Specification

Project Acronym: **PEPPOL**

Grant Agreement number: **224974**

Project Title: **Pan-European Public Procurement Online**

PEPPOL Post Award eProcurement
ICT – Models

BIS 1a – Catalogue only

Version: 3.00
Status: In use

Editors:
        Giancarlo De Stefano (Consip)
        Leonardo Bertini (Consip)

Revision History

Version	Date	Author	Organisation	Description
1.00	20100430	Peter Borresen	ebConnect	First version pending EC approval)
1.01	20101001	Klaus Vilstrup Pedersen	DIFI	EC approval
2.00	20101129	Leonardo Bertini	Consip	Second version (pending EC approval)
3.0	25.01.2012	Bergthor Skulason	NITA	3rd version.

Contributors

Organisations

Consip, Italy, http://www.eng.consip.it/on-line/en/Home.html
Bundesbeschaffung GmbH (BBG), Austria, www.bbg.gv.at
DIFI (Direktoratet for forvaltning og IKT)[1], Norway, http://www.difi.no
NITA (IT- og Telestyrelsen)[2], Denmark, http://www.itst.dk

Persons

Leonardo Bertini, Consip, (editor)
Andrea Leutbeg, BBG
Bergthor Skulason, NITA
Giancarlo De Stefano, Consip
Klaus V. Pedersen, DIFI
Peter Borresen, NITA/ebConnect

---

[1] English: Agency for Public Management and eGovernment
[2] English: National IT- and Telecom Agency

Table of Contents

1 Introduction

This BIS is a result of work within PEPPOL project and is published as part of PEPPOL specifications.

This PEPPOL BIS provides a set of specifications for implementing a PEPPOL business process. The document is concerned with clarifying requirements for ensuring interoperability of pan-European Public eProcurement and provides guidelines for supporting these requirements and how to implement them.

1.1 Audience

The audience for this document is organizations wishing to be PEPPOL enabled for exchanging electronic catalogues, and/or their ICT-suppliers. These organizations may be:
- Service providers
- Contracting Authorities
- Economic Operators
- Software Developers

More specifically it is addressed towards the following roles:
- ICT Architects
- ICT Developers
- Business Experts

1.2 The PEPPOL BIS – short overview

The PEPPOL BIS (**B**usiness **I**nteroperability **S**pecification) provides a set of specifications for implementing PEPPOL business documents. The specifications enable any company to issue electronic documents that fulfil legal and business processing requirement within the European Union and the EEA[3]. It supports a subset of information that is used by most industries and enables users to issue documents (invoices, orders, etc...) that are valid for cross border trade within the European Union and the EEA.

The BIS specifications are based on set of requirements to provide support for "common business processes" and legal requirements. The BIS identifies a small set of information elements and business rules as a basis for supporting these requirements. A selection of business rules place restrictions on the data elements to fulfil the requirements and clarify choices otherwise left open to implementers.

The PEPPOL BIS does not support data that is specific to certain industries or may be required in other areas. Trading partners can bi-laterally or within a trading context, provide additional content and rules to meet their specific needs by using this BIS as basis.

The PEPPOL BIS can serve as a standardised communication agreement within a trading community and can be reused for new trading partners without any additional setup cost. Implementing PEPPOL therefore opens the ability to exchange documents with various trading partners without previous bi-lateral setup and thereby lowering the cost of connecting to each new trading partner.

PEPPOL approach is to promote the PEPPOL BIS as a <u>procurement community agreement</u>. One of the defining components of PEPPOL is the service registries (SMP) where trading partners register their capabilities to receive electronic documents according to specific BIS. This registration constitutes a community agreement: any PEPPOL partner can lookup these capabilities and engage in document exchange with the registered company without previous agreement or bi-lateral setup.

A PEPPOL BIS can be seen as part of a standardised communication agreement that deals with:
- sequence of document in scope
- content of documents (data elements)
- business rules that govern the exchange

---

[3] EEA is the European Economic Area. Current members are Iceland, Liechtenstein and Norway.

PEPPOL specifications for the post award provide support for the procurement processes linking information flow from catalogues, through ordering into billing, see [PEPPOL_PostAward] for more information.

1.3   PEPPOL BIS 1a - Catalogue Only – scope

This PEPPOL BIS supports a process for suppliers to send a catalogue. It is intended to support transmission of an electronic catalogue for processing in semi automated processes by the receiver. The BIS mandates no procurement related data but supports different ways of referring to products and services. By selective use of such references it can be used as basis for automated processing of ordering and invoicing.

The intended scope for this BIS is:
- B2B and B2G
- Common business processes for cross industry and cross border procurement
- Regional procurement within EU and EEA
- For supporting purchase of goods and services and/or services that can be itemized.

This PEPPOL BIS supports a set of "common use cases / process". These are processes that are used widely or understood as being relevant for most companies. The main processes supported by this BIS are:
- Description of goods and services
- Maintaining content of framework contract
- Item comparison
- Item dependency and composition
- Description of packaging and storage requirements
- VAT classification
- Item instance description
- Maintenance of catalogue

This PEPPOL BIS supports requirements by providing elements for information needed to meet the requirement. This BIS also provides a set of business rules to clarify content and implementers can use them as basis for validation where it provides business value.

1.4   PEPPOL BIS 1a - Basic Catalogue Only – benefits

Catalogues are used as basis for maintenance of information about products and services that are part of a contract, like a framework agreement.
- The buyer (or a catalogue provider on his behalf) can present the information in a web shop where he can ensure correctness of product description, prices and other terms that may apply.
- The supplier can provide the customer with correct information at all times and ensure high data quality in orders based on the catalogue he prepares.
- Implementing the catalogue provides the possibility of designing fully automated purchasing flows in which the electronic documents can be validated and matched automatically, thereby saving resources compared to manual processing.
- Implementation of a catalogue can be the first step in automating the purchasing process followed by an order and an invoice, leading to entire purchasing process running from sourcing, ordering and invoicing to payment.

This PEPPOL BIS is based on the CEN/ISSS WS/BII Profile BII01 specification, see [BII_Catalogue].

1.5   PEPPOL BIS 1a - Basic Catalogue Only – summary

This PEPPOL BIS structure is based on the European Interoperability Framework 2.0. PEPPOL BIS applies the Framework within 5 layers as follows:

- Legal:
  - There are no legal requirements that place requirements on this BIS.
- Organization (Organization/Business):
  - This PEPPOL BIS supports B2B and B2G
  - This PEPPOL BIS supports cross border, regional and domestic trade in EU and EEA
  - This PEPPOL BIS can function as a standardized EDI agreement within a trading community

- ▶▶ This PEPPOL BIS supports linking of business processes within the sending and receiving organization. This process of electronic transmission in electronic form can be linked into internal processes of both sender and receiver, which may differ for various reasons.
- ▶ Organization (Process):
  - ▶▶ This PEPPOL BIS supports a set of "common business processes" that are assumed to be supported by most. These are processes that are used widely or understood as being relevant for most companies.
- ▶ Semantic:
  - ▶▶ The set of information elements is assumed to be sufficient to support Organizational business and processing requirements stated above.
  - ▶▶ A CORE catalogue:
    - Data model, a set of elements that the receiver MUST be able to process.
    - Business rules, a set of business rules that ensure a common way of processing the information elements. The rules are stated in a way that allows for automated validation of document instances. Issuer of catalogues cannot issue documents that conflict with these rules.

    PEPPOL adds business rules on top of the data model to clarify certain design choices left open by the CEN BII. These choices are intended to lower the implementation threshold by limiting options for implementers and thereby increase interoperability of PEPPOL.
- ▶ Technical Interaction (Process and semantic implementation):
  - ▶▶ Binding to OASIS UBL 2.0, see [UBL]
  - ▶▶ ISO/IEC 19757-3 Schematron, for automation of document validation, see [Schematron]
  - ▶▶ XSLT Stylesheet for presentation of content, see [XSLT]
- ▶ Technical Interaction (eSignature Validation):
  - ▶▶ Not mandatory in this PEPPOL BIS. Not supported.
- ▶ Technical Transport: Based on BusDox 1.0, see [PEPPOL_Transp].
  - ▶▶ PEPPOL Transport Infrastructure
  - ▶▶ PEPPOL requires all documents to be transported using the PEPPOL Transport Infrastructure.

In order to comply with a PEPPOL BIS, it is necessary to comply with each interoperability layer.

1.6 PEPPOL Interoperability, conformance and testing support

Participants within the PEPPOL community must claim conformance to be able to register capabilities and participate in document exchange. Conformance is therefore expressed as requirements on the software solution implementing the BIS.

More information on testing support can be found at [PEPPOL_PostAward].

1.7 PEPPOL Implementation support

This PEPPOL BIS is bound to UBL 2.0 syntax. PEPPOL provides a set of tools as implementation support. These include:

- ▶ Specifications of PEPPOL BIS 1a – Basic Catalogue Only (this document).
- ▶ Implementation guideline for this BIS.
- ▶ Business rules and code lists.
- ▶ Schematron components for validation of business rules that apply to documents.
- ▶ Stylesheet for presentation of Core data elements.
- ▶ A HTML presentation of the CEN BII data model for browsing.
- ▶ Validation web site
- ▶ Example documents and test cases

Information on implementation support can be found at PEPPOL Post Award support page, see [PEPPOL_PostAward].

PEPPOL has set up the PEPPOL Enterprise Interoperability Architecture (EIA) – that presents the PEPPOL artefacts in a repository. The EIA repository is a three dimensional matrix for organizing results of the project that you can navigate by clicking on the cells in the framework. For more information about the PEPPOL EIA, see [PEPPOL_EIA].

The latest version of this document can be found in: Post Award eProcurement / ICT Architecture / Models.

1.8   References

[PEPPOL]	http://www.peppol.eu/
[PEPPOL_EIA]	http://www.peppol.eu/peppol_components/peppol-eia/eia
[PEPPOL_PostAward]	http://www.peppol.eu/PostAward
[PEPPOL_Transp]	http://www.peppol.eu/Transp
[CEN_BII]	www.cen.eu/cwa/bii/specs
[CEN_BII2]	http://www.cenbii.eu
[BII_Catalogue]	http://www.cen.eu/cwa/bii/specs/Profiles/ProfileDoc/BII profile 01 - Catalogue only v1.pdf
[BII_CATModel]	An browsable HTML version: http://www.cen.eu/cwa/bii/specs/Profiles/Data/html/CoreTrnsDm/BiiCoreTrdm019 Catalogue; 1.0; CENBII/D1.htm and MS-Excel version: http://www.cen.eu/cwa/bii/specs/Profiles/Data/TrnsDm/CoreTrnsDm/BiiCoreTrdm019 Catalogue; 1.0; CENBII.xls
[UBL]	http://docs.oasis-open.org/ubl/os-UBL-2.0/UBL-2.0.html
[UBL_Catalogue]	http://docs.oasis-open.org/ubl/cs-UBL-2.0/xsd/maindoc/UBL-Catalogue-2.0.xsd
[Schematron]	http://www.schematron.com
[XSLT]	http://www.w3.org/TR/xslt20/
[DIR_2006/112/EC]	Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax, found at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32006L0112:EN:NOT
[EIF]	European Interoperability Framework 2.0, found at: http://ec.europa.eu/isa/library/index_en.htm http://ec.europa.eu/isa/documents/isa_annex_ii_eif_en.pdf

2 Legal Interoperability

This chapter describes the legal implications of adopting the PEPPOL Profile 1a. It also analyzed any legal obligations coming from existing European Directives.

At general level, the relevant directives referring to the procurement procedure are the directives 2004/17/EC and 2004/18/EC. Public Procurement legislation documents can be found following the link

http://ec.europa.eu/internal_market/publicprocurement/legislation_en.htm

2.1 Post award Catalogues

In post-award, the use of eCatalogues falls within the domain of Private Law. According to an analysis carried out by WP3 participants during the design phase, neither national nor at European level can be found requirements referring to Catalogue formats as such in private legislation.

Hence, agreements between the parties of a contract can take the most various shapes and conditions.

Considering that eCatalogues are also electronic documents, national and EU legislation on electronic documents apply; the analysis of the legislative implications are analysed in the following paragraph

EU Mandatory Legal requirements

As previously seen, according to the Recital 20 of the Directive, the use of e-Catalogues for the submission of tenders relies on the use of electronic means of communications.

Both the Directives 2004/17/EC and 2004/18/EC provide at the article 1.12 a definition of electronic means of communication, stating that 'electronic means' means using electronic equipment for the processing (including digital compression) and storage of data which is transmitted, conveyed and received by wire, by radio, by optical means or by other electromagnetic means.

The article 42 of the Directive 18/2004/EC provides for rules applicable to electronic communications and the tools to be used for communicating by electronic means. In particular, the means of communication chosen must be generally **available** and thus **not restrict** economic operators' access to the tendering procedure (paragraph 2).

Moreover, communication and the exchange and storage of information shall be carried out in such a way as to ensure that the **integrity of data** and the **confidentiality** of tenders and requests to participate are preserved, and that the contracting authorities examine the content of tenders and requests to participate only after the time limit set for submitting them has expired (paragraph 3).

Finally, the paragraph 4, prescribes that the tools to be used for communicating by electronic means, as well as their technical characteristics, must be **non-discriminatory**, **generally available and interoperable** with the information and communication technology products in general use.

Therefore, according to the aforementioned provisions, when making use of electronic means of communications in tender procedure, contracting authorities should comply with the following legal requirements, strictly related to the principles as explicitly referred by the EU Directives.
In particular the choice of the electronic means of communications chosen by a contracting authorities should ensure:

- **General availability:** any electronic mean of communication used by a contracting authority in a tender procedure shall be commonly accessible and easily usable so as to ensure the compliance with the general principle of equal treatment and non-discrimination, and offering, at the same time, a real openness to the market and the grounds for effective competition. Moreover, just to achieve unrestricted and full direct access to all the tender documents, all relevant documents must be accessible on a

precise site and around the clock from the date of publication of the contract notice until the expiry of the deadline for submitting tenders. In this sense, contracting authorities shall guarantee free, available and reliable access to the contracting authority's connection to an open network, in order to guarantee that access to the tendering procedure is not restricted and to ensure equal treatment and effective competition.

- **interoperability:** the electronic means used and any electronic tool made available by a contracting authority shall be able to function and interact with commonly used equipment and applications as well as with commonly used hardware and software equipment available on the market and normally used by economic operators. In particular, such means and tool shall not represent barriers for cross-border suppliers or certain groups of suppliers

- **integrity, confidentiality and security:** the tools and means used for the transmission and storage of all information concerning a tender procedure shall be realised in a way to safeguard the integrity of transmitted data, ensuring that data exchanged between contracting authorities and economic operators or stored within an electronic platform or system is not accessible to other parties and that the aforementioned data and information may not be modified or tampered with (on purpose or accidentally) by the contracting authorities themselves or by third parties.

3 Organizational Organization/Business Interoperability

Organizational/Business requirements for orders originate mainly from the business context and the goods and services in scope for the procurement. These requirements reflect on the end-to-end communication between customer and supplier and enable linking of in-house processes between them. This chapter explains how interoperability are met from an organizational view and addresses the issues of how parties initiates electronic business and their business benefits in using standard based electronic catalogues instead of paper based catalogues.

3.1 Peppol as CEN BII extension

The PEPPOL project, has adopted the BII profile specification as basis for public procurement in Europe. For implementing the BII profiles PEPPOL has identified number of issues.

▶ In some cases the BII profiles provide options for entering data, e.g. in the case of addresses that can be entered either by providing address details or by using identifiers. PEPPOL makes a choice from those options to improve interoperability.

▶ The BII orientation towards compliance to the EU directive on VAT is different from the PEPPOL orientation. Whereas BII provides the necessary elements in the core profile specifications for complying with the EU directives on VAT, PEPPOL seeks to define rules that enforce compliance.

▶ BII is designed for cross border trade. For implementation it is however realized that all invoice are issued within the legal domain of a country and consequently need to comply with the legal requirements imposed on the supplier.

▶ It is the end goal of the project to promote wide spread adoption of electronic invoices by suppliers who supply governments in different countries. It is assumed that only those who already have considerable trade with the public sector across borders would adopt invoicing solutions that only work for cross border trade and then use another solution for their domestic trade. Considering that most companies do most of their business domestically it is considered important that the solutions can be implemented as a single solution for domestic as well as cross border trade with different countries.

To address the above issues PEPPOL has made use of the extension functionality that is part of the BII profiles. The role of this extension is to enforce those choices.

3.2 Organizational scope

In this BIS:

▶ a service provider acting on behalf of buyer / seller can issue / receive the catalogue.

▶ any mapping done to / from in-house or internal network formats by either party or service providers on their behalf is out of scope for PEPPOL and is the responsibility of the relevant trading partner.

▶ either party may use an intermediary to handle the catalogues.

▶ the supplier must be registered in a PEPPOL recognized SMP for receiving catalogues documents.

▶ provides support for semi automated processing of catalogues by the receiver and can be used as basis for automated processing of orders and invoicing.

3.3 Business requirements

3.3.1 Catalogue processing rules

When processing an eCatalogue the following business rules are applied:

1. A catalogue transaction without a stated validity period is assumed to be valid until cancelled.

2. The catalogue should be regarded as the Supplier's standing offer, and the Supplier is thereby obligated to supply the catalogue items according to the terms identified in the catalogue.

3. If the Catalogue Provider party is not the Supplier of the products, it is possible to specify Supplier Party.

4. A catalogue transaction either refers to one contract/agreement or none.

5. Catalogue transactions are subordinate to the contracts/agreements on which they are based.

6. A catalogue transaction must contain an identifier for the catalogue it represents or updates.

7. It is the Supplier's responsibility that data contained in the catalogue transaction is valid from a technical as well as business point of view.

8. The Supplier is obligated to provide catalogue transactions updating items when item attributes change in the targeted catalogue, according to agreements.

9. It is the Contracting Authority's responsibility to compile received catalogue transactions into a catalogue and confirm action trough accept.

10. The receiver can reject a transaction if it does not conform to the agreement under which the transaction is delivered.

11. A receiver must accept and implement a transaction if it conforms to an agreement.

3.3.2 Catalogue data model rules

The following changes have been made to the data model:

12. Catalogue/Seller_ Supplier Party. Supplier Party/Party/PartyTaxScheme is made mandatory

13. An identifier has been added to Item Property (to support eClass)

14. An identifier has been added to Item Property Group (to support eClass)

3.3.3 Catalogue validation rules

The CEN BII workshop specifies a core catalogue document that is intended to meet requirements in all countries of Europe as well as supporting most common business needs. In some cases the BII document does this by providing options. The PEPPOL project has identified some issues where it is beneficial to select from those options and state as part of this PEPPOL BIS.

The business requirements identified are the following:

15. In all countries participating in PEPPOL there are legal requirements that invoices should include address information for the customer/buyer and the supplier/seller and their names. In some countries this information can be given either by using identifiers that refer to a registry that holds the name and detailed address or by providing the name and address details directly in the invoice. In other country however only the latter approach, giving the name and address details in the invoice, is accepted.

    Same thinking applies to orders. This means that if orders in PEPPOL always include the party name and its address details then they should comply with the law in all participating country. Consequently all orders should at minimum contain the customer and supplier name and address detail as
    ▶▶ street name and building number
    ▶▶ city name
    ▶▶ zip code
    ▶▶ country code

16. Some code list and identifier elements in the BII core orders do not specify what code list or identifier schema should be used which implies that the sender can use any or has to agree with the receiver which one should be used. Limiting the choice of code lists and identifier a schema reduces the set that need to be considers and improves interoperability.

    ▶▶ The choice of party, postal address and location identifiers needs to be limited to a stated list which currently includes: GLN
    ▶▶ The choice of standard item identifiers needs to be limited to a stated list which currently includes: GTIN
    ▶▶ The choice of commodity classification code lists needs to be limited to a stated list which currently includes: UN/SPSC, CPV, eClass

3.4 PEPPOL Policy for using Identifiers

PEPPOL project has defined a "Policy for Using Identifiers" [PEPPOL_Transp] that describes the policy for using the correct identifiers in both its transport infrastructure and within the documents exchanged across that

infrastructure. It also introduces principles for any identifiers used in the PEPPOL environment. The policies that apply to this BIS are the following:

Org21   Policy 8. - XML attributes for Party Identifiers in UBL documents.
The "schemeID" attribute must be populated in all instances of the "ID" element when used within a "PartyIdentification" container and in all instances of the "EndpointID" element when used within a "Party" container.

Org22   Policy 11 - PEPPOL Customization Identifiers.
The PEPPOL Customization Identifier identifies the standardised transaction (e.g. BII transaction) and any PEPPOL extension, as it applies to the transaction. The full syntax is:
            <transactionId>:# <extensionId>[#<extensionId>]

Org23   Policy 12 - Specifying Customization Identifiers in UBL documents.
The value for CustomizationID element in the document instance MUST correspond to the Customization ID of the BusDox Document Identifier (see POLICY 11). In addition, the "schemeID" attribute must specify 'PEPPOL' to indicate this convention is a PEPPOL policy.

Org24   Policy 16 - PEPPOL Process Identifiers.
PEPPOL processes are identified by the respective BII processes. The process identifier has to match the BII profile ID.

4 Organizational Process Interoperability

The PEPPOL project, has adopted the BII profile specifications as basis for public procurement in Europe. This PEPPOL BIS reuses the collaboration specifications as a means of controlling the interaction between the trading parties.

4.1 CEN ISSS WS/BII Profile

When a tender has been awarded he submitter becomes a supplier. The submitted catalogue is now a list of actual goods and services that the purchasing authority can use in the sourcing process according to a contract. The purchasing authority uses their local system to send eCatalogues, receive eCatalogues or to send and receive a Catalogue response (Acceptance or Rejection). The sending and receiving documents is dependent on the transformation of documents (if necessary) and the validation.

- ▶ Send eCatalogue: This use case enables the actor "Supplier" to send electronic Catalogues via the PEPPOL infrastructure. As this is an outgoing documents have to be transformed (if necessary) to the PEPPOL format and validated before it is transported via the infrastructure.
- ▶ Receive eCatalogue: This use case enables the actor "Buyer" to receive electronic catalogues via the PEPPOL infrastructure. Incoming documents are validated and transformed (if necessary) to the national/contracting authority format and then processed by the authority's system.
- ▶ Send eCatalogue Response: This use case enables the actor "Buyer" to send an eCatalogue response (thereby accepting or rejecting the Catalogue in full) via the PEPPOL infrastructure. As this is an outgoing document it has to be transformed (if necessary) to the PEPPOL format and validated before it is transported via the infrastructure.
- ▶ Receive eCatalogue Response: This use case enables the actor "Supplier" to receive an electronic catalogue response via the PEPPOL infrastructure. Incoming documents are validated and transformed (if necessary) to the national/supplier's format and then processed by the supplier's system.
- ▶ Transform document: The previously introduced use cases depend on this use case. The scope of this use case is the transformation from national/contracting authority/supplier format to the PEPPOL format and vice versa.
- ▶ Validate document: The scope of this use case is the validation of the sent documents according to the PEPPOL business rules, and in the case of post-award eCatalogues according to the contract specific rules. Only valid documents can be transported via the PEPPOL infrastructure.
- ▶ Transport document: The scope of this use case is to transport the documents via the PEPPOL infrastructure.

This can either be accepted or rejected by the contracting authority. The following figure shows the collaboration of the CENBII Profile 1:
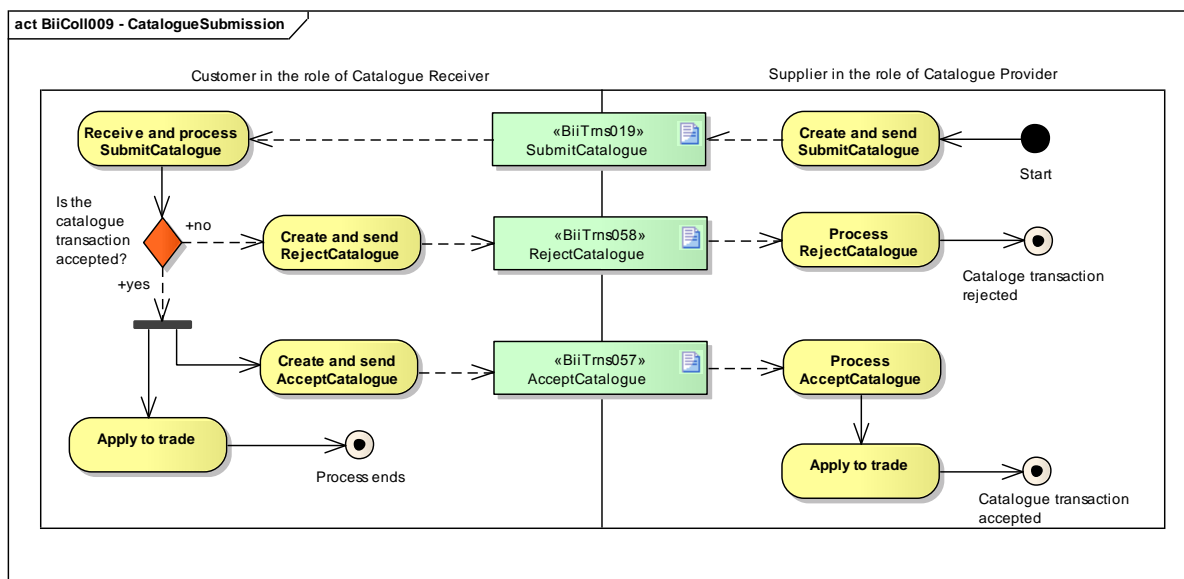
The submission of a catalogue triggers a workflow that assigns somebody from contracting authority to review the catalogues. This is done manually by looking at the styled version of the catalogue document.

PEPPOL Rule 3.5.3:	*The contracting authorities' application must be able to a) receive and b) display a Catalogue Document corresponding to transaction data model for CENBII SubmitCatalogue.*

Depending on the outcome of the review, the Contracting Authority submits an Application Response according to the document model in the CENBII transaction data model "RejectCatalogue" or "AcceptCatalogue"

PEPPOL Rule 3.5.4:	*The contracting authorities' application must be able to a) produce an Application Response* according to the document model in the CENBII transaction data model "RejectCatalogue" and "AcceptCatalogue"

4.2   Business rules

The BII profile business rules are listed in chapter 5.3. The BII profile specifications do not allow modifications to the collaboration process defined. Consequently PEPPOL does not specify any additional rules that apply to the process.

5 Semantic Interoperability

The PEPPOL BIS data model is based on the CEN/ISSS WS/BII BiiCoreTrdm019 specifications [CEN_BII]. They define transaction data models for the information content of a business transaction exchanged within the scope of a BIS. In CEN BII BII01 the transaction data model used is BiiCoreTrdm019, see [BII_CATModel]. A PEPPOL extension is identified as: eugen.

5.1 Legal requirements, mapping to semantic model

No mapping of legal requirements to be supported in this BIS.

5.2 BIS 1a – Catalogue only Transaction Data Model

The BIS 1a data model is based on TRDM019 catalogue transaction from CEN BII. Information about this data model can also be viewed on the CEN BII web site, see [CEN_BII]. Please note that changes that PEPPOL has done to the data model are not represented in the BII web site.
▸ In MS-Excel table format.
▸ In HTML browsable format.
See [BII_CATModel].for further information.

The following tables show the elements in a Core Order.
▸ First two columns show the Cardinality of the element.
▸ The element name (element preceded with a "+" sign is a class, the rest are simple elements).
▸ The last column states restrictions, references, business rules or code list that may apply to the field.
▸ Please note that the order of elements when used in orders must follow the order stated in the below list. For more information please refer to [UBL].

5.2.1 BIS 1a – The Catalogue header

The following table shows the content of the core catalogue header:

Cardinality		Element name	Restriction
1	1	Catalogue/UBL Version Identifier/Identifier	
1	1	Catalogue/Customization Identifier/Identifier	
1	1	Catalogue/Profile Identifier/Identifier	
1	1	Catalogue/Identifier	
0	1	Catalogue/Name	
1	1	Catalogue/Issue Date/Date	
0	1	Catalogue/Version/Identifier	
0	1	+Catalogue/Validity_ Period/Period	
0	1	.. Period/Start Date/Date	
0	1	.. Period/End Date/Date	
0	1	+Catalogue/Referenced_ Contract/Contract	
1	1	.. Contract/Identifier	
0	1	.. Contract/Contract Type/Text	
1	1	+Catalogue/Provider_ Party/Party	
0	1	.. Party/Endpoint Identifier/Identifier	
0	1	.. +Party/Party Identification	
1	1	.. .. Party Identification/Identifier	
0	1	.. +Party/Party Name	
1	1	.. .. Party Name/Name	
1	1	+Catalogue/Receiver_ Party/Party	
0	1	.. Party/Endpoint Identifier/Identifier	
0	1	.. +Party/Party Identification	
1	1	.. .. Party Identification/Identifier	
0	1	.. +Party/Party Name	
1	1	.. .. Party Name/Name	
0	1	+Catalogue/Seller_ Supplier Party/Supplier Party	

Cardinality		Element name	Restriction
1	1	.. +Supplier Party/Party	
0	1	.. .. Party/Endpoint Identifier/Identifier	
0	1	.. .. +Party/Party Identification	
1	1	.. .. .. Party Identification/Identifier	
0	1	.. .. +Party/Party Name	
1	1	.. .. .. Party Name/Name	
0	1	.. .. +Party/Postal_ Address/Address	
0	1	.. .. .. Address/Identifier	
0	1	.. .. .. Address/Postbox/Text	
0	1	.. .. .. Address/Street Name/Name	
0	1	.. .. .. Address/Additional_ Street Name/Name	
0	1	.. .. .. Address/Building Number/Text	
0	1	.. .. .. Address/Department/Text	
0	1	.. .. .. Address/City Name/Name	
0	1	.. .. .. Address/Postal_ Zone/Text	
0	1	.. .. .. Address/Country Subentity/Text	
0	1	.. .. .. +Address/Country	
1	1	.. .. Country/Identification Code/Code	
0	1	.. .. +Party/Contact	
0	1	.. .. .. Contact/Telephone/Text	
0	1	.. .. .. Contact/Telefax/Text	
0	1	.. .. .. Contact/Electronic_ Mail/Text	
0	1	.. .. +Party/Person	
0	1	.. .. .. Person/First_ Name/Name	
0	1	.. .. .. Person/Family_ Name/Name	
0	1	.. .. .. Person/Middle_ Name/Name	
0	1	.. .. .. Person/Job Title/Text	
0	1	.. .. +Party.PartyTaxScheme	
0	1	.. .. .. PartyTaxScheme.CompanyIdentifier.Identifier (*)	
0	1	+Catalogue/Contractor_ Customer Party/Customer Party	
1	1	.. +Customer Party/Party	
0	1	.. .. Party/Endpoint Identifier/Identifier	
0	1	.. .. +Party/Party Identification	
1	1	.. .. .. Party Identification/Identifier	
0	1	.. .. +Party/Party Name	
1	1	.. .. .. Party Name/Name	
0	1	.. .. +Party/Contact	
0	1	.. .. .. Contact/Telephone/Text	
0	1	.. .. .. Contact/Telefax/Text	
0	1	.. .. .. Contact/Electronic_ Mail/Text	
0	1	.. .. +Party/Person	
0	1	.. .. .. Person/First_ Name/Name	
0	1	.. .. .. Person/Family_ Name/Name	
0	1	.. .. .. Person/Middle_ Name/Name	
0	1	.. .. .. Person/Job Title/Text	
0	n	+Catalogue/CatalogueLine	

Table 1 Information Elements in a Core Catalogue Header

5.2.2 BIS 1a – The Catalogue line

The following table shows the content of the core catalogue line:

Cardinality	Element name	Restriction

1	1	Catalogue Line/Identifier			
1	1	Catalogue Line/Action Code/Code			
1	1	Catalogue Line/Orderable_ Indicator/Indicator			
0	1	Catalogue Line/Orderable_ Unit/Text			
1	1	Catalogue Line/Content Unit/Quantity			
0	1	Catalogue Line/Order Quantity Increment/Numeric			
0	1	Catalogue Line/Minimum_ Order Quantity/Quantity			
0	1	Catalogue Line/Maximum_ Order Quantity/Quantity			
0	1	Catalogue Line/Warranty_ Information/Text			
0	1	+Catalogue Line/Line Validity_ Period/Period			
0	1	.. Period/Start Date/Date			
0	1	.. Period/End Date/Date			
0	1	+Catalogue Line/Item Comparison			
1	1	.. Item Comparison/Price/Amount			
1	1	.. Item Comparison/Quantity			
0	n	+Catalogue Line/Required_ Related Item/Related Item			
1	1	.. Related Item/Identifier			
0	1	.. Related Item/Quantity			
0	1	.. Related Item/Description/Text			
0	n	+Catalogue Line/Required_ Item Location Quantity/Item Location Quantity			
0	1	.. Item Location Quantity/Lead Time/Measure			
0	1	.. Item Location Quantity/Minimum_ Quantity/Quantity			
0	1	.. Item Location Quantity/Maximum_ Quantity/Quantity			
0	1	.. +Item Location Quantity/Applicable Territory_ Address/Address			
0	1	.. .. Address/Identifier			
0	1	.. .. Address/Address Type Code/Code			
0	1	.. .. Address/Street Name/Name			
0	1	.. .. Address/Additional_ Street Name/Name			
0	1	.. .. Address/Building Number/Text			
0	1	.. .. Address/City Name/Name			
0	1	.. .. Address/Postal_ Zone/Text			
0	1	.. .. Address/Country Subentity/Text			
0	1	.. .. Address/Region/Text			
0	1	.. .. +Address/Country			
1	1	.. .. .. Country/Identification Code/Code			
0	1	.. +Item Location Quantity/Price			
1	1	.. .. Price/Price Amount/Amount			
0	1	.. .. Price/Base_ Quantity/Quantity			
0	1	.. .. +Price/Validity_ Period/Period			
0	1	.. .. .. Period/Start Date/Date			
0	1	.. .. .. Period/End Date/Date			
1	1	+Catalogue Line/Item			
0	1	.. Item/Description/Text			
0	1	.. Item/Pack Quantity/Quantity			
0	1	.. Item/Pack Size/Numeric			
0	1	.. Item/Name			
0	n	.. Item/Keyword/Text			
0	1	.. +Item/Sellers_ Item Identification/Item Identification			
1	1	.. .. Item Identification/Identifier			
1	1	.. .. Item Identification/Extended_ Identifier/Identifier			
0	1	.. +Item/Standard_ Item Identification/Item Identification			
1	1	.. .. Item Identification/Identifier			
0	1	.. +Item/Item Specification_ Document Reference/Document Reference			
1	1	.. .. Document Reference/Identifier			
0	1	.. .. Document Reference/Document Type/Text			

0	1	..	..	+Document Reference/Attachment	
0	1	..	..	... Attachment/Embedded_ Document/Binary Object	
0	1	..	..	+Attachment/External Reference	
1	1	..	..	... External Reference/URI/Identifier	
0	1	..	+Item/Origin_ Country/Country		
1	1	..	..	Country/Identification Code/Code	
1	n	..	+Item/Commodity Classification		
0	1	..	..	Commodity Classification/Commodity Code/Code	
0	1	..	..	Commodity Classification/Item Classification Code/Code	
0	n	..	+Item/Hazardous Item		
0	1	..	..	Hazardous Item/UNDG Code/Code	
0	1	..	..	Hazardous Item/Hazard Class Identifier/Identifier	
0	1	..	+Item/Classified_ Tax Category/Tax Category		
1	1	..	..	Tax Category/Identifier	
1	1	..	..	+Tax Category/Tax Scheme	
1	1	..	..	... Tax Scheme/Identifier	
0	n	..	+Item/Additional_ Item Property/Item Property		
1	1	..	..	Item Property/Name	
1	1	..	..	Item Property/Value/Text	
0	1	..	+Item/Manufacturer_ Party/Party		
0	1	..	..	+Party/Party Name	
1	1	..	..	... Party Name/Name	
0	1	..	+Item/Item Instance		
0	1	..	..	+Item Instance/Lot Identification	
0	1	..	..	... Lot Identification/Expiry Date/Date	

Table 2 Information Elements in a Core Catalogue Transaction Line

5.2.3 Accept and Reject Catalogue Data model

The Accept and Reject catalogue data model are identical in structure. The difference is the value in the Response Code. For a rejection, the Response Description is mandatory.

Cardinality		Element name	Restriction
1	1	Application Response/UBL Version Identifier/Identifier	
1	1	Application Response/Customization Identifier/Identifier	
1	1	Application Response/Profile Identifier/Identifier	
1	1	Application Response/Identifier	
1	1	Application Response/Issue Date/Date	
0	1	Application Response/Issue Time/Time	
0	1	Application Response/Note/Text	
1	1	+Application Response/Sender_ Party/Party	
0	1	.. Party/Endpoint Identifier/Identifier	
0	1	.. +Party/Party Identification	
1	1	.. .. Party Identification/Identifier	
1	1	.. +Party/Party Name	
1	1	.. .. Party Name/Name	
1	1	+Application Response/Receiver_ Party/Party	
0	1	.. Party/Endpoint Identifier/Identifier	
0	1	.. +Party/Party Identification	
1	1	.. .. Party Identification/Identifier	
1	0	.. +Party/Party Name	
1	1	.. .. Party Name/Name	
1	1	+Application Response/Document Response	
1	1	.. +Document Response/Response	

1	1	..	..	Response/Reference/Identifier	
0	1	..	..	Response/Response Code/Code	
0	1	..	..	Response/Description/Text	
1	1	..	+ Document Response/Document Reference		
1	1	..	..	Document Reference/Identifier	
1	1	..	..	Document Reference/Document Type Code/Code	

5.2.4 Syntax mapping to UBL

The UBL schema for invoice can be downloaded from link [UBL_Catalogue].

5.3   BIS 1a – Catalogue Only, Business Rules (BiiCoreTrdm019)

The PEPPOL rule set is a set of rules that clarify the content by stating mandatory fields, content rules like code lists, calculation rules and dependency rules for individual fields. Issuers of orders that produce messages that do not contradict any of these rules can be certain that anyone claiming conformance to PEPPOL can receive and process these messages.

PEPPOL has stated the following abstract rule in order to facilitate interoperability in cross border trade as well as compliance to EU legal directives. The rules are grouped into four sections depending on their scope and origin. It is important for implementers to note that documents issued by PEPPOL participants claiming conformance, MUST conform to the business rules stated in this BIS.

All the following rules have accompanying error level that can be stated as:
- warning   the rule points to an issue that would provide clarifying or information that increases consistency and aids interoperability. The rule should be applied to the message.
  - A sender of message should NOT send messages that might raise warnings.
  - Receivers of messages should not reject messages that raise warnings.
- fatal   the rule point to a major issue of consistency or data correctness.
  - A sender of message should NOT send messages that will raise fatal errors.
  - Receivers of messages can be expected to reject messages that raise fatal errors.

As support for implementers PEPPOL has made available:
- A Schematron implementation of the rules
- PEPPOL document validation service.

See [PEPPOL_PostAward] for more information.

5.3.1 BII Core Rules (biicore)

These are BII rules that are concerned with the CORE invoice data model. This set of rules is syntax specific and reflects PEPPOL use of mapping to UBL 2.0. It restricts use of classes by changing their cardinality.

The mapping of rules to Schematron also identifies rules of checking for presence of additional content that is not part of the core specifications. These rules are not listed here since they are not part of the specifications.

Rule No.	Rule	Error level

5.3.2 BII Profile Rules (biiprofile)

These are BII rules that are concerned with profile level issues. They respond to the ProfileID in an invoice.

Rule No.	Rule	Error level

5.3.3 BII and PEPPOL Semantic Rules (biirules and eugen)

These are the rules that BII and PEPPOL have identified that are concerned with the semantics of the data. They are the European common ordering rules identified. These are issues like rules on content, dependency and calculations. BII rules have the "BIIRULE" prefix while PEPPOL rules are prefixed with "EUGEN". For readability the rules are grouped together by scope.

General rules:

Rule No.	Rule	Error level
EUGEN-T19-R029	A validity period end date SHOULD be later or equal to a validity period start date	warning
EUGEN-T19-R040	Contract reference SHOULD always present	fatal
	Contracts references in a catalogue MUST specify a contract identifier	
EUGEN-T19-R028	Contract reference SHOULD be only one	warning
EUGEN-T19-R027	If Contract Identifier is not specified SHOULD Contract Type text be used for Contract Reference	warning
EUGEN-T19-R003	An catalogue MUST have a profile identifier.	fatal
EUGEN-T19-R002	An catalogue MUST have a customization identifier.	fatal
EUGEN-T19-R001	An catalogue MUST have a syntax identifier	fatal
EUGEN-T19-R043	An catalogue MUST contain the date of issue	fatal
EUGEN-T19-R044	An catalogue MUST contain the catalogue identifier	fatal
EUGEN-T19-R045	Document attached to or referred to in an catalogue MUST specify a document identifier	fatal
EUGEN-T19-R020	Mime code Should be given for embedded binary object accordingly to code list	warning

Parties:

Rule No.	Rule	Error level
EUGEN-T19-R031	Provider party endpoint identifier MUST be filled in	fatal
EUGEN-T19-R030	Receiver party endpoint identifier MUST be filled in	fatal
EUGEN-T19-R023	A Customer postal address in an catalogue SHOULD contain at least street name and number, city name, zip code and country code	warning
EUGEN-T19-R010	A seller postal address in an catalogue SHOULD contain at least street name and number, city name, zip code and country code	warning
EUGEN-T19-R025	In cross border trade the VAT identifier for the customer should be prefixed with country code.	warning
EUGEN-T19-R009	In cross border trade the VAT identifier for the supplier MUST be prefixed with country code.	warning
EUGEN-T19-R024	An catalogue MUST contain the full name of the buyer	fatal
EUGEN-T19-R007	An catalogue MUST contain the full name of the seller	fatal
EUGEN-T19-R005	Party Tax Scheme. Company Identifier SHOULD be present	warning
EUGEN-T19-R006	A party contact telephone text SHOULD be filled in	warning

Calculation rules:

Rule No.	Rule	Error level
EUGEN-T19-R013	Prices of items MUST not be negative	fatal

Products and services:

Rule No.	Rule	Error level
EUGEN-T19-R042	If Price is defined than Price Base Quantity SHOULD be greater than Zero	warning
EUGEN-T19-R039	Maximum_quantity SHOULD NOT be negative	warning
EUGEN-T19-R038	Catalogue line Mimimum_quantity SHOULD be present	warning
EUGEN-T19-R037	Catalogue line Maximum_quantity SHOULD be present	warning
EUGEN-T19-R036	Mimimum_quantity SHOULD NOT be negative	warning
EUGEN-T19-R033	Maximum_quantity SHOULD be greater or equal to the Minimum quantity	warning
EUGEN-T19-R032	Non Orderable items MUST be identified	fatal
EUGEN-T19-R046	Orderable Unit MUST be provided for orderable items	
EUGEN-T19-R034	Catalogue line Maximum_quantity SHOULD be greater than the Minimum quantity (it is applied to the section Item location.quantity.maximum_quantity)	warning
EUGEN-T19-R016	Line validity period SHOULD be within the range of the whole catalogue validity period	warning
EUGEN-T19-R041	A Catalogue line MUST contain Item Identification or Item description	fatal
EUGEN-T19-R019	Item Tax Scheme SHOULD be present	warning
EUGEN-T19-R018	Item Tax Category SHOULD be present	warning
EUGEN-T19-R017	Item should have a Description	warning
EUGEN-T19-R015	Item Commodity Classification: both Classification Commodity codes and Item classification code MUST be filled	fatal
EUGEN-T19-R012	Standard Identifiers SHOULD contain the Schema Identifier (e.g. GTIN)	warning
EUGEN-T19-R047	Classification codes SHOULD contain the Classification scheme Identifier (e.g. CPV or UNSPSC)	
EUGEN-T19-R048	An catalogue MUST have at least one catalogue line	
EUGEN-T19-R049	Catalogue line MUST contain a unique line identifier	

5.3.4 Accept and Reject Catalogue - BII Core Rules (biicore)

Rule No.	Rule	Error level
	Response. Response Code. Code AP=Accepted, RE= Rejected	fatal
	Response. Description. Text Restriction: Manatory if reject	warning

5.4 Identifiers, mapping of requirements to semantic model

PEPPOL has no intention of developing a new policy on identifying Parties. The strategy is to recognize a range of different identification schemes and provide a code list of those recognized schemes based on international standards. For further information, see PEPPOL "Policy for Using Identifiers" [PEPPOL_Transp].

Requirement Org21   Policy 8

Policy 8 is implemented as a set of code list rules. See Ch 5.5 on code lists.
        PCL-019-006
        PCL-019-007

Examples of usage in PartyIdentification:

```
<cac:PartyIdentification>
      <cbc:ID schemeID="GLN">4035811991014</cbc:ID>
</cac:PartyIdentification>
```

The following examples denotes that the Issuing Agency is DK:CVR in the PEPPOL set of Issuing Agency Codes. This means that the party has the Danish CVR identifier DK87654321.

Examples of usage in PartyIdentification and Endpoint ID:

```
<cbc:EndpointId ID schemeID="DK:CVR">DK87654321</cbc:EndpointId>
```

```
<cac:PartyIdentification>
      <cbc:ID schemeID="DK:CVR">DK87654321</cbc:ID>
</cac:PartyIdentification>
```

Requirement Org22   Policy 11

Policy 11 mandates that PEPPOL Customization Identifiers MUST follow the syntax:
        <transactionId>:# <extensionId>[#<extensionId>]

The following example identifies SubmitCatalogue within "PEPPOL BIS 1a" as extension to the BII BiiCoreTrdm019 data model:

```
urn:www.cenbii.eu:transaction:biicoretrdm019:ver1.0:#urn:www.peppol.eu:bis:peppol1a:ver1.0
```

Where:
- Transaction ID: urn:www.cenbii.eu:transaction:biicoretrdm019:ver1.0
- Extension ID: urn:www.peppol.eu:bis:peppol1a:ver1.0
- Please be aware of the different usage of letterl "1" and number "1".

For implementers: Please note that CustomizationID element in the document instance MUST correspond to the Customization ID of the SMP Document Identifier.

Requirement Org23   Policy 12

Policy 12 is implemented as follows:
- CustomizationID element MUST follow Policy 11 (see, requirement Org22):
- schemeID MUST equal "PEPPOL"

Example of usage:

```
<cbc:CustomizationID schemeID="PEPPOL">
urn:www.cenbii.eu:transaction:biicoretrdm019:ver1.0:#urn:www.peppol.eu:bis:peppol1a:ver1.0
</cbc:CustomizationID>
```

Requirement Org24   Policy 16

Policy 16 mandates that process identifiers MUST match the BII profile ID.

As an example the following process identifier is used for —BII01 - Catalogue only:

```
<cbc:ProfileID>urn:www.cenbii.eu:profile:bii01:ver1.0</cbc:ProfileID>
```

For implementers: Please note that process identifiers in the document instance MUST correspond to the SMP process identifier.

5.5 SubmitCatalogue - Code Lists

A number of information elements values are constrained to be those in a list of codes known as Code Lists. The specific Code Lists used for this transaction must be common between business partners in order to achieve interoperability. The following section lists the code lists identified by CEN BII and PEPPOL to be used in the PEPPOL BIS.

More information about PEPPOL use of code lists can be found at [PEPPOL_PostAward].

5.5.1 BII Code list rules (biirules-Code Lists)

The following rules regarding code lists are stated in BII documentation.

Rule ID	Rule description	Severity
CL-019-001	InvoiceTypeCode in an invoice MUST be 380 from UN/ECE 1001 code list	fatal
CL-019-002	DocumentCurrencyCode MUST be coded using ISO code list 4217	fatal
CL-019-003	currencyID MUST be coded using ISO code list 4217	fatal
CL-019-004	Country codes in an invoice MUST be coded using ISO code list 3166-1	fatal

5.5.2 PEPPOL Code list rules (eugen-CodeLists)

The following additional code list rules are applied for PEPPOL implementations in addition to the BII rules

Rule ID	Rule description	Severity
PCL-019-001	Mime code in attribute MUST be MIMEMediaType.	fatal
PCL-019-002	Postal address identifiers SHOULD be GLN.	warning
PCL-019-003	Location identifiers SHOULD be GLN	warning
PCL-019-004	Standard item identifiers SHOULD be GTIN.	warning
PCL-019-005	Commodity classification SHOULD be one of UNSPSC, eClass or CPV.	warning
PCL-019-006	Party Identifiers MUST use the PEPPOL PartyID list	fatal
PCL-019-007	Endpoint Identifiers MUST use the PEPPOL PartyID list.	fatal

6 Technical Interaction Interoperability – Process and Semantic Implementation

Based on CEN BII results, a syntax binding of this PEPPOL BIS to the UBL 2.0 syntax is available to implementers. For more information about UBL see [UBL].

All document instances conformant to this PEPPOL BIS must be:
- Capable of validation against the UBL 2.0 Schema, see [UBL_Catalogue].
- Conform to all business rules provided in this BIS

As support for implementers PEPPOL has made available:
- XSLT Stylesheet for presentation of content.
- Examples of PEPPOL Catalogues
- Guidelines on use for implementers

See [PEPPOL_PostAward] for more information.

7 Technical Interaction Interoperability - eSignature Validation

PEPPOL enforces no legal requirements on digital signatures for end-to-end checking of:
- Integrity
- Authenticity
- Non repudiation

And as such PEPPOL eCatalgoue do not require the eSignatures.

However, if eCatalgoue are digitally signed the recipient party (e.g. Contracting Authority) may wish to use the PEPPOL Digital Signature Validation service to confirm validity of the certificate used for the signature.

8 Technical Interaction Interoperability - Transport

The method of delivering data over the PEPPOL transport infrastructure is defined by the BusDox specification that guarantees the authenticity of the origin and the integrity of their content by fulfilling the requirements of electronic data interchange (EDI), as defined in Article 2 of Commission Recommendation 1994/820/EC of 19 October 1994, see [DIR_2006/112/EC]. .

PEPPOL requires all catalogues to be transported using the PEPPOL Transport Infrastructure. This uses a transport model based on the BusDox version 1.0 specification suite that can be implemented as a four corner model and ensures communication of business documents in a secure and reliable way.

The use of this PEPPOL BIS is dependent on the connection of both participants to the PEPPOL Transport Infrastructure. From the perspective of the services, the receiving participant (e.g. the Contracting Authority) must register their support for PEPPOL BIS 1a in a PEPPOL recognized SMP.

More information on the PEPPOL Technical infrastructure can be found on [PEPPOL_Transp].