Specification

OpenPeppol AISBL

Peppol Transport Infrastructure

ICT - Models

Peppol Business Message Envelope (SBDH)

Version: 2.0

Status: In use

Statement of originality

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Version History

Version	Date	Change log
1.0.0	2014-01-15	Initial version
1.1	2018-08-31	Added the possibility to specify document type identifier scheme and process identifier scheme Added the possibility to specify additional attributes
1.1.1	2018-09-28	Fixed error in chapter 2.5 in the example of an additional attribute without a value Added note on attribute case sensitivity in chapter 2.5
1.2	2019-02-01	Added section for non-XML payloads
1.2.1	2020-03-11	Added chapter 2.6 on the Internet Media Type Remove the references to the Peppol Policy for use of Identifiers 3.x Updated to the new branding
2.0	2023-03-13	Added chapter 2.5 on country code Removed the reference to AS2

1 Introduction

The Peppol Message Envelope is a customization of the UN/CEFACT Standard Business Document Header (SBDH) [SBDH]. The customization represents a true subset of the standard XML Schemas and any instance conformant to this specification is also conformant to the SBDH.

The Peppol Message Envelope makes it possible for Access points to:

- Route messages without having to access to the business message/data

- Always use the same way of identifying sender/receiver, document type and process
- Overcome issues with namespace or versioning of the payload
- Provide additional attributes that help processing the payload

The Message Envelope can also carry some of the infrastructure elements when using protocols like AS4. The creation of the Message Envelope is RECOMMENDED to be done already in the system issuing the business document but it may also be created by a service provider who is preparing the document for transportation to the receiver's Access Point. This specification does not recommend any particular setup with regard to this when the Message Envelope is not created in the issuing system.

1.1 Terminology

The keywords "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [RFC2119].

1.2 Normative references

[RFC2119] "Key words for use in RFCs to Indicate Requirement Levels", https://www.ietf.org/rfc/rfc2119.txt

[Peppol_Policy4] "Peppol Policy for use of Identifiers v4.1.0", https://docs.peppol.eu/edelivery/policies/PEPPOL-EDN-Policy-for-use-of-identifiers-4.1.0-2020-03-11.pdf

[SBDH] "Standard Business Document Header Technical Specification", https://www.gs1.org/standards/edi-xml-gdsn-gs1-uncefact-xml-profiles/sbdh-technical-specifications/1-3

1.3 When to use the envelope

Unless other policies are decided for the Peppol infrastructure, the following principals describe when the envelope is to be applied.

- Business Message Envelope MUST be applied for all messages exchanged with AS4

2 SBDH Usage

2.1 Party identifiers

The required Receiver party identifier in the Message Envelope header is the one that corresponds to a Peppol Participant registered in the SML/SMP. Also, the Sender party identifier is required. The structure of the identifier MUST follow the "Peppol Policy for use of Identifiers v4.x" [Peppol_Policy4].

In cases where the sender is not registered in SML/SMP the identifier of the sender MUST be used as if the sender would be registered.

Non-normative example:

```
<Sender>
  <Identifier Authority="iso6523-actorid-upis">0088:7315458756324</Identifier>
</Sender>
<Receiver>
  <Identifier Authority="iso6523-actorid-upis">0088:4562458856624</Identifier>
</Receiver>
```

2.2 XML considerations

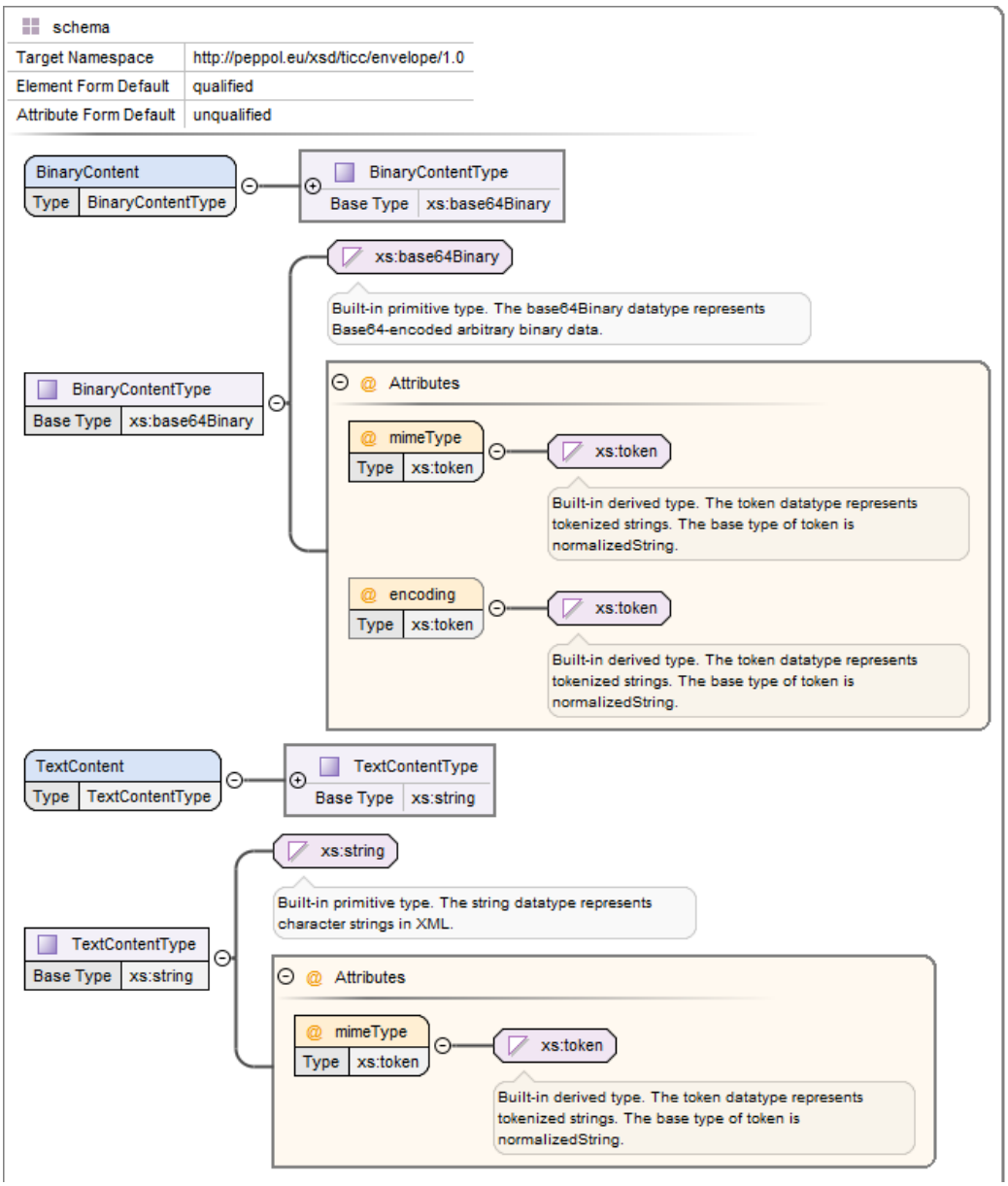
Since the envelope and included business document becomes one single XML instance, both the envelope and the business document MUST have the same character encoding. The included business document MUST be well-formed. The Message Envelope MUST NOT contain another Message Envelope.

2.3 Non-XML Payloads

Several processes that are supported in Peppol require the transportation of binary data and non-XML text as payload. In order for Peppol to support the transmission of non-XML payloads, an XML wrapper has been defined that MUST be used for wrapping these payloads.

The XML wrapper defined in this document MUST NOT be used to wrap another XML wrapper neither as binary nor as text payload.

The following picture depicts the XML schema of the XML wrapper (see chapter 3.2 for the full XML schema):



2.3.1 Binary Payloads

In order to support the transmission of binary payloads they should be transformed and packaged as follows:

1. The binary payload must be Base64-encoded
2. The encoded payload MUST be included inside the XML element `BinaryContent`. The XML namespace URI for this element MUST be `http://peppol.eu/xsd/ticc/envelope/1.0`.
3. The attribute `mimeType` MUST be set to the respective payload MIME type.
4. For text-based payloads, the optional `encoding` attribute MUST be used if the source encoding is different than the encoding of the surrounding XML document. At least the "UTF-8" encoding MUST be supported.

Non-normative example:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<StandardBusinessDocument
xmlns="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
    <StandardBusinessDocumentHeader>
        ...
    </StandardBusinessDocumentHeader>
    <BinaryContent xmlns="http://peppol.eu/xsd/ticc/envelope/1.0"
                   mimeType="application/vnd.etsi.asic-e+zip"
                   encoding="UTF-8">
        ABCD45678922 ...
    </BinaryContent>
</StandardBusinessDocument>
```

2.3.2 Non-XML Text Payloads

For text data, there is no need of a container, as it can be placed directly as payload inside a `TextContent` XML element. The XML namespace URI for this element must be `http://peppol.eu/xsd/ticc/envelope/1.0`. The attribute `mimeType` MUST be set to the respective payload MIME type.

Note:

- If the text payload contains XML special characters (e.g. '<' or '>'), they MUST be escaped using XML encoding or alternatively the data needs to be wrapped inside a CDATA element so the XML remains well formed.
- If a text payload is embedded inside the `TextContent` element, it MUST use the same character encoding as the surrounding XML, otherwise the `BinaryContent` data element SHOULD be used.

Non-normative example:

```
<?xml version="1.0" encoding="iso-8859-1"?>
<StandardBusinessDocument
xmlns="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
    <StandardBusinessDocumentHeader>
        ...
    </StandardBusinessDocumentHeader>
    <TextContent xmlns="http://peppol.eu/xsd/ticc/envelope/1.0"
                 mimeType="Application/EDIFACT">
UNB+UNOA:2+9930711378399:14+7798032711116:14+160927:2252+EW861380947'UNH+186453437+CONTRL
:D:96A:UN:EAN002'UCI+F6GVY+7658032710006:14+9930711378111:14+8'UCM+3HHL0+ORDERS:D:96A:UN:
EAN008+7'UNT+4+186453437'UNZ+1+EW861380947'
    </TextContent>
</StandardBusinessDocument>
```

2.4 Peppol Process ID and Document Type ID

The values of Process ID and Document Type ID are necessary in the SML/SMP discovery process to retrieve the relevant service metadata. Both values should be mapped to the element located at:

`StandardBusinessDocument/StandardBusinessDocumentHeader/BusinessScope/Scope/InstanceIdentifier`

The respective identifier schemes are to be located in the following element (new in v1.1):

`StandardBusinessDocument/StandardBusinessDocumentHeader/BusinessScope/Scope/Identifier`

For backwards compatibility reasons (from version 1.1 to 1.0) – if the identifier schemes are missing – the default process scheme identifier `cenbii-procid-ubl` and the default document type identifier scheme `busdox-docid-qns` MUST be used.

The qualifier located at `/StandardBusinessDocument/StandardBusinessDocumentHeader/BusinessScope/Scope/Type` is used to distinguish the meaning of the values by using codes: `DOCUMENTID` (for a document type identifier) and `PROCESSID` (for process identifiers).

Non-normative example without identifier schemes:

```
  <Scope>
    <Type>DOCUMENTID</Type>
    <InstanceIdentifier>urn:oasis:names:specification:ubl:schema:xsd:Invoice-
2::Invoice##urn:www.cenbii.eu:transaction:biitrns010:ver2.0:extended:urn:www.peppol.eu:bis:peppol4a:
ver2.0::2.1</InstanceIdentifier>
  </Scope>
  <Scope>
    <Type>PROCESSID</Type>
    <InstanceIdentifier>urn:www.cenbii.eu:profile:bii04:ver1.0</InstanceIdentifier>
  </Scope>
```

Non-normative example including identifier schemes (possible since v1.1 of this specification):

```
  <Scope>
    <Type>DOCUMENTID</Type>
    <InstanceIdentifier>urn:oasis:names:specification:ubl:schema:xsd:Invoice-
2::Invoice##urn:www.cenbii.eu:transaction:biitrns010:ver2.0:extended:urn:www.peppol.eu:bis:peppol4a:
ver2.0::2.1</InstanceIdentifier>
    <Identifier>busdox-docid-qns</Identifier>
  </Scope>
  <Scope>
    <Type>PROCESSID</Type>
    <InstanceIdentifier>urn:www.cenbii.eu:profile:bii04:ver1.0</InstanceIdentifier>
    <Identifier>cenbii-procid-ubl</Identifier>
  </Scope>
```

2.5 Country codes of the End Users

To satisfy the reporting requirements for traffic statistics, the country code of the business level sender MUST be provided. The business-level sender is the C1 node in the 4-corner model. The information provided in the envelope complements the identifier information on the messaging level.

The country code MUST be provided in every instance of the envelope. The value of the country code MUST be provided according to ISO-3166-1 in the Alpha-2 notation (e.g. “BE” representing Belgium). Other notations MUST NOT be used. The value MUST follow this case-sensitive regular expression:

`[A-Z0-9][A-Z0-9]`

Kosovo is a special case: It can be represented using either the code `XK`[1] or the code `1A`[2].

The country code of C1 MUST be known by the creator of the envelope.

[1] XK is a "user assigned" ISO 3166 code not designated by the standard, but used by the European Commission, Switzerland, the Deutsche Bundesbank and other organisations.
[2] 1A is used by the Publications Office of the EU and part of the Peppol PoAC code lists

The qualifier located at `/StandardBusinessDocument/StandardBusinessDocumentHeader/BusinessScope/Scope/Type` is used to distinguish the meaning of values by using codes: `COUNTRY_C1` MUST be used for C1 country code. The country code value itself is mapped to the element located at:

`StandardBusinessDocument/StandardBusinessDocumentHeader/BusinessScope/Scope/InstanceIdentifier`

Non-normative example for an exchange of a business document from a business level sender in Belgium:

```
  <Scope>
    <Type>COUNTRY_C1</Type>
    <InstanceIdentifier>BE</InstanceIdentifier>
  </Scope>
```

2.6 Additional attributes

Additional attributes MAY be provided that can be used to support the processing of the payload. These additional attributes are represented as key-value-pairs.

Each additional attribute is represented as a `/StandardBusinessDocument/StandardBusinessDocumentHeader/BusinessScope/Scope` element.

The attribute key must be contained in the child element `Type`. All attribute keys listed in chapter 2.6.1 are reserved and cannot be used as an additional attribute key. The attribute key MUST be unique within an SBDH. The attribute key MUST be handled case sensitive.

The attribute value must be contained in the child element `InstanceIdentifier`. The attribute value MAY be omitted.

Non-normative example with two additional attributes:

```
<BusinessScope>
  <!-- other mandatory values -->
  <Scope>
    <Type>TECHNICAL_VALIDATION_URL</Type>
    <InstanceIdentifier>http://peppol.example.org/as4</InstanceIdentifier>
  </Scope>
  <Scope>
    <Type>TECHNICAL_VALIDATION_REQUIRED</Type>
    <InstanceIdentifier>true</InstanceIdentifier>
  </Scope>
</BusinessScope>
```

Non-normative example with one additional attribute that has no value:

```
<BusinessScope>
  <!-- other mandatory values -->
  <Scope>
    <Type>IndicatorAttribute</Type>
    <InstanceIdentifier />
  </Scope>
</BusinessScope>
```

2.6.1 Reserved attributes

The following additional attribute keys are reserved for internal use in the Peppol network and MUST NOT be used for other purposes than the intended ones.

Attribute key	Description
COUNTRY_C1	Country code of original sender of the document (C1) (see chapter 2.5). Reserved since v2.0 of this specification.
COUNTRY_C4	Reserved for potential future use.

DOCUMENTID	Specifies the Peppol Document Type Identifier value (see chapter 2.3)
PROCESSID	Specifies the Peppol Process Identifier value (see chapter 2.3)
TECHNICAL_VALIDATION_URL	Reserved for potential future use.
TECHNICAL_VALIDATION_REQUIRED	Reserved for potential future use.

2.7 Internet Media Type

The MIME type or Content-Type for Peppol Message Envelope documents MUST be either `application/xml` or `text/xml` (they can be used interchangeably[3]).

2.8 Message Envelope Schema

[3] See https://tools.ietf.org/html/rfc7303#section-9.2

Element/Attribute	Annotation	
StandardBusinessDocument	Type	StandardBusinessDocument
xs:sequence	Occurrence	1 .. 1
StandardBusinessDocumentHeader	Occurrence	1 .. 1
	Type	StandardBusinessDocumentHeader
xs:sequence	Occurrence	1 .. 1
HeaderVersion	Occurrence	1 .. 1
	Type	xs:string
	Fixed	1.0
	Description	**Always value 1.0**
Sender	Occurrence	1 .. 1
	Type	Partner
xs:sequence	Occurrence	1 .. 1
Identifier	Occurrence	1 .. 1
	Type	PartnerIdentification
	Description	**Use the format XXXX:AAAAAAAA where XXXX is the type of identifer (such as 0088 for GS1 GLN) and AAAAAAAA the actual identifier.**
Authority	Type	xs:string
	Use	required
	Description	**Use fixed value "iso6523-actorid-upis"**
Receiver	Occurrence	1 .. 1
	Type	Partner
xs:sequence	Occurrence	1 .. 1
Identifier	Occurrence	1 .. 1
	Type	PartnerIdentification
	Description	**Use the format XXXX:AAAAAAAA where XXXX is the type of identifer (such as 0088 for GS1 GLN) and AAAAAAAA the actual identifier.**
Authority	Type	xs:string
	Use	required
	Description	**Use fixed value "iso6523-actorid-upis"**
DocumentIdentification	Occurrence	1 .. 1
	Type	DocumentIdentification
xs:sequence	Occurrence	1 .. 1
Standard	Occurrence	1 .. 1
	Type	xs:string
	Description	**The standard of the enveloped business message, normally described by use of the XML namespace of the business message root element (such as urn:oasis:names:specification:ubl:schema:xsd:Order-2)**
TypeVersion	Occurrence	1 .. 1
	Type	xs:string
	Description	**The version number of the enveloped business message (such as the value "2.1" for OASIS UBL 2.1 or "2.0" for OASIS UBL 2.0)**
InstanceIdentifier	Occurrence	1 .. 1
	Type	xs:string
	Description	**An informative unique ID created by the issuer of the envelope. The InstanceIdentifier MUST be unique for each Business Message Envelope being created. This ID is not the same as the ID of the business message (such as the Invoice Number). It is not the same as a transmission Message ID generated by the application sending the message (as defined in AS4).** **The InstanceIdentifier MUST be globally unique and it is RECOMMENDED to use UUID (such as 118e3040-51d2-11e3-8f96-0800200c9a66)**
Type	Occurrence	1 .. 1
	Type	xs:string
	Description	**Message type - mandatory in SBDH. XML local element name of the root-element in the business message.**

Element/Attribute	Annotation
CreationDateAndTime	Occurrence 1 .. 1 Type xs:dateTime Description **The date and time for when this envelope was created. It is NOT necessarily the same as the issue date of the business document (such as the invoice) being enveloped. It is NOT necessarily the date time for transmission.** **The format of the value of this MUST include timezone information.** **Use this format for UTC: 2014-01-17T09:30:00Z (Where the "Z" indicates UTC)** **Or specify offset from UTC by adding the time difference: 2014-01-17T09:30:00+02:00 (Where +02:00 indicates 2 hours positive offset to UTC)**
BusinessScope	Occurrence 1 .. 1 Type BusinessScope Description **Elements used to identify the ProcessID and DocumentID.**
xs:sequence	Occurrence 1 .. 1
Scope	Occurrence 4 .. unbounded Type Scope Description **Repeat for each mandatory qualifier. See chapters 2.4 and 2.5**
xs:sequence	Occurrence 1 .. 1
ScopeAttributes	Occurrence 1 .. 1
xs:sequence	Occurrence 1 .. 1
Type	Occurrence 1 .. 1 Type xs:string Description **Qualifier of how to understand the InstanceIdentifier element. Codes.**
InstanceIdentifier	Occurrence 1 .. 1 Type xs:string Description **The values matching the type qualified by the ScopeAttributes/ Type element.**
Identifier	Occurrence 0 .. 1 Type xs:string Description **Identification scheme used for the Document type identifier/Process identifier. See chapter 2.4**
xs:any	Occurrence 1 .. 1 Description **Business message goes here!**

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3.1 Example instance document (non-normative)

```
<?xml version="1.0" encoding="UTF-8"?>
<StandardBusinessDocument xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
    <StandardBusinessDocumentHeader>
        <HeaderVersion>1.0</HeaderVersion>
        <Sender>
            <Identifier Authority="iso6523-actorid-upis">0088:7315458756324</Identifier>
        </Sender>
        <Receiver>
            <Identifier Authority="iso6523-actorid-upis">0088:4562458856624</Identifier>
        </Receiver>
        <DocumentIdentification>
            <Standard>urn:oasis:names:specification:ubl:schema:xsd:Invoice-2</Standard>
            <TypeVersion>2.1</TypeVersion>
            <InstanceIdentifier>123123</InstanceIdentifier>
            <Type>Invoice</Type>
            <CreationDateAndTime>2019-02-01T15:42:10Z</CreationDateAndTime>
        </DocumentIdentification>
        <BusinessScope>
            <Scope>
                <Type>DOCUMENTID</Type>
                <InstanceIdentifier>urn:oasis:names:specification:ubl:schema:xsd:Invoice-
2::Invoice##urn:cen.eu:en16931:2017#compliant#urn:fdc:peppol.eu:2017:poacc:billing:3.0::2.1</I
nstanceIdentifier>
                <Identifier>busdox-docid-qns</Identifier>
            </Scope>
            <Scope>
                <Type>PROCESSID</Type>
          <InstanceIdentifier>urn:fdc:peppol.eu:2017:poacc:billing:01:1.0</InstanceIdentifier>
                <Identifier>cenbii-procid-ubl</Identifier>
            </Scope>
            <Scope>
                <Type>COUNTRY_C1</Type>
                <InstanceIdentifier>BE</InstanceIdentifier>
            </Scope>
        </BusinessScope>
    </StandardBusinessDocumentHeader>
    <Invoice xmlns:cbc="urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-2"
xmlns:cac="urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-2"
xmlns="urn:oasis:names:specification:ubl:schema:xsd:Invoice-2">
        <!-- reduced instance file -->
    </Invoice>
</StandardBusinessDocument>
```

3.2 Message Envelope Extension XML Schema

The normative version of the Message Envelope Extension XML Schema can be found at
https://docs.peppol.eu/edelivery/