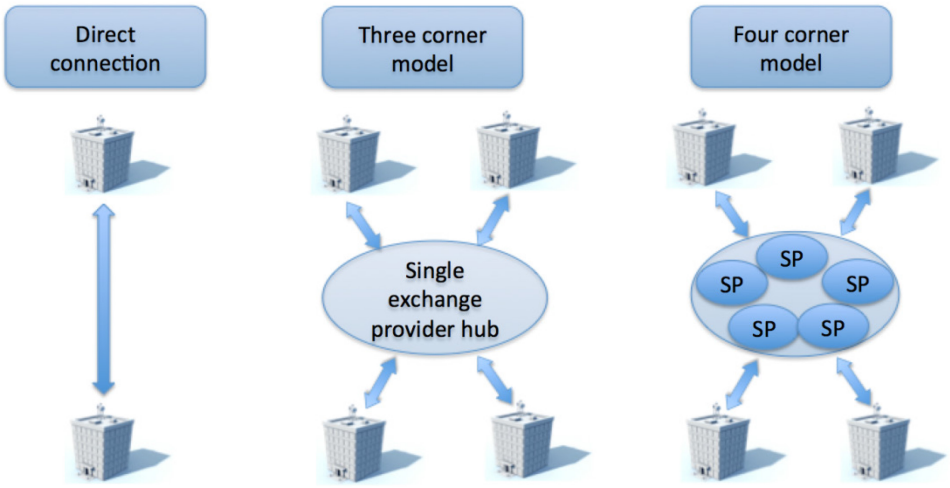

Figure 1 — Common operating models for e-Invoicing

5 Guidelines

5.1 Common terminology

This Guideline calls for the consistent use of terminology to describe and clarify the roles and responsibilities of actors and roles involved in transmission. Much of the required terminology is embedded in the EN, but there are other terms relevant to the transmission level, a selection of which are set out in this document. As terms and definitions are used by actors in the transmission process, they should be clearly defined and consistently used in legal and operational documents. Reference should be made to common definitions used by standardization bodies, such as CEN, UN/CEFACT and ISO.

5.2 Best practices for transmission and related network services

The following business and technical best practices to ensure interoperable transmission are proposed, whilst recognizing that their actual adoption or their provision by means of services is a matter of choice and lie in the competitive domain:

1) **Agreement on transmission method**: Trading parties should agree on, or find acceptable, one or more transmission channels to be used for e-Invoicing and related communication. Such channels will usually, be established at the initiative of the invoice receiver, and this could be termed a 'pull' mode. In other cases, the invoice sender may create or find an electronic connection acceptable to the invoice receiver, and this could be termed a 'push' mode.

2) **Needs of trading parties**: In establishing such transmission channels the initiator of the transmission method should take into account the needs of their trading party, in terms of ease of use and factors such as size of enterprise, technical capability and geographic location, providing, where appropriate, choice and flexibility. There is a need for easy to use and cost effective solutions for SMEs to send invoices to their buyers whilst not impeding process automation on the buyer side.

3) **Transmission availability**: All networks and transmission methods should support reliability, availability and resilience as appropriate to the business circumstances. There should be support for multiple time-zones and, as feasible, 24x7x365 service availability.

4) **Message structure and identifiers**: There should be a separation of the message header, envelope, or metadata from message content or payload. Message identifiers should be available so

that individual messages are unambiguously identifiable. Where a networks are provided for e-invoice delivery, an identifier for each network instance should be made available in order to unambiguously identify each network and permit interoperability between networks.

5) **Message types**: There should be made available or mutually agreed a comprehensive range of message types, including business level responses and message level responses, such as acknowledgements, invoice status, response messages and rejections.

6) **Clear boundaries**: There should be clear definitions as to where a transmission process begins and ends and what gateway, node or access point creates the boundary between the system of the sender or receiver. Such boundary conditions shall be consistent with the allocation of business and legal responsibility and liability.

7) **Transmission security**: All transmission connections including access to portals and websites should be protected by security and confidentiality methods and devices, such as firewalls, access controls and the use of electronic signatures (advanced and qualified digital signatures). Security requirements need to include protection of the transmission process from intrusion and infringement of confidentiality. Encryption may be employed where appropriate in the context of the data being exchanged.

8) **Web services**: The employment of websites for uploading and downloading e-invoices, data and related documents should be deployed in an easy-to-use and secure manner. It is possible to organize secure transmission within a secure 'closed loop' environment based on such web services.

9) **E-mail**: The use of e-mail is very widespread and allows messages to reach the intended recipients in the vast majority of instances, although delivery is not guaranteed. Nevertheless additional controls should be considered by sender and receiver to mitigate basic e-mail limitations, such as the impact of spam, fraud attacks and lack of confidentiality. Additional controls such as encryption, the use of digital signatures, response messages and delivery confirmations, should be agreed and documented. Senders and receivers also need to have a clear definition of the e-mail process to be used (payload attached or embedded in the body of the message, the use of compression, the number of documents per email, etc.). Due to the nature of the email protocol, the receiver will need to pay special attention to issues of authentication and security, and the methods issues described in 6.2. E-delivery Services as defined in the eIDAS regulation are recommended in appropriate circumstances. These provide an enhanced form of e-mail with supporting evidence relating to the handling of an e-mail including proof of submission and delivery.

Further requirements for technology standards, addressing and routing, authenticity and integrity, and data protection are covered in the paragraphs below.

5.3 Use of common technology standards at the transmission level

This Guideline recommends the use of common, non-proprietary, royalty-free European and international information technology standards for communication and related areas such as security. Such standards and technology should enable interoperability and foster competition and innovation. The number of strictly mandated technical requirements shall be kept to a minimum as a matter of principle.

Examples of standards relevant to these Guidelines at the transmission level are:

1) AS2 (IETF), AS4 (OASIS), OFTP2 (ODETTE) and SMTP (Email) - protocols for the secure and reliable transmission of messages across the Internet;

2) SBDH - a standard for the envelope or header, which incorporates a payload or content message such as an e-invoice;

3) SML/SMP (Service Metadata Locator/Service Metadata Publisher) – Oasis Specifications for distributed registry lookup and discovery;

4) digital certificates/PKI (Public key Infrastructure) – ETSI standards for trust services;

5) http protocol based standards and specifications (REST, Web services, SSL/TLS etc.) for web applications.

Attention is drawn to the CEF e-Delivery which has the status of a generic Digital Service Infrastructure in the CEF programme in the area of data exchange with a focus on interoperability, security, scalability and performance, and legal assurance and accountability. CEF e-Delivery is developed by the European Commission in consultation with other stakeholders based on the e-SENS Large Scale Pilots and the PEPPOL specifications. These may be used to support any four-corner model for the exchange of e-invoices or other related documents and are accordingly recommended for adoption, as appropriate.

CEF is the Connecting Europe Facility a multi-year funding and policy programme involving transport, energy and telecoms, supporting the EU Digital Single Strategy initiative.

The e-Delivery building blocks can be found on https://joinup.ec.europa.eu/community/cef/.

ETSI/TS 102 640 about Registered Electronic Mail (REM) and ETSI SR 019 050 about Electronic Registered Delivery Services (ERDS) are relevant standards for the implementation and interconnection of invoice transmission services. ETSI/TS 102 640-5 about REM-MD Interoperability Profiles provides relevant standards for the interconnection of both types of transmission services: i.e. Store and Forward (S&F) and Store and Notify (S&N). ETSI is also preparing additional Standard Reports and Technical Specifications as part of the M/460 mandate concerning the eIDAS trust services – electronic registered mail and registered electronic delivery services. An important part of this work programme are technical specifications “Testing Conformance and Interoperability” for delivery services.

5.4 Identification, addressing and routing

This Guideline proposes the principles to be applied to the development of commonly recognized identification schemes, interoperable addressing and routing processes both within and across different domains and networks, and the identifiers that enable them. The proposed principles are as follows:

1) A distinction should be made between an identifier by which a person is generally recognized (e.g. name, company number, VAT number etc.) and an address which is the location, at which a natural person (individual) or legal person (corporate entity), a system, or a device may be reached, recognizing that any of these may require more than one address.

2) All transmission solutions should provide or create the tools for the use of an unambiguous identifier for both the users themselves and, where applicable for any associated solution or service providers on a basis that is cost effective and easy to use including facilitating the transfer of business relationships from one solution to another to avoid lock-in.

3) All solution and service providers should also obtain and widely distribute an address to enable others to route all relevant messages to them and their customers.

4) Addresses and identifiers should be sufficient to support the processing of invoices, invoice related messages and potentially other business messages to senders and receivers.

5) All networks and network based solutions should publicly make available their various addressing and routing structures and numbering conventions on a transparent basis, as required by the needs of their trading parties.

6) All networks and network based solutions are encouraged to (but should not be compelled to) publish an easily accessible directory, in which are found the identifiers and addresses of end-users, who wish that such information be published in this way.

7) Unless it is a condition of participating in a particular network or network based solution, no end-user (a natural or legal person, being the ultimate invoice receiver or sender) should be compelled to agree to the publication of such information, for any reason such as confidentiality, or the use of practices where it discovers the necessary details on a private bilateral basis.

8) The identifiers should be capable of being re-used for other e-procurement services and preferably be globally unique.

9) Existing identifiers and numbering conventions should be used where possible.

10) Attention is drawn to the SML/SMP/ Directory artefacts present in the PEPPOL and e-Delivery specifications for the creation of Directory Services.

11) Commission Implementing Regulations (EU) 2015/1501 and 2015/1502 are additional regulations concerning the identification of data relating to natural or legal persons, the applicable Levels of Authentication (LOA) and the necessary controls.

Industry participants are encouraged to cooperate in the further development and adoption of more interoperable and easy to use addressing and routing procedures within a standards body such as CEN and ETSI and also, taking due account of relevant international standards.

5.5 Authenticity and integrity

The authenticity of the origin and the integrity of the content of any invoice should be ensured in accordance with Article 233 of the VAT Directive 2010/45/EU, which describes three ways to ensure authenticity of origin and integrity of invoice content:

Business controls which create a reliable audit trail. An example of a business control is the matching of supporting documents such purchase orders, delivery notes and remittance advices. Controls should be appropriate to the size, activity and type of the taxable person. An audit trail should contain source documents, processed transactions and references to the linkage between them. Business controls have no impact at the transmission level, so have no implication for these Guidelines on transmission, as it is a pure business process handled before (by the sender) or after (by the receiver) the actual transmission of the invoice; however, it is nevertheless recommended for quality purposes to follow the best practices for transmission described in these Guidelines when using the business controls method.

Advanced electronic signature. By definition, this type of signature uniquely identifies and links its signatory to the content (authenticity of the origin) and invalidates the signature if the signed data has been tampered with (integrity of the data). Advanced digital signatures can be technically implemented, following the XAdES, PAdES or CadES (COMMISSION IMPLEMENTING DECISION (EU) 2015/1506). It is recommended to always apply the signature to the transmitted payload so that the authenticity and integrity of the invoice can be verified during the whole legal archiving period and for confidentiality purposes. At the message or header level, the transmitted message could be also signed (e.g. when sent using the AS2 protocol), for the whole or during a stage or stages of the transmission process, but the use of signatures in these circumstances is separate from its use to ensure authenticity and integrity.

EDI (Electronic Data Interchange). There shall be a previously executed agreement between the parties (Commission Recommendation 1994/820/EC) before any EDI transmission may be used as guarantee for the authenticity of the origin and integrity of the data. The implemented transport security methods should be documented in the agreement. There are various types of agreements between parties that could be used for this purposes, such as bilateral agreements between two parties, multilateral agreements used in legal frameworks such as OpenPEPPOL, and a variety of national agreements.

The above three methods are cited in the Directive as valid options, but it is contemplated that there are and will be in the future other possible ways of ensuring Authenticity and Integrity. An example is described in the Regulation (EU) N°910/2014 on electronic identification and trust services for electronic transactions in the Internal Market (eIDAS Regulation), which provides a regulatory environment to enable secure and seamless electronic interactions between businesses, citizens and public authorities. Among other items, it provides the regulatory environment for electronic signatures, electronic seals, timestamps and other proofs for authentication mechanisms to enable electronic transactions with the same legal standing as transactions performed on paper.

Mention should also be made of the e-Delivery services (Regulation (EU) N°910/2014) which defines a service that makes it possible to transmit data between third parties by electronic means and provides evidence relating to the handling of the transmitted data, including proof of sending and receiving the data, and that protects transmitted data against the risk of loss, theft, damage or any unauthorized alterations. Documents transmitted using an e-Delivery service are guaranteed to have authenticity, integrity and confidentiality.

5.6 Data protection

Key principles for data protection when processing and transmitting invoices shall be applied:

— data shall be protected against unauthorized access

— life cycle management is defined and applied

Invoice data may include personal data (EN 16931 seller and buyer contacting details) and even sensitive personal data in possible attachments and extensions.

The definition of Party include all entities engaged in the transmission of invoice and invoice related messages and information. Seller and buyer parties normally act in Personal Data Controller role, whilst solution and service providers normally operate in Personal Data Processor role.

Parties shall implement all technical and organizational measures necessary to meet the requirements of applicable data protection law under the governing law to protect personal data.

In the case that Personal Data may be transferred out of the territory that European Commission has found to guarantee an adequate level of data protection, the parties shall ensure that prior written consent is established, and also when required by applicable legislation and relevant contractual arrangements.

Currently, the Data Protection Directive (Directive 95/46/EC [4]) on the protection of individuals with regard to the processing of personal data and on the free movement of such data, is applicable. This Directive will be obsolete as of May 25th, 2018. It will be replaced by Regulation (EU) 2016/679 [18].

5.7 Implications of format conversion services at the transmission level

Transmission services should support and enable the need to provide format conversion services at any stage in the end-to-end transmission and delivery process. The actual process and business requirements for format conversion lie outside the scope of these Guidelines. The end-to-end transmission layer should not impede or prevent format conversion.

The use of the EN establishing the core data elements of a e-invoice based on a semantic data model requires that format conversion for syntactical expressions does not result in alterations to core invoice content.

Format conversion should be carried out exclusively on behalf of either the Seller or Buyer, or both, and under their explicit authority, and as not prevented by regulation. An example of the latter case is where applicable regulations require that the same e-invoice shall be archived by both trading parties in identical form. In certain Member States, it is also a requirement to deliver (and archive) the original structured format to the invoice receiver, irrespective of any intermediate format conversion. It is also necessary to archive original electronic invoices in the format in which they are received.

It should be recognized that the use of electronic signatures, electronic seals and end-to-end encryption will prevent format conversion prior to the data being rendered in a form ready for processing by the receiver or its appointed service provider. Format conversion is not possible without decryption or decommissioning electronic signatures and electronic seals and therefore cannot take place during the transmission between sender and receiver. It can be executed before transmission – by or on behalf of the sender – or after transmission – by or on behalf of the receiver. If any other arrangements are required, such as the use of format conversion services by third parties they shall be executed separately and outside the invoice transmission process.

5.8 The role of visual presentations (for legibility) including 'hybrid' invoices

The use of the EN necessarily entails the transmission or delivery of a structured invoice compliant with the semantic data model and the rules for syntax bindings.

Article 233 of Directive 2010/45/EU says: 'The authenticity of the origin, the integrity of the content and the legibility of an invoice, whether on paper or in electronic form, shall be ensured from the point in time of issue until the end of the period for storage of the invoice'.

From the foregoing extract, it becomes essential that both the seller and the buyer need to be able to enable the production of a legible i.e. a readable version of each e-invoice. In a number of Member States this is described as a “human readable version”. A structured format expressed in one of the listed syntaxes cannot fulfil this role by itself.

However, it is perfectly possible to present invoice data presented in a structured electronic format additionally in a human readable visual presentation to enable convenient visualization. Many parties find the use of a commonly shared visual representation as convenient for readability and mutual understanding.

There are a number of practical ways to provide the readable presentation of an invoice:

1) For structured formats, the supplier and the buyer are able to use tools that will create a human readable version compatible with the structured format. Providing such a human readable version to accompany the structured invoice is a common practice and may be rendered at any stage and by any actor in the process, based on identical invoice data.

2) For XML syntaxes, a stylesheet can be applied to the XML format in order to generate a readable presentation each time it is needed (such as during processing and throughout the archiving period). The stylesheet shall be provided in a version available when the structured invoice is created. The human readable presentation may be provided by the supplier or its service provider, or a third party, for instance through a URL indicated in the XML message. The obligation to make available all invoice information present in the structured file in a readable version depends on the quality of the stylesheet. It is also recommended to ensure that the stylesheet is available on a long term basis (i.e. throughout the archiving period). In the event of the presence of invoice extensions, it is necessary to use a compatible stylesheet able to present all the additional information provided.

3) The seller or its service provider may provide a human readable version by means of a pdf presentation so as to secure its integrity throughout the archiving period. This readable version can be embedded within the structured format (as a base64 encoded blob- binary large object). Another way is to embed the structured invoice inside the pdf, using the PDF A/3 format. This latter is often called a 'hybrid' invoice, as it includes both a structured and a human readable format. All information present in the structured format shall be present in the readable pdf. For XML structured invoices, a good practice for the seller or its service provider, which creates the invoice, is to generate the readable pdf by applying a stylesheet to the XML invoice. This will secure coherence between the information present in the XML format and the information present in the pdf presentation. This is a good solution to guarantee the ability of both seller and buyer to provide a human readable presentation throughout the archiving period. Another alternative is where the structured format and the human readable presentation may actually sit side by side in a container or envelope forming part of the transmission process.

In whatever manner the human readable presentation is created, it is important to bear in mind that since the fundamental process for producing an electronic invoice compliant with the European standard is based on invoice creation, processing and delivery in a structured format required by Directive 2014/55/EU, the human readable presentation is only a companion for human processes and cannot be a substitute for the structured e-invoice itself. The structured invoice will invariably be considered to be the reference instance and the instance for process automation, as required under Directive 2014/55/EU. However, the human readable version may be used in the event of manual processing or when a readable version is clearly required. In the event that a human readable presentation, it s present and contain all the information present in the structured e-invoice.

The use of a visual or human readable presentation should always be subject to the rule; 'No compulsion, no prohibition'.

5.9 Guidance for the implementation of Operating Models

5.9.1 Introduction

This Guideline promotes interoperability within and between multiple business and implementation models, or use cases. These models need to include as yet unknown future developments in technology and business models, particularly as 'cloud' technology develops. The co-existence of different models promotes choice and compatibility for end-users. The environment benefits from the robust development of bilateral, three-corner models and four-corner model solutions to support widespread interoperability.

There are no inherent barriers preventing all these models to interact and gradually develop into a virtual any-to-any network with drastically reduced communication costs for end-users. The latter idea of a completely seamless and frictionless universal e-business ecosystem accessible to anyone with the required functionality and security would represent a desirable long term goal, although its realization is challenging.

5.9.2 Specific additional Guideline regarding Direct Connection (Bilateral) models

In a bilateral scenario trading parties are responsible for agreeing at a commercial level the basis on which they will work together. Where possible, one or other of the trading parties may work to ensure the maximum degree of standardization in their dealings with as many parties as possible. Reference may be made to implementation models and resources placed in the public domain by supportive public and private sector organizations.

To support technical interoperability, trading parties should exchange their addressing details and inter-operate using commonly available tools and techniques in line with these Guidelines.

Bilateral exchanges vary enormously in scale and scope from tightly integrated supply chains employing EDI, ERP to ERP direct connections, and EIPP/EBPP (Electronic Invoice or Bill Presentment

and Payment) web-portals. Parties are required to agree on all levels of interoperability, business, semantic and technical on a basis that is proportionate to their business context.

It is recommended that steps be taken to deploy repeatable and cost-effective processes to counter-act the inevitable cost pressures and complexity involved in this model.

5.9.3 Specific additional Guideline regarding three-corner models

In a three-corner model, a single service provider or platform is responsible for all business, organizational, semantic and technical interoperability. The buyer and supplier are present in the same network or platform. The Guidelines herein are recommended for adoption by them and special regard should be paid to the need to adopt standardized easy-to-use tools and techniques especially where SMEs are involved.

The proliferation of stand-alone three-corner models could become a barrier to interoperability despite their undoubted role in building critical mass and tight supply chain integration. However, the tendency of such e-Invoicing service providers to enter into interoperability agreements with each other is a clear sign of market maturation and it is recommended that all solution and service providers adopt interoperability arrangements to deliver reach as required by their clients.

5.9.4 Specific additional Guideline regarding four-corner models

The Guidelines call on service providers to inter-operate with a wide variety of other service providers as is required by their users. These connections can be achieved either through bilateral linkages between them or through the creation of multilateral network solutions.

Under a four-corner model trading parties are connected to their own service providers or access points, which in turn inter-operate with each other. Under such a scenario, trading parties avoid the need to create multiple and often differing connections with their own trading parties.

Such models contain many options for the carrying out of roles and responsibilities both in the user to service provider domain and between service providers. Service providers acting in a four-corner model need to pay attention to the separate transmission needs of the supplier domain, the interoperability domain and the buyer domain. There is an important need for clarity and transparency and clear rules for transmission services based on wide available standards and protocols at the transmission level, compliant with other Guidelines set out in this document.

The PEPPOL e-Delivery Network in the e-Procurement domain is an implementation of the four-corner model with community based interoperability. Lifecycle management and legal governance utilizes CEF e-Delivery capabilities for:

— Message exchange with AS2/SBDH;

— Dynamic discovery and look-up using SML/SMP;

— PKI based trust services linked to the Legal framework;

— See OpenPEPPOL: http://www.peppol.eu.

The European E-invoicing Service Providers Association (EESPA) has established a Model Interoperability Agreement in active use by its members and beyond. See http://www.eespa.eu.

5.10 The need for legally binding agreements at the transmission level

This Guideline recognizes the importance of establishing sound and enforceable agreements between trading parties and between trading parties and service providers (as appropriate) and their users to promote trust, reach and interoperability at the transmission level.

Examples of what should be considered for agreement are:

— general obligations of the contracting parties;

— service availability;

— technical failure and recovery scenarios;

— handling of disputes;

— support (contact persons);

— liability and risk apportionment, relating to interoperability responsibilities;

— addressing and routing;

— communication/security requirements.

Within the bilateral and three-corner models, all agreements are a matter for the parties concerned both as to form and content. They should be kept to a minimum and be easily understandable.

Within the four-corner model, service providers may formalize agreements between them in a bilateral SLA (Service Level Agreement) or a multilateral agreement, in which clusters of service providers enter into one agreement through which they become contractually bound to all other participating service providers. For both scenarios, model agreements should be developed and implemented, clearly establishing responsibilities and liabilities.

Even with multilateral contracts in place at the transmission level, there may be a need for additional bilateral business contracts to define business-related issues such as invoice creation responsibilities (if considered relevant by the parties), mapping/format conversion/archiving responsibilities (if any), compensation for damages and limits of commercial liability.

Annex A
(informative)

Legislation summary

COUNCIL DIRECTIVE 2010/45/EU of 13 July 2010 amending Directive 2006/112/EC on the common system of value added tax

Article 233(1)

The authenticity of the origin, the integrity of the content and the legibility of an invoice, whether on paper or in electronic form, shall be ensured from the point in time of issue until the end of the period for storage of the invoice.

Each taxable person shall determine the way to ensure the authenticity of the origin, the integrity of the content and the legibility of the invoice. This may be achieved by any business controls which create a reliable audit trail between an invoice and a supply of goods or services.

“Authenticity of the origin” means the assurance of the identity of the supplier or the issuer of the invoice.

“Integrity of the content” means that the content required according to this Directive has not been altered.

Article 233(2)

Other than by way of the type of business controls described in paragraph 1, the following are examples of technologies that ensure the authenticity of the origin and the integrity of the content of an electronic invoice:

(a) an advanced electronic signature within the meaning of point (2) of Article 2 of Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures (*), based on a qualified certificate and created by a secure signature creation device, within the meaning of points (6) and (10) of Article 2 of Directive 1999/93/EC;

(b) electronic data interchange (EDI), as defined in Article 2 of Annex 1 to Commission Recommendation 1994/820/EC of 19 October 1994 relating to the legal aspects of electronic data interchange (**), where the agreement relating to the exchange provides for the use of procedures guaranteeing the authenticity of the origin and integrity of the data.

REGULATION (EU) No 910/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 23 July 2014

on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC

COMMISSION IMPLEMENTING DECISION (EU) 2015/1506 of 8 September 2015

laying down specifications relating to formats of advanced electronic signatures and advanced seals to be recognized by public sector bodies pursuant to Articles 27(5) and 37(5) of Regulation (EU) No 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market

Annex B
(informative)

Abbreviations

AS2 (IETF)- AS2 (Applicability Statement 2) is a specification about how to transport data securely and reliably over the Internet. Security is achieved by using digital certificates and encryption. IETF is the Internet Engineering Task Force

AS4 (OASIS)- an open standard for the secure and payload-agnostic exchange of business-to-business documents using Web services.

B2B- Business to Business

B2G- Business to Government

CEF- Connecting Europe Facility

CEN – European Standards Committee

CEN TC434- CEN Technical Committee 434

DIGIT- Directorate-General for Informatics- European Commission

DG CONNECT- Directorate-General for Communications Networks- European Commission

DG GROW- Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs- European Commission

Directive 2010/45/EU- directive on VAT including treatment of e-Invoicing

Directive 2014/55/EU- directive on e-Invoicing in public procurement

EESPA- European e-invoicing Service Providers Association

EIPP/EBPP- E-invoice or E-Bill presentment and payment

EIF- European Interoperability Framework

EN- European Norm

EEA- European Economic Area

ERP- Enterprise Resource Planning (system)

e-SENS- electronic Simple European Networked Services and Large Scale Pilots managed by DIGIT European Commission

ESO- European Standardization Organization

ETSI- European Telecommunications Standards Institute

EU- European Union

ISO- International Standards Organization

NSO- National Standards Organization

OFTP2 (ODETTE)- OFTP2 from Odette is a global standard for securely exchanging file data over the Internet.

openPEPPOL- the openPEPPOL Association is responsible for the governance and maintenance of the PEPPOL specifications ...

PDF- a file format used to present information as a fixed-layout flat document, including the text, fonts, graphics, and other information needed to display it.

PKI- public key infrastructure is a set of roles, policies, and procedures needed to create, manage, distribute, use, store, and revoke digital certificates and manage public-key encryption.

EN 16931-2017- the semantic data model of the core elements of an electronic invoice – the core invoice model – is specified in EN 16931:2017, the CEN identifier for this EN

Regulation (EU) No. 1025/2012- regulation on European Standardization

REST- Representational State Transfer.

SBDH- Standard Business Document Header, a GS1 standard

SLA- Service Level Agreement

SME- small and medium-sized business

SML/SMP- Service Metadata Publisher and Service Metadata Locator are components of Look-up and discovery services in openPEPPOL

SMTP (Email)- Simple Mail Transfer Protocol is an Internet standard for electronic mail (email) transmission

SSL- Secure Sockets Layer is the standard security technology for establishing an encrypted link between a web server and a browser

STP- straight through processing

TLS- Transport Layer Security, successor to SSL

TR- Technical Report

UN/CEFACT- intergovernmental body being the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

VAT- Value-added tax

Bibliography

[1] COM(2010) 712 final, *Reaping the benefits of electronic invoicing for Europe*

[2] European Directive 2014/55/EU, *Directive on electronic invoicing in public procurement*

[3] *European Interoperability Framework (EIF)*. Towards Interoperability for European Public Services, 2011

[4] European Directive 95/46/EC, *Directive on the protection of individuals with regard to the processing of personal data and on the free movement of such data*

[5] EN 16931-1, *Electronic invoicing – Part 1: Semantic Data Model of the Core Elements of an Electronic Invoice*

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

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

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

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

[10] ETSI/TS 102 640 (all parts), *Electronic Signatures and Infrastructures (ESI); Registered Electronic Mail (REM)*

[11] ETSI SR 019 050, *Electronic Signatures and Infrastructures (ESI); Rationalized framework of Standards for Electronic Registered Delivery Services Applying Electronic Signatures*

[12] Commission Implementing Regulation (EU) 2015/1501 of 8 September 2015 on the interoperability framework pursuant to Article 12(8) of Regulation (EU) No 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market

[13] Commission Implementing Regulation (EU) 2015/1502 of 8 September 2015 on setting out minimum technical specifications and procedures for assurance levels for electronic identification means pursuant to Article 8(3) of Regulation (EU) No 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market

[14] Council Directive 2010/45/EU of 13 July 2010 amending Directive 2006/112/EC on the common system of value added tax as regards the rules on invoicing

[15] Commission Implementing Decision (EU) 2015/1506 of 8 September 2015 laying down specifications relating to formats of advanced electronic signatures and advanced seals to be recognised by public sector bodies pursuant to Articles 27(5) and 37(5) of Regulation (EU) No 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market

[16] Commission Recommendation 1994/820/EC October 1994, Proposed Revision with the Requirements of Directive 2001/115/EC, Present Day E-Commerce Practices and Revised Definition of EDI Electronic Data Interchange

[17] Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC

[18] Regulation (EU) No 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC

Waarom betaalt u voor een norm?
Normen zijn afspraken voor en door de markt, zo ook deze norm. NEN begeleidt het gehele normalisatieproces. Van het bijeenbrengen van partijen, het maken en vastleggen van de afspraken en het bieden van hulp bij de toepassing van de normen. Om deze diensten te kunnen bekostigen betalen alle belanghebbende partijen die aan tafel zitten voor het normalisatieproces, en u als gebruiker voor normen en trainingen. NEN is een stichting en heeft geen winstoogmerk.

Wat is nu precies de toegevoegde waarde van normen?
Stelt u zich eens voor … u wilt in het buitenland geld pinnen, maar uw bankpas past niet. Of uw nieuwe telefoon herkent uw simkaart niet. De samenstelling van de benzine over de grens is anders waardoor u niet kunt tanken. Het dagelijks leven zou zonder goede afspraken over producten, processen en diensten een stuk complexer zijn.

Het maken en vastleggen van afspraken door belanghebbende partijen noemen we het normalisatieproces. Normalisatie had vanouds betrekking op techniek en producten. Nu worden steeds vaker normen voor diensten ontwikkeld. Zo zijn er afspraken op het gebied van gezondheidszorg, schuldhulpverlening, kennisintensieve dienstverlening, externe veiligheid en MVO.

Normen zorgen voor verbetering van producten, diensten en processen; qua veiligheid, gezondheid, efficiëntie, kwaliteit en duurzaamheid. Dit ziet u op de werkvloer, in de omgang met elkaar en in de samenleving als geheel. Organisaties die normalisatie onderdeel van hun strategie maken, vergroten hun professionaliteit, betrouwbaarheid en concurrentiekracht.

Wat doet NEN?
NEN ondersteunt in Nederland het normalisatieproces. Als een partij zich tot NEN richt met de vraag om een afspraak tot stand te brengen, gaan wij aan de slag. We onderzoeken in hoeverre normalisatie mogelijk is en er interesse voor bestaat. Wij nodigen vervolgens alle belanghebbende partijen uit om deel te nemen. Een breed draagvlak is een randvoorwaarde. De afspraken komen op basis van consensus tot stand en worden vastgelegd in een document. Dit is meestal een norm. Afspraken die in een NEN-norm zijn vastgelegd mogen niet conflicteren met andere geldige NEN-normen. NEN-normen vormen samen een coherent geheel. Een belanghebbende partij kan een producent, ondernemer, dienstverlener, gebruiker, maar ook de overheid of een consumenten- of onderzoeksorganisatie zijn. De vraag is niet altijd om een norm te ontwikkelen. Vanuit de overheid komt regelmatig het verzoek om te onderzoeken of er binnen een bepaalde sector of op een bepaald terrein normalisatie mogelijk is. NEN doet dan onderzoek en start afhankelijk van de uitkomsten een project. Deelname staat open voor alle belanghebbende partijen. NEN beheert ruim 30.000 normen. Dit zijn de in Nederland aanvaarde internationale (ISO, IEC), Europese (EN) en nationale normen (NEN). In totaal zijn er ruim 800 normcommissies actief met in totaal bijna 5.000 normcommissieleden. Een goed beheer van de omvangrijke normencollectie en de afstemming tussen nationale, Europese en internationale normcommissies vereisen dan ook een zeer goede infrastructuur.

Betalen kleine organisaties net zoveel als grote organisaties?
Het uitgangspunt is dat alle partijen die deelnemen aan het normalisatieproces een evenredig deel betalen. De normcommissieleden kunnen onderling andere afspraken maken. Zo worden er wel eens afspraken gemaakt dat de grote partijen een groter deel betalen dan de kleinere bedrijven. De prijzen voor normen zijn voor iedereen gelijk. De kosten voor licenties zijn afhankelijk van de omvang van een organisatie en het aantal gebruikers.

Voordelen van normalisatie en normen
Gegarandeerde kwaliteit | Veiligheid geborgd | Bevordert duurzaamheid | Opschalen en vermarkten van nieuwe innovatieve producten | Meer (internationale) handelsmogelijkheden | Verhoogde effectiviteit en efficiëntie | Onderscheidend in de markt.

Voordelen van deelname
Invloed op de (internationale en Europese) afspraken | Als eerste op de hoogte van veranderingen | Netwerk; ook op Europees en internationaal niveau | Kennisvergroting.