**TOOP Policy for the use of identifiers**

**Version 0.9**

**Status: in use**

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Date | Description of changes | Author |
| 0.9 | 2018-05-14 | Initial version based on PEPPOL Policy for the use of identifiers 3.1.0 | Philip Helger |

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# Introduction

This document is heavily based on the PEPPOL Policy for the use of identifiers 3.1.0 [PEPPOL].

## Audience

This document describes a TOOP policy and guidelines for use of identifiers within the TOOP network. The intended audience for this document are is organizations wishing to be TOOP enabled for exchanging data and documents, and/or their ICT-suppliers. More specifically it is addressed towards the following roles:

* ICT Architects
* ICT Developers
* Business Experts

## Terminology

The key words "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.

## References

|  |  |
| --- | --- |
| [TOOP] | <http://www.toop.eu/> |
| [PEPPOL] | <https://github.com/OpenPEPPOL/documentation/blob/master/TransportInfrastructure/PEPPOL_Policy%20for%20use%20of%20identifiers-310.pdf> |
| [TOOP\_CodeList] | <https://github.com/TOOP4EU/toop/tree/master/Code%20Lists> |
| [ISO 15459] | <http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=51284>  <http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=43349> |
| [ISO 9735 Service Code List (0007)] | <http://www.gefeg.com/jswg/cl/v41/40107/cl3.htm> |
| [ISO 6523] | <http://www.iso.org/iso/catalogue_detail?csnumber=25773> |
| [Busdox] | <https://github.com/OpenPEPPOL/peppol-eia/blob/master/1-ICT_Architecture/1-ICT-Transport_Infrastructure/13-ICT-Models/ICT-Transport-BusDox_Definitions-101.pdf> |
| [OASIS UBL] | <http://docs.oasis-open.org/ubl/os-UBL-2.0/UBL-2.0.html>  <http://docs.oasis-open.org/ubl/os-UBL-2.0.zip> |
| [OASIS ebCore] | <http://docs.oasis-open.org/ebcore/PartyIdType/v1.0/CD03/PartyIdType-1.0.html> |
| [UN/CEFACT] | <http://www.unece.org/cefact/> |

# Introduction to identifiers

Identifiers are information elements that establish the identity of objects, such as organizations, products, places, etc. The TOOP project uses many identifiers in both its transport infrastructure and within the documents exchanged across that infrastructure. Two of the significant identifiers are those for Parties (organizations, persons, etc.) and Services (business profiles, document types, etc). These are the “who” and the “what” of TOOP business exchanges.

This document outlines the policy for using the correct identifiers specifically for these two areas but it also introduces principles for any identifiers used in the TOOP environment. Implementers failing to adhere to these policies seriously jeopardize the interoperability of the information being exchanged. This policy should form a requirement of any TOOP participation agreements.

## Scope

### Policy of a federated[[2]](#footnote-2) scheme for identifying Parties

Parties in the TOOP infrastructure play the role of Participants. There are sender and receiver Participants in any exchange, but the TOOP SMP (Service Metadata Publisher) only publishes services defined for the receiver Participant. The technical name for this identifier in TOOP is the Participant Identifier (TPI).

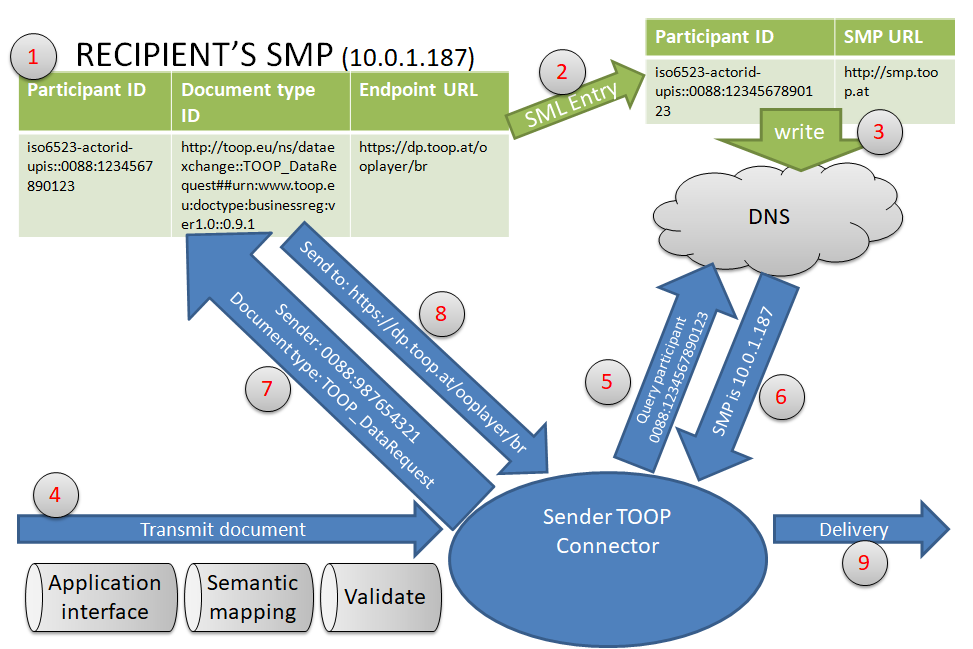
There is a relationship between these various parties but we have no policy on how this should be done. This policy relates to the common use of different identification schemes to identify the appropriate Party within the context required. In other words, identifiers may have different values but the method by which they are defined should be consistent.

Many schemes already exist for identifying parties. TOOP has no intention of developing yet another. Our strategy is to recognize a range of different identification schemes and provide a code list of those recognized schemes based on international standards (ISO 6523 ICD list).

### Policy for identifying Document Types and Services used in TOOP

The TOOP infrastructure requires a Participant sending a document to identify both the receiving Participant and the service that will receive the document. They (or their Access Point provider) achieve this by searching the Service Metadata Locator (SML) to find the relevant Service Metadata Publisher (SMP) that can identify the endpoint address (NB. not the same as the Endpoint ID in the business document) within the recipient’s access point. This endpoint address is the service address where the document is accepted (AP). Therefore it is important to define precisely what documents and services can be handled by the receiving Participant.

TOOP has defined use case specifications for supported business processes and choreographies of the exchanged documents. These can be identified by a document schema and type as well as the business context of use. The diagram below shows the relationship of these information elements.



# Policy for TOOP Party Identification

The following aspects are addressed in this policy:

1. The TOOP code list of Party Identification schemes used in exchanged documents.
2. The TOOP code list of Participant Identification format schemes used in metadata.

TOOP will not implement its own scheme for identifying Parties. Instead it will support a federated system for uniquely identifying parties following the ISO 15459 format scheme[[3]](#footnote-3) for unique identifiers. This requires defining a controlled set of Issuing Agency Codes[[4]](#footnote-4) (IACs) for identification schemes (also known as party identifier types[[5]](#footnote-5) or Identification code qualifier[[6]](#footnote-6) or International Code Designators[[7]](#footnote-7) or Party ID Type[[8]](#footnote-8)) required by TOOP implementations.

Each TOOP Party identifier to be used in the federated system is a combination of the Issuing Agency Code and the value given by the Issuing Agency.

* It will be ensured that SMP Providers have suitable governance of their identification schemes when they enter, update and delete information on their SMP.
* Within the content of business documents, each TOOP Participant will be responsible for using the appropriate TOOP Party Identifier.

This section defines the policies for the formatting and the population of values for Party Identifiers in federation used by TOOP.

## Format

1. Use of ISO15459 encoding

Participant and Party Identifiers should adhere to ISO 15459 constraints:

- MUST be at least 1 character long (excluding the identifier scheme)

- MUST NOT be more than 50 characters long (excluding the identifier scheme)

- MUST only contain alphabetic and numeric digits from the invariant character set of ISO/IEC 646 (ISO 7-bit coded character set)

Document Type Identifiers should adhere to the following constraints:

- MUST be at least 1 character long (excluding the identifier scheme)

- MUST NOT be more than 500 characters long (excluding the identifier scheme)

- MUST only contain alphabetic, numeric digits and punctuation characters from the invariant character set of ISO-8859-1

Process Identifiers should adhere to the following constraints:

- MUST be at least 1 character long (excluding the identifier scheme)

- MUST NOT be more than 200 characters long (excluding the identifier scheme)

- MUST only contain alphabetic, numeric digits and punctuation characters from the invariant character set of ISO-8859-1

Applies to: all identifiers in all components

1. Use of ISO15459 structure

A Party identifier used in TOOP MUST comprise of:

- An Issuing Agency Code/Participant Identifier Scheme

- The value provided by the Issuing Agency

Applies to: all participant/party identifiers in all components

1. TOOP identifier value casing

All TOOP participant identifier values MUST be treated case insensitive even if the underlying scheme requires a case sensitive value.

All TOOP document type values MUST be treated case sensitive.

All TOOP process identifier values MUST be treated case sensitive.

Applies to: all identifiers in all components

**Examples Participant identifier:**

Participant identifier value “0088:abc” is equal to “0088:ABc”

Participant identifier value “0088:abc” is NOT equal to “0010:abc”

**Example Document Type identifier:**

Document type identifier value (one line)

urn:eu:toop:ns:dataexchange-1p10::Request##urn:eu.toop.request.registeredorganization::1.10

is NOT equal to (also one line)

URN:EU:TOOP:NS:DATAEXCHANGE-1P10::REQUEST##URN:EU.TOOP.REQUEST.REGISTEREDORGANIZATION::1.10

**Example Process identifier:**

Process identifier value

“urn:www.cenbii.eu:profile:bii06:ver1.0”

is NOT equal to

“URN:WWW.CENBII.EU:PROFILE:BII06:VER1.0”

1. Coding of Issuing Agencies

All Participant Identifier Schemes for Party Identifiers MUST be taken from the normative version of the code list referenced in the following section.

Applies to: all participant/party identifiers in all components

## Participant Identifier Scheme Values

The values for the initial TOOP Participant Identifier Scheme list were taken from [PEPPOL] and include known Issuing Agencies (from e.g. ISO 6523[[9]](#footnote-9)).

It is significant that this list will need ongoing extension under governance procedures currently being developed (see section on Governance). To ensure sustainability and proper governance it is proposed to include only Identifier Schemes in the following order of priority:

1. International recognized standard schemes, then
2. International de-facto accepted schemes, then
3. Nationally defined schemes

The normative version of the code list is available at [TOOP\_CodeList].

Note: rows marked as deprecated should not be used for newly issued documents, as the respective identifier issuing agency is no longer active/valid. Deprecated scheme IDs may however not be reused for different agencies as existing exchanged documents may refer to them.

1. TOOP participant identifier scheme

The TOOP identifier scheme for using this list of issuing agencies MUST be:

iso6523-actorid-upis

Note: Participant identifier, party identifier and business identifier are used interchangeable in the different TOOP documents.

Applies to: all participant/party identifiers in all TOOP components

1. Numeric Codes for Participant Identifier Schemes

The numeric ISO 6523 code set as used in TOOP MAY include additional code values not part of the official ISO 6523 code set and so cannot be referred to as the official ISO 6523 code set. The codes starting with “99” are extending the official code set. For convenience the term “ISO6523” is used for all codes and indicates the origin of many code values used.

Applies to: all participant/party identifiers in all TOOP components

1. XML attributes for Participant Identifiers in TOOP

The “scheme” attribute MUST be populated with the value "iso6523-actorid-upis" (see POLICY 5) in all instances of the “ParticipantIdentifier” element.

Applies to: XML documents used in the SMP

**Example:**

<ParticipantIdentifier scheme="iso6523-actorid-upis">0088:4035811991014</ParticipantIdentifier>

1. 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. The valid values are defined in the code list as “schemeID”.

Note: the optional attributes “schemeAgencyName” and “schemeURI” can be ignored.

Note: the attribute “schemeID” is mandatory for the elements “PartyIdentification” and “EndpointID”.

Applies to: Document used in a TOOP with UBL syntax mapping

**Example:**

<cac:PartyIdentification>

<cbc:ID schemeID="0088">4035811991014</cbc:ID>

</cac:PartyIdentification>

and

<cac:Party>

<cbc:EndpointID schemeID="0088">4035811991014</cbc:EndpointID>

</cac:Party>

**Example 1: Use in an OASIS SMP:**

The following example from an SMP exchange denotes that the Participant is identified using the ISO 6523 ICD in the TOOP set of Participant Identifier Schemes. This in turn has a numeric value of 0088 meaning that the party has a 0088 (GLN) identifier of “4035811991014”.

<ParticipantIdentifier scheme="iso6523-actorid-upis">0088:4035811991014</ParticipantIdentifier>

**Example 2: Use in a TOOP document using UBL syntax mapping:**

The following example denotes that the Participant Identifier Scheme is “GLN” (0088) in the TOOP set of Participant Identifier Schemes. This means that the party has the GLN identifier “4035811991014”.

<cac:PartyIdentification>  
 <cbc:ID schemeID="0088">4035811991014</cbc:ID>  
</cac:PartyIdentification>

1. Participant Identifiers for DNS

Participant identifiers – consisting of scheme and value – MUST be encoded as follows into a DNS name:

<hash-of-value>.<scheme>.<SML-zone-name>

Applies to: the resolution of TOOP participant identifier for SMP clients

Explanation:

|  |  |
| --- | --- |
| <hash-of-value> | Is the Base32 encoded, non-padded representation of the SHA-256 hash value, of the lowercased identifier value (e.g. 0088:abc).  The **UTF-8** charset needs to be used for extracting bytes out of strings for SHA-256 hash value creation.  Lowercasing must be performed according to the **en\_US** locale rules (no special character handling).  Note: it is important, that the SHA-256 hash value is generated **after** the identifier value has been lowercased because according to POLICY 3 participant identifiers have to be treated case insensitive. “Base32 encoded” means the encoding of each SHA-256 hash-byte into 2 characters in the range of [0-9a-v] (e.g. byte value 0 becomes string representation “AA” and byte value 255 becomes string representation “74”). |
| <scheme> | Is the identifier scheme value (“iso6523-actorid-upis” in TOOP) and is added “as is” into the DNS name[[10]](#footnote-10).  Note: The Busdox specification ensures that the participant identifier schemes are valid DNS name parts (see [Busdox]) |
| <SML-zone-name> | Is the DNS domain name of the SML zone (e.g. “toop.acc.edelivery.tech.ec.europa.eu.” – mind the trailing dot). |

**Example:**

The participant identifier “0088:123abc” with the scheme “iso6523-actorid-upis” in the SML DNS zone “toop.acc.edelivery.tech.ec.europa.eu.” is encoded into the following identifier:

Y7DZFXAF3D4CJZ4KCGRXTEC6TWVCGA4KY7ZWA5BOIF6MSWD4TDRQ.iso6523-actorid-upis.toop.acc.edelivery.tech.ec.europa.eu.

The result must be the same if the identifier “0088:123ABC” is used, as identifier values are treated case insensitive.

# Policies on Identifying Document Types supported by TOOP

## Format

Document types used in TOOP are identified using the concepts defined in the Busdox Identifier Schemes (see [Busdox]). As outlined in POLICY 3 document type identifiers have to be treated case sensitive.

The identifier format is an aggregated format that covers the following identifier concepts:

* Format Identifier:   
  This identifies the specific syntax of the document that is being exchanged in the service. For XML documents, the root element namespace (the namespace of the schema defining the root element) and document element local name (the name of the root element) are concatenated using the “::” delimiter to define the syntax of the XML document.
* Customization Identifier:   
  This represents a customization of a service, such as a customization of the document format.
* Version Identifier:   
  This identifies the version of a document following the versioning conventions of that specific document syntax.

1. TOOP Document Type Identifier scheme

The TOOP document type identifier scheme to be used MUST be:

toop-doctypeid-qns

Applies to: all document type identifiers in all components

1. TOOP Customization Identifiers

The Customization Identifier is defined in the relevant TOOP BIS specification. It MUST be treated as an atomic string.

Applies to: all document type identifiers in all components

**Example:**

urn:eu.toop.process.datarequestresponse

1. Specifying Customization Identifiers in UBL documents

The value for CustomizationID element in the document instance MUST correspond to the Customization ID of the TOOP Document Type Identifier.

Applies to: documents used in TOOP with UBL syntax mapping

**Example:**

<cbc:CustomizationID>

urn:eu.toop.process.datarequestresponse

</cbc:CustomizationID>

1. TOOP Document Type Identifiers

The format of the Document Type Identifier MUST use the format:

<root NS>::<document element local name>##<customization id>::<version>

The value for Customization ID component in the Document Type Identifier should correspond to the CustomizationID in the document instance. The combination of customization ID and version is denoted as “Subtype identifier” in [BusDox]. Therefore the URL encoding of these elements has to be done as stated in the specification document.

<version> is used to reflect the version of the underlying syntax standard.

Applies to: all document type identifiers in all components

**Example:**

The following example denotes that the document type is a TOOP Request for registered organization data using data model 1.10.

urn:eu:toop:ns:dataexchange-1p10::Request##urn:eu.toop.request.registeredorganization::1.10

|  |  |
| --- | --- |
| **Root namespace** | urn:eu:toop:ns:dataexchange-1p10 |
| **Document element local name** | Request |
| **Customization ID (see above)** | urn:eu.toop.request.registeredorganization |
| **Version** | 1.10 |

1. Specifying Document Type Identifiers in SMP documents

The value for the scheme attribute MUST be “toop-doctypeid-qns” (see POLICY 10) and the element value MUST be the document type identifier itself (see POLICY 13).

Applies to: XML documents used in the SMP

**Example usage in the SMP:**

<DocumentIdentifier scheme="toop-doctypeid-qns"> urn:eu:toop:ns:dataexchange-1p10::Request##urn:eu.toop.request.registeredorganization::1.10

</DocumentIdentifier>

## Document Type Identifier Values

The normative version of the code list is available at [TOOP\_CodeList].

Rows marked as "deprecated" should not be used for newly issued documents.

It is important to note that this is a dynamic list. Over time new services will be added. Developers should take this into account when designing and implementing solutions for TOOP services.

# Policy on Identifying Processes supported by TOOP

## Format

As outlined in POLICY 3 TOOP process identifiers have to be treated case sensitive.

1. TOOP Process Identifier scheme

The TOOP process identifier scheme to be used MUST be:

toop-procid-agreement

Applies to: all process identifiers in all components

1. TOOP Process Identifiers

The Process Identifier is defined in the relevant TOOP pilot specification. A TOOP Access Point MUST treat the identifier as an atomic string.

Applies to: all process identifiers in all components

**Example:**

The following process identifier is used for “Request and Response of data elements”:

urn:eu.toop.process.datarequestresponse

1. Specifying Process Identifiers in SMP documents

The value for the scheme attribute MUST be “toop-procid-agreement” (see POLICY 15) and the element value MUST be the process identifier itself (see POLICY 16).

Applies to: XML documents used in the SMP

**Example:**

<ProcessIdentifier scheme="toop-procid-agreement">urn:eu.toop.process.datarequestresponse</ProcessIdentifier>

## Process ID values

The normative version of the code list is available at [TOOP\_CodeList].

# Policy on Identifying Transport Profiles in TOOP

## SMP

The underlying eDelivery network supports different transport protocols. Each endpoint registered in an SMP is required to provide a transport profile identifying the used transport.

1. Specifying Transport Profiles in SMP documents

The value for the transportProfile attribute must be one of the Profile IDs in the list below if one of the predefined transport profiles is chosen. The value of the transportProfile attribute is case sensitive.

Applies to: XML documents used in the SMP

**Example:**

<Endpoint transportProfile="bdxr-transport-ebms3-as4-v1p0">

...

</Endpoint>

## Transport Profile values

The normative version of the code list is available at [TOOP\_CodeList].

# Governance of this Policy

This policy needs maintenance to ensure it supports new versions of the standards, extensions to other identification schemes, new services, etc.

As this policy is closely related to the PEPPOL Policy for the use of identifiers, all changes to that source document should be closely followed if applicable in the TOOP context. TOOP needs to ensure on-going participation and support of this work.

To ensure sustainability and proper governance of Party Identifier schemes it is proposed to include only Issuing Agency Codes in the scope of:

1. International recognized standard schemes (CEN, ISO, UN/ECE)
2. International de-facto accepted schemes (OASIS)
3. Nationally defined schemes

The TOOP Governing Board shall ensure that each Issuing Agency:

1. Recognizes any organisation wishing to allocate unique Party identifiers as part of a TOOP Pilot. An individual organisation or company wishing to issue unique identifiers shall do so through umbrella organisations such as their trade associations, network provider or a public or state agency;
2. Has defined rules which ensure that every unique identifier issued with their authority shall begin with their Issuing Agency Code (IAC);  
   NOTE: The purpose of this is to ensure that the same unique Party identifier (including the IAC) can never be issued by another issuer, no matter which agency is used to ensure unambiguity in the total marketplace.
3. Has defined rules so that a unique party identifier is only re-issued after the previously issued unique identifier has ceased to be of significant to any user. The length of such period should be dependent upon the environment in which the unique identifier will be used.

These rules mirror those of the ISO 15459 registration Authority (NEN) and will support the option to transfer the responsibility that authority as part of the TOOP sustainability program. In effect TOOP is taking the role of a governance agency for the TOOP pilot period.

1. English: Austrian Federal Computing Centre [↑](#footnote-ref-1)
2. By federation we mean that each agency maintains their own identification schemes. Our policy recognizes and identifies these schemes and does not attempt to replicate them. [↑](#footnote-ref-2)
3. ISO 15459-4 Individual items, see [ISO 15459] [↑](#footnote-ref-3)
4. ISO 15459 terminology, see [ISO 15459] [↑](#footnote-ref-4)
5. CEN/BII terminology [↑](#footnote-ref-5)
6. ISO 9735 Service Code List (0007) terminology [↑](#footnote-ref-6)
7. ISO 6523 terminology [↑](#footnote-ref-7)
8. OASIS ebCore terminology [↑](#footnote-ref-8)
9. See <http://en.wikipedia.org/wiki/ISO_6523> [↑](#footnote-ref-9)
10. Case changes may be done but are not required, as the underlying DNS system is case insensitive. [↑](#footnote-ref-10)