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Associated Signature Containers (ASiC);
Part 2: Additional ASiC containers

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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 2 of a multi-part deliverable specifying Associated Signature Containers (ASiC), as identified below:

Part 1:   "Building blocks and ASiC baseline containers";

Part 2:   "Additional ASiC containers".

National transposition dates	
Date of adoption of this EN:	25 April 2016
Date of latest announcement of this EN (doa):	31 July 2016
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 January 2017
Date of withdrawal of any conflicting National Standard (dow):	31 January 2017

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).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

Part 1 of the present multi-part deliverable, ETSI EN 319 162-1 [2] (ASiC part 1 henceforth) specifies the use of container structures for associating either detached CAdES [1] signatures or detached XAdES [i.7] signatures or time assertions, with one or more signed objects to which they apply and specifies a number of baseline containers that aim to fulfil the common use cases and allows a number of options.

1 Scope

Specific communities or use cases may have additional requirements that are not addressed by the baseline containers defined in ASiC part 1 [2] that can be built using the building blocks defined there or additional ones. The present document references such specific additional use of ASiC and aims to be used for containers that collect together electronic documents including those supported by OCF, ODF and UCF describing how these container formats can be used to associate digital signatures with any data objects in the container.

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 http://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 319 122-1: "Electronic Signatures and Infrastructures (ESI); CAdES digital signatures; Part 1: Building blocks and CAdES baseline signatures".

[2] ETSI EN 319 162-1: "Electronic Signatures and Infrastructures (ESI); Associated Signature Containers (ASiC); Part 1: Building blocks and ASiC Baseline containers".

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 reference 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] Application Note: "APPNOTE.TXT - .ZIP File Format Specification", PKWARE® Inc., September 2012.

NOTE: Available at http://www.pkware.com/documents/APPNOTE/APPNOTE-6.3.3.TXT.

[i.2] Universal Container Format (UCF).

NOTE: Available at https://wikidocs.adobe.com/wiki/display/PDFNAV/Universal+Container+Format.

[i.3] ISO/IEC TS 30135 (all parts): "Information technology -- Digital publishing -- EPUB3".

[i.4] OASIS: "Open Document Format for Office Applications (OpenDocument) Version 1.2; Part 3: Packages", 29 September 2011.

[i.5] IETF RFC 4998: "Evidence Record Syntax (ERS)".

[i.6] IETF RFC 6283: "Extensible Markup Language Evidence Record Syntax (XMLERS)".

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

3   Definitions and abbreviations

3.1   Definitions

For the purposes of the present document, the terms and definitions given in CAdES [1], XAdES [i.7] and ASiC part 1 [2] apply.

3.2   Abbreviations

For the purposes of the present document, the abbreviations given in CAdES [1], XAdES [i.7] and ASiC part 1 [2] apply.

4   ASiC additional containers

4.1   Introduction

This clause defines ASiC additional containers designed to maximize interoperability for ASiC for use cases considered of general use not covered by baseline containers specified in ASiC part 1 [2] clause 5:

- ASiC-S with time assertion specified in clause 4.2.1;

- ASiC-E with CAdES specified in clause 4.3.1; and

- ASiC-E with time assertion specified in clause 4.3.2.

4.2   ASiC-S additional containers

4.2.1   ASiC-S Time assertion additional container

The present clause defines the ASiC-S Time assertion additional container. The requirement specified in ASiC part 1 [2] for ASiC-S shall apply with the following additional restrictions:

a)   it shall comply with the specific provision given in ASiC part 1 [2], clause 4.3.3.1 item 2) a) and clause 4.3.3.2, item 4) a), 4) d) or 4) e);

b)   it may contain additional elements in the META-INF folder as specified in ASiC part 1 [2], clause 4.3.3.2 item 5) a) and 5) b);

c)   it shall support ASiC part 1 [2], clause 4.3.3.2 item 2); and

d)   if one or more ASiCArchiveManifest files are present they shall comply with ASiC part 1 [2], clause A.7 with the additional restriction that only `SignedData` shall be used to include certificate and revocation information.

4.3   ASiC-E additional containers

4.3.1   ASiC-E CAdES additional container

The present clause defines the ASiC-E CAdES additional container. The requirements specified in ASiC part 1 [2] clause 4.4 for ASiC-E shall apply with the following additional restrictions:

a)   it shall comply with the specific provision given in ASiC part 1 [2], clause 4.4.4.1, item 1) a), and clause 4.4.4.2, item 3) a); and

b)   it shall support ASiC part 1 [2], clause 4.4.5, item 2).

NOTE: Implementations compliant with ASiC-E CAdES additional container requirements can support the same levels defined for baseline containers specified in ASiC part 1 [2], clause 5.

4.3.2 ASiC-E Time assertion additional container

The present clause defines the ASiC-E time assertion additional container. The requirement specified in ASiC part 1 [2] for ASiC-E shall apply with the following additional restrictions:

a)   it shall comply with the specific provision given in ASiC part 1 [2], clause 4.4.4.1, item 1) a), and clause 4.4.4.2, item 3) b) or 4) a) or 4) b); and

b)   it shall support ASiC part 1 [2], clause 4.4.5 item 2).

Annex A (informative):
Using ASiC with existing container specifications

The present annex specifies recommendations for the use of ASiC containers in a way which is compatible with existing container specifications that define a file structure with associated metadata and signatures.

The container may be realized either as a physical container based on ZIP [i.1] as required by ASiC part 1 [2], clause 4.4.2 item 1) or, when supported by the external specification, as an abstract container with a file system model supporting storage of files in a folder hierarchy.

> NOTE: UCF [i.2] is an example of container formats supporting abstract containers.

ASiC part 1 [2], clause 4.4.2 item 3), clause 4.4.3.1 should apply, and clause 4.4.3.2 should apply with the following additional requirements:

- "mimetype" may be present and should comply with ASiC part 1 [2] and contain the media type identifying the container type, if applicable.

- "META-INF/container.xml" may be present and should comply with OCF [i.3].

- "META-INF/manifest.xml" may be present and should comply with ODF [i.4].

- "META-INF/metadata.xml" may be present and should comply with ODF [i.4].

- "META-INF/signatures.xml" may be present and should comply with OCF [i.3] if "mimetype" is present and its value is "application/epub+zip".

- "META-INF/*signatures*.xml" may be present and should comply with ODF [i.4] if "mimetype" is present and its value is an ODF supported media type.

Other files defined in the OCF [i.3], UCF [i.2] and ODF [i.4] formats may be present and combined within ASiC as appropriate and should not violate the format implied by the "mimetype" file.

The following table specifies the general requirements that should apply for all ASiC-E containers.

Table A.1

Container files or properties	OCF	ODF	UCF	Additional requirements and notes
Mimetype	may be present	may be present	may be present	a
META-INF/manifest.xml	may be present	should be present	may be present	b
META-INF/container.xml	should be present	may be present	may be present	c
META-INF/metadata.xml	may be present	may be present	may be present	c
META-INF/ *signatures*.xml	should be present	should be present	should be present	d
Container filename extension	should be present	should be present	should be present	f, e
Archive level ZIP comment	may be present	may be present	may be present	g, e

Additional requirements:

a)   If present the value should be conformant to the relevant container specification.

b)   If present the content should be conformant to ODF [i.4].

c)   If present the content should be conformant to OCF [i.3].

d)   The filename should be conformant to the relevant container specification. The content root element should be compliant with ASiC part 1 [2], clause 4.4.3.2, item 3) b) for ODF [i.4], item 3) c) for OCF [i.3] and UCF [i.2].

e)   If applicable (i.e. the container is a physical container).

f) The file extension should comply with the container media type associated to the container content or with ASiC part 1 [2], clause 4.4.3.1, item 2) b).

g) Presence and value should be as specified in ASiC part 1 [2], clause 4.4.3.1, item 3).