

**OpenPEPPOL AISBL**

**Post Award Coordinating Community**

**ICT – Models**

**PEPPOL Invoice Pre Study**

**Version: 1.00**

**Status: Published, April 2017**

**Statement of copyright**



This deliverable is released under the terms of the **Creative Commons Licence** accessed through the following link: <http://creativecommons.org/licenses/by/3.0/>.

In short, it is free to

**Share** — to copy, distribute and transmit the work

**Remix** — to adapt the work

Under the following conditions

**Attribution** — You must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

**Table of Contents**

[1 Introduction 4](#_Toc478660600)

[1.1 Objective of this document 4](#_Toc478660601)

[2 References 4](#_Toc478660602)

[3 Document history 5](#_Toc478660603)

[3.1 Revision history 5](#_Toc478660604)

[3.2 Contributors 5](#_Toc478660605)

[4 Scope and prerequisite 6](#_Toc478660606)

[4.1 Prerequisite 6](#_Toc478660607)

[4.2 Scope 6](#_Toc478660608)

[4.3 Peppol invoicing objectives 6](#_Toc478660609)

[4.4 Directive 2014/55/EU on electronic invoicing in public procurement 7](#_Toc478660610)

[4.5 The European standard on electronic invoicing EN 16931 [EN] 7](#_Toc478660611)

[4.6 Report criterias 9](#_Toc478660612)

[5 Gap analysis 9](#_Toc478660613)

[5.1 PEPPOL BIS4A 2.0 invoice to the EN 16931 9](#_Toc478660614)

[5.2 Crediting (credit note) 13](#_Toc478660615)

[6 Potential approaches for supporting the EN 14](#_Toc478660616)

[6.1 Overview of approaches 14](#_Toc478660617)

[6.2 Approach A — PEPPOL adopts EN as-is 14](#_Toc478660618)

[6.3 Approach B — PEPPOL develops Core Invoice Usage Specification 15](#_Toc478660619)

[6.4 Approach C – PEPPOL develops an extension specification 15](#_Toc478660620)

[6.5 UN/CEFACT Cross Industry Invoice support 16](#_Toc478660621)

[7 Recommendation 16](#_Toc478660622)

[7.1 Recommendation 1 – Mandatory invoice BIS specifications 17](#_Toc478660623)

[7.2 Recommendation 2 – Additional BIS specifications 18](#_Toc478660624)

[7.3 Recommendation 3 –BIS as extension specifications 18](#_Toc478660625)

[7.4 Recommendation 4 – Syntax support 18](#_Toc478660626)

[8 Appendixes 19](#_Toc478660627)

[8.1 Appendix A - Extension gaps 19](#_Toc478660628)

[8.2 Appendix B - Core Invoice Usage Specification gaps. 22](#_Toc478660629)

[8.3 Appendix C – Code lists 23](#_Toc478660630)

[8.4 Appendix D – Allowed adjustments to the EN 25](#_Toc478660631)

# Introduction

The purpose of the project is to perform and document a pre-study of the different approaches for how to use the European standard on Electronic Invoicing [EN] within PEPPOL, including recommendations on the way forward.

## Objective of this document

This report is intended to give a recommendation that supports the OpenPEPPOL management in deciding on the way forward on adopting the EN for the invoice and credit note documents.

This report is for PEPPOL's own purposes and is not intended to be used by any other party as a reference or benchmark for how to adopt the EN.

# References

[PEPPOL\_BIS] <http://www.peppol.eu/>, specifically http://www.peppol.eu/ressource-library/technical-specifications/post-award.

[PEPPOL\_Transp] http://www.peppol.eu/ressource-library/technical-specifications/infrastructure-resources.

[EN] The European standard for Electronic Invoicing, EN 16931. At the time of writing this report the EN is not published.

[DIRECTIVE 55] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0055

# Document history

## Revision history

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version | Date | Author | Organisation | Description |
| 1.0 | 31.03.2017 | Georg Birgisson | ESV / Midran Ltd. | First version |

## Contributors

The following individuals and their organizations have contributed to the development of this PEPPOL document by participation in team meetings, discussions and by providing expert input and review.

Ahti Allikas – OpusCapita Group OY

Charlotte Dahl Skovhus – mySupply

Erlend Klakegg – DIFI

Georg Birgisson – ESV / Midran Ltd.

Helena Ask – Visma Software International AS

Jan Mærøe – DIFI

Jens Aabol – DIFI

Jerry Dimitriou – UPRC (University Of Piraeus Research Center)

Kees Duvekot – Wehkamp BV

Krist Deveugele – Basware

Martin Forsberg – Single Face To Industry/ESV

Oriol Bausà – Invinet

Paweł Żebrowski – Institute of Logistics and Warehousing, Poland

Per Martin Jøraholmen – The Norwegian Government Agency for Financial Management (DFØ)

Philip Helger – BRZ

Rik Ribbers – Simplerinvoicing

Risto Collanus – Visma Software International AS

Siw Midtgård Meckelborg – DIFI / Edisys Consulting AS

Tadeusz Rudnicki – Institute of Logistics and Warehousing, Poland

Trond Ausdal – Visma Software International AS

# Scope and prerequisite

## Prerequisite

This report does not have prerequisites.

## Scope

This report is concerned with evaluating gaps between the technical specification of the PEPPOL Invoice (transaction 10) and for Credit Note (transaction 14), as they are specified in PEPPOL BIS4a/BIS5a v2 [PEPPOL\_BIS], against the specifications of the European standard for electronic invoicing [EN], as specified in the final draft for formal vote. Based on an assessment of the identified gaps, the report evaluates the potential approaches for how PEPPOL may upgrade its invoicing so that it is compliant to the EN, with consideration to PEPPOL's requirements.

The analysis of the report is from the perspective of the "PEPPOL user" who are all those who send and/or receive invoices as well as the service providers who provide tools and services to those senders and the receivers. Identified gaps, their effect and possible resolutions are evaluated by how they would affect the current invoice processes of the PEPPOL user.

The report is not an evaluation of the EN in itself and should not in any way be read as an opinion or judgement of the EN.

The evaluation addresses differences that may exist in the following:

* Business terms.
* Cardinalities and rules.
* Code lists.
* Attributes.
* Business processes.
* Syntax bindings.

The report will attempt to identify the differences and evaluate their significance, but it will not attempt to resolve potential issues.

The report identifies potential approaches for how PEPPOL may adopt the EN. It evaluates the different approaches with consideration to a gap analysis and makes recommendations on the way forward.

Based on the recommended way forward, the report identifies necessary projects that OpenPEPPOL will need to carry out to migrate from the current specification to a new specification based on the EN.

## Peppol invoicing objectives

PEPPOL is based on three major pillars:

* the network (PEPPOL Transport Infrastructure) [PEPPOL\_Transp]
* the document specifications (PEPPOL Business Interoperability Specifications -BIS) [PEPPOL\_BIS]
* the legal framework that defines the network governance (PEPPOL Transport Infrastructure Agreements)

PEPPOL enables access to its network through Access Points, which exchange standardised electronic documents based on the PEPPOL BIS. PEPPOL Access Points have the following key features:

* anyone can set up a PEPPOL Access Point;
* no peering agreements needed between PEPPOL Access Points; and
* no roaming fees allowed between PEPPOL Access Points.

The following statement from the PEPPOL website ([www.peppol.eu/peppol\_elements](http://www.peppol.eu/peppol_elements)) identifies the main objectives that OpenPEPPOL aims to achieve by defining BIS specifications.

The eProcurement specifications  (PEPPOL BIS) maintained by OpenPEPPOL build on the work of the CEN Workshop on Business Interoperability Interfaces for Public Procurement in Europe (CEN BII). PEPPOL has not developed new standards but has used the CEN BII results to develop implementation guidelines, known as PEPPOL BIS, that can be embedded in eProcurement and eInvoicing systems, to support interoperability across Europe.

The PEPPOL BIS are formal requirements to ensure pan European interoperability of procurement documents, such as eInvoices. They address the following issues:

* choreography of document exchange
* semantic document model

The choreography deals with capabilities for handling varied and complex  exchange processes, stating what your capabilities are and what capabilities you can expect from your trading partners.

The semantic model identifies the content that receivers can be expected to process without any bi-lateral agreement or setup. It provides for: the minimal content of a document, the rules constraining the content, the use of identifiers and code lists. This model ensures that if the sender issues a document according to the rules, he can be certain that all receivers will be able to process it in the same way.

With the emergence of the European standard for an electronic invoice PEPPOL has decided to base its invoicing on the EN instead of the CENBII invoice specification.

An important part of the PEPPOL objectives is that semantic models can be processed „without any bi-lateral agreement or setup". The effect of this objective is that the PEPPOL BIS specifications are more specific and aim to reduce options for the users in order to make implementations more effective, both in terms of cost and operations. Consequently the current BIS specifications contain restrictions on the underlying CENBII specifications.

It is also noted that the PEPPOL network today has over half a million users who are sending or receiving invoices based on the current BIS specifications. Migration cost and other effects on those implementations are therefore an important issue when evaluating the significance of differences/gaps.

## Directive 2014/55/EU on electronic invoicing in public procurement

Directive 2014/55/EU [DIRECTIVE 55] on electronic invoicing in public procurement states the requirements put on public contracting authorities and contracting entities for receiving electronic invoices. The directive includes the following articles, inter alia, that are relevant to this report.

(art 7) Member States shall ensure that contracting authorities and contracting entities receive and process electronic invoices which comply with the European standard...

(art 14) …Only electronic invoices issued by the economic operator to whom the public contract or concession contract has been awarded (the main contractor) should be covered by this Directive…

(art 34) …contracting authorities and contracting entities should be obliged to receive and process electronic invoices which comply with the European standard on electronic invoicing and with any of the syntaxes on the list published by the Commission…

(art 35) …Where the sender chooses to submit the invoice using the European standard on electronic invoicing, the recipient's obligation to receive and process should only apply if the invoice is in one of the syntaxes included on the list of syntaxes published by the Commission…

Together with the EN specification of compliance (see section 4.5.2) this means that a public entity must receive and process an electronic invoice that is sent by a supplier if that invoice is in either of the two syntaxes listed. That same public entity may however create a Core Invoice Usage Specification (CIUS, see section 4.5.3.1 ) and only accept invoices that are compliant to that CIUS.

## The European standard on electronic invoicing EN 16931 [EN]

The EN is a semantic data model of the core elements of an electronic invoice and credit note. As such it defines the data that is exchanged in an invoice in terms of its meaning and the rules it must follow. Separately the EN lists message syntaxes that may be used to express that data. The EN provides bindings to those syntaxes.

The EN was created by the European Committee for Standardisation (CEN) by request from the European Commission based on Directive 2014/55/EU on electronic invoicing.

In the standardisation request it was instructed that the CENBII 2.0 specification for an invoice and credit note as well as the MUG (Message User guidelines) specification should be used as base. The PEPPOL invoice as defined in the PEPPOL BIS4 and 5 also uses CENBII 2.0 as its base.

### Syntax binding

The EN lists two syntaxes that a sender may use. Those are:

* UBL Invoice and credit note messages as defined in ISO/IEC 19845:2015 (UBL 2.1)
* UN/CEFACT Cross Industry Invoice XML message as specified in XML Schemas 16B (SCDRM-CII)

The EN provides bindings between the semantic model and these two syntaxes (CEN/TS 16931-3-2 and CEN/TS 16931-3-3). The list of syntaxes and their binding to the semantic model is not part of the standard itself. However article 34 of directive 2014/55/EU requires public entities to accept invoices that are sent in either of the two syntaxes listed.

### Compliance to the EN

The EN for electronic invoice defines the concepts of compliance and conformance according to TOGAF as follows:

compliant:

some or all features of the core invoice model are used and all rules of the core invoice model are respected.

conformant

all rules of the core invoice model are respected and some additional features not defined in the core invoice model are also used.

The EN contains a specification of a methodology for how parties may restrict the full invoice to create a compliant implementation and a message instance. Such a specification is called a Core Invoice Usage Specification (CIUS)

The EN defines how parties who are either sending or receiving invoices are compliant to the standard as follows.

A receiving party may only claim compliance to the core invoice model if he accepts invoices that comply with the core invoice model in general, or with a CIUS, that is itself compliant with the core invoice model.

A sending party may claim compliance if he sends invoices that comply to the core invoice model, including those issued in accordance with a conformant CIUS.

The EN defines how individual invoice document instances are compliant to the standard.

An invoice document instance is compliant to the core invoice model if it respects all rules defined for the core invoice model, which may include the specification contained in a conformant CIUS.

If an invoice instance document supports requirements that can be considered as a use of a CIUS, the invoice instance document is still compliant to the core invoice model. These invoice instance documents can still be received and processed by a party who is not supporting the CIUS because it still complies to the rules of the core invoice model.

### Restricting and extending the EN

The EN recognizes that the semantic data model and rules that it specifies may not support all business requirements that may exist in specific industry sectors or business relations. As example, some industry sectors may require additional business terms and in some business relations, otherwise optional information may be required.

The EN defines a methodology for adjusting to such additional requirements. If the adjusted specification only restricts options that are allowed in the EN so that they will produce invoice instances that a receiver would be able to process by following the unrestricted EN specification. Such adjusted specifications are considered to be compliant to the EN and are called Core Invoice Usage Specifications. If the adjustments are additional information elements or other alterations that add functionality, the adjusted specification is considered to be extended and called an extension specification. Extended invoice instance documents are not considered to be compliant to the EN.

The use of adjusted specifications always requires agreement between trading parties but that agreement may be made directly or indirectly. By joining a network like PEPPOL, accepting its requirements and registering receiving capabilities, a party may enter an indirect agreement with other PEPPOL users on the use of an adjusted EN specification as documented in a PEPPOL BIS.

Details on what adjustments can be made to the EN in a CIUS or an Extension can be found in Appendix D.

## Report criteria

Based on the above this report sets the following main criteria for its recommendations:

1. The PEPPOL mandatory invoice shall not be an extension specification.

A significant number of PEPPOL users fall under the scope of the EN and must accept compliant invoices. If the mandatory PEPPOL invoice is an extension specification those parties could not comply with directive 55 by adopting it, and would be forced to implement another compliant invoice specification.

1. The new PEPPOL Invoice and credit note shall enable existing Peppol users to continue their current invoicing, in the extent possible, in an EN compliant way.

There are over half a million current PEPPOL users who are successfully using the current BIS specifications. This criteria aims to strike an economic balance between the cost of adopting the EN and the benefits that it produces.

1. The migration and the use of PEPPOL should be as simple as possible.

Since the PEPPOL network is in full operation it is important that the migration to the EN can be carried out effectively and with minimum implementation costs.

1. Added functions and processes introduced by the EN should be adopted unless there are explicit reasons not to add these.

The overall aim should be to adopt the EN with minimal restrictions but at the same time to make the adoption economical and maintain the efficiency of the current PEPPOL invoicing processes and to consider national requirements of new PEPPOL members.

1. It should be possible to use the mandatory invoice BIS without direct bilateral agreements.

In line with PEPPOL objectives the adoption of the EN should enable PEPPOL users to exchange invoices based on the BIS specification and without direct bilateral agreement on how to use options that may exist in the specifications. This may require restricting some options that exist in the EN because of its wider scope.

# Gap analysis

## PEPPOL BIS4A 2.0 invoice to the EN 16931

This chapter identifies the difference found between the currently mandatory PEPPOL BIS for invoice and credit note, and EN, and states them as gaps. The section attempts to identify the following:

* If current requirements of the PEPPOL BIS are supported by the EN.
* Does the EN impose additional requirements

The baseline for the gap analysis is the current PEPPOL invoice and credit note. This means that if a feature existing in the current BIS is not supported in the EN, then it is considered to be missing. If it is the other way around, it is considered to be added.

Each gap was evaluated in two ways.

* CIUS or Ext. For each identified gap PEPPOL has the options of either adjusting its invoice processing to the EN or to apply the CIUS methodology to support current processes. Each gap was therefore evaluated based on whether it can be closed with a CIUS or not. It is considered that gaps that cannot be closed with a CIUS would require an Extension although some of those may in fact not fit into the EN extension methodology either, but that was not evaluated.
* Effect. The effect of each gap is evaluated as minor, average or major from the point of view of how much it would affect current PEPPOL users to adopt the EN specification for the gap. The definition of the effect is as follows.
  + Minor, when adopting the EN specification current PEPPOL users can continue their current processes with minimal or no change.
  + Average, when adopting the EN specification current PEPPOL users can continue or modify a process or function.
  + Major, adopting the EN specification requires current PEPPOL user to either discontinue a process or function, or adopt a new one.

The analysis recognized that the effect of a gap may be different from a business perspective versus a technical perspective. This is particularly the case for gaps in business terms and code lists, but gaps in syntax bindings and attributes tend to have technical effect and gaps in business process to have business effect.

### Business terms

The team compared the business terms in the EN to those that are in the PEPPOL BIS. A difference between business terms is considered to be a gap and can be its name, its definition or both. Differences in features of a business term, such as cardinalities were evaluated separately. Differences in the data types of business terms and the specification of the data types were not evaluated.

When a business term is added into a PEPPOL BIS a receiver who registers that he is capable of receiving that BIS is stating that he will in some way receive and process that term. Consequently any business terms added put some effort on the receiver. The EN CIUS specification allows restricting out business terms that are optional in the EN but terms that are mandatory may not be restricted out. However, when restricting out optional terms, attention must be given to rules that may depend on that term and thus preventing it from being restricted out.

The gap analysis identified 46 gaps in business terms. Of these, 38 are classified as minor. Most of those (34) could be closed with a CIUS.

#### Main findings from gaps between business terms

The following points summarize several gaps found and are of the nature that they will have to be adopted by all PEPPOL users in order to be compliant to the EN.

* Delivery information on line level is not supported in the EN.
* The EN does not support exchange rate information as part of stating the VAT amount in accounting currency.
* When tax representative is given in an invoice the EN mandates more details such as address.
* The EN does not provide for supplementing the contract reference with its type and issue date.
* Payment means information in EN does not support branch identifiers that may be used in national clearing systems and it does not support financial institution address information used in some non-SEPA transfers.

The following points summarize gaps that may, through the use of a CIUS, be restricted out in a PEPPOL BIS specification.

* The EN has added a number of qualified reference elements.
* All addresses contain 3 address lines instead of 2.
* The EN allows multiple text notes, which subjects may be classified with subject codes.
* Payment means add elements to support direct debit payments.

A more detailed list of changes in business terms can be found in appendix A and B.

### Cardinality and rules

#### Cardinality

The cardinality of the business terms and their rules control how and when the different terms can be used including how often they may or must appear in each instance document.

When the EN is more flexible than the PEPPOL specification, then PEPPOL can maintain its specification by restricting that flexibility. This would most commonly be when an element is optional in the EN and mandatory in PEPPOL such as is the case for some identifiers. On the other hand, when the EN is stricter, then PEPPOL must accept that in order to be compliant to the EN.

The gap analysis identified 16 cases where the cardinality is different. In half of those the EN is stricter, and in half it more flexible. One of these is considered to have major effect but it can be addressed with a CIUS. Other are mainly average (12) and half of them could be addressed with a CIUS.

#### Rules

The business rules may also control how individual business terms may appear, and they also control their value, for example by forcing certain code lists, or they control the relationship between them.

The gap analysis identifies 138 cases where there is difference between the business rules in the EN and PEPPOL BIS.

The criterion for compliance is that rules must not be broken. This means that PEPPOL must adopt all the EN rules. In some cases the EN simply states rules in a different way, but the outcome is assessed to be the same. In those cases PEPPOL would have to adopt the rules, but the effect on the users would be minor to none. In other cases the EN is stricter, which forces PEPPOL to adjust. Then there are cases where the EN does not enforce rules where PEPPOL does. In those cases PEPPOL may keep its rules as long as they don't break existing EN rules. Keeping such rules is considered to be restrictive.

Out of the 138 differences there were 58 of the nature that PEPPOL must adjust to the EN. However only 14 of those are considered to have average impact. The other 44 are mainly different expressions of the same outcome and would be considered minor.

In the remaining 80 differences PEPPOL has the option of restricting with a CIUS. 2 of those were considered to have average effect, and the rest were minor. PEPPOL might nevertheless adjust to the EN for most of these differences.

#### Main findings from gaps in cardinality or rules

* The EN treats process identifiers as optional but they are important for the PEPPOL transport registration. This can be restricted with a CIUS.
* The EN makes the party legal name mandatory but the trade name, if different, is optional. In PEPPOL this is the other way around. This may affect those who register their trading parties with their trade name only in their ERP systems.
* The EN requires non-VAT invoices to include VAT elements using the category code O for Out of scope. In the BIS parties that are not VAT registered can leave out all VAT details. This cannot be restricted out in a CIUS.
* Although the general structure of VAT handling is similar to the BIS there is significant change to rules and the use of category code. This cannot be restricted out but should not affect general processing.
* The EN does not impose rules that enforce calculation of line total amount. PEPPOL could add such rules as long as such added calculation would be restricting how line level information is given within what is allowed by the EN.
* In the EN only one payment means can be stated. This cannot be changed in a CIUS.
* In the EN the total value of an invoice and a credit note may be negative whereas in PEPPOL only lines may be negative as long as they don't sum up to a negative total.

### Code lists

There is significant difference in how the EN handles code lists. In general PEPPOL restricts allowed code values in order to limit the options that the receiver must process. The EN on the other hand defines code lists for all code elements and makes the full list allowed for most of them. This means that the receiver of an unrestricted list must consider all possible codes. PEPPOL can however restrict each code list in a CIUS that is compliant to the EN.

The majority of the code lists in the EN is using version 16b. This means that adding codes to the code lists must be done by submitting it to the relevant maintenance agency and the EN needs be updated and published as using the new code list version.

#### Main findings from gaps code lists

* The full specification of the EN enables several invoice processes in addition to those currently supported in the PEPPOL BIS 4a and 5a. These include self billing, partial/final invoicing, crediting through negative invoices, and handling of new invoice types.
* In the EN allowed payment means types has been increased significantly.
* Code lists for charges are not the same as used in PEPPOL BIS. PEPPOL uses code list 5305 for both allowances and charges but the EN uses 5305 for allowances and 7161 for charges. This cannot be adjusted without an Extension.
* The EN allows UOM codes for quantities from both recommendation 20 and recommendation 21 whereas PEPPOL only allows recommendation 20. This could be restricted in a CIUS.

### Attributes

Generally the EN does not state attributes for codes and identifiers. This is because the values of the attributes are in fact fixed in the specification. Although this reduces the flexibility of the user e.g. to change what code lists are used, it is not considered to be a significant issue for PEPPOL. There were 20 gaps identified in the use of attributes but all are considered to have minor impact.

Where attributes are not included in the EN as optional elements for codes, PEPPOL cannot use them to indicate the use of restricted code lists and must do so though a CIUS specification that is compliant to the EN by stating the restricted set of values in the specification.

### Business processes

An invoice is designed to support certain processes through the combination of business terms, codes and rules. The EN specification specifically notes 12 processes as being supported. Of those the following are also currently supported by the PEPPOL BIS specification.

1. P1: Invoicing of deliveries of goods and services against purchase orders, based on a contract;
2. P2: Invoicing deliveries of goods and services based on a contract;
3. P3: Invoicing the delivery of an incidental purchase order;
4. P4: Pre-payment;
5. P5: Spot payment;
6. P6: Payment in advance of delivery;
7. P7: Invoices with references to a despatch advice;
8. P8: Invoices with references to a despatch advice and a receiving advice;

The following business processes are not supported in the PEPPOL BIS specification.

1. P9: Credit notes or invoices with negative amounts, issued for a variety of reasons including the return of empty packaging
   * The PEPPOL BIS does not allow for negative invoices or credit notes.
2. P10: Corrective invoicing (cancellation/correction of an invoice);
   * In this process the EN notes the use of negative invoices. The PEPPOL BIS does not allow negative invoices so the processes described partially supported.
3. P11: Partial and final invoicing;
   * Parties can use PEPPOL invoices for partial invoices and then issue a final invoice for the remaining amount. The EN description of partial and final invoice process however supports a use case where partial invoice do not carry VAT but then the VAT for the full trade is charged with the final invoice. This part of the described process is not supported in the PEPPOL BIS. The EN specification states that the final invoice shall refer the partial invoices. Such reference is indirectly supported in PEPPOL.
4. P12: Self billing.
   * In self billing the invoice is created by the buyer and sent to the seller instead of the other way around. When receiving the invoice the seller books the invoice as a sale in his sales systems but not as a purchase. The PEPPOL BIS does not support this process.

Additional invoice types are supported by the EN through the invoice type code as stated in the EN specification

"Other entries of UNTDID 1001 [6] with specific invoices or credit notes may be used if applicable."

The UNTDID 1001 code list allows specifying several invoice types in addition to those described the 12 processes such as pro forma invoice, tax invoice, customs invoice as well as industry specific invoices such as metered invoice and forwarders invoice. See appendix C. These invoice types indicate business processes that may not be supported by the PEPPOL BIS.

### Syntax binding

#### UBL syntax binding

The PEPPOL BIS 2.0 specification for an invoice is bound to the UBL 2.1 syntax. In some cases where the same business term exits in both EN and BIS the syntax binding of that term is different. The gap analysis identified 16 gaps in syntax binding. Most are considered to have average technical effect by requiring mapping information to different syntax elements, and minor or no business effect.

In some cases the EN syntax binding is making use of elements that were added in UBL 2.1, and are an improvement, but due to concerns with backwards compatibility the current PEPPOL BIS for some elements use UBL 2.0 bindings.

VAT in accounting currency is the only difference in syntax binding that was considered to have average effect.

#### Syntax binding to CII

The EN is bound to two syntaxes, the UBL 2.1 as well as the UN/CEFACT Cross industry invoice 16b syntax. Each public entity is, through directive 2014/55/EU, required to accept invoices using either of the two.

This means that if a public entity is to be able to fulfil its obligations according the directive by adopting PEPPOL then PEPPOL must enable it to accept invoices that are using the CII syntax.

It is recognised that a syntax binding towards UN/CEFACT CII does not currently exist in PEPPOL so a gap analysis between PEPPOL and CII is not possible. The report does however identify potential approaches on how PEPPOL public entities, who are bound by directive 2014/55/EU, may through the implementation of PEPPOL BIS become conformant to its requirements.

## Crediting (credit note)

The EN uses the same data model for invoice and credit note. The identification of whether a document is an invoice or a credit note can be made by using the document type code or, as is the case for UBL, by syntax binding to a credit note specific syntax document type.

A full gap analysis for the credit note was not carried out as part of this report but several gaps specific to the credit note were realized through the invoice gap analysis.

In PEPPOL the process of crediting is, simply put, based on using a credit note to correct or reverse a specific invoice. The credit note references the invoice that it is correcting. Likewise an incorrect credit note would be corrected with an invoice.

The EN however allows more variants for crediting through the use of positive and negative invoices. As example the following processes are possible with the EN but not PEPPOL.

* A positive invoice is reversed with an identical invoice where all amounts have the opposite numerical operator.
* A positive credit note may be reversed with a negative credit note.

Through restricting code lists and negativity of values, PEPPOL can maintain its current processing in a CIUS.

Since the EN specification for the credit notes uses exactly the same data model with the same definition for the business terms the credit note contains terms that have limited or changed semantic relevance to a credit note. PEPPOL can restrict most of those terms in a CIUS and in some cases it could add a restrictive usage description to adjust to the credit note.

### Main issues regarding the credit note and the process of crediting

Because a detailed gap analysis was not done for the credit note there are less details noted for these issues and there may be issues that the team is not aware of:

1. The EN uses the same data model for an invoice and a credit note and does not address the relevance of some of the business terms in the context of a credit note or the difference in semantics.
2. Additional credit note types are supported such as self billed, financial, forwarders and factored.
3. EN applies the same set of rules to the credit note whereas the BIS has applies specific rules for the credit note that differ to some extent from the invoice rules.
4. Most of the key issues stated for the invoice also apply to the credit note.

# Potential approaches for supporting the EN

The use of a BIS specification for messages and the business process they are supporting is a central concept in PEPPOL. The following approaches are based on the idea that PEPPOL adopts the EN by creating a PEPPOL BIS specification that defines how the EN is to be used in the PEPPOL community.

The way the EN specifies the invoice with the option of creating restricted Core Invoice Usage Specification or extension specification provides several possible approaches to how PEPPOL adopts the EN. The following chapter briefly identifies the main approaches, each of which is then detailed in the following chapters.

## Overview of approaches

The adoption of the EN by PEPPOL involves two main concepts. The adoption of the semantic data model of the EN and support of syntaxes that are listed with the EN.

For the adoption of the EN semantic data model the following potential approaches were considered:

Approach A – PEPPOL adopts the EN fully as-is.

This means that the EN specification would be used without any adjustments. In this case PEPPOL could create a BIS specification that simply references the EN specification.

Approach B – PEPPOL develops a Core Invoice Usage Specification.

This means that PEPPOL creates a BIS that follows the methodology specified in chapter 7 of the EN and is thus compliant to the EN. In this approach PEPPOL is not restricted to creating a single BIS based on the EN.

Approach C – PEPPOL develops an extension specification.

In this approach PEPPOL creates a specification that adds business terms and rules to support requirements currently supported in the PEPPOL BIS but not in the EN. Such a specification alone would however not make PEPPOL compliant to the EN.

PEPPOL is not restricted to only one of the above approaches, and may develop several BISes, some of which are CIUS, some that are extension specifications, and there may also be a full EN BIS.

The EN lists two syntaxes that are in scope of Directive 2014/55/EU. The team identified four approaches for how the syntaxes may be supported by PEPPOL. These approaches are addressed specifically in a separate chapter since they may be combined with the different approaches to adopting the semantic data model.

## Approach A — PEPPOL adopts EN as-is

If PEPPOL adopts the EN as-is as its mandatory BIS, this means that PEPPOL would make it mandatory for PEPPOL members to support the EN without any restrictions or other changes. PEPPOL might still provide its own BIS documentation and could simply refer to the EN for details.

That means that a receiver who has registered for receiving invoices must process invoices that use any of the processes and functions that are supported by the EN.

Referring to the gap analysis, adopting the EN as-is, every PEPPOL users would have to adopt the changes imposed by every gap identified.

### Benefits

Ability to receive invoices issued by any EN compliant issuer, whether he is a PEPPOL user or not.

### Disadvantages

Adopting the EN as-is as mandatory invoice message imposes several additional requirements on PEPPOL users that are currently not being used.

The PEPPOL policy for identifiers cannot be enforced without restrictions to the rules of the EN.

The team considered adding a BIS specification that contains the full EN specification but evaluation of this options indicated that providing such as BIS would introduce an open option into the PEPPOL network enabling senders to send invoices that require processing not supported by the receivers unless there is bilateral agreement. Encouraging the use of bilateral agreements and use of flexible specifications does not align with stated PEPPOL invoicing objectives.

## Approach B — PEPPOL develops Core Invoice Usage Specification

PEPPOL can use the approach to create a BIS that is a restriction on the EN and follows the criteria set in chapter 7 of the EN for Core Invoice Usage Specifications.

One approach is for PEPPOL to create a single specification that is a CIUS. This opens up the question on how that BIS should be restricted. It could be restricted to follow the current BIS specifications as closely as possible. Another approach is to make it follow the EN as closely as possible and the third is to use a different benchmark such as creating a BIS that implements the VAT directive (2006/112) as closely as possible.

PEPPOL may also develop multiple BIS specification that each implement different processes and functions that are supported by the EN. With that approach there could be one BIS for commercial invoicing in a similar way as is currently supported with BIS4 and BIS5. Additionally PEPPOL may then create BIS specifications for invoicing processes such as self billing, partial and final invoices (with variation on VAT as describe in the EN) and so forth.

Still another approach could be that PEPPOL maintains it’s current PEPPOL BIS4 and BIS5 specifications but creates a new optional BIS that is EN compliant.

### Benefits

A CIUS allows PEPPOL to implement its PEPPOL identifier policy.

It allows PEPPOL to restrict code lists and functions that would impose additional costs on current PEPPOL invoice users.

It allows PEPPOL to continue its current approach of specifying invoices that are specific to the intended processing and thus reduce the complexity for the receiver.

### Disadvantages

Non PEPPOL users who send invoices to PEPPOL users need to be aware that a PEPPOL receiver has imposed certain restrictions on the invoices that might lead to the rejection of an invoice even if that invoice is compliant to the EN in full.

## Approach C – PEPPOL develops an extension specification

The gap analysis carried out in this report shows that there are several functions that are supported by the current PEPPOL invoice but not by the EN.

### Benefits

Allows PEPPOL users to continue their invoicing processing in the current way.

### Disadvantages

Does not result in PEPPOL users becoming compliant to the EN. This requires those PEPPOL users who are in scope of directive 2014/55/EU to also support EN invoices alongside PEPPOL.

Bears the risk of the PEPPOL invoice becoming an alternate, competing, invoice to the EN which is against the rules of European standardisation.

## UN/CEFACT Cross Industry Invoice support

TC434 has provided a list of syntaxes for expressing the EN semantic data model. These are UBL 2.1 and UN/CEFACT Cross Industry Invoice 16b. This list of syntaxes supported and the binding to those syntaxes is not part of the EN itself but optional Technical specifications. Directive 2014/55/EU however states in article 34 that public entities that are required to support the EN must be able to process invoices that are delivered in either syntax. This requirement does not apply to private entities who use the EN or to senders. They may select one of the syntaxes and use that one alone or both.

The team agreed that a public entity that must support the EN should be able to do so by adopting PEPPOL. This means that for those entities the adoption of PEPPOL must include support for receiving CII. The following approaches to this were discussed.

### Mandatory support for both UBL and CII

The benefit of this approach is that all PEPPOL users become compliant to the EN in line with Directive 2014/55/EU.

The main disadvantage is that this approach requires all PEPPOL users, including those who do not have to comply with directive 2014/55/EU to implement support for both syntaxes.

### Mandatory support for UBL syntax and optional CII support

The benefit of this approach is that it allows those PEPPOL users who must comply with Directive 2014/55/EU to register the optional support for the CII syntax but does not require other members to implement double syntax support.

This approach does not impose disadvantage on those who send UBL invoices, but those who send CII syntax invoices can only send to those PEPPOL users that have registered the optional support. It may also challenge onboarding as those who are using CII will be required to adopt UBL in order to join PEPPOL.

### Restricting out the CII syntax in a usage specification

Although this may be possibly within the allowed limits of a CIUS, Directive 2014/55/EU does not allow public entities to do so. Therefore this is not a viable approach.

### PEPPOL transformation services from CII to UBL

The EN does not provide direct mapping between the two syntaxes, only mapping indirectly through the syntax mapping of the semantic model. To provide mapping between CII and UBL would require interpretations and restrictions in transformation that would become the responsibility of PEPPOL to maintain and to govern.

If errors occur in the exchange of invoices that have been transformed, the transformation is a possible cause of the error. In those cases the party operating the transformation may become involved in the resolution of the error. If PEPPOL would make transformation between UBL and CII as an integral part of its transport network that would require PEPPOL to have the resources to participate in such error resolutions. If the cost of that work is to be carried by those who use it, that calls for change to the PEPPOL pricing strategy which currently is only annual fixed fees.

# Recommendation

A conclusion drawn from evaluation of the potential approaches with consideration to the requirements and the gap analysis.

These statements are agreed from the point of view of PEPPOL requirements and existing implementations but shall not to be interpreted as general conclusions on the EN.

* The project agreed that adoption of the EN as-is through a single BIS specification is not feasible.
  + Among reasons stated are that EN provides for multiple invoicing processes and incomplete or too open code lists. There was not full agreement on the importance of the different reasons but the conclusion was agreed.
* PEPPOL should initiate action to produce a BIS that is a CIUS for the EN and supports at least the invoicing processes that are supported by the current PEPPOL BIS4 and BIS5 specifications. These should replace the current BIS4 and BIS5 as mandatory invoicing specifications.
  + When processes and functions are being specified the BIS should aim to follow the EN specification but restrict according the PEPPOL BIS when there is consensus that adopting the EN would impose unjustified cost on current PEPPOL users.
* PEPPOL support to the EN may be through more than one BIS.
  + Developing additional BIS specifications as CIUS for other invoicing processes should be addressed by the PoAcc as separate projects.
* PEPPOL users should have the option of registering the capability of receiving the EN as-is.
* PoAcc should consider developing optional extension specifications to the EN that support functionality that is currently in the PEPPOL BIS but is not supported in the EN (general agreement but needs to be detailed).
* The PEPPOL BIS should aim to support each invoicing function by following the methodology and business rules of the EN (agreed).
* The mandatory BIS specification in the PEPPOL network should be with the UBL syntax binding. PEPPOL users may optionally register support for the CII syntax.
* PEPPOL will provide detailed specifications for UBL.

## Recommendation 1 – Mandatory invoice BIS specifications

### Proposal

OpenPEPPOL should initiate a task to develop new BISes for invoice and billing so that the invoice and credit note transactions are compliant to the EN as Core Invoice Usage Specifications as defined in chapter 7 of the EN using the UBL syntax binding. In same way as now the support of one of these two is mandatory for those PEPPOL users who wish to receive invoices through the PEPPOL network.

OpenPEPPOL should also develop the same BIS specification with UNCEFACT/CII syntax binding but provide them as optional specifications that can be registered as capabilities by those who wish.

### Justification

OpenPEPPOL already has a significant user community that is using the current BIS specification successfully in their business processes. For many of those the need to comply with the EN is driven by legal requirement rather than business or process requirements.

Recognizing that the current PEPPOL invoice is based on extensive user experience and analytical work that has been carried out from the perspective of PEPPOL users, it is logical to enable current PEPPOL users to migrate to an EN compliant specification while avoiding significant affect on the current implementations.

By developing BIS specification for CII syntax binding PEPPOL ensures that those who wish to use the CII syntax through PEPPOL are bound by the same restrictions. This makes it possible for those who receive CII syntax messages to use the same processing as for the UBL syntax.

### Execution

Adoption of this recommendation implies the following.

1. All gaps between the current BIS specifications and the EN that would require an extension to continue using the approach of the BIS will have to be closed by adopting the specification for the particular gap. See appendix A for list of gaps that require extensions.
2. The business processes supported by the updated BIS should aim to follow the EN unless there is consensus to restrict them to the business processes supported by the current BIS. This is to support the aim of supporting the EN but simultaneously avoid forcing current PEPPOL users of the invoice to add support processes that they are not currently using.
3. The methodology and business rules of the EN shall be adopted by the BIS.

## Recommendation 2 – Additional BIS specifications

### Proposal

OpenPEPPOL should evaluate interest among its members for creating new BISes as CIUS that support business processes that are enabled by the EN and would not be supported by the upgraded BIS 4 and BIS5.

### Justification

The gap analysis of the EN versus the PEPPOL invoice has shown that in the development of the EN, support has been added for business processes that may be useful for some PEPPOL users in certain trade relations. Many of those trade relations may depend on bilateral setup of those relations and agreeing on the use of optional BIS specifications would fit into setting up those trade relations. Examples of such trade relations are self billing and partial/final invoicing.

### Execution

OpenPEPPOL should draw up proposals for BIS specifications that would be compliant CIUS of the EN and evaluate if there is sufficient interest from PEPPOL users to develop them.

## Recommendation 3 –BIS as extension specifications

### Proposal

It is recommended that OpenPEPPOL does not develop an extension specification the EN.

Recognizing that there are business requirements that are currently supported by the BIS but are not supported in the EN, OpenPEPPOL should evaluate interest and feasibility of creating BIS as extension specifications to the EN. This could enable invoicing functions that are not supported in the EN but are supported by the current PEPPOL BIS4 and BIS5

### Justification

Such an extension specification should be based on the EN Extension methodology as specified in TS xxx

This recommendation is driven by the consideration that the current PEPPOL BIS for invoice is an extension to the CENBII specification, on which it is based. These extensions have been added to support business requirements that have been submitted by PEPPOL users and judged important enough to justify extending the CENBII specifications. PEPPOL's adoption of EN as a replacement for CENBII as the base specification does not remove those requirements from the PEPPOL user community.

An extension specification to the EN is not compliant to the EN, but a party who already support the PEPPOL BISes as EN compliant specifications can optionally support an extension specification for specific functions.

### Execution

OpenPEPPOL should evaluate interest from PEPPOL users for a BIS specification that provides all or selected functions of the current BIS that are not supported by the EN. Based on the results OpenPEPPOL should take decision on whether to develop a BIS as an extension specification.

## Recommendation 4 – Syntax support

### Proposal

The team proposes that mandatory PEPPOL BIS for invoice should use the UBL 2.1 syntax binding provided with the EN but, as stated in recommendation 1, PEPPOL should develop a BIS for the CII syntax as an optional specification.

PEPPOL should continue its practice to use the UBL as its syntax for all other BIS specifications including other optional invoice specification based on the EN that might be developed based on recommendation 2.

### Justification

Those PEPPOL users who are public authorities and fall under the scope of Directive 2014/55/EU are required by the directive to process an invoice that is compliant to the EN either in UBL 2.1 or in UN/CEFACT CII 16b syntax.

Economic operators who send invoices to public authorities may select one of the two syntaxes and send in that one only. Parties who do not fall under the scope of directive 2014/55/EU may select either of the syntaxes and receive that one only.

A main objective of OpenPEPPOL is to facilitate interoperability in electronic trade. A key factor in that is to minimize implementation costs. Reducing variants in messages is an important factor in lowering implementation cost.

By selecting a single syntax as the mandatory syntax PEPPOL sets a base line where a single syntax can be used by all parties. Only those who need to comply with directive 2014/55/EU must support an additional syntax an then only when receiving.

By developing a CII version of the PEPPOL BIS for invoices, PEPPOL enables those who must comply with directive 2014/55/EU to register support to a CII version of the same semantic invoice as the one that is mandatory in PEPPOL. Not providing the CII version with the same restrictions introduces the risk that parties who have implemented the necessary processes to support the mandatory BIS specification in UBL might need to extend or change their processing functions to receive unrestricted CII invoices.

### Execution

The execution of this recommendation requires the following steps:

1. OpenPEPPOL develops new BISes so that they comply with the EN using the UBL 2.1 syntax binding provided by the EN and makes those mandatory.
2. OpenPEPPOL develops CII variants of the new BISes and makes those optional. These variants should have the necessary Customization and Profile identifiers for registering in the PEPPOL network and should be added to the allowed list in the network.

# Appendixes

## Appendix A - Extension gaps

The following gaps have been identified between the EN and the PEPPOL BIS and are of the type that if the BIS specification would be followed then that would require adjustments to the EN specifications that are classified as extensions.

### PEPPOL BIS business terms missing from the EN

The following business terms exist in the PEPPOL BIS but not in the EN. Adding these terms into a BIS specification requires an extension to the EN.

|  |  |
| --- | --- |
| **Business terms** | **Difference** |
| (referenced) Contract type | tir10-083 |
| (referenced) Contract type code | tir10-084 |
| Contact Identifier (seller) | OP-T10-002 |
| Contact fax number (seller) | tir10-023 |
| Contact fax number (buyer) | tir10-035 |
| Financial Institution Name (for non-SEPA) | OP-T10-006 |
| Financial Institution address (for non-SEPA) | OP-T10-007 |
| Address line 1 | OP-T10-007a |
| Address line 2 | OP-T10-007b |
| City | OP-T10-007c |
| Post code | OP-T10-007d |
| Country subdivision | OP-T10-007e |
| Financial institution branch identifier | tir10-044 |
| Payment card type | tir10-117 |
| Source Currency code | OP-T10-009 |
| Target Currency code | OP-T10-010 |
| Calculation rate | OP-T10-011 |
| Operator code | OP-T10-012 |
| Exchange rate date | OP-T10-013 |
| Delivered to location identifier (line level) | OP-T10-003 |
| Address line 1 | OP-T10-004a |
| Address line 2 | OP-T10-004b |
| City | OP-T10-004c |
| Post code | OP-T10-004d |
| Country subdivision | OP-T10-004e |
| Delivery date (on line level) | OP-T10-016 |
| Invoice line VAT amount | tir10-115 |
| Country code | tir10-019 |

Some of the individual terms act together to support business functions as follows:

* Details for a referenced contract by providing its type, as code, and issue date (origin CENBII).
* Financial institution details for non-SEPA payments (origin CENBII and PEPPOL).
* Exchange information for VAT in accounting currency (origin PEPPOL)
* Delivery information on line level (origin PEPPOL)

### PEPPOL business terms changed in EN

The following business terms have been changed in the EN in such a way that continuing to apply them as has been done on the BIS would require an extension to the EN.

|  |  |  |  |
| --- | --- | --- | --- |
| **EN id** | **EN name** | **BIS id** | **BIS name** |
| BT-69 | Tax representative country code |  |  |
| BT-27 | Seller name | tir10-108 | Seller legal registration name |
| BT-44 | Buyer name | OP-T10-001 | Buyers legal registration name |
| BT-111 | Invoice total VAT amount in accounting currency | OP-T10-014 | Transaction Currency Tax Amount |
| BT-40 | Seller country code | tir10-019 | Country code |

### Changed syntax binding

The syntax binding of the following business terms is different in the EN from what is in the BIS. Continuing to use the current syntax binding of the BIS would require an extension to the EN.

|  |  |
| --- | --- |
| tir10-041 | Invoice payment due date |
| tir10-082 | Buyer reference identifier |
| tir10-089 | Document identifier + type |
| tir10-089 | Document identifier + type |
| tir10-098 | Sellers tax registration status |
| OP-T10-014 | Transaction Currency Tax Amount |
| tir10-045 | Financial institution identifier |
| tir10-074 | Item price base quantity##***Unit of Measure from Quantity Datatype*** |
| tir10-073 | Item attribute value |

In most cases this is the same information but placed in a different tag which affects the reading and writing of the message but should not affect the business processes that are supported by the business terms.

### Use of attributes

For the following business terms the EN's use of attributes is different from the BIS. In most cases the EN defines the code lists as part of the specification and does not identify the code or identifier schema in the message. Adding the attribute information into the message would be classified as an extension but that does not prevent PEPPOL from restricting the codes lists by identifying the codes in the documentation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **EN id** | **EN name** | **Type** | **BIS id** | **BIS name** |
| BT-3 | Invoice type code | listID | tir10-080 | Invoice type code |
| BT-5 | Invoice currency code | listID | tir10-007 | Invoice currency code |
| BT-6 | VAT accounting currency code | listID | OP-T10-015 | Tax Currency Code |
| BT-55 | Buyer country code | listID | tir10-031 | Country code |
| BT-80 | Deliver to country code | listID | tir10-039 | Country code |
| BT-81 | Payment means type code | listID | tir10-040 | Payment means type code |
| BT-98 | Document level allowance reason code | listID | tir10-092 | Allowance or charge reason code |
| BT-105 | Document level charge reason code | listID | tir10-092 | Allowance or charge reason code |
| BT-40 | Seller country code | listID | tir10-019 | Country code |
| BT-159 | Item country of origin | listID | tir10-095 | Item country of origin |
| BT-129 | Invoiced quantity | unitCodeListID | tir10-064 | Invoiced quantity |
| BT-151 | Invoiced item VAT category code | schemeID | tir10-072 | Item VAT category code |
| BT-84 | Payment account identifier | schemeID | tir10-043 | Financial account identifier |
| BT-95 | Document level allowance VAT category code | schemeID | tir10-048 | Allowance or charge  VAT category |
| BT-102 | Document level charge VAT category code | schemeID | tir10-048 | Allowance or charge  VAT category |
| BT-118 | VAT category code | schemeID | tir10-052 | VAT category code |
| BT-63 | Seller tax representative VAT identifier | schemeID | tir10-119 | Seller tax representative VAT identifier |
| BT-31 | Seller VAT identifier | schemeID | tir10-020 | Seller VAT identifier |
| BT-32 | Seller tax registration identifier | schemeID |  |  |
| BT-48 | Buyer VAT identifier | schemeID | tir10-032 | Buyer VAT identifier |

### Change in cardinalities

The following business terms that were optional in the BIS are mandatory in the EN. They can not be made optional in a BIS without an extension.

|  |  |
| --- | --- |
| **BIS id** | **BIS name** |
| tir10-108 | Seller legal registration name |
| OP-T10-001 | Buyers legal registration name |
| tir10-119 | Seller tax representative VAT identifier |
| tir10-043 | Financial account identifier |
|  | VAT BREAKDOWN |
|  | PRICE DETAILS |
|  | LINE VAT INFORMATION |

The following business term that was allowed to be unbounded in the BIS has been restricted to one instance in the EN. Allowing unbounded in the BIS would require an extension.

|  |  |
| --- | --- |
|  | PAYMENT INSTRUCTIONS |

## Appendix B - Core Invoice Usage Specification gaps

The following gaps that have been identified between the BIS and the EN can be addressed by continuing to use the BIS approach by restricting the EN in a compliant CIUS.

### Business terms

The following business terms are added or changed in the EN.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **EN id** | **EN name** | **BIS id** | **BIS name** | **Difference** |
| BT-3 | Invoice type code | tir10-080 | Invoice type code | Changed |
| BT-22 | Invoice note | tir10-005 | Invoice note | Changed |
| BT-28 | Seller trading name | tir10-014 | Seller name | Changed |
| BT-29 | Seller identifier | tir10-085 | Seller standard identifier | Changed |
| BT-41 | Seller contact point | tir10-025 | Contact person name | Changed |
| BT-45 | Buyer trading name | tir10-026 | Buyer name | Changed |
| BT-56 | Buyer contact point | tir10-037 | Contact person name | Changed |
| BT-8 | Value added tax point date code |  |  | addition |
| BT-11 | Project reference |  |  | addition |
| BT-14 | Sales order reference |  |  | addition |
| BT-15 | Receiving advice reference | tir10-089 | Document identifier + type | addition |
| BT-16 | Despatch advice reference | tir10-089 | Document identifier + type | addition |
| BT-17 | Tender or lot reference |  |  | addition |
| BT-18 | Invoiced object identifier | tir10-089 | Document identifier + type | addition |
| BT-21 | Invoice note subject code |  |  | addition |
| BT-32 | Seller tax registration identifier |  |  | addition |
| BT-162 | Seller address line 3 |  |  | addition |
| BT-64 | Tax representative address line 1 |  |  | addition |
| BT-65 | Tax representative address line 2 |  |  | addition |
| BT-164 | Tax representative address line 3 |  |  | addition |
| BT-66 | Tax representative city |  |  | addition |
| BT-67 | Tax representative post code |  |  | addition |
| BT-68 | Tax representative country subdivision |  |  | addition |
| BT-70 | Deliver to party name |  |  | addition |
| BT-165 | Deliver to address line 3 |  |  | addition |
| BT-82 | Payment means text |  |  | addition |
| BT-85 | Payment account name |  |  | addition |
| BT-88 | Payment card holder name |  |  | addition |
| BT-89 | Mandate reference identifier |  |  | addition |
| BT-90 | Bank assigned creditor identifier |  |  | addition |
| BT-91 | Debited account identifier |  |  | addition |
| BT-93 | Document level allowance base amount |  |  | addition |
| BT-94 | Document level allowance percentage |  |  | addition |
| BT-100 | Document level charge base amount |  |  | addition |
| BT-101 | Document level charge percentage |  |  | addition |
| BT-137 | Invoice line allowance base amount |  |  | addition |
| BT-138 | Invoice line allowance percentage |  |  | addition |
| BT-140 | Invoice line allowance reason code |  |  | addition |
| BT-142 | Invoice line charge base amount |  |  | addition |
| BT-143 | Invoice line charge percentage |  |  | addition |
| BT-145 | Invoice line charge reason code |  |  | addition |

### Syntax

Any change to syntax binding from what is stated in the EN requires an extension.

### Attributes

Any addition of attribute elements requires and extension.

### Cardinalities

The cardinality in the EN for the following business terms differs from the BIS in such a way that they may be restricted to follow the current BIS in an EN compliant way.

|  |  |
| --- | --- |
| **BIS id** | **BIS name** |
| tir10-005 | Invoice note |
| tir10-002 | Profile identifier |
| tir10-091 | Allowance or charge reason |
| tir10-091 | Allowance or charge reason |
| tir10-096 | VAT category percentage |
| tir10-078 | Allowance or charge reason |
| tir10-078 | Allowance or charge reason |
| tir10-095 | Item country of origin |

## Appendix C – Code lists

The following codes are supported by the EN in code elements that may affect the processing of the document.

### Invoice type code

Although the full UNDIT code list is reference only the following values of that list are concerned with invoicing and credit notes. The ones marked with p are currently supported in the PEPPOL BIS.

82 Metered services invoice

295 Price variation invoice

325 Proforma invoice

326 Partial invoice

331 Commercial invoice which includes a packing list

380 p Commercial invoice

384 p Corrected invoice

385 Consolidated invoice

386 Prepayment invoice

387 Hire invoice

388 Tax invoice

389 Self-billed invoice

390 Delcredere invoice

393 p Factored invoice

394 Lease invoice

395 Consignment invoice

553 Forwarder’s invoice discrepancy report

575 Insurer's invoice

623 Forwarder's invoice

739 Metered services consumption report supporting an invoice

780 Freight invoice

870 Consular invoice

935 Customs invoice

751 Invoice information for accounting purposes

81 Credit note related to goods or services

83 Credit note related to financial adjustments

261 Self billed credit note

262 Consolidated credit note - goods and services

296 Credit note for price variation

308 Delcredere credit note

381 p Credit note

396 Factored credit note

420 Optical Character Reading (OCR) payment credit note

532 Forwarder’s credit note

### Payment means code

The EN specification allows for the full list of UNDID code list 4461 which contains the following values.

1 Instrument not defined

2 Automated clearing house credit

3 Automated clearing house debit

4 ACH demand debit reversal

5 ACH demand credit reversal

6 ACH demand credit

7 ACH demand debit

8 Hold

9 National or regional clearing

10 In cash

11 ACH savings credit reversal

12 ACH savings debit reversal

13 ACH savings credit

14 ACH savings debit

15 Bookentry credit

16 Bookentry debit

17 ACH demand cash concentration/disbursement (CCD) credit

18 ACH demand cash concentration/disbursement (CCD) debit

19 ACH demand corporate trade payment (CTP) credit

20 Cheque

21 Banker's draft

22 Certified banker's draft

23 Bank cheque (issued by a banking or similar establishment)

24 Bill of exchange awaiting acceptance

25 Certified cheque

26 Local cheque

27 ACH demand corporate trade payment (CTP) debit

28 ACH demand corporate trade exchange (CTX) credit

29 ACH demand corporate trade exchange (CTX) debit

30 Credit transfer

31 Debit transfer

32 ACH demand cash concentration/disbursement plus (CCD+)

33 ACH demand cash concentration/disbursement plus (CCD+)

34 ACH prearranged payment and deposit (PPD)

35 ACH savings cash concentration/disbursement (CCD) credit

36 ACH savings cash concentration/disbursement (CCD) debit

37 ACH savings corporate trade payment (CTP) credit

38 ACH savings corporate trade payment (CTP) debit

39 ACH savings corporate trade exchange (CTX) credit

40 ACH savings corporate trade exchange (CTX) debit

41 ACH savings cash concentration/disbursement plus (CCD+)

42 Payment to bank account

43 ACH savings cash concentration/disbursement plus (CCD+) debit

44 Accepted bill of exchange

45 Referenced home-banking credit transfer

46 Interbank debit transfer

47 Home-banking debit transfer

48 Bank card

49 Direct debit

50 Payment by postgiro

51 FR, norme 6 97-Telereglement CFONB (French Organisation for

52 Urgent commercial payment

53 Urgent Treasury Payment

54 Credit card

55 Debit card

56 Bankgiro

57 Standing agreement

58 SEPA credit transfer

59 SEPA direct debit

60 Promissory note

61 Promissory note signed by the debtor

62 Promissory note signed by the debtor and endorsed by a bank

63 Promissory note signed by the debtor and endorsed by a third party

64 Promissory note signed by a bank

65 Promissory note signed by a bank and endorsed by another bank

66 Promissory note signed by a third party

67 Promissory note signed by a third party and endorsed by a bank

68 Online payment service

70 Bill drawn by the creditor on the debtor

74 Bill drawn by the creditor on a bank

75 Bill drawn by the creditor, endorsed by another bank

76 Bill drawn by the creditor on a bank and endorsed by a third party

77 Bill drawn by the creditor on a third party

78 Bill drawn by creditor on third party, accepted and endorsed by bank

91 Not transferable banker's draft

92 Not transferable local cheque

93 Reference giro

94 Urgent giro

95 Free format giro

96 Requested method for payment was not used

97 Clearing between partners

ZZZ Mutually defined

## Appendix D – Allowed adjustments to the EN

### Core Invoice Usage Specification

The following adjustments, if applied to the EN, result in a CIUS. An adjusted specification may contain more than one adjustment some of which may be restrictions and other extensions. If an invoice contains a single adjustment which is an addition that instance is considered to be an extension.

| Type of change | Example/remark |
| --- | --- |
| Business Terms |  |
| Mark conditional Information element not to be used | Can be achieved by changing cardinality 0..x to 0..0. This essentially means that an element which use is conditional is not to be used. This will not affect the receivers processing. Care need to be taken to ensure that the business rules defined for the core invoice model are not broken. |
| Make semantic definition narrower | A narrower semantic definition of a business term means that the meaning conveyed is still within the meaning defined in the core invoice model and is already recognised by the receiver. |
| Add synonyms | As synonyms will only supplement the original business terms but do not replace it - the original term is still normative. A receiver who has designed his processing based on the core invoice model can continue to do so. Examples of synonyms are mapping of national or sector terminology to the terminology used in the core invoice. |
| Add explanatory text | Adding explanatory text that, for example, explains how a business term is used in a specific use case. There is a risk that such text may also affect the semantic definition and this shall be avoided. Explanatory information does not require any further action from the receiver and the automatic processing of the assigned invoice is still possible. |
| Cardinality |  |
| Make a conditional element mandatory (0..x --> 1..x) | If a conditional element is made mandatory it simply means that the option of using it is applied. The receiver shall be prepared for the situation that a conditional element is used, so he does not need to modify his processing. |
| Decrease number of repetitions (x..n --> x..1) | If the number of repetitions is decreased they will remain within the limit that the receiver has catered for. |
| Semantic data type |  |
| Change semantic data type from string to ... | If the semantic data type of a business term is changed from string to some other type the receiver can still process the value as a string. |
| Codes and identifiers |  |
| Remove one of multiple defined lists | Where the core invoice semantic model defines more than one allowed list and the core invoice usage specification reduces the number of allowed lists then the invoice instance document is still conformant. However such a change shall leave at least one of the defined lists in place. |
| Mark defined values as not allowed | If the allowed code values are restricted within an existing list it simply means that certain values of the full list are being used and the receiver should have designed for processing them. |
| Business Rules |  |
| Add new non-conflicting business rule for existing element(s) | Represents an additional restriction on the allowed content within what is defined for the core invoice model. The receiver should therefore have designed for that content. |
| Make an existing business rule more restrictive | The exchanged content of the business term remains within what was defined for the core invoice model and the receiver should have designed for it. |
| Value domain for an element |  |
| Restrict text or byte array length | If a maximum is set on the length where there was no limit the content remains within what was defined for the core invoice model. |
| Require defined structured values | When the core invoice model does not set a structure on a value the receiver would not have designed for processing in any particular form. Rules to enforce a given pattern should therefore not affect his processing. |
| Restrict allowed fraction digits | Fewer fraction digits result in a value that is within the accuracy that the receiver would have designed for when implementing the core invoice model. |

### Extensions

Alongside the EN there is a technical report that defines what adjustments may be done to extend the EN so that the message instance may still be considered to be based on the EN.

The general rule is that an extension may not break the rules of the EN semantic specification but it may add to them. The additions should then be clearly identified. As comparison the PEPPOL BIS for an invoice is an extension to the CENBII invoice and the conformance statement identifies the additions.

Following adjustments may be done in an extension.

| Type of change | Example/remark |
| --- | --- |
| Business Terms |  |
| Add new information elements | To conform to the core invoice model, the receiver shall be able to receive and process all information elements as defined in the core invoice model. If an information element is added to the data model the receiver shall take that term into account and decide on how to process it. In order to assure that the additional information elements are processed correctly a bilateral agreement shall exist, see clause 7.1. |
| Make semantic definition wider | If a semantic definition is made wider, the meaning of the exchanged data will be beyond what the core invoice model has defined. That requires the receiver to modify his processing to take that additional meaning into account.  Rather than extending the semantic definition of an element it is preferable to add a new element with the required semantic meaning. |
| Cardinality |  |
| Increase number of repetitions (x..1 --> x..n) | If an invoice instance document contains more repetitions of information elements than what is defined in the core invoice model and thus expected by the receiver, the receiver shall in his processing take into consideration the added repetitions. |
| Codes and identifiers |  |
| Add a new list | If a new code list is added, the receiver shall be able to understand the business meaning of the codes in that list requiring him to modify his processing. |
| Add values to a defined list | By extending the content of an existing list code values are added that the receiver shall understand, requiring him to modify his processing. |
| Business Rules | Care should be taken to ensure that any alteration to business rules preserve the semantic interoperability to the core invoice model. |
| Remove an existing Business Rule. | Business rules are defined in order to control the integrity and consistency of the data values allowing the receiver to design his processing accordingly. If rules are removed that may require redesign of the processing. |
| Make an existing business rule less restrictive. | By making a business rule less restrictive it will allow values that the receiver may not have planned for. |
| Value domain for an element | Care should be taken to ensure that any alteration of a value domain for an element preserves the semantic interoperability to the core invoice model. Rather than amending the value domains it should be considered to add a new element with the required value domain. |
| Increase element length. | If maximum lengths are removed, the invoice instance document may include data strings that are longer than what the receiver has designed for.  Reducing maximum lengths would not affect the processing and is not considered as an extension. Maximum lengths are generally set if there are field length restrictions in databases so extending them would require change of database structure and any interfaces that display that data field in the given system. Increasing length is thus likely to impose significant changes and other ways of exchanging the added data should be preferred such as by using attachments. |
| Change structure definition of values. | If values have defined structure the receiver can process or parse that value accordingly. If that structure is changed such processing may need to be modified.  Defined structuring of data is most common for identifiers, dates and times the exact structure may differ per syntax. It should be preferred to restructure the data itself so that it fits into the defined structure instead of changing the defined structure to fit the data. |
| Increase allowed fraction digits. | If the number of allowed digits is increased beyond what is defined in the core invoice model, the receiver may need to modify his processing. For example to avoid rounding issues. |