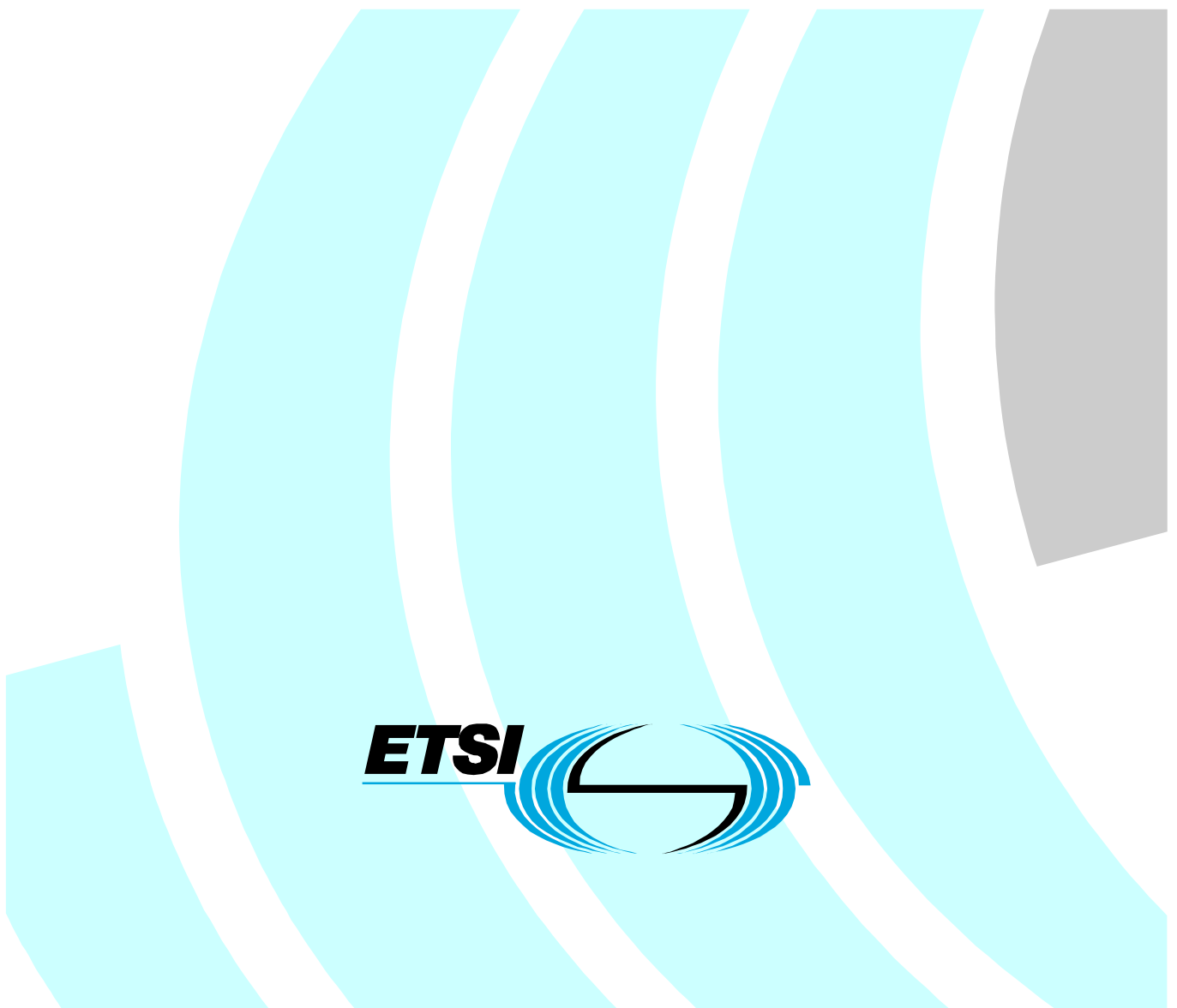


**External Report of the
2010 XAdES / CAdES Remote Plugtests™ Event
(Oct-Nov 2010)**



Reference

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Abstract

This document is the report of the 2010 Remote Plugtests Event on XAdES and CAAdES, organized by ETSI Centre of Testing and Interoperability (CTI) conducted using the ETSI portal supporting remote interoperability plugtests.

For Non Disclosure Agreement reason, the report does not list the results of each testcases. It only show the overall and anonymous statistics, without link to the company names.

Status of this Document

This document is provided by ETSI Center of Testing and Interoperability (CTI). For further details on Plugtests services, please see : <http://www.etsi.org/Website/OurServices/Plugtests/home.aspx> .

1 Introduction

The present document aims at reporting the 2010 Remote Plugtests© Event on XAdES and CADES.

For Non Disclosure Agreement reason, the report does not list the results of each testcases. It shows the overall and anonymous statistics, without link to the company names. A full “Internal” report including the list of participants and the description and the results of all the testcases has been provided to the event participants.

The document also provides details on the specification, design and implementation of the portal supporting Remote Plugtests© Events on XAdES and CADES specification, including an overview of the contents of the portal as well as the on-line PKI-related services provided to the participants of the XAdES/CADES Remote Plugtests.

The present report provides details on:

- Specification, design and implementation of those testcases description, including cross-verification, upgrade and arbitration testcases and negative testcases for XAdES and CADES signatures. This includes an overview of the new contents of the portal as well as the re-structuration of the old contents.
- The Remote Plugtests© Event on XAdES and CADES organized by ETSI and held from Monday 25th October to Monday 22nd November 2010 (The event was initially planned until 5th November but it has been extended to 22nd November due to high number of participants).

The present document is organized as indicated below.

Section 2 provides details on how the material of the portal is organized and the kind of services it provides to the participants of the Plugtests© Events.

Section 3 lists the participating companies to the 2010 XAdES and CADES Remote Plugtests© Event.

Section 4 provides an overview of the most interesting results and conclusions of the Plugtests.

Section 5 provides details on a number of issues related to the XAdES and CADES specification as identified by the participants. These issues will be sent to the ESI TC for this to take into consideration for future XAdES/CADES standardization activities.

Section 6 shows the interoperability matrixes for the test-cases that were defined for the Plugtests event, and for XAdES specifications.

Section 7 shows the interoperability matrixes for the test-cases that were defined for the Plugtests event, and for CADES specifications.

2 Organization and contents of the portal

The portal has two different parts, namely one public part, that anybody may visit, and a private part accessible only for the participants subscribed to the Plugtests event.

Public part has remained identical to the one that the portal had during the past Remote Plugtests© Event in 2008 and 2009 on XAdES and CADES

The private part has been re-structured since then because of the incorporation of a new part providing support to interoperability tests on on XAdES and CADES.

2.1 Public part of the portal

PLUGTESTS™
INTEROP EVENTS

XAdES & CADES Portal

ETSI Centre for Testing and Interoperability (CTI) is organizing 2 new Remote Plugtests events for XAdES and CADES, conducted in parallel from **25th October to 5th November 2010**.

The **XAdES** event aims at conducting interoperability test cases on XAdES signatures.

- This will include an extension to the **XAdES v1.3.2** with respect to previous Plugtests events. This extended test will provide test coverage of the specification including testing signatures evolution, simulating real life situations.
- A new set of specific test cases will also be provided to cover the extensions defined in the new **XAdES v1.4.1**.

The **CADES** event aims to perform interoperability tests on CADES implementations.

- This will include an extension to the **CADES v1.7.4** with respect to previous Plugtests events. This extended test will provide test coverage of the specification including testing signatures evolution, simulating real life situations.
- A new set of specific test cases that cover the changes defined in the last version of **CADES v1.8.1**.

The purpose of these events is:

- To consolidate solutions to already identified interoperability issues of XAdES and CADES.
- To enable participants to assess the level of interoperability of XAdES and CADES.
- To identify additional issues that should be taken into account in future CADES /XAdES standardization activities.
- To improve the quality of XAdES/CADES specifications.
- To ease the introduction of XAdES/CADES signatures, by providing the means to solve interoperability problems before widespread deployment.

• Remote XAdES/CADES plugtest **25 October - 5 November 2010**
[click here](#) For registration

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Advanced Electronic Signature

ETSI World Class Standards

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As mentioned above, this part remains as it was for previous events It includes the following contents:

- The XAdES Plugtests page, providing some more details on the event itself, namely targetted specification, targetted audience, some general info on how to conduct such event, etc.
- The CADES Plugtests page, providing some more details on the event itself, namely targetted specification, targetted audience, some general info on how to conduct such event, etc.

- The Mailing List page, providing some details on participants' mailing list support provided by the portal for facilitating exchange of information during the plugtests.
- The Registration page, providing details on the Plugtests registration process.
- The Presentation of the Plugtests team.
- The **Login to Plugtests Area** page, access to the **protected area** of the portal.

2.2 Private part of the portal

This part is visible only for the participants of the Plugtests event. It is structured in three main areas:

- **Common area.** This area contains a number of pages that provide generic information to the participants, which is relevant to participants of both XAdES and CADES interoperability tests.
- **XAdES specific area.** This area contains a number of pages that support the interoperability tests on XAdES.
- **CADES specific area.** This area contains a number of pages that support the interoperability tests on CADES.

Sub-clauses below provide details of the contents of these pages.

Plugtests Portal For Electronic Signature

Common

Conducting Plugtest

Interactions with portal
 Downloading material
 Generation & cross-verif.
 Upgrade & arbitration
 Only verification
 Cryptographic Material
 Online PKI services details
 Online PKI Services access
 Online TSP Services access
 Online TSP Services for XAdES 141
 Attribute Certificate Issuance
 Participants' List
 Meeting Support
 Presentations
 Chat
 Public pages

XAdES

Test Cases Definition Language
 Test Cases
 Verification Reports
 Stats per Form
 Upload
 Download
 Test Data Directory
 Questions & Answers

CAAdES

Test Cases
 Your Verification Reports
 InteropMatrix Reports
 Stats per Form
 Upload
 Download
 Test Data Directory
 Questions & Answers

Conducting Plugtest

Welcome velez
[change password](#)

Contents

- [1. Introduction](#)
- [2. Types of tests](#)
- [3. Versions of XAdES and CAAdES tested](#)
- [4. Before starting the plugtest](#)
- [5. Conducting generation and cross-verification tests](#)
- [6. Conducting upgrade and arbitration tests](#)
- [7. Conducting only-verification tests](#)

1. Introduction

This page provides generic information on the plugtest, namely: the types of interoperability tests that the participants will be able to conduct, and a high-level description of how they may conduct tests using the XAdES/CAAdES plugtest portal.

2. Types of tests

This plugtest allows to conduct three types of tests:

- **Generation and cross-verification** (a.k.a. Positive) tests.
 Each participant is invited to generate a certain set of valid XAdES/CAAdES signatures with certain characteristics (generation). The rest of participants are invited afterwards to verify these signatures (cross-verification). The plugtest portal automatically generates an updated set of interoperability matrixes that all the participants may access.
- **Only-verification** (a.k.a. Negative) tests.
 ETSI has generated a number of invalid XAdES/CAAdES signatures (the so-called "negative testcases") by different reasons. Each participant may, at her own discretion, try to verify these signatures, checking in this way that the corresponding tool actually detects that the signature is not valid.
- **Signatures Upgrade and Arbitration** (a.k.a. Positive) tests.



In this type of tests a simple form of XAdES/CAAdES (XAdES-B for instance) will be generated by one participant A (acting as signer). A different participant B (acting as verifier/archival system) will verify the aforementioned signature and will upgrade it to a more evolved form (to XAdES-X). Finally, the participant A (acting now as if she was an arbitrator) will take the upgraded signature and will verify it as an arbitrator would do.

2.2.1 Contents of Common area of Private part

2.2.1.1 Conducting plugtests information pages

The Conducting Plugtests page is the first of a set of six pages providing detailed explanations on how to conduct interoperability tests on both XAdES and CAAdES during this event.

This first page details the three types of interoperability tests provided at this plugtests event:

- **Generation and cross-verification** (a.k.a. Positive) tests.
 Each participant is invited to generate a certain set of valid XAdES/CAAdES signatures with certain characteristics (generation). The rest of participants are invited afterwards to verify these signatures (cross-verification). The plugtest portal automatically generates an updated set of interoperability matrixes that all the participants may access.
- **Only-verification** (a.k.a. Negative) tests.
 ETSI has generated a number of invalid XAdES/CAAdES signatures (the so-called "negative testcases") by different reasons. Each participant may, at her own discretion, try to verify these signatures, checking in this way that the corresponding tool actually detects that the signature is not valid.

- **Signatures Upgrade and Arbitration (a.k.a. Positive) tests.**

In this type of tests a simple form of XAdES/CAAdES (XAdES-B for instance) will be generated by one participant A (acting as signer). A different participant B (acting as verifier/archival system) will verify the aforementioned signature and will upgrade it to a more evolved form (to XAdES-X). Finally, the participant A (acting now as if she was an arbitrator) will take the upgraded signature and will verify it as an arbitrator would do.

This section also provides details on the versions of XAdES and CAAdES tested/

- XAdES v1.3.2.

This plugtest allows the following types of tests on XAdES v1.3.2:

- Generation and cross-verification.
- Only-verification.
- Signatures Upgrade and Arbitration.

Participants of previous plugtest events should take into account that new test cases for XAdES v1.3.2 have been specified, enlarging the testing scope

- XAdES v1.4.1.

This plugtest allows the following types of tests on XAdES v1.4.1:

- Generation and cross-verification.
The plugtest specifies a number of test cases for checking interoperability when using new properties defined in XAdES v1.4.1, namely <xadesv141:TimeStampValidationData> and <xadesv141:ArchiveTimeStamp>.
- Only-verification.
The portal also contains a number of invalid XAdES v1.4.1 signatures caused by wrong contents of <xadesv141:TimeStampValidationData> and <xadesv141:ArchiveTimeStamp>.

- CAAdES v1.7.4.

This plugtest allows the following types of tests on CAAdES v1.7.4:

- Generation and cross-verification.
- Only-verification.
- Signatures Upgrade and Arbitration..

Participants of previous plugtest events should take into account that new test cases for CAAdES v1.7.4 have been specified, enlarging the testing scope

- CAAdES v1.8.1.

This plugtest allows the following types of tests on CAAdES v1.8.1:

- Generation and cross-verification.
The plugtest specifies a number of test cases for checking interoperability after implementing the changes specified within CAAdES v1.8.1.

It also provides high level description of the steps that participants must perform for conducting the two different types of interoperability tests aforementioned.

The rest of pages of the set provide details on:

- How to download material from the portal for starting conducting the Plugtests (**Downloading material page**). This material is usually a zip file enclosing a well defined folder structure containing both signatures and verification reports on signatures.
- How to generate XAdES and/or CAAdES signatures and uploading them to the corresponding section of the portal so that the rest of participants at the interoperability tests may download and verify them (**Generating Signatures page**).
- How to verify other participants' signatures, report on verification results and uploading of these reports to the portal so that the portal keeps track of the current status of the Plugtests (**Verifying Signatures page**).

2.2.1.2 Cryptographic material pages

The Cryptographic Material page is the first one of a set of four pages providing details on the cryptographic material handed to the participants at the beginning of the plugtest.

The portal deployed two trust frameworks for this plugtests, each one having a different Root CA.

Within each trust framework different scenarios are defined. ETSI will define groups of test cases (for instance a group defining different test cases for XAdES-A signatures) for each scenario.

Participants will use the cryptographic material in a certain scenario (as per ETSI indications) for generating (and/or verifying) the signatures corresponding to this group. In consequence each scenario will incorporate a set of cryptographic items that the participants will use while working with one of the aforementioned groups of test cases.

The two trust frameworks have been defined as detailed below:

- **First trust framework. Root_CA_OK as Root CA.** This framework will be used for conducting all the tests on XAdES v1.3.2. For this trust framework, two different scenarios have been defined:
 - The Scenario SCOK page provides details of the first scenario supported by the portal for the Trust Framework aforementioned, namely, a scenario where all the certificates are valid.
 - The Scenario SC1 page provides details of the second scenario supported by the portal for the Trust Framework aforementioned, namely, a scenario where a revoked end-entity certificate and an expired end-entity certificate exist for being used in some of the only-verification test cases.
- **Second trust framework. Root_CA_2OK as Root CA.** This framework will be used for conducting the tests on new features introduced by XAdES v1.4.1, namely and unsigned properties. Only one scenario has been defined for this framework, consisting in one Root CA (Root_CA_2OK) which issues certificate for a TSA (TSA2), which issues the time-stamp tokens for the signatures generated. This scenario does not provides end user certificates and participants will use signing certificates in the the first trust framework, which results in

Each CA also provided **OCSP** responses reporting the status of the certificates issued by that CA. In addition to that, each CA issued **CRLs** reporting the revoked certificates.

The portal also includes a **Timestamping Authority** able to generate time-stamp tokens on request by the participants.

2.2.1.3 Online PKI-related services page

The Plugtests portal incorporates a number of online PKI-related services.

The **Online PKI services details page** describe all of them and provides details on how the participants may access them.

The on-line PKI-related services deployed are listed below:

- **CA-related services.** This service provides issuance of certificates; generation of CRLs; publication of CRLs. Participants should use this service for getting their corresponding certificates for generating XAdES/CAAdES signatures.
- **Time-stamp Authority server.** This server generates RFC 3161 time-stamp tokens as per request of the participants in the plugtest.
- **OCSP responders,** which are able to generate OCSP responses to OCSP requests submitted by the participants on the status of a certain certificate generated by the ETSI portal infrastructure. During this Plugtest, these OCSP responders will actually be the CAs issuing certificates (Direct Trust Model).
- **LDAP server.** This server acts as central repository for CA and TSA certificates, and CRLs.
- **Http server.** This server acts as alternative central repository for CA and TSA certificates, and CRLs.

This page also contains a link to a Java class implementing basic login/password authentication mechanism required for accessing these services, so that participants had not to develop such a mechanisms in their tools.

2.2.1.4 Online PKI services access page

The Online PKI Services access page allows to access to most of the on-line PKI-related services provided by the portal, namely: access to the CA software for requesting generation of a key-pair and the corresponding end-entity certificate for generating signatures, connection details for accessing the LDAP server where CRLs and CA certificates are stored, etc.

2.2.1.5 Online TSA services access page

The Online TSP Services access page allows to access to the TSA server deployed in the server for requesting generation of time-stamp tokens.

2.2.1.6 Attribute certificate issuance page

In the XAdES CertifiedRoles test (X-BES-5) or CAAdES CertifiedAttributes test (C-BES-5), the participants may need their X509 V2 attribute certificate ([RFC3281]) for their signing public key certificate. The private key and certificate of the attribute authority which issues their attribute certificate can be found in the CryptographicMaterial.

Thus the participants can issue their own attribute certificate for themselves by some security toolkits. However the plugtest service can also issue the attribute certificate if participants need. This section gives also details how to request the attribute certificate.

2.2.1.7 Participants' List page

This page lists the details of all the companies and people that participated in the Plugtests™ as well as their coordinates.

2.2.1.8 Meeting Support page

The Meeting Support page contains all the information related to the meetings that took place during the Plugtests event. It includes:

- **Introduction presentation.** This presentation was made available before the start of the plugtests, and it provides the most relevant information on the event, including structure of the portal, relevant URLs, rules to be followed during the participation, etc

- Calendar for the meetings (Gotomeeting conference calls).
- Dialing details for the Web Conference (GotoMeeting).
- URL for accessing a chat server accessible through a Web browser were the calls were minuted and participants could write their comments, questions and statements.
- The agenda for each meeting.
- Links to the minutes of each meeting.

2.2.1.9 Presentations pages

The Presentations page is the first of a set of pages containing presentations. At present, there are two presentations available:

- A presentation on the ETSI ESI TC, the body in charge of standardizing XAdES.
- A presentation on the history of XAdES and CAdES , which includes details on the different published versions.

2.2.1.9 Mailing list

A Electronic mail list with archival capabilities, whose use was restricted to the participants in the Plugtests©, was set up for supporting exchange of messages among them.

2.2.1.10 Chat page

The Chat page provides access to a web-based chat that participants use during the conference calls for sharing notes. It is also used for taking notes of the meetings. These notes are the core component of the meetings minutes.

2.2.2 Contents of XAdES and CAdES Specific areas of Private part

The portal contains, within the private part of the portal, a specific area for each specification (XAdES and CAdES) that is tested in this Plugtests©.

The contents for each of these areas are tailored for the specification supported by that area.

Sub-clauses below provide details of the pages appearing within each specific area. Each sub-clause actually provides details on two pages, one within the XAdES specific area and one within the CAdES specific area, including those aspects that have in common and those aspects where they are different.

2.2.2.1 Test Cases pages

These are pages containing documents with the complete specification of the test cases for each specification (XAdES or CAdES).

The documents are written in XML and incorporate XSLT stylesheets and javascript technologies. These technologies allow:

- To browse the aforementioned test definition documents and build pieces of text and tables corresponding to each test case within this document.
- To browse reports of verification (simple XML documents) of each single XAdES and / or CAdES signature verified by each participant, process them and keep up to date the interoperability matrixes, which show what signatures of each participant have been verified by what other participants and the results of such verifications.

The XAdES test case document actually incorporates the whole set of interoperability matrixes resulting from the uploading of the participants of their verification report. It is worth to mention that XSLT and javascript technologies allow that each time a participant uploads a set of signatures and/or verification reports, the interoperability matrixes shown within the XAdES test case document, are updated, so that participants always see the up to date information on interoperability tests carried so far.

The CAAdES test case document does not incorporate the interoperability matrixes. Instead, they may be accessed in a different document of the portal. As with matrixes within the XAdES test case document, the CAAdES interoperability matrixes are also updated whenever any participant uploads a package with new signatures and / or verification reports.

2.2.2.2 Individual verification reports

Both XAdES and CAAdES specific areas contain a page where each participant may find its own interoperability matrixes, i.e. matrixes that report the verification results obtained by the rest of the participants after trying to verify each of his/her signatures.

These matrixes include links to the signature files and to the verification report files, as well an indication of the verification result.

Each participant access from the main page of the portal to her own verification reports page, and from there, each participant may directly access to the verification reports pages of the rest of the participants.

2.2.2.3 Statistics per signature form

Both XAdES and CAAdES specific areas contain a table that summarizes the number of XAdES and CAAdES signatures generated at each instant of the Plugtests©.

The table shows how many signature of a certain XAdES or CAAdES form has generated each participant in the Plugtests©.

2.2.2.4 Upload pages

Both XAdES and CAAdES specific areas contain a page that participants use for uploading their signatures and / or verification reports.

The Upload pages provide mechanisms for uploading new signatures, new verification reports or both.

Once uploaded, the portal re-builds a new downloading package in the corresponding specific area (XAdES or CAAdES) and makes it available for all the participants at the corresponding Dowload page. Within this package, participants will find all the signatures and verification reports generated up to that instant in the plugtest.

As it has been already mentioned, the upload of a package has the immediate effect of updating the corresponding interoperability matrixes and the individual verification reports within the suitable specific area.

2.2.2.5 Download pages

Both XAdES and CAAdES specific areas contain a page that participants use for downloading the corresponding initial package that includes cryptographic material, test-definition files, and a folder structure suitable for uploading signatures and verification reports).

These pages are also used for downloading the whole material generated by the participants at a certain instant of the plugtest, including all the XAdES (or CAAdES) signatures and verification reports generated so far.

2.2.2.6 Test data directory pages

Both XAdES and CAAdES specific areas contain a page that participants use for browsing the folders structure where the portal stores the XAdES or CAAdES signatures and the verification files generated by all the participants.

This allows a detailed inspection of the files uploaded in a certain instant to the portal.

2.2.2.7 Known issues pages

Both XAdES and CAdES specific areas contain a page that lists all the different issues that were raised during the event. These issues were classified in two groups, namely:

- Issues that are related to the the Plugtests itself (test cases definitions, restrictions, portal infrastructures, etc).
- Issues related to the corresponding specification (XAdES or CAdES), which may impact further standardization activities.
- Issues related to both the Plugtests itself and to the specification.

2.2.2.8 Questions and answers pages

Both XAdES and CAdES specific areas contain a page that collects the most relevant questions raised during the Plugtests© and their corresponding answers if they have been agreed.

3 Participants list

The table below shows the details of all the organizations and persons that have participated in the 2010 XAdES / CADES Remote Plugtests© Event.

There have been 27 different organizations and 66 people participating in the event.

| Participating Companies | XAdES | CADES | Country |
|---|-------|-------|-----------------|
| ALBALIA Interactiva, S.L. | X | | Spain |
| Ardaco | X | X | Slovak Republic |
| AS Sertifitseerimiskeskus | X | | Estonia |
| Ascertia Limited | X | X | UK |
| BULL S.A.S | X | X | France |
| CERTSIGN | X | X | Romania |
| Cryptolog International | X | X | France |
| DICTAO | X | X | France |
| E-GROUP | X | | Hungary |
| Eldos Corp | X | X | UK |
| ENIGMA Systemy Ochrony Informacji Sp. z o.o. | X | X | Poland |
| FedICT | X | X | Belgium |
| IBM Spain | X | | Spain |
| IPS Certification Authority, S.L. | X | | Spain |
| Luxtrust SA | X | X | Luxemburg |
| Microsec Ltd | X | X | Hungary |
| Microsoft | X | | USA |
| Ministry of Finance, Israel | X | | Israel |
| NTT Information Sharing Platform Laboratories | X | | Japan |
| Polish Security Printing Works | X | X | Poland |
| Polysys Ltd | X | X | Hungary |
| Safelayer Secure Communications SA | X | X | Spain |

| | | | |
|--------------------------------------|---|---|-----------|
| TrustWeaver | X | X | Spain |
| Tubitak Uekae | X | X | Turkey |
| UAB-"MIT-SOFT" | X | | Lithuania |
| Universitat Politecnica de Catalunya | X | X | Spain |
| IAIK | X | | Austria |
| ETSI | | | France |

4 Plugtests conclusions

4.1 Scalability of the portal

From a technological point of view, the most relevant conclusion is that the portal designed has proved to be easily scalable when hosting of two Plugtests© has been required.

For simultaneously supporting XAdES and CAAdES Remote Plugtests© events, the portal was rapidly tuned to include the new test specifications and Testcases descriptions. Deploying mechanical features already deployed in past events XAdES/CAAdES (upload/download, access to up to date individual interoperability reports, access to up to date individual signature forms interoperability matrixes, etc) did not required much less effort.

In addition to that, the technology used proved also to scale well in terms of response time. Although 66 participants were registered from 27 companies, no complains by participants reporting slow reaction of the portal were raised.

4.2 Remote vs. Face to Face

The STF team reinforces its opinion on the usefulness of Remote Plugtests© as a way of reducing costs to participants.

27 companies registered from US, Europe and Asia. That would have been difficult to organise in a face to face event

4.3 Communication supporting technologies

The Utilization of Web conference (GoToMeeting and GoToWebinar) has been very appreciated by participants and improved communications regarding past events (audio and visual)

It has allowed the participants to get very interactive conferences, by sharing the same document or application. At the welcome meeting, the team explained how to conduct the testing by making a real case demo.

The chat of the portal has also been very important for the participants to write their questions or request and also it has been used as meeting minutes.

4.4 Event duration

Initially, 2 weeks of testing have been planned for this event. It has rapidly show that this is too short for a such amount of testcases.

Moreover, for this event, 27 companies were registered, whereas 11 were registered at the previous XAdES/CAAdES event. As each company has to verify the signature of the other ones, the time needed increases with the amount of companies. 2 weeks were definitely too short, especially to run XAdES and CAAdES in parallel.

For this reasons, the Plugtests team has decided to extend the duration of the event until the 22 November 2010, which has led to get a 4 week event.

The participants have considered that with such testcases complexity, it is difficult to run both XAdES and CAAdES at the same time. They would rather prefer to get 2 separated events.

5 XAdES/CAdES-related Issues

The present section lists some of the issues raised during the conduction of the XAdES-CAdES Plugtests™ Event in November/December 2010.

5.1 Technical wrap-up

On CAdES signatures, the most controversial issue was the different readings of the latest version of the ETSI TS 101 733 regarding the production of the input to the computation of the message imprint to be sent to the TSA for getting the ArchiveTimeStamp unsigned attribute. The current specification deals with this issue in section 6.4.1 of normative part, and in annex K. It seems that readers of these two pieces of specification reach different conclusions when deciding what has to be concatenated and how for computing the aforementioned message imprint, resulting in a lack of interoperability.

On XAdES signatures, the so-called “generation and cross verification” tests proved that applications have got a good level of interoperability, and participants could improve their applications after fixing problems that in the first iterations appeared in some of their signatures based on their deep analysis after that their validation by other participants failed.

The higher degree of interoperability problems on XAdES appeared in the so called “signature upgrade and arbitration” test cases. This is a new type of test cases for this specific plugtest™. In this type of tests, a participant A generated a basic signature form (XAdES-BES, XAdES-EPES XAdES-T or XAdES-C as much) and uploaded it to the portal. A second participant B takes the former signature, verifies it and upgrades it to a more complex form (XAdES-A, for instance), adding the validation material that she has used, and uploads it. Finally, a third participant C takes the signature as uploaded by B, and verifies it. A would mimic the signer in the real world, B would mimic the initial verifier in the real world, and finally, C would mimic a potential arbitrator that had to decide about the validity of the signature in case of dispute.

These tests proved that the process of building the evolved forms between different applications still bring problems to ulterior verifiers, due to a number of reasons, some of which are detailed below:

- not making available the validation material at the notified place when participants generated references (XAdES-X forms for instance)
- Substitution of References to validation material by new references, which made to fail certain time-stamps computed on former references
- Not inclusion of the actual validation material referenced in references previously existing in the original signatures.

For CAdES signatures the number of participants that tested the “signature upgrade and arbitration” cases, was much less than in XAdES, which may be explained by the fact that this was actually the second plugtest organized by CAdES.

As for the issues that impacted or may impact XAdES and CAdES standardization in the future, it is worth to mention that previously to the start of the event, ETSI had been reported on an discrepancy in the tag of an XML element (xadesv141:XAdESTimeStamp) between the Technical Specification document and one of the XML Schema files that define the XML Schema of XAdES v.1.4.1(xadesv141:XAdESTimeStampV2). At the very beginning of the Plugtests, participants commented that bug and agreed in one solution as the one that would impact the less to their implementations. As a result of that, a new version of XAdES version 1.4.2, with this decision implemented, was issued

5.2 Change XML schema of XAdES v1.4.1

Deliverable: ETSI TS 101 903 version v1.4.1

CR Title: change XML schema of XAdES v1.4.1

Source: Juan Carlos Cruellas (rapporteur)

Submission date: 08/11/2010

Category: F (correction)

Reason for change:

The TS 101 903 v1.4.1 defines a new XML element ArchiveTimeStamp in a different namespace than the former ArchiveTimeStamp defined in v1.3.2.

The xml schema file that defines this new element, does not use "ArchiveTimeStamp" as element name, but "ArchiveTimeStampV2", which is not obviously correct.

The participants in the current XAdES remote plugtest have agreed that the best way to proceed would be to change the xml schema file so that the element name is "ArchiveTimeStamp" so that the TS text and the xml schema file use the same name, avoiding confusion.

Also, the TimeStampValidationData element, incorporates an URI attribute whose name, in the xml schema is "UR". This is also a typo error that should be fixed.

In summary of change:

The change request is to change in the xml schema of XAdES v1.4.1:

"ArchiveTimeStampV2" to "ArchiveTimeStamp"
"UR" to "URI"

Change typo in clause 8.1 of ETSI TS

Add some text remarking these typos in version v1.4.1

Final xml schema modified:

```
<xsd:schema targetNamespace="http://uri.etsi.org/01903/v1.4.1#" elementFormDefault="qualified">
<xsd:import namespace="http://uri.etsi.org/01903/v1.3.2#"
schemaLocation="http://uri.etsi.org/01903/v1.3.2/XAdES.xsd"/>
<!-- Start CertificateValues -->
<xsd:element name="TimeStampValidationData" type="ValidationDataType"/>
-
<xsd:complexType name="ValidationDataType">
-
<xsd:sequence>
<xsd:element ref="xades:CertificateValues" minOccurs="0"/>
<xsd:element ref="xades:RevocationValues" minOccurs="0"/>
</xsd:sequence>
<xsd:attribute name="Id" type="xsd:ID" use="optional"/>
<xsd:attribute name="URI" type="xsd:anyURI" use="optional"/>
</xsd:complexType>
<xsd:element name="ArchiveTimeStamp" type="xades:XAdESTimeStampType"/>
</xsd:schema>
```

6 XAdES Plugtests© Interoperability matrixes

6.1 Summaries for Positive Test Cases

XAdES-BES

| Signatures | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|------------|--------------------|------------------------|----------|-------|----------|-------|----------------|------|------------|------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-BES-1 | 19 | 315 | 298 | 94,60 | 4 | 1,27 | 11 | 3,49 | 2 | 0,63 |
| X-BES-2 | 20 | 309 | 285 | 92,23 | 12 | 3,88 | 10 | 3,24 | 2 | 0,65 |
| X-BES-3 | 19 | 311 | 281 | 90,35 | 18 | 5,79 | 10 | 3,22 | 2 | 0,64 |
| X-BES-4 | 15 | 222 | 203 | 91,44 | 12 | 5,41 | 4 | 1,80 | 3 | 1,35 |
| X-BES-5 | 5 | 47 | 44 | 93,62 | 1 | 2,13 | 0 | 0,00 | 2 | 4,26 |
| X-BES-6 | 14 | 196 | 177 | 90,31 | 5 | 2,55 | 12 | 6,12 | 2 | 1,02 |
| X-BES-7 | 14 | 204 | 177 | 86,76 | 14 | 6,86 | 11 | 5,39 | 2 | 0,98 |
| X-BES-8 | 15 | 207 | 192 | 92,75 | 9 | 4,35 | 4 | 1,93 | 2 | 0,97 |
| X-BES-9 | 10 | 132 | 116 | 87,88 | 11 | 8,33 | 4 | 3,03 | 1 | 0,76 |
| X-BES-10 | 11 | 139 | 118 | 84,89 | 14 | 10,07 | 5 | 3,60 | 2 | 1,44 |
| X-BES-11 | 9 | 114 | 101 | 88,60 | 8 | 7,02 | 4 | 3,51 | 1 | 0,88 |
| X-BES-15 | 7 | 82 | 67 | 81,71 | 10 | 12,20 | 3 | 3,66 | 2 | 2,44 |

| | | | | | | | | | | |
|-----------------------|------------|-------------|-------------|--------------|------------|-------------|-----------|-------------|-----------|-------------|
| Total /Average | 158 | 2278 | 2059 | 89,60 | 118 | 5,82 | 78 | 3,25 | 23 | 1,33 |
|-----------------------|------------|-------------|-------------|--------------|------------|-------------|-----------|-------------|-----------|-------------|

XAdES-EPES

| Positive Testcases | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|--------------------|------------------------|----------|-------|----------|-------|----------------|------|------------|-------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-EPES-1 | 15 | 165 | 120 | 72,73 | 24 | 14,55 | 8 | 4,85 | 13 | 7,88 |
| X-EPES-2 | 5 | 44 | 31 | 70,45 | 5 | 11,36 | 1 | 2,27 | 7 | 15,91 |

| | | | | | | | | | | |
|-----------------------|-----------|------------|------------|--------------|-----------|--------------|----------|-------------|-----------|--------------|
| Total /Average | 20 | 209 | 151 | 71,59 | 29 | 12,95 | 9 | 3,56 | 20 | 11,89 |
|-----------------------|-----------|------------|------------|--------------|-----------|--------------|----------|-------------|-----------|--------------|

XAdES-T

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------|--------------------|------------------------|----------|-------|----------|------|----------------|------|------------|------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-T-1 | 23 | 391 | 334 | 85,42 | 33 | 8,44 | 16 | 4,09 | 8 | 2,05 |

| | | | | | | | | | | |
|-----------------------|-----------|------------|------------|--------------|-----------|-------------|-----------|-------------|----------|-------------|
| Total /Average | 23 | 391 | 334 | 85,42 | 33 | 8,44 | 16 | 4,09 | 8 | 2,05 |
|-----------------------|-----------|------------|------------|--------------|-----------|-------------|-----------|-------------|----------|-------------|

XAdES-C

| Signatures | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|------------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-C-1 | 16 | 186 | 125 | 67,20 | 53 | 28,49 | 4 | 2,15 | 4 | 2,15 |
| X-C-2 | 15 | 164 | 113 | 68,90 | 46 | 28,05 | 2 | 1,22 | 3 | 1,83 |
| X-C-3 | 4 | 29 | 19 | 65,52 | 8 | 27,59 | 0 | 0,00 | 2 | 6,90 |
| | | | | | | | | | | |
| Total /Average | 35 | 379 | 257 | 67,21 | 107 | 28,04 | 6 | 1,12 | 9 | 3,63 |

XAdES-X

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|------------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-1 | 14 | 148 | 102 | 68,92 | 42 | 28,38 | 1 | 0,68 | 3 | 2,03 |
| X-2 | 12 | 131 | 98 | 74,81 | 30 | 22,90 | 1 | 0,76 | 2 | 1,53 |
| X-3 | 13 | 129 | 79 | 61,24 | 36 | 27,91 | 0 | 0,00 | 14 | 10,85 |
| X-4 | 12 | 125 | 82 | 65,60 | 33 | 26,40 | 1 | 0,80 | 9 | 7,20 |
| | | | | | | | | | | |
| Total /Average | 51 | 533 | 361 | 67,64 | 141 | 26,40 | 3 | 0,56 | 28 | 5,40 |

XAdES-XL

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|------------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-XL-1 | 16 | 170 | 127 | 74,71 | 38 | 22,35 | 0 | 0,00 | 5 | 2,94 |
| X-XL-2 | 14 | 144 | 108 | 75,00 | 33 | 22,92 | 0 | 0,00 | 3 | 2,08 |
| X-XL-3 | 17 | 162 | 100 | 61,73 | 45 | 27,78 | 1 | 0,62 | 16 | 9,88 |
| X-XL-4 | 14 | 119 | 81 | 68,07 | 29 | 24,37 | 1 | 0,84 | 8 | 6,72 |
| | | | | | | | | | | |
| Total /Average | 61 | 595 | 416 | 69,88 | 145 | 24,35 | 2 | 0,36 | 32 | 5,41 |

XAdES-A

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|------------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-A-1 | 13 | 105 | 84 | 80,00 | 21 | 20,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-2 | 12 | 89 | 69 | 77,53 | 19 | 21,35 | 1 | 1,12 | 0 | 0,00 |
| X-A-3 | 13 | 102 | 65 | 63,73 | 21 | 20,59 | 1 | 0,98 | 15 | 14,71 |
| X-A-4 | 12 | 85 | 53 | 62,35 | 19 | 22,35 | 1 | 1,18 | 12 | 14,12 |
| X-A-5 | 11 | 81 | 56 | 69,14 | 14 | 17,28 | 1 | 1,23 | 10 | 12,35 |
| X-A-6 | 10 | 69 | 45 | 65,22 | 12 | 17,39 | 1 | 1,45 | 11 | 15,94 |
| X-A-7 | 12 | 95 | 81 | 85,26 | 8 | 8,42 | 5 | 5,26 | 1 | 1,05 |
| X-A-8 | 10 | 66 | 59 | 89,39 | 5 | 7,58 | 1 | 1,52 | 1 | 1,52 |
| X-A-9 | 10 | 77 | 53 | 68,83 | 9 | 11,69 | 3 | 3,90 | 12 | 15,58 |
| Total /Average | 103 | 769 | 565 | 73,49 | 128 | 16,29 | 14 | 1,85 | 62 | 8,36 |

6.3 Summaries for Positive Test Cases XAdES V1.4.1**XAdES-BES V1.4.1**

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|-----------|--------------|----------|-------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| 141-BES-1 | 3 | 18 | 17 | 94,44 | 1 | 5,56 | 0 | 0,00 | 0 | 0,00 |
| 141 BES-2 | 3 | 18 | 17 | 94,44 | 1 | 5,56 | 0 | 0,00 | 0 | 0,00 |
| Total /Average X- | 6 | 36 | 34 | 94,44 | 2 | 5,56 | 0 | 0,00 | 0 | 0,00 |

XAdES-T V1.4.1

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|-----------|---------------|----------|-------------|----------------|--------------|------------|----------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| 141-T | 4 | 32 | 27 | 84,38 | 4 | 12,50 | 1 | 3,13 | 0 | 0,00 |
| Total /Average X- | 4 | 32 | 27 | 84,375 | 4 | 12,5 | 1 | 3,125 | 0 | 0 |

XAdES-X V1.4.1

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|-----------|--------------|----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| 141-X-2 | 2 | 10 | 9 | 90,00 | 1 | 10,00 | 0 | 0,00 | 0 | 0,00 |
| 141 X-3 | 2 | 10 | 8 | 80,00 | 1 | 10,00 | 0 | 0,00 | 1 | 10,00 |
| Total /Average X- | 4 | 20 | 17 | 85,00 | 2 | 10,00 | 0 | 0,00 | 1 | 5,00 |

XAdES-A V1.4.1

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|-----------|--------------|----------|-------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| 141 A-2 | 3 | 14 | 12 | 85,71 | 2 | 14,29 | 0 | 0,00 | 0 | 0,00 |
| 141 A-3 | 3 | 15 | 11 | 73,33 | 2 | 13,33 | 0 | 0,00 | 2 | 13,33 |
| 141 A-5 | 3 | 15 | 9 | 60,00 | 3 | 20,00 | 1 | 6,67 | 2 | 13,33 |
| 141 A-7 | 2 | 8 | 8 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| 141 A-9 | 2 | 8 | 8 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average X- | 13 | 60 | 48 | 83,81 | 7 | 9,52 | 1 | 1,33 | 4 | 5,33 |

6.4 Summaries for Negative Test Cases**XAdES-BES**

| Negative Test Cases | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|----------|--------------|-----------|--------------|----------------|--------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-BESN-1 | 1 | 7 | 2 | 28,57 | 3 | 42,86 | 2 | 28,57 | 0 | 0,00 |
| X-BESN-2 | 1 | 5 | 2 | 40,00 | 3 | 60,00 | 0 | 0,00 | 0 | 0,00 |
| X-BESN-3 | 1 | 7 | 2 | 28,57 | 3 | 42,86 | 2 | 28,57 | 0 | 0,00 |
| X-BESN-4 | 1 | 7 | 1 | 14,29 | 5 | 71,43 | 1 | 14,29 | 0 | 0,00 |
| Total /Average | 4 | 26 | 7 | 27,86 | 14 | 54,29 | 5 | 17,86 | 0 | 0,00 |

XAdES-T

| Negative Test Cases | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|----------|-------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| TN-1 | 1 | 5 | 0 | 0,00 | 4 | 80,00 | 1 | 20,00 | 0 | 0,00 |
| TN-3 | 1 | 6 | 0 | 0,00 | 6 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| TN-2 SC1 | 1 | 3 | 0 | 0,00 | 3 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average X- | 3 | 14 | 0 | 0,00 | 13 | 93,33 | 1 | 6,67 | 0 | 0,00 |

XAdES-X

| Negative Test Cases | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|----------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-1 | 1 | 4 | 2 | 50,00 | 2 | 50,00 | 0 | 0,00 | 0 | 0,00 |
| X-2 | 1 | 4 | 1 | 25,00 | 3 | 75,00 | 0 | 0,00 | 0 | 0,00 |
| X-3 | 1 | 4 | 0 | 0,00 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| X-4 | 1 | 4 | 0 | 0,00 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average X- | 4 | 16 | 3 | 18,75 | 13 | 81,25 | 0 | 0,00 | 0 | 0,00 |

XAdES-XL

| Negative Test Cases | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|----------|--------------|-----------|--------------|----------------|-------------|------------|--------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| XL-1 | 1 | 4 | 2 | 50,00 | 2 | 50,00 | 0 | 0,00 | 0 | 0,00 |
| XL-2 | 1 | 4 | 2 | 50,00 | 2 | 50,00 | 0 | 0,00 | 0 | 0,00 |
| XL-3 | 1 | 4 | 0 | 0,00 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| XL-4 | 1 | 5 | 1 | 20,00 | 3 | 60,00 | 0 | 0,00 | 1 | 20,00 |
| XL-5 | 1 | 5 | 1 | 20,00 | 3 | 60,00 | 0 | 0,00 | 1 | 20,00 |
| XL-6 | 1 | 5 | 0 | 0,00 | 4 | 80,00 | 0 | 0,00 | 1 | 20,00 |
| XL-7 | 1 | 4 | 1 | 25,00 | 3 | 75,00 | 0 | 0,00 | 0 | 0,00 |
| XL-8 | 1 | 4 | 0 | 0,00 | 3 | 75,00 | 0 | 0,00 | 1 | 25,00 |
| Total /Average XL | 8 | 35 | 7 | 20,63 | 24 | 68,75 | 0 | 0,00 | 4 | 10,63 |

XAdES-A

| Negative Test Cases | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|----------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| AN-1 | 13 | 5 | 1 | 20,00 | 4 | 80,00 | 0 | 0,00 | 0 | 0,00 |
| AN-2 | 12 | 5 | 2 | 40,00 | 3 | 60,00 | 0 | 0,00 | 0 | 0,00 |
| AN-3 | 13 | 5 | 1 | 20,00 | 3 | 60,00 | 0 | 0,00 | 1 | 20,00 |
| AN-4 | 12 | 5 | 1 | 20,00 | 4 | 80,00 | 0 | 0,00 | 0 | 0,00 |
| AN-5 | 11 | 5 | 0 | 0,00 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average X- | 61 | 25 | 5 | 20,00 | 19 | 76,00 | 0 | 0,00 | 1 | 4,00 |

6.3 Summaries for Upgrade Test Cases

Upgrade from XAdES-T-1 to XAdES-C-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|------------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-C-1~X-T-1 | 3 | 15 | 12 | 80,00 | 3 | 20,00 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 2 | 7 | 5 | 71,43 | 2 | 28,57 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 3 | 16 | 13 | 81,25 | 3 | 18,75 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 5 | 33 | 25 | 75,76 | 8 | 24,24 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 5 | 35 | 27 | 77,14 | 8 | 22,86 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 3 | 20 | 8 | 40,00 | 12 | 60,00 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 5 | 35 | 27 | 77,14 | 8 | 22,86 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 3 | 16 | 13 | 81,25 | 3 | 18,75 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 5 | 33 | 28 | 84,85 | 5 | 15,15 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 4 | 27 | 22 | 81,48 | 5 | 18,52 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 5 | 34 | 28 | 82,35 | 6 | 17,65 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 7 | 34 | 27 | 79,41 | 7 | 20,59 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 4 | 24 | 20 | 83,33 | 4 | 16,67 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 2 | 9 | 7 | 77,78 | 2 | 22,22 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 5 | 33 | 26 | 78,79 | 7 | 21,21 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 4 | 25 | 21 | 84,00 | 4 | 16,00 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 4 | 25 | 21 | 84,00 | 4 | 16,00 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 3 | 15 | 12 | 80,00 | 3 | 20,00 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 2 | 8 | 4 | 50,00 | 4 | 50,00 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 2 | 14 | 10 | 71,43 | 4 | 28,57 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 4 | 26 | 22 | 84,62 | 4 | 15,38 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 2 | 8 | 4 | 50,00 | 4 | 50,00 | 0 | 0,00 | 0 | 0,00 |
| X-C-1~X-T-1 | 4 | 23 | 20 | 86,96 | 3 | 13,04 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 86 | 515 | 402 | 75,78 | 113 | 24,22 | 0 | 0,00 | 0 | 0,00 |

Upgrade from XAdES-T-1 to XAdES-X-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|--------------------|------------------------|------------|--------------|-----------|-------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-X-1~X-T-1 | 3 | 13 | 13 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 2 | 6 | 6 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 20 | 16 | 80,00 | 4 | 20,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 22 | 21 | 95,45 | 1 | 4,55 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 23 | 22 | 95,65 | 1 | 4,35 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 21 | 21 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 2 | 6 | 4 | 66,67 | 2 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 3 | 13 | 13 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 21 | 21 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 19 | 18 | 94,74 | 1 | 5,26 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 21 | 21 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 21 | 19 | 90,48 | 2 | 9,52 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 3 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 2 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 20 | 18 | 90,00 | 2 | 10,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 2 | 6 | 5 | 83,33 | 1 | 16,67 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 21 | 20 | 95,24 | 1 | 4,76 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 2 | 11 | 6 | 54,55 | 5 | 45,45 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 3 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 21 | 21 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 2 | 12 | 8 | 66,67 | 4 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 22 | 21 | 95,45 | 1 | 4,55 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-T-1 | 4 | 21 | 21 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average X- | 76 | 369 | 344 | 91,66 | 25 | 8,34 | 0 | 0,00 | 0 | 0,00 |

Upgrade from XAdES-C-1 to XAdES-X-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-X-1~X-C-1 | 4 | 18 | 15 | 83,33 | 2 | 11,11 | 0 | 0,00 | 1 | 5,56 |
| X-X-1~X-C-1 | 4 | 19 | 15 | 78,95 | 2 | 10,53 | 0 | 0,00 | 2 | 10,53 |
| X-X-1~X-C-1 | 3 | 11 | 9 | 81,82 | 1 | 9,09 | 0 | 0,00 | 1 | 9,09 |
| X-X-1~X-C-1 | 4 | 18 | 15 | 83,33 | 1 | 5,56 | 0 | 0,00 | 2 | 11,11 |
| X-X-1~X-C-1 | 4 | 20 | 16 | 80,00 | 3 | 15,00 | 0 | 0,00 | 1 | 5,00 |
| X-X-1~X-C-1 | 2 | 4 | 2 | 50,00 | 1 | 25,00 | 0 | 0,00 | 1 | 25,00 |
| X-X-1~X-C-1 | 3 | 11 | 9 | 81,82 | 1 | 9,09 | 0 | 0,00 | 1 | 9,09 |
| X-X-1~X-C-1 | 4 | 20 | 14 | 70,00 | 5 | 25,00 | 0 | 0,00 | 1 | 5,00 |
| X-X-1~X-C-1 | 4 | 18 | 15 | 83,33 | 1 | 5,56 | 0 | 0,00 | 2 | 11,11 |
| X-X-1~X-C-1 | 2 | 4 | 2 | 50,00 | 1 | 25,00 | 0 | 0,00 | 1 | 25,00 |
| X-X-1~X-C-1 | 4 | 19 | 15 | 78,95 | 3 | 15,79 | 0 | 0,00 | 1 | 5,26 |
| X-X-1~X-C-1 | 3 | 12 | 10 | 83,33 | 2 | 16,67 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-C-1 | 2 | 6 | 5 | 83,33 | 1 | 16,67 | 0 | 0,00 | 0 | 0,00 |
| X-X-1~X-C-1 | 4 | 18 | 14 | 77,78 | 3 | 16,67 | 0 | 0,00 | 1 | 5,56 |
| X-X-1~X-C-1 | 3 | 11 | 9 | 81,82 | 1 | 9,09 | 0 | 0,00 | 1 | 9,09 |
| X-X-1~X-C-1 | 2 | 11 | 3 | 27,27 | 8 | 72,73 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 52 | 220 | 168 | 73,44 | 36 | 18,03 | 0 | 0,00 | 16 | 8,52 |

Upgrade from XAdES-T-1 to XAdES-A-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-A-1~X-T-1 | 4 | 19 | 17 | 89,47 | 2 | 10,53 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 5 | 28 | 25 | 89,29 | 3 | 10,71 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 6 | 34 | 29 | 85,29 | 5 | 14,71 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 3 | 16 | 11 | 68,75 | 5 | 31,25 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 6 | 34 | 30 | 88,24 | 3 | 8,82 | 0 | 0,00 | 1 | 2,94 |
| X-A-1~X-T-1 | 5 | 26 | 22 | 84,62 | 4 | 15,38 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 4 | 22 | 19 | 86,36 | 3 | 13,64 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 5 | 29 | 26 | 89,66 | 3 | 10,34 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 4 | 21 | 18 | 85,71 | 2 | 9,52 | 0 | 0,00 | 1 | 4,76 |
| X-A-1~X-T-1 | 4 | 20 | 13 | 65,00 | 5 | 25,00 | 1 | 5,00 | 1 | 5,00 |
| X-A-1~X-T-1 | 3 | 16 | 11 | 68,75 | 5 | 31,25 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 6 | 34 | 31 | 91,18 | 2 | 5,88 | 0 | 0,00 | 1 | 2,94 |
| X-A-1~X-T-1 | 5 | 26 | 22 | 84,62 | 4 | 15,38 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 5 | 30 | 27 | 90,00 | 3 | 10,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 3 | 17 | 15 | 88,24 | 2 | 11,76 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 6 | 37 | 34 | 91,89 | 3 | 8,11 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 1 | 4 | 3 | 75,00 | 1 | 25,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 6 | 36 | 34 | 94,44 | 2 | 5,56 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 4 | 20 | 17 | 85,00 | 3 | 15,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 4 | 24 | 18 | 75,00 | 5 | 20,83 | 0 | 0,00 | 1 | 4,17 |
| X-A-1~X-T-1 | 3 | 17 | 15 | 88,24 | 2 | 11,76 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 2 | 11 | 9 | 81,82 | 2 | 18,18 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-T-1 | 2 | 8 | 6 | 75,00 | 2 | 25,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 96 | 529 | 452 | 83,55 | 71 | 15,38 | 1 | 0,22 | 5 | 0,86 |

Upgrade from XAdES-C-1 to XAdES-A-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-A-1~X-C-1 | 4 | 24 | 16 | 66,67 | 8 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 2 | 9 | 7 | 77,78 | 2 | 22,22 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 1 | 7 | 6 | 85,71 | 1 | 14,29 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 3 | 15 | 9 | 60,00 | 6 | 40,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 1 | 7 | 5 | 71,43 | 2 | 28,57 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 1 | 5 | 4 | 80,00 | 1 | 20,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 4 | 21 | 15 | 71,43 | 4 | 19,05 | 0 | 0,00 | 2 | 9,52 |
| X-A-1~X-C-1 | 3 | 17 | 15 | 88,24 | 2 | 11,76 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 4 | 25 | 20 | 80,00 | 5 | 20,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 2 | 13 | 13 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 5 | 25 | 18 | 72,00 | 4 | 16,00 | 1 | 4,00 | 2 | 8,00 |
| X-A-1~X-C-1 | 1 | 4 | 3 | 75,00 | 1 | 25,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-1~X-C-1 | 5 | 24 | 18 | 75,00 | 3 | 12,50 | 1 | 4,17 | 2 | 8,33 |
| X-A-1~X-C-1 | 2 | 11 | 7 | 63,64 | 3 | 27,27 | 0 | 0,00 | 1 | 9,09 |
| X-A-1~X-C-1 | 4 | 23 | 15 | 65,22 | 8 | 34,78 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 42 | 230 | 171 | 75,47 | 50 | 21,65 | 2 | 0,54 | 7 | 2,33 |

Upgrade from XAdES-T-1 to XAdES-A-7 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-A-7~X-T-1 | 4 | 21 | 17 | 80,95 | 4 | 19,05 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 6 | 37 | 32 | 86,49 | 5 | 13,51 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 3 | 14 | 10 | 71,43 | 4 | 28,57 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 2 | 10 | 7 | 70,00 | 3 | 30,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 1 | 3 | 2 | 66,67 | 1 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 2 | 9 | 6 | 66,67 | 3 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 3 | 11 | 8 | 72,73 | 3 | 27,27 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 5 | 27 | 25 | 92,59 | 2 | 7,41 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 3 | 12 | 8 | 66,67 | 4 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 3 | 14 | 7 | 50,00 | 7 | 50,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 4 | 22 | 18 | 81,82 | 4 | 18,18 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 6 | 32 | 27 | 84,38 | 4 | 12,50 | 0 | 0,00 | 1 | 3,13 |
| X-A-7~X-T-1 | 4 | 19 | 15 | 78,95 | 4 | 21,05 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 4 | 21 | 17 | 80,95 | 4 | 19,05 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 4 | 19 | 17 | 89,47 | 2 | 10,53 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 1 | 6 | 5 | 83,33 | 1 | 16,67 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 6 | 34 | 32 | 94,12 | 2 | 5,88 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 5 | 27 | 25 | 92,59 | 2 | 7,41 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 3 | 17 | 14 | 82,35 | 3 | 17,65 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 4 | 17 | 12 | 70,59 | 5 | 29,41 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 6 | 34 | 26 | 76,47 | 8 | 23,53 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 4 | 17 | 12 | 70,59 | 5 | 29,41 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-T-1 | 5 | 28 | 26 | 92,86 | 1 | 3,57 | 0 | 0,00 | 1 | 3,57 |
| Total /Average | 88 | 451 | 368 | 78,38 | 81 | 21,33 | 0 | 0,00 | 2 | 0,29 |

Upgrade from XAdES-C-1 to XAdES-A-7 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-------------|-----------------|---------------------|----------|-------|----------|-------|----------------|------|------------|------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| X-A-7~X-C-1 | 4 | 21 | 16 | 76,19 | 5 | 23,81 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 4 | 17 | 11 | 64,71 | 5 | 29,41 | 0 | 0,00 | 1 | 5,88 |
| X-A-7~X-C-1 | 4 | 20 | 13 | 65,00 | 7 | 35,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 1 | 5 | 4 | 80,00 | 1 | 20,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 2 | 9 | 6 | 66,67 | 3 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 3 | 16 | 15 | 93,75 | 1 | 6,25 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 2 | 5 | 3 | 60,00 | 2 | 40,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 5 | 21 | 17 | 80,95 | 3 | 14,29 | 0 | 0,00 | 1 | 4,76 |
| X-A-7~X-C-1 | 2 | 9 | 6 | 66,67 | 3 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 3 | 12 | 7 | 58,33 | 5 | 41,67 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 5 | 20 | 15 | 75,00 | 4 | 20,00 | 0 | 0,00 | 1 | 5,00 |
| X-A-7~X-C-1 | 3 | 11 | 8 | 72,73 | 3 | 27,27 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 1 | 4 | 3 | 75,00 | 1 | 25,00 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 4 | 19 | 15 | 78,95 | 4 | 21,05 | 0 | 0,00 | 0 | 0,00 |
| X-A-7~X-C-1 | 3 | 14 | 12 | 85,71 | 2 | 14,29 | 0 | 0,00 | 0 | 0,00 |

| | | | | | | | | | | |
|-----------------------|-----------|------------|------------|--------------|-----------|--------------|----------|-------------|----------|-------------|
| Total /Average | 46 | 203 | 151 | 73,31 | 49 | 25,65 | 0 | 0,00 | 3 | 1,04 |
|-----------------------|-----------|------------|------------|--------------|-----------|--------------|----------|-------------|----------|-------------|

7 XAdES Plugtests© Interoperability matrixes

7.1 Summaries for Positive Test Cases

CAAdES-BES

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------|-----------------|---------------------|----------|-------|----------|-------|----------------|------|------------|------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-BES-1 | 13 | 122 | 99 | 81,15 | 18 | 14,75 | 4 | 3,28 | 1 | 0,82 |
| C-BES-2 | 13 | 123 | 107 | 86,99 | 12 | 9,76 | 3 | 2,44 | 1 | 0,81 |
| C-BES-3 | 9 | 82 | 73 | 89,02 | 6 | 7,32 | 2 | 2,44 | 1 | 1,22 |
| C-BES-4 | 7 | 50 | 40 | 80,00 | 4 | 8,00 | 2 | 4,00 | 4 | 8,00 |
| C-BES-5 | 3 | 12 | 10 | 83,33 | 0 | 0,00 | 1 | 8,33 | 1 | 8,33 |
| C-BES-6 | 7 | 51 | 45 | 88,24 | 3 | 5,88 | 2 | 3,92 | 1 | 1,96 |
| C-BES-7 | 7 | 56 | 50 | 89,29 | 3 | 5,36 | 2 | 3,57 | 1 | 1,79 |
| C-BES-8 | 9 | 73 | 65 | 89,04 | 6 | 8,22 | 2 | 2,74 | 0 | 0,00 |
| C-BES-10 | 9 | 74 | 68 | 91,89 | 3 | 4,05 | 2 | 2,70 | 1 | 1,35 |
| C-BES-11 | 7 | 42 | 35 | 83,33 | 5 | 11,90 | 2 | 4,76 | 0 | 0,00 |
| C-BES-15 | 7 | 43 | 37 | 86,05 | 5 | 11,63 | 1 | 2,33 | 0 | 0,00 |
| C-BES-16 | 9 | 74 | 66 | 89,19 | 6 | 8,11 | 1 | 1,35 | 1 | 1,35 |

| | | | | | | | | | | |
|-----------------------|------------|------------|------------|--------------|-----------|-------------|-----------|-------------|-----------|-------------|
| Total /Average | 100 | 802 | 695 | 86,46 | 71 | 7,92 | 24 | 3,49 | 12 | 2,14 |
|-----------------------|------------|------------|------------|--------------|-----------|-------------|-----------|-------------|-----------|-------------|

CAAdES-EPES

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------|-----------------|---------------------|----------|-------|----------|-------|----------------|------|------------|------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-EPES-1 | 7 | 33 | 23 | 69,70 | 9 | 27,27 | 1 | 3,03 | 0 | 0,00 |
| C-EPES-2 | 6 | 19 | 11 | 57,89 | 7 | 36,84 | 1 | 5,26 | 0 | 0,00 |

| | | | | | | | | | | |
|--------------------------|-----------|-----------|-----------|--------------|-----------|--------------|----------|-------------|----------|-------------|
| Total /Average X- | 13 | 52 | 34 | 63,80 | 16 | 32,06 | 2 | 4,15 | 0 | 0,00 |
|--------------------------|-----------|-----------|-----------|--------------|-----------|--------------|----------|-------------|----------|-------------|

CAAdES-T

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------|-----------------|---------------------|----------|-------|----------|-------|----------------|------|------------|------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-T-1 | 13 | 122 | 106 | 86,89 | 13 | 10,66 | 3 | 2,46 | 0 | 0,00 |

| | | | | | | | | | | |
|--------------------------|-----------|------------|------------|--------------|-----------|--------------|----------|-------------|----------|-------------|
| Total /Average C- | 13 | 122 | 106 | 86,89 | 13 | 10,66 | 3 | 2,46 | 0 | 0,00 |
|--------------------------|-----------|------------|------------|--------------|-----------|--------------|----------|-------------|----------|-------------|

CADES-C

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-------------------------|-----------------|---------------------|-----------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-C-1 | 9 | 49 | 40 | 81,63 | 8 | 16,33 | 0 | 0,00 | 1 | 2,04 |
| C-C-2 | 8 | 40 | 33 | 82,50 | 6 | 15,00 | 0 | 0,00 | 1 | 2,50 |
| Total /Average C | 17 | 89 | 73 | 82,07 | 14 | 15,66 | 0 | 0,00 | 2 | 2,27 |

CADES-X

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-------------------------|-----------------|---------------------|------------|--------------|-----------|-------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-X-1 | 8 | 43 | 37 | 86,05 | 4 | 9,30 | 0 | 0,00 | 2 | 4,65 |
| C-X-2 | 7 | 37 | 33 | 89,19 | 3 | 8,11 | 0 | 0,00 | 1 | 2,70 |
| C-X-3 | 7 | 32 | 27 | 84,38 | 1 | 3,13 | 0 | 0,00 | 4 | 12,50 |
| C-X-4 | 7 | 35 | 32 | 91,43 | 2 | 5,71 | 0 | 0,00 | 1 | 2,86 |
| Total /Average C | 29 | 147 | 129 | 87,76 | 10 | 6,56 | 0 | 0,00 | 8 | 5,68 |

CADES-XL

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|--------------------------|-----------------|---------------------|------------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-XL-1 | 10 | 70 | 61 | 87,14 | 9 | 12,86 | 0 | 0,00 | 0 | 0,00 |
| C-XL-2 | 8 | 50 | 44 | 88,00 | 6 | 12,00 | 0 | 0,00 | 0 | 0,00 |
| C-XL-3 | 9 | 52 | 38 | 73,08 | 9 | 17,31 | 0 | 0,00 | 5 | 9,62 |
| C-XL-4 | 8 | 42 | 32 | 76,19 | 8 | 19,05 | 0 | 0,00 | 2 | 4,76 |
| Total /Average XL | 35 | 214 | 175 | 81,10 | 32 | 15,30 | 0 | 0,00 | 7 | 3,59 |

CADES-A

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-------------------------|-----------------|---------------------|------------|--------------|-----------|-------------|----------------|-------------|------------|--------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-A-1 | 10 | 35 | 25 | 71,43 | 5 | 14,29 | 0 | 0,00 | 5 | 14,29 |
| C-A-2 | 7 | 25 | 20 | 80,00 | 2 | 8,00 | 0 | 0,00 | 3 | 12,00 |
| C-A-3 | 8 | 27 | 21 | 77,78 | 2 | 7,41 | 0 | 0,00 | 4 | 14,81 |
| C-A-4 | 7 | 22 | 18 | 81,82 | 2 | 9,09 | 0 | 0,00 | 2 | 9,09 |
| C-A-5 | 7 | 23 | 19 | 82,61 | 1 | 4,35 | 0 | 0,00 | 3 | 13,04 |
| C-A-6 | 6 | 18 | 16 | 88,89 | 0 | 0,00 | 0 | 0,00 | 2 | 11,11 |
| C-A-7 | 8 | 36 | 28 | 77,78 | 3 | 8,33 | 0 | 0,00 | 5 | 13,89 |
| C-A-8 | 6 | 20 | 17 | 85,00 | 0 | 0,00 | 0 | 0,00 | 3 | 15,00 |
| C-A-9 | 8 | 35 | 27 | 77,14 | 4 | 11,43 | 0 | 0,00 | 4 | 11,43 |
| Total /Average C | 67 | 241 | 191 | 80,27 | 19 | 6,99 | 0 | 0,00 | 31 | 12,74 |

7.2 Summaries for Negative Test Cases

CAAdES-BES Negative

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|----------|-------------|-----------|---------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-BESN-4 | 1 | 5 | 0 | 0,00 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| C-BESN-5 | 1 | 5 | 0 | 0,00 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 2 | 10 | 0 | 0,00 | 10 | 100,00 | 0 | 0,00 | 0 | 0,00 |

CAAdES-T Negative

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|----------|-------------|-----------|---------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-TN-1 | 1 | 5 | 0 | 0,00 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| C-TN-2 | 1 | 3 | 0 | 0,00 | 3 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| C-TN-3 | 1 | 5 | 0 | 0,00 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 3 | 13 | 0 | 0,00 | 13 | 100,00 | 0 | 0,00 | 0 | 0,00 |

CAAdES-X Negative

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|----------|--------------|----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-XN-1 | 1 | 3 | 1 | 33,33 | 2 | 66,67 | 0 | 0,00 | 0 | 0,00 |
| C-XN-2 | 1 | 3 | 0 | 0,00 | 3 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| C-XN-3 | 1 | 3 | 0 | 0,00 | 3 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 3 | 9 | 1 | 11,11 | 8 | 88,89 | 0 | 0,00 | 0 | 0,00 |

CAAdES-XL Negative

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|----------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| XLN-1 | 1 | 4 | 2 | 50,00 | 2 | 50,00 | 0 | 0,00 | 0 | 0,00 |
| XLN-2 | 1 | 4 | 1 | 25,00 | 3 | 75,00 | 0 | 0,00 | 0 | 0,00 |
| XLN-3 | 1 | 3 | 0 | 0,00 | 3 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| XLN-4 | 1 | 4 | 0 | 0,00 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| XLN-5 | 1 | 4 | 0 | 0,00 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| XLN-6 | 1 | 4 | 0 | 0,00 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 6 | 23 | 3 | 12,50 | 20 | 87,50 | 0 | 0,00 | 0 | 0,00 |

7.3 Summaries for Upgrade Test Cases

Upgrade from CADES-BES-2 to CADES-C-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|-----------|--------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-C-1~C-BES-2 | 4 | 11 | 9 | 81,82 | 2 | 18,18 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 3 | 8 | 2 | 25,00 | 6 | 75,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 4 | 11 | 8 | 72,73 | 3 | 27,27 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 4 | 11 | 11 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 2 | 4 | 3 | 75,00 | 1 | 25,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 3 | 8 | 7 | 87,50 | 1 | 12,50 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 3 | 8 | 7 | 87,50 | 1 | 12,50 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-BES-2 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 43 | 121 | 107 | 85,80 | 14 | 14,20 | 0 | 0,00 | 0 | 0,00 |

Upgrade from CADES-T-1 to CADES-C-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|----------|-------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-C-1~C-T-1 | 2 | 4 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 2 | 4 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 3 | 9 | 9 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 3 | 8 | 7 | 87,50 | 1 | 12,50 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 2 | 4 | 3 | 75,00 | 1 | 25,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 4 | 12 | 11 | 91,67 | 1 | 8,33 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 3 | 8 | 3 | 37,50 | 5 | 62,50 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 3 | 7 | 7 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 4 | 12 | 12 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-C-1~C-T-1 | 3 | 8 | 7 | 87,50 | 1 | 12,50 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 41 | 112 | 103 | 90,71 | 9 | 9,29 | 0 | 0,00 | 0 | 0,00 |

Upgrade from CADES-BES-2 to CADES-X-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|---------------|-----------------|---------------------|----------|--------|----------|-------|----------------|------|------------|------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-X-1~C-BES-2 | 4 | 10 | 10 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 4 | 10 | 10 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 2 | 2 | 2 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 4 | 9 | 9 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 4 | 10 | 10 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 4 | 10 | 10 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 4 | 10 | 10 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 4 | 10 | 10 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 2 | 2 | 1 | 50,00 | 1 | 50,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-BES-2 | 4 | 9 | 7 | 77,78 | 2 | 22,22 | 0 | 0,00 | 0 | 0,00 |

| | | | | | | | | | | |
|-----------------------|-----------|-----------|-----------|--------------|----------|-------------|----------|-------------|----------|-------------|
| Total /Average | 45 | 97 | 94 | 94,44 | 3 | 5,56 | 0 | 0,00 | 0 | 0,00 |
|-----------------------|-----------|-----------|-----------|--------------|----------|-------------|----------|-------------|----------|-------------|

Upgrade from CADES-T-1 to CADES-X-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-------------|-----------------|---------------------|----------|--------|----------|-------|----------------|------|------------|-------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-X-1~C-T-1 | 4 | 9 | 8 | 88,89 | 0 | 0,00 | 0 | 0,00 | 1 | 11,11 |
| C-X-1~C-T-1 | 4 | 9 | 8 | 88,89 | 1 | 11,11 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 4 | 9 | 8 | 88,89 | 1 | 11,11 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 3 | 8 | 2 | 25,00 | 6 | 75,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 4 | 9 | 8 | 88,89 | 1 | 11,11 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 2 | 2 | 2 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 4 | 9 | 8 | 88,89 | 1 | 11,11 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-T-1 | 3 | 8 | 7 | 87,50 | 1 | 12,50 | 0 | 0,00 | 0 | 0,00 |

| | | | | | | | | | | |
|-----------------------|-----------|-----------|-----------|--------------|-----------|--------------|----------|-------------|----------|-------------|
| Total /Average | 43 | 88 | 76 | 89,00 | 11 | 10,15 | 0 | 0,00 | 1 | 0,85 |
|-----------------------|-----------|-----------|-----------|--------------|-----------|--------------|----------|-------------|----------|-------------|

Upgrade from CADES-C-1 to CADES-X-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|-----------|--------------|----------|-------------|----------------|-------------|------------|-------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-X-1~C-C-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-C-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-C-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-C-1 | 4 | 9 | 6 | 66,67 | 3 | 33,33 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-C-1 | 4 | 9 | 8 | 88,89 | 1 | 11,11 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-C-1 | 2 | 2 | 2 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-C-1 | 2 | 4 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-C-1 | 3 | 6 | 5 | 83,33 | 1 | 16,67 | 0 | 0,00 | 0 | 0,00 |
| C-X-1~C-C-1 | 3 | 5 | 5 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| Total /Average | 27 | 50 | 45 | 93,21 | 5 | 6,79 | 0 | 0,00 | 0 | 0,00 |

Upgrade from CADES-BES-2 to CADES-A-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-----------------------|-----------------|---------------------|------------|--------------|-----------|--------------|----------------|-------------|------------|--------------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-A-1~C-BES-2 | 5 | 14 | 10 | 71,43 | 2 | 14,29 | 0 | 0,00 | 2 | 14,29 |
| C-A-1~C-BES-2 | 4 | 10 | 5 | 50,00 | 3 | 30,00 | 0 | 0,00 | 2 | 20,00 |
| C-A-1~C-BES-2 | 4 | 10 | 7 | 70,00 | 2 | 20,00 | 0 | 0,00 | 1 | 10,00 |
| C-A-1~C-BES-2 | 4 | 10 | 5 | 50,00 | 4 | 40,00 | 0 | 0,00 | 1 | 10,00 |
| C-A-1~C-BES-2 | 4 | 9 | 9 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-BES-2 | 4 | 10 | 4 | 40,00 | 4 | 40,00 | 0 | 0,00 | 2 | 20,00 |
| C-A-1~C-BES-2 | 5 | 13 | 9 | 69,23 | 2 | 15,38 | 0 | 0,00 | 2 | 15,38 |
| C-A-1~C-BES-2 | 5 | 13 | 9 | 69,23 | 2 | 15,38 | 0 | 0,00 | 2 | 15,38 |
| C-A-1~C-BES-2 | 4 | 9 | 9 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-BES-2 | 4 | 10 | 7 | 70,00 | 2 | 20,00 | 0 | 0,00 | 1 | 10,00 |
| C-A-1~C-BES-2 | 5 | 13 | 10 | 76,92 | 2 | 15,38 | 0 | 0,00 | 1 | 7,69 |
| C-A-1~C-BES-2 | 5 | 13 | 10 | 76,92 | 2 | 15,38 | 0 | 0,00 | 1 | 7,69 |
| C-A-1~C-BES-2 | 5 | 13 | 10 | 76,92 | 2 | 15,38 | 0 | 0,00 | 1 | 7,69 |
| Total /Average | 58 | 147 | 104 | 70,82 | 27 | 18,55 | 0 | 0,00 | 16 | 10,63 |

Upgrade from CADES-T-1 to CADES-A-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-------------|-----------------|---------------------|----------|--------|----------|-------|----------------|------|------------|-------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-A-1~C-T-1 | 4 | 9 | 9 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-T-1 | 3 | 7 | 7 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-T-1 | 3 | 8 | 3 | 37,50 | 4 | 50,00 | 0 | 0,00 | 1 | 12,50 |
| C-A-1~C-T-1 | 4 | 9 | 9 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-T-1 | 5 | 13 | 9 | 69,23 | 3 | 23,08 | 0 | 0,00 | 1 | 7,69 |
| C-A-1~C-T-1 | 5 | 13 | 10 | 76,92 | 2 | 15,38 | 0 | 0,00 | 1 | 7,69 |
| C-A-1~C-T-1 | 5 | 13 | 10 | 76,92 | 2 | 15,38 | 0 | 0,00 | 1 | 7,69 |
| C-A-1~C-T-1 | 4 | 10 | 5 | 50,00 | 4 | 40,00 | 0 | 0,00 | 1 | 10,00 |
| C-A-1~C-T-1 | 5 | 13 | 9 | 69,23 | 2 | 15,38 | 0 | 0,00 | 2 | 15,38 |
| C-A-1~C-T-1 | 4 | 10 | 7 | 70,00 | 2 | 20,00 | 0 | 0,00 | 1 | 10,00 |
| C-A-1~C-T-1 | 3 | 6 | 4 | 66,67 | 1 | 16,67 | 0 | 0,00 | 1 | 16,67 |
| C-A-1~C-T-1 | 4 | 11 | 7 | 63,64 | 2 | 18,18 | 0 | 0,00 | 2 | 18,18 |
| C-A-1~C-T-1 | 5 | 13 | 10 | 76,92 | 2 | 15,38 | 0 | 0,00 | 1 | 7,69 |

| | | | | | | | | | | |
|-----------------------|-----------|------------|-----------|--------------|-----------|--------------|----------|-------------|-----------|-------------|
| Total /Average | 54 | 135 | 99 | 73,62 | 24 | 17,65 | 0 | 0,00 | 12 | 8,73 |
|-----------------------|-----------|------------|-----------|--------------|-----------|--------------|----------|-------------|-----------|-------------|

Upgrade from CADES-C-1 to CADES-A-1 form

| Signature | Total Generated | Total Verifications | Success | | Failure | | Not Applicable | | Incomplete | |
|-------------|-----------------|---------------------|----------|--------|----------|-------|----------------|------|------------|-------|
| | | | Absolute | % | Absolute | % | Absolute | % | Absolute | % |
| C-A-1~C-C-1 | 2 | 5 | 2 | 40,00 | 2 | 40,00 | 0 | 0,00 | 1 | 20,00 |
| C-A-1~C-C-1 | 1 | 1 | 1 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-C-1 | 2 | 4 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-C-1 | 2 | 4 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-C-1 | 2 | 5 | 2 | 40,00 | 2 | 40,00 | 0 | 0,00 | 1 | 20,00 |
| C-A-1~C-C-1 | 2 | 4 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |
| C-A-1~C-C-1 | 3 | 8 | 3 | 37,50 | 4 | 50,00 | 0 | 0,00 | 1 | 12,50 |
| C-A-1~C-C-1 | 3 | 8 | 5 | 62,50 | 2 | 25,00 | 0 | 0,00 | 1 | 12,50 |
| C-A-1~C-C-1 | 2 | 4 | 4 | 100,00 | 0 | 0,00 | 0 | 0,00 | 0 | 0,00 |

| | | | | | | | | | | |
|-----------------------|-----------|-----------|-----------|--------------|-----------|--------------|----------|-------------|----------|-------------|
| Total /Average | 19 | 43 | 29 | 75,56 | 10 | 17,22 | 0 | 0,00 | 4 | 7,22 |
|-----------------------|-----------|-----------|-----------|--------------|-----------|--------------|----------|-------------|----------|-------------|

History

| Document history | | |
|-------------------------|----------------|--------------------------|
| V0.1 | 4th Jan 2011 | Creation of the document |
| V1.0 | 7th March 2011 | Final version |
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