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Elektronski podpisi in infrastruktura (ESI) - Storitve elektronske priporočene dostave - 3. del: Formati

Electronic Signatures and Infrastructures (ESI) - Electronic Registered Delivery Services - Part 3: Formats

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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Electronic Signatures and Infrastructures (ESI).

The present document is part 3 of a multi-part deliverable. Full details of the entire series can be found in part 1 [i.10].

National transposition dates	
Date of adoption of this EN:	23 August 2018
Date of latest announcement of this EN (doa):	30 November 2018
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Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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1 Scope

The present document specifies the format for the semantic content (metadata, evidence, identification, and Common Service Infrastructure) that flows across the different interfaces of an Electronic Registered Delivery Service (ERDS) as defined in ETSI EN 319 522-2 [1].

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference/.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] ETSI EN 319 522-2: "Electronic Signatures and Infrastructures (ESI); Electronic Registered Delivery Services; Part 2: Semantic contents".

[2] W3C Recommendation: "XML Signature Syntax and Processing. Version 1.1, 11 April 2013".

[3] IETF RFC 3061: "A URN Namespace of Object Identifiers".

[4] CEF eIDAS Technical Sub-group: "eIDAS SAML Attribute profile". Version 1.1.2. October 2016.

[5] OASIS: "Assertions and Protocols for the OASIS Security Assertion Markup Language (SAML) V2.0", March 2005.

[6] IETF RFC 5646: "Tags for Identifying Languages".

[7] IETF RFC 5035: "Enhanced Security Services (ESS) Update: Adding CertID Algorithm Agility".

[8] OASIS: "Service Metadata Publishing (SMP) Version 1.0", OASIS standard, August 2017.

[9] ETSI EN 319 532-3: "Electronic Signatures and Infrastructures (ESI); Registered Electronic Mail (REM) Services; Part 3: Formats".

[10] ETSI EN 319 522-4-3: "Electronic Signatures and Infrastructures (ESI); Electronic Registered Delivery Services; Part 4: Bindings; Sub-part 3: Capability/requirements bindings".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] Commission implementing Regulation (EU) 2015/1502 "on setting out minimum technical specifications and procedures for assurance levels for electronic identification means pursuant to Article 8(3) of Regulation (EU) No 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market".

[i.2] NIST Special Publication 800-63: "Digital Identity Guidelines".

[i.3] NIST Special Publication 800-63-A: "Digital Identity Guidelines. Enrolment and Identity Proofing Requirements".

[i.4] NIST Special Publication 800-63-B: "Digital Identity Guidelines. Authentication and Lifecycle Management".

[i.5] NIST Special Publication 800-63-C: "Digital Identity Guidelines. Federation and Assertions".

[i.6] IETF RFC 5322: "Internet Message Format".

[i.7] ETSI EN 319 132-1: "Electronic Signatures and Infrastructures (ESI); XAdES digital signatures; Part 1: Building blocks and XAdES baseline signatures".

[i.8] IETF RFC 7522: "Security Assertion Markup Language (SAML) 2.0 Profile for OAuth 2.0 Client Authentication and Authorization Grants".

[i.9] ETSI TS 119 612: "Electronic Signatures and Infrastructures (ESI); Trusted Lists".

[i.10] ETSI EN 319 522-1: "Electronic Signatures and Infrastructures (ESI); Electronic Registered Delivery Services; Part 1: Framework and Architecture".

[i.11] OASIS: "AS4 Profile of ebMS 3.0 Version 1.0, OASIS Standard", January 2013.

[i.12] ETSI EN 319 522-4-1: "Electronic Signatures and Infrastructures (ESI); Electronic Registered Delivery Services; Part 4: Bindings; Sub-part 1: Message delivery bindings".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI EN 319 522-1 [i.10] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI EN 319 522-1 [i.10] apply.

4 Metadata formats

4.1 Introduction

The following clause aims at providing specific formats for metadata components identified in ETSI EN 319 522-2 [1], clause 6. Clause 4.2 maps metadata components in IETF RFC 5322 format; clause 4.3 maps metadata components in AS4 format [i.6].

Other mappings can be provided by future versions of the present document or by other parties.

In clause 4.3, all XML elements are given for information only. In case of conflict with the XML Schema file referenced to, clause A.1 takes precedence.

4.2 IETF RFC 5322 format

Specification for the **mapping of ERDS metadata** in an IETF RFC 5322 [i.6] format shall be as specified in ETSI EN 319 532-3 [9].

4.3 XML format for use in AS4 binding

4.3.1 Introduction

This clause defines an XML format for the ERDS relay meta-data as defined in ETSI EN 319 522-2 [1], clause 6, which is to be included in the AS4 message that is exchanged between ERDSs. Although its primary use is in the AS4 bindings it may also be used in other bindings.

4.3.2 Namespaces used

Table 1 shows the URIs corresponding to the namespaces and the prefixes associated to them in the present document.

Table 1: Namespaces URIs and prefixes

Namespace's URI	Namespace's prefix
http://uri.etsi.org/19522/v1#	erds
http://www.w3.org/2001/XMLSchema	xs
http://www.w3.org/2000/09/xmldsig#	ds
urn:oasis:names:tc:SAML:2.0:assertion	saml

Below follows a copy of the `xs:schema` element of the XML Schema file whose location is detailed in clause A.1 and that defines the namespace whose URI is `http://uri.etsi.org/19522/v1#`:


```
<xs:schema targetNamespace="http://uri.etsi.org/19522/v1#"
xmlns:ds="http://www.w3.org/2000/09/xmldsig#" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="http://uri.etsi.org/19522/v1#" xmlns:saml="urn:oasis:names:tc:SAML:2.0:assertion">

  <xs:import namespace="http://www.w3.org/XML/1998/namespace"
schemaLocation="http://www.w3.org/2001/xml.xsd"/>

  <xs:import namespace="http://www.w3.org/2000/09/xmldsig#"
schemaLocation="http://www.w3.org/TR/2002/REC-xmldsig-core-20020212/xmldsig-core-schema.xsd"/>

  <xs:import namespace="urn:oasis:names:tc:SAML:2.0:assertion"   schemaLocation="http://docs.oasis-
open.org/security/saml/v2.0/saml-schema-assertion-2.0.xsd"/>
```

4.3.3 Auxiliary elements

4.3.3.1 Introduction

The present clause provides details of a number of auxiliary types and elements used in throughout the XML Schema file whose location is detailed in clause A.1.

4.3.3.2 URI related types

The present clause defines a number of types whose instances' values are URIs.

These types element shall be defined as in XML Schema file whose location is detailed in clause A.1 and is copied below for information:

```
<!-- targetNamespace="http://uri.etsi.org/19522/v1#" -->

  <xs:simpleType name="NonEmptyURIType">
    <xs:restriction base="xs:anyURI">
      <xs:minLength value="1"/>
    </xs:restriction>
  </xs:simpleType>
```

```
  <xs:complexType name="NonEmptyAttributedURIType">
    <xs:simpleContent>
      <xs:extension base="NonEmptyURIType">
        <xs:attribute ref="xml:lang" use="optional"/>
        <xs:attribute name="scheme" type="xs:string" use="optional"/>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>

  <xs:complexType name="NonEmptyMultiLangURIType">
    <xs:simpleContent>
      <xs:extension base="NonEmptyURIType">
        <xs:attribute ref="xml:lang" use="required"/>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>

  <xs:complexType name="NonEmptyMultiLangURIListType">
    <xs:sequence>
      <xs:element name="URI" type="NonEmptyMultiLangURIType maxOccurs="ubounded" "/>
    </xs:sequence>
  </xs:complexType>
```

Instances of `NonEmptyURIType` type shall have a non-empty URI as value.

Instances of `NonEmptyAttributedURIType` shall have a non-empty URI as value. The `xml:lang` attribute shall identify a language using the language code as specified in IETF RFC 5646 [6]. The `scheme` attribute shall indicate the scheme for the URI value of the element.

Instances of NonEmptyMultiLangURIType shall have a non-empty URI as value. The `xml:lang` attribute shall identify a language using the language code as specified in IETF RFC 5646 [6].

4.3.3.3 String related types

The present clause defines a number of types whose instances' values are strings.

These types element shall be defined as in XML Schema file whose location is detailed in clause A.1 and is copied below for information:


```
<!-- targetNamespace="http://uri.etsi.org/19522/v1#" -->

  <xs:simpleType name="NonEmptyStringType">
    <xs:restriction base="xs:string">
      <xs:minLength value="1"/>
    </xs:restriction>
  </xs:simpleType>

  <xs:complexType name="AttributedNonEmptyStringType">
    <xs:simpleContent>
      <xs:extension base="NonEmptyStringType">
        <xs:attribute name="type" type="NonEmptyStringType" use="required"/>
      </xs:extension>
    </xs:simpleContent>
  </xs:complexType>
```

Instances of `NonEmptyStringType` type shall have a non-empty string as value.

Instances of `NonEmptyAttributedStringType` type shall have a non-empty string as value. The `type` attribute shall indicate the type of the corresponding string value.

4.3.3.4 Container for extensibility

The present clause defines the `Any` element that may have any content.

The present clause also defines the `AnyType` type whose instances may have any content.

They are specified for serving as placeholders for contents that are not specified in the present document.

This `Any` element shall be defined as in XML Schema file whose location is detailed in clause A.1 and is copied below for information:

```
<!-- targetNamespace="http://uri.etsi.org/19522/v1#" -->

  <xs:element name="Any" type="AnyType"/>

  <xs:complexType name="AnyType" mixed="true">
    <xs:sequence minOccurs="0" maxOccurs="unbounded">
      <xs:any namespace="##any" processContents="lax"/>
    </xs:sequence>
    <xs:anyAttribute namespace="##any"/>
  </xs:complexType>
```

4.3.3.5 `RelayMetadata` root element

The root element of the XML document containing the ERDS meta-data shall be the `RelayMetadata` element.

This element shall be defined as in XML Schema file whose location is detailed in clause A.1 and is copied below for information:

```
<!-- targetNamespace="http://uri.etsi.org/19522/v1#" -->

  <xs:element name="RelayMetadata" type="RelayMetadataType"/>

  <xs:complexType name="RelayMetadataType">
    <xs:sequence>
      <xs:element ref="MessageIdentifier"/>
      <xs:element name="ERDMessageType" type="ERDSMessageTypeType"/>
      <xs:element minOccurs="0" name="InReplyTo" type="MessageIdentifierType"/>
      <xs:element minOccurs="0" name="RelayTime" type="xs:dateTime"/>
      <xs:element minOccurs="0" name="ExpirationTime" type="xs:dateTime"/>
      <xs:element minOccurs="0" name="ScheduledDeliveryTime" type="xs:dateTime"/>
      <xs:element name="SenderId" type="EntityIdentifierType"/>
      <xs:element minOccurs="0" name="ReplyTo" type="EntityIdentifierType"/>
      <xs:element name="RecipientId" type="EntityIdentifierType"/>
      <xs:element ref="UserContentInfo"/>
      <xs:element name="RequiredAssuranceLevel" type="AssuranceLevelDetailsType" minOccurs="0"/>
      <xs:element name="ApplicablePolicy" minOccurs="0" type="ERDSPolicyIDType"/>
      <xs:element name="RequestedConsignmentMode" minOccurs="0" type="ConsigmentModeType"/>
      <xs:element minOccurs="0" ref="Extensions"/>
      <xs:element minOccurs="0" ref="ds:Signature"/>
    </xs:sequence>
    <xs:attribute name="version" use="required">
      <xs:simpleType>
        <xs:restriction base="xs:string"/>
      </xs:simpleType>
    </xs:attribute>
  </xs:complexType>
```


Meta-data documents shall have "`EN319522v1.1.1`" as value for `version` attribute.

Attribute `version` shall implement the semantics specified in clause 6.2.1 of ETSI EN 319 522-2 [1].

Clauses from 4.3.4 to 4.3.18 provide XML Schema definitions and requirements on its components.

4.3.4 MessageIdentifier element

The `MessageIdentifier` element shall have the semantics of component MD11 as specified in clause 6.2.11 of ETSI EN 319 522-2 [1].

This element shall be defined as in XML Schema file whose location is detailed in clause A.1 and is copied below for information:

```
<!-- targetNamespace="http://uri.etsi.org/19522/v1#" -->

  <xs:element name="MessageIdentifier" type="MessageIdentifierType"/>

  <xs:simpleType name="MessageIdentifierType">
    <xs:restriction base="NonEmptyStringType"/>
  </xs:simpleType>
```