



**Electronic Signatures and Infrastructures (ESI);
XAdES digital signatures -
Testing Conformance and Interoperability;
Part 2: Test suites for testing interoperability of XAdES
baseline signatures**

Reference

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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Electronic Signatures and Infrastructures (ESI).

The present document is part 2 of a multi-part deliverable covering XAdES digital signatures - Testing Conformance and Interoperability. Full details of the entire series can be found in part 1 [i.3].

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 defines a number of test suites to assess the interoperability between implementations claiming conformance to XAdES baseline signatures as specified in ETSI EN 319 132-1 [1].

The test suites are defined with four different layers reflecting the four different levels of XAdES baseline signatures:

- Tests suite addressing interoperability between applications claiming B-B level conformance.
- Tests suite addressing interoperability between applications claiming B-T level conformance.
- Tests suite addressing interoperability between applications claiming B-LT level conformance.
- Tests suite addressing interoperability between applications claiming B-LTA level conformance.

Test suites also cover augmentation of XAdES baseline and negative test cases.

These test suites are agnostic of the PKI infrastructure. Any PKI infrastructure can be used including the one based on EU Member States Trusted Lists.

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 319 132-1: "Electronic Signatures and Infrastructures (ESI); XAdES digital signatures; Part 1: Building blocks and XAdES baseline signatures".

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 applications of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TR 119 001: "Electronic Signatures and Infrastructures (ESI); The framework for standardization of signatures; Definitions and abbreviations".
- [i.2] ETSI TR 119 000: "Electronic Signatures and Infrastructures (ESI); The framework for standardization of signatures: overview".
- [i.3] ETSI TR 119 134-1: "Electronic Signatures and Infrastructures (ESI); XAdES digital signatures - Testing Conformance and Interoperability; Part 1: Overview".

- [i.4] ETSI EN 319 102-1: "Electronic Signatures and Infrastructures (ESI); Procedures for Creation and Validation of AdES Digital Signatures; Part 1: Creation and Validation".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETSI TR 119 001 [i.1] and the following apply:

negative test case: test case either for a signature that is not a XAdES baseline signature, or for a signature whose validation according to ETSI EN 319 102-1 [i.4] would not result in TOTAL_PASSED

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TR 119 001 [i.1] and the following apply:

CA	Certification Authority
CRL	Certificate Revocation List
OCSP	Online Certificate Status Provider
TSA	Time-Stamping Authority
TSA1	Time-Stamping Authority 1
TSA2	Time-Stamping Authority 2

4 Overview

This clause describes the overall approach used throughout the present document to specify test suites for testing interoperability of XAdES baseline signature as specified in ETSI EN 319 132-1 [1].

ETSI EN 319 132-1 [1] defines four different levels of XAdES baseline signatures.

The test suites are defined with different layers reflecting the levels of XAdES signatures specified in ETSI EN 319 132-1 [1]:

- Testing XAdES signatures interoperability between applications claiming B-B level conformance.
- Testing XAdES signatures interoperability between applications claiming B-T level conformance. .
- Testing XAdES signatures interoperability between applications claiming B-LT T level conformance.
- Testing XAdES signatures interoperability between applications claiming B-LTA T level conformance.

Table 1 shows the prefixes used throughout the present document to refer to specific elements in the XAdES signature associated to the URIs of the corresponding namespaces.

Table 1: Prefixes used

XML Namespace URI	Prefix
http://www.w3.org/2000/09/xmldsig#	ds
http://uri.etsi.org/01903/v1.3.2#	xades
http://uri.etsi.org/01903/v1.4.1#	xadesv141

5 Test-suite for testing interoperability of XAdES-B-B signatures

The test cases in this clause have been defined for different combinations of XAdES-B-B signatures properties.

Mandatory properties for XAdES-B-B signatures as specified in ETSI EN 319 132-1 [1] clause 6.3 shall be present.

Table 2 shows the test suite for testing interoperability of XAdES-B-B signatures as specified in ETSI EN 319 132-1 [1] that do not incorporate `xades:SignaturePolicyIdentifier` qualifying property.

Table 3 shows the test suite for testing interoperability of XAdES-B-B signatures as specified in ETSI EN 319 132-1 [1] that do incorporate `xades:SignaturePolicyIdentifier` and `xades:SignaturePolicyDocumentStore` qualifying properties.

Table 2: Test cases for XAdES-B-B signatures that do not incorporate xades:SignaturePolicyIdentifier qualifying property

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BB/1	This is the simplest test case for XAdES-B-B signatures. XAdES-B-B signature signing one data object (a text file) and the xades:SignedProperties element. The signature only contains the mandatory XAdES properties according to the B-level, namely: xades:SigningTime, xades:SigningCertificateV2, xades:DataObjectFormat. The xades:DataObjectFormat should point to a ds:Reference whose URI attribute points to the signed simple text file.	Positive validation.	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat
XAdES/BB/2	XAdES-B-B signature signing two data objects and the xades:SignedProperties element. This brings the presence of two xades:DataObjectFormat signed properties.	Positive validation.	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:DataObjectFormat
XAdES/BB/3	XAdES-B-B signature signing two data objects and the xades:SignedProperties element. Incorporates one xades:CommitmentTypeIndication qualifying property expressing a commitment for all the signed data objects.	Positive validation.	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:DataObjectFormat xades:CommitmentTypeIndication (with xades:AllSignedDataObjects element)
XAdES/BB/4	XAdES-B-B signature signing two data objects and the xades:SignedProperties element. Incorporates one xades:CommitmentTypeIndication qualifying property expressing a commitment for one of the signed data objects.	Positive validation.	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:DataObjectFormat xades:CommitmentTypeIndication (with one xades:ObjectReference element)
XAdES/BB/5	XAdES-B-B signature signing one data object (a text file) and the xades:SignedProperties element. Incorporates one xades:SignatureProductionPlaceV2 qualifying property.	Positive validation.	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:SignatureProductionPlaceV2
XAdES/BB/6	XAdES-B-B signature signing one data object (a text file) and the xades:SignedProperties element. Incorporates one X509 Attribute certificate within the xades:SignerRoleV2 qualifying property.	Positive validation.	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:SignerRoleV2 (with one X509 Attribute certificate within one CertifiedRole/X509AttributeCertificate element)
XAdES/BB/7	XAdES-B-B signature signing one data object (a text file) and the xades:SignedProperties element. Incorporates one claimed attribute within the xades:SignerRoleV2 qualifying property.	Positive validation.	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:SignerRoleV2 (with one xades:Claimed element)

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BB/8	XAdES-B-B signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. Incorporates one signed assertion within the <code>xades:SignerRoleV2</code> qualifying property.	Positive validation.	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignerRoleV2</code> (with one <code>xades:SignedAssertion</code> element)
XAdES/BB/9	XAdES-B-B signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. Incorporates one X509 Attribute certificate and one signed assertion within the <code>xades:SignerRoleV2</code> qualifying property.	Positive validation.	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignerRoleV2</code> (with one <code>xades:SignedAssertion</code> element and with one <code>CertifiedRole/X509AttributeCertificate</code> element)
XAdES/BB/10	XAdES-B-B signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. Incorporates one <code>xades:CounterSignature</code> qualifying property.	Positive validation.	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:CounterSignature</code>
XAdES/BB/11	XAdES-B-B signature signing two data objects and the <code>xades:SignedProperties</code> element. Incorporates one <code>xades:AllDataObjectsTimeStamp</code> encapsulating a time-stamp token that time-stamps the signed data objects as specified in ETSI EN 319 132-1 [1].	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:AllDataObjectTimeStamp</code>
XAdES/BB/12	XAdES-B-B signature signing two data objects and the <code>xades:SignedProperties</code> element. Incorporates one <code>xades:IndividualDataObjectsTimeStamp</code> encapsulating a time-stamp token that time-stamps one of the signed data objects as specified in ETSI EN 319 132-1 [1].	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:IndividualDataObjectsTimeStamp</code>
XAdES/BB/13	XAdES-B-B signature signing two data objects and the <code>xades:SignedProperties</code> element. Incorporates one <code>xades:CommitmentTypeIndication</code> qualifying property expressing a commitment for one of the signed data objects. Incorporates one <code>xades:SignatureProductionPlaceV2</code> qualifying property. Incorporates one X509 Attribute certificate and one signed assertion within the <code>xades:SignerRoleV2</code> qualifying property. Incorporates one <code>xades:CounterSignature</code> qualifying property. Incorporates one <code>xades:IndividualDataTimeStamp</code> encapsulating a time-stamp token that time-stamps one of the signed data objects as specified in ETSI EN 319 132-1 [1].	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:CommitmentTypeIndication</code> (with one <code>xades:ObjectReference</code> element) • <code>xades:SignatureProductionPlaceV2</code> • <code>xades:SignerRoleV2</code> with one <code>xades:SignedAssertion</code> element and with one <code>CertifiedRole/X509AttributeCertificate</code> • <code>xades:CounterSignature</code> • <code>xades:IndividualDataObjectTimeStamp</code>

Table 3: Test cases for XAdES-B-B signatures incorporating xades:SignaturePolicyIdentifier qualifying property

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BB/14	XAdES-B-B signature signing one data object (a text file) and the xades:SignedProperties element. Incorporates one xades:SignaturePolicyIdentifier qualifying property containing a xades:SignaturePolicyHash element and the following qualifiers: xades:SPURI, and xades:UserNotice.	Positive validation	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:SignaturePolicyIdentifier (with xades:SignaturePolicyHash element and xades:SPURI and xades:UserNotice qualifiers)
XAdES/BB/15	XAdES-B-B signature signing one data object (a text file) and the xades:SignedProperties element. Incorporates one xades:SignaturePolicyIdentifier qualifying property containing a xades:SignaturePolicyHash element and the following qualifiers: xades:SPURI, and xadesv141:SPDocSpecification. This last qualifier will specify how to compute the digest value of the signature policy document. NOTE: At the time the present document was produced no technical specification within ETSI TR 119 000 [i.2] was available specifying a syntax for defining a signature policy. The test case is nevertheless incorporated in order it can be used when such specification(s) are produced.	Positive validation	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:SignaturePolicyIdentifier (with xades:SignaturePolicyHash element and xades:SPURI and xadesv141:SPDocSpecification qualifiers)
XAdES/BB/16	XAdES-B-B signature signing one data object (a text file) and the xades:SignedProperties element. Incorporates one xades:SignaturePolicyIdentifier qualifying property containing a xades:SignaturePolicyHash element and the following qualifiers: xades:SPURI, and xades:UserNotice. Incorporates one xadesv141:SignaturePolicyStore qualifying property containing a xadesv141:SignaturePolicyDocument element.	Positive validation	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:SignaturePolicyIdentifier (with xades:SignaturePolicyHash element and xades:SPURI and xades:UserNotice qualifiers) xadesv141:SignaturePolicyStore (with xadesv141:SignaturePolicyDocument element)
XAdES/BB/17	XAdES-B-B signature signing one data object (a text file) and the xades:SignedProperties element. Incorporates one xades:SignaturePolicyIdentifier qualifying property containing a xades:SignaturePolicyHash element and the following qualifiers: xades:SPURI, and xades:UserNotice. Incorporates one xadesv141:SignaturePolicyStore qualifying property containing a xadesv141:SigPolDocLocalURI element.	Positive validation	<ul style="list-style-type: none"> xades:SigningCertificateV2 xades:SigningTime xades:DataObjectFormat xades:SignaturePolicyIdentifier (with xades:SignaturePolicyHash element and xades:SPURI and xades:UserNotice qualifiers) xadesv141:SignaturePolicyStore (with xadesv141:SigPolDocLocalURI element)

6 Test-suite for testing interoperability of XAdES-B-T signatures

The test cases in this clause have been defined for different combinations of XAdES-B-T signatures properties.

Mandatory properties for XAdES-B-T signatures as specified in ETSI EN 319 132-1 [1], clause 6.3 shall be present.

Table 4 shows the test suite for testing interoperability of XAdES-B-T signatures as specified in ETSI EN 319 132-1 [1].

Table 4: Test cases for XAdES-B-T signatures

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BT/1	This test case tests the simplest XAdES B-T-Level conformant signature. XAdES signature as specified in test case XAdES/BB/1 with the incorporation of a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA that is within the same hierarchy as the signing certificate of the signature.	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token)
XAdES/BT/2	XAdES-B-T signature signing two data objects and the <code>xades:SignedProperties</code> element. Incorporates one <code>xades:IndividualDataObjectsTimeStamp</code> encapsulating a time-stamp token that time-stamps one of the signed data objects as specified in ETSI EN 319 132-1 [1]. Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token. The two time-stamps are generated by the same TSA that is within the same hierarchy as the signing certificate of the signature.	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:IndividualDataObjectsTimeStamp</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token)
XAdES/BT/3	XAdES-B-T signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. Incorporates two <code>xades:SignatureTimeStamp</code> qualifying properties, each one encapsulating one time-stamp token generated by different TSAs. These TSAs are within different trust hierarchies. NOTE: This will allow to define test cases for having different <code>xadesv141:TimeStampValidationData</code> qualifying properties associated to different <code>xades:SignatureTimeStamp</code> qualifying properties.	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token generated by one TSA1) • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token generated by a TSA2 different from the previous one, within a different trust hierarchy)

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BT/4	<p>XAdES-B-T signature signing two data objects and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates one <code>xades:CommitmentTypeIndication</code> qualifying property expressing a commitment for one of the signed data objects.</p> <p>Incorporates one <code>xades:SignatureProductionPlaceV2</code> qualifying property.</p> <p>Incorporates one X509 Attribute certificate within the <code>xades:SignerRoleV2</code> qualifying property.</p> <p>Incorporates one <code>xades:CounterSignature</code> qualifying property.</p> <p>Incorporates one <code>xades:IndividualDataObjectsTimeStamp</code> encapsulating a time-stamp token that time-stamps one of the signed data objects as specified in ETSI EN 319 132-1 [1] generated by a TSA1.</p> <p>Incorporates one <code>xades:SignaturePolicyIdentifier</code> qualifying property containing a <code>xades:SignaturePolicyHash</code> element and without qualifiers.</p> <p>Incorporates one <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a different TSA2.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:CommitmentTypeIndication</code> (with one <code>xades:ObjectReference</code> element) • <code>xades:SignatureProductionPlaceV2</code> • <code>xades:SignerRoleV2</code> with one <code>CertifiedRole/X509AttributeCertificate</code> • <code>xades:SignaturePolicyIdentifier</code> • <code>xades:CounterSignature</code> • <code>xades:IndividualDataObjectTimeStamp</code> (generated by a TSA1) • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token generated by a different TSA2 within a different trust hierarchy than TSA1)

7 Test-suite for testing interoperability of XAdES-B-LT signatures

The test cases in this clause have been defined for different combinations of XAdES-B-LT signatures properties.

Mandatory properties for XAdES-B-LT signatures as specified in ETSI EN 319 132-1 [1], clause 6.3 shall be present.

Table 5 shows the test suite for testing interoperability of XAdES-B-LT signatures as specified in ETSI EN 319 132-1 [1].

Table 5: Test cases for XAdES-B-LT signatures

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLT/1	<p>XAdES-B-LT signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing CRLs.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignerRoleV2</code> with one <code>CertifiedRole/X509AttributeCertificate</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs)
XAdES/BLT/2	<p>XAdES-B-LT signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses)
XAdES/BLT/3	<p>XAdES-B-LT signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates one <code>xades:CounterSignature</code> qualifying property.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing CRLs.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:CounterSignature</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs)

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLT/4	<p>XAdES-B-LT signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates one <code>xades:CounterSignature</code> qualifying property.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:CounterSignature</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses)
XAdES/BLT/5	<p>XAdES-B-LT signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates one X509 Attribute certificate and one signed assertion within the <code>xades:SignerRoleV2</code> qualifying property.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not present elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing CRLs.</p> <p>Incorporates a <code>xades:AttrAuthoritiesCertValues</code> qualifying property with certificates required for validating the X509 Attribute certificate not incorporated elsewhere in the signature.</p> <p>Incorporates a <code>xades:AttributeRevocationValues</code> qualifying property containing validation material (CRLs) required for validating the X509 Attribute certificate not incorporated elsewhere in the signature.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignerRoleV2</code> with one <code>CertifiedRole/X509AttributeCertificate</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xades:AttrAuthoritiesCertValues</code> • <code>xades:AttributeRevocationValues</code> (with CRLs)

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLT/6	<p>XAdES-B-LT signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates one X509 Attribute certificate and one signed assertion within the <code>xades:SignerRoleV2</code> qualifying property.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not present elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses</p> <p>Incorporates a <code>xades:AttrAuthoritiesCertValues</code> qualifying property with certificates required for validating the X509 Attribute certificate not incorporated elsewhere in the signature.</p> <p>Incorporates a <code>xades:AttributeRevocationValues</code> qualifying property containing validation material (OCSP responses) required for validating the X509 Attribute certificate not incorporated elsewhere in the signature.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignerRoleV2</code> (with an Attribute certificate). • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xades:AttrAuthoritiesCertValues</code> • <code>xades:AttributeRevocationValues</code> (with OCSP responses)
XAdES/BLT/7	<p>XAdES-B-LT signature signing two data objects and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates one <code>xades:IndividualDataObjectsTimeStamp</code> encapsulating a time-stamp token that time-stamps one of the signed data objects as specified in ETSI EN 319 132-1 [1] within a different hierarchy than the signature signing certificate.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by one TSA2 within a different hierarchy than the signature signing certificate and the TSA1.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:IndividualDataObjectsTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing CRLs.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:IndividualDataObjectsTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs)

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLT/8	<p>XAdES-B-LT signature signing two data objects and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates one <code>xades:IndividualDataObjectsTimeStamp</code> encapsulating a time-stamp token that time-stamps one of the signed data objects as specified in ETSI EN 319 132-1 [1] within a different hierarchy than the signature signing certificate.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by one TSA2 within a different hierarchy than the signature signing certificate and the TSA1.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:IndividualDataObjectsTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:IndividualDataObjectsTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses)

8 Test-suite for testing interoperability of XAdES-B-LTA signatures

The test cases in this clause have been defined for different combinations of XAdES-B-LTA signatures properties.

Mandatory properties for XAdES B-LTA signatures described in ETSI EN 319 132-1 [1] profile, clause 6.3, shall be present.

Table 6 shows the test suite for testing interoperability of XAdES-B-LTA signatures as specified in ETSI EN 319 132-1 [1].

Table 6: Test cases for XAdES-B-LTA signatures

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLTA/1	<p>XAdES-B-LTA signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing CRLs.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xadesv141:ArchiveTimeStamp</code>
XAdES/BLTA/2	<p>XAdES-B-LTA signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:ArchiveTimeStamp</code>

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLTA/3	<p>XAdES-B-LTA signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA2 within a different hierarchy than the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing CRLs.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xadesv141:ArchiveTimeStamp</code>
XAdES/BLTA/4	<p>XAdES-B-LTA signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA2 within a different hierarchy than the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:ArchiveTimeStamp</code>

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLTA/5	<p>XAdES-B-LTA signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing CRLs.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within the first <code>xadesv141:ArchiveTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a second <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xadesv141:ArchiveTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xadesv141:ArchiveTimeStamp</code>

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLTA/6	<p>XAdES-B-LTA signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within the first <code>xadesv141:ArchiveTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a second <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:ArchiveTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xadesv141:ArchiveTimeStamp</code>
XAdES/BLTA/7	<p>XAdES-B-LTA signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA2 within a different hierarchy than the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing CRLs.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within the first <code>xadesv141:ArchiveTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are CRLs.</p> <p>Incorporates a second <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xadesv141:ArchiveTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xadesv141:ArchiveTimeStamp</code>

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLTA/8	<p>XAdES-B-LTA signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA2 within a different hierarchy than the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within the first <code>xadesv141:ArchiveTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a second <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:ArchiveTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xadesv141:ArchiveTimeStamp</code>
XAdES/BLTA/9	<p>XAdES-B-LTA signature. The <code>ds:SignedInfo</code> contains two <code>ds:Reference</code> children. One of them references the <code>xades:SignedProperties</code> element. The other one references a <code>ds:Manifest</code> element.</p> <p>The <code>ds:Manifest</code> element references two detached data objects.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p> <p>Incorporates a <code>xadesv141:RenewedDigests</code> qualifying property containing the recomputed digest value of one of the two data objects signed through the signed <code>ds:Manifest</code> with a different digest algorithm than the one used in the corresponding <code>ds:Reference</code>.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:RenewedDigests</code> • <code>xadesv141:ArchiveTimeStamp</code>

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLTA/10	<p>XAdES-B-LTA signature. The <code>ds:SignedInfo</code> contains two <code>ds:Reference</code> children. One of them references the <code>xades:SignedProperties</code> element. The other one references a <code>ds:Manifest</code> element.</p> <p>The <code>ds:Manifest</code> element references two detached data objects.</p> <p>Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p> <p>Incorporates a <code>xadesv141:RenewedDigests</code> qualifying property containing the recomputed digest value of one of the two data objects signed through the signed <code>ds:Manifest</code> with a different digest algorithm than the one used in the corresponding <code>ds:Reference</code>.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within the first <code>xadesv141:ArchiveTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a second <code>xadesv141:RenewedDigests</code> qualifying property containing the recomputed digest value of one of the two data objects signed through the signed <code>ds:Manifest</code> with a different digest algorithm than the one used in the corresponding <code>ds:Reference</code>.</p> <p>Incorporates a second <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:RenewedDigest</code> • <code>xadesv141:ArchiveTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xadesv141:RenewedDigest</code> • <code>xadesv141:ArchiveTimeStamp</code>

9 Test-suite for augmentation of XAdES baseline signatures

This clause describes the so called augmentation tests cases. For running them a certain signer generates a XAdES baseline signature of a certain level. After that a verifier validates the signature and augments it to a higher level by adding a number of unsigned qualifying properties. Finally, a third entity validates the augmented signature.

The test cases in this clause have been defined for testing augmentation of XAdES-B-T signatures to XAdES-B-LTA signatures and subsequent validation of the augmented signatures.

Table 7 shows which properties are required to augment XAdES-B-T signatures to XAdES-B-LTA signatures for each test case.

Table 7: Test cases for augmentation of XAdES-B-T to XAdES-B-LTA signatures

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/AUG/1	<p>The XAdES-B-T signature generated in test case XAdES/BT/1 is augmented to a XAdES-B-LTA signature as specified in test case XAdES/BLTA/1. This requires to incorporate into the signature the validation material of the signing certificate of the signature within the <code>xades:CertificateValues</code> and <code>xades:RevocationValues</code> qualification properties.</p> <p>This also requires to incorporate into the signature the validation material of the signing certificate of the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code>, within the <code>xadesv141:TimeStampValidationData</code> qualifying property. The revocation material incorporated are CRLs.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xadesv141:ArchiveTimeStamp</code>
XAdES/AUG/2	<p>The XAdES-B-T signature generated in test case XAdES/BT/1 is augmented to a XAdES-B-LTA signature as specified in test case XAdES/BLTA/2. This requires to incorporate into the signature the validation material of the signing certificate of the signature within the <code>xades:CertificateValues</code> and <code>xades:RevocationValues</code> qualification properties.</p> <p>This also requires to incorporate into the signature the validation material of the signing certificate of the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code>, within the <code>xadesv141:TimeStampValidationData</code> qualifying property. The revocation material incorporated are OCSP responses.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:ArchiveTimeStamp</code>
XAdES/AUG/3	<p>The XAdES-B-T signature generated in test case XAdES/AUG/1 is augmented to a XAdES-B-LTA signature as specified in test case XAdES/BLTA/5.</p> <p>This requires to incorporate into the signature the validation material of the signing certificate of the time-stamp token encapsulated by <code>xadesv141:ArchiveTimeStamp</code>, within the <code>xadesv141:TimeStampValidationData</code> qualifying property.</p> <p>The revocation material incorporated are CRLs.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xadesv141:ArchiveTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xadesv141:ArchiveTimeStamp</code>

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/AUG/4	<p>The XAdES-B-T signature generated in test case XAdES/AUG/1 is augmented to a XAdES-B-LTA signature as specified in test case XAdES/BLTA/6.</p> <p>This requires to incorporate into the signature the validation material of the signing certificate of the time-stamp token encapsulated by <code>xadesv141:ArchiveTimeStamp</code>, within the <code>xadesv141:TimeStampValidationData</code> qualifying property.</p> <p>The revocation material incorporated are OCSP responses.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:ArchiveTimeStamp</code> • <code>xadesv141:TimeStampValidationData</code> • <code>xadesv141:ArchiveTimeStamp</code>

10 Test suites with negative test cases

10.1 Introduction

The present clause distinguishes two different types of negative test cases:

- 1) Test cases leading to valid XAdES signatures that nevertheless, are not XAdES baseline signatures.
- 2) Test cases leading to XAdES baseline signatures whose validation according to ETSI EN 319 102-1 [i.4] would not result in TOTAL_PASSED.

10.2 Test cases generating non XAdES baseline signatures

The present clause defines test cases that do not generate XAdES baseline signatures.

Table 8: Test cases generating non XAdES baseline signatures

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/NB/1	A XAdES signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. Incorporates the <code>xades:SigningCertificateV2</code> qualifying property. It does not incorporate the mandatory <code>xades:SigningTime</code> qualifying property. It incorporates <code>xades:DataObjectFormat</code> qualifying property.	Notification of non XAdES baseline	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:DataObjectFormat</code>
XAdES/NB/2	A XAdES signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. Incorporates the <code>xades:SigningCertificateV2</code> qualifying property. Incorporates the <code>xades:Time</code> qualifying property. It does not incorporate the <code>xades:DataObjectFormat</code> qualifying property.	Notification of non XAdES baseline	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code>
XAdES/NB/3	A XAdES signature signing one data object (a text file), the <code>xades:SignedProperties</code> element and the <code>ds:KeyInfo</code> element, which contains the signing certificate of the signature. Incorporates the <code>xades:Time</code> qualifying property. It incorporates <code>xades:DataObjectFormat</code> qualifying property. It does not incorporate the mandatory <code>xades:SigningCertificateV2</code> qualifying property.	Notification of non XAdES baseline	<ul style="list-style-type: none"> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>
XAdES/NB/4	A signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. Incorporates the <code>xades:Time</code> qualifying property. It does not incorporate the mandatory <code>xades:SigningCertificateV2</code> qualifying property.	Notification of non XAdES signature	<ul style="list-style-type: none"> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>

10.3 Test cases on XAdES-B-B signatures

The present clause defines test cases that generate XAdES baseline signatures whose validation according to ETSI EN 319 102-1 [i.4] do not result in TOTAL_PASSED.

The values within the Pass Criteria column in Table 9 are not the actual final results generated by a validation tool.

Table 9: Test cases on XAdES-B-B signatures

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BBN/1	A XAdES-B-B signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. The digest value of one of the <code>ds:Reference</code> children of <code>ds:SignedInfo</code> is wrong.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>
XAdES/BBN/2	A XAdES-B-B signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. The value within the <code>ds:SignatureValue</code> is wrong.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>
XAdES/BBN/3	A XAdES-B-B signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the signature is not trusted.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>
XAdES/BBN/4	A XAdES-B-B signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the signature is expired.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>
XAdES/BBN/5	A XAdES-B-B signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the signature is revoked.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>
XAdES/BBN/6	A XAdES-B-B signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the signature is issued by a CA whose certificate is revoked.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>
XAdES/BBN/7	A XAdES-B-B signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The <code>xades:SigningCertificateV2</code> qualifying property contains only one <code>xades:Cert</code> . The digest value within this element is not the digest of the signing certificate of the signature.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code>
XAdES/BBN/8	A XAdES-B-B signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The digest value within the <code>xades:SigPolicyHash</code> element is wrong.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignaturePolicyIdentifier</code>

10.4 Test cases on XAdES-B-T signatures

Table 10 defines test cases that generate XAdES-B-T signatures whose validation process as specified in ETSI EN 319 102-1 [i.4] shall not be TOTAL_PASSED.

Table 10: Test cases on XAdES-B-T signatures

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BTN/1	A XAdES-B-T signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. The digest value of one of the <code>ds:Reference</code> children of <code>ds:SignedInfo</code> is wrong.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>
XAdES/BTN/2	A XAdES-B-T signature signing one data object (a text file) and the <code>xades:SignedProperties</code> element. The value within the <code>ds:SignatureValue</code> is wrong.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>
XAdES/BTN/3	A XAdES-B-T signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the signature was expired at the time indicated within the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code> qualifying property.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>
XAdES/BTN/4	A XAdES-B-T signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the signature was revoked at the time indicated within the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code> qualifying property.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>
XAdES/BTN/5	A XAdES-B-T signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the signature is issued by a CA whose certificate signature was revoked at the time indicated within the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code> qualifying property.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>
XAdES/BTN/6	A XAdES-B-T signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code> qualifying property is not trusted.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>
XAdES/BTN/7	A XAdES-B-T signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code> qualifying property was expired at the time indicated within its time-stamp token.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>
XAdES/BTN/8	A XAdES-B-T signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The signing certificate of the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code> qualifying property was revoked at the time indicated within its time-stamp token.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>
XAdES/BTN/9	A XAdES-B-T signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element. The message imprint in the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code> qualifying property is wrong.	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code>

10.5 Test cases on XAdES-B-LTA signatures

Table 11 defines test cases that generate XAdES-B-LTA signatures whose validation process as specified in ETSI EN 319 102-1 [i.4] shall not be TOTAL_PASSED.

Table 11: Test cases on XAdES-B-LTA signatures

TC ID	Description	Pass criteria	Signature qualifying properties
XAdES/BLTAN/1	<p>A XAdES-B-LTA signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element.</p> <p>The time indicated within the time-stamp token encapsulated by <code>xades:SignatureTimeStamp</code> qualifying property is posterior to the time indicated within the time-stamp token encapsulated by <code>xadesv141:ArchiveTimeStamp</code>.</p>	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xadesv141:ArchiveTimeStamp</code>
XAdES/BLTAN/2	<p>A XAdES-B-LTA signature signing one data object (a text file), and the <code>xades:SignedProperties</code> element.</p> <p>The message imprint within the time-stamp token encapsulated by <code>xadesv141:ArchiveTimeStamp</code> qualifying property is wrong.</p>	Negative validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with CRLs) • <code>xadesv141:ArchiveTimeStamp</code>
XAdES/BLTAN/3	<p>XAdES-B-LTA signature. The <code>ds:SignedInfo</code> contains two <code>ds:Reference</code> children. One of them references the <code>xades:SignedProperties</code> element. The other one references a <code>ds:Manifest</code> element.</p> <p>The <code>ds:Manifest</code> element references two detached data objects. Incorporates a <code>xades:SignatureTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p> <p>Incorporates a <code>xadesv141:TimeStampValidationData</code> with the validation data required for validating the time-stamp token within <code>xades:SignatureTimeStamp</code> and that is not incorporated elsewhere in the signature. The revocation data are OCSP responses.</p> <p>Incorporates a <code>xades:CertificateValues</code> qualifying property.</p> <p>Incorporates a <code>xades:RevocationValues</code> qualifying property containing OCSP responses.</p> <p>Incorporates a <code>xadesv141:RenewedDigests</code> qualifying property containing the recomputed digest value wrongly computed of one of the two data objects signed through the signed <code>ds:Manifest</code> with a different digest algorithm than the one used in the corresponding <code>ds:Reference</code>.</p> <p>Incorporates a <code>xadesv141:ArchiveTimeStamp</code> qualifying property encapsulating one time-stamp token generated by a TSA1 within the same hierarchy as the signature signing certificate.</p>	Positive validation	<ul style="list-style-type: none"> • <code>xades:SigningCertificateV2</code> • <code>xades:SigningTime</code> • <code>xades:DataObjectFormat</code> • <code>xades:DataObjectFormat</code> • <code>xades:SignatureTimeStamp</code> (encapsulating one time-stamp token) • <code>xadesv141:TimeStampValidationData</code> • <code>xades:CertificateValues</code> • <code>xades:RevocationValues</code> (with OCSP responses) • <code>xadesv141:RenewedDigest</code> (with wrong digest value) • <code>xadesv141:ArchiveTimeStamp</code>

History

Document history		
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