

D8.9

Integration Testing Report (2)

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1. Executive Summary

This document is the deliverable D8.9 "Integration Testing Report (2)" of the project "Lightweight Infrastructure for Global Heterogeneous Trust management in support of an open Ecosystem of Stakeholders and Trust schemes" (LIGHT^{est}, project nr. 700321) with the objective to create a global cross domain trust infrastructure that renders it transparent and easy for verifiers to evaluate electronic transactions. This deliverable is constructed upon the deliverable D8.8 "Integration Testing Report (1)" and it covers the second iteration on integration testing efforts.

Throughout the course of the project, integration testing will be carried out in three iterations and at each iteration a periodic report on integration testing will be published. This document D8.9 – Integration Testing Report (2) is the second iteration testing report on integration testing of LIGHT^{est} components at the system level. The main contents of this deliverable include test cases that are derived from normative statements and test assertions given in D8.8 according to the applied Minder Test Assertion Model.

Results of the testing will be provided in the third iteration of the report.

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2. Document Information

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2.2 History

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0.2	12/02/2019	TUBITAK	Update and inclusion of
			Test cases
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3.3 Table of Acronyms

API	Ар	plication Program Int	erface				
ATV	Au	tomatic Trust Verifier					
CC	Co	nformance Clause					
DNS	Do	main Name System					
DNSSEC	Do	main Name System	SECurity	extensions			
DP	De	legation Publisher					
eIDAS	Ele	ctronic Identification	, Authent	ication and t	trust (Ser	rvices)	
eT	Ele	ctronic transaction					
FR	Fu	nctional Requiremen	t				
HTTP(S)	Hy	pertext Transfer Prot	ocol (Seo	cure)			
ISTQB	Inte	ernational Software 7	Festing Q	ualifications	Board		
MTDL	Mir	nder Test Definition L	anguage	;			
M1	Mir	nder END User ATV	Adapter				
M2	Mir	nder ATV Adapter					
NS	No	rmative Statement					
OASIS	Ad	vancing Open standa	ards for ir	nformation s	ociety		
PDF	Po	rtable Document For	mat				
RA	Re	ference Architecture					
PTR	Po	inter					
REST	Re	presentational State	Transfer	(service)			
RR	Re	source Record					
S/MIME	Se	cure/Multipurpose In	ternet Ma	ail Extension	S		
SUT	Sys	stem Under Test					
ТА	Te	st Assertion					
TA id	Te	st Assertion Identifica	ation Nun	nber			
TCP/IP	Tra	Insmission Control P	rotocol /	Internet Pro	tocol		
TP	Τru	ist Policy					
TPL	Τru	ist Policy Language					
TSLTS	Τru	ist Service Status Lis	st Technie	cal Specifica	ation		
TSL	Τru	ist Service Status Lis	st				
TSP	Τru	st Service Provider					
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TSPA	Trust Scheme Publication Authority
TTA	Trust Translation Authority
URI	Uniform Resource Identifier
XML	Extensible Markup Language

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4. Scope of the deliverable

4.1 Overview

The overall focus of the LIGHT^{est} project is to develop a lightweight trust infrastructure providing parties of electronic transactions with automatic validation of trust based on their individual trust policies. By using an existing infrastructure of the global Domain Name System (DNS) for publication, querying, and cross-jurisdiction translation of information relevant to make such decisions, including levels of assurance, LIGHT^{est} aims to enable the use of truly "global trust lists". With this approach LIGHT^{est} basically provides an infrastructure to realize the most important principles and driving factors of eIDAS on a global level.

Integration testing is a level of software testing where individual LIGHT^{est} components are combined and tested as a group. The purpose of this level of testing is to expose faults/defects in the interfaces and in the interactions between integrated components or systems. Task 8.4 is dedicated to integration testing. In this task, we will test outputs of other WPs in order to see whether they exchange and use information properly, interpret the exchanged information meaningfully, and multiple entities work together in a harmonious way.

This deliverable is structured as follows. Section 1 presents the executive summary. Section 2 basically includes document information and Section 3 gives the table of contents. Section 4 presents an overview of WP8 and scope of this deliverable. Section 5 summarizes the testing architecture with Minder Test Manager inclusion and revisits the testing methodology. Section 6 presents integration testing scenarios and Section 7 presents the integration test cases derived from test assertions for TSPA, TTA and DP.

4.2 Scope

Within the course of the LIGHT^{est} project, integration testing of the software components developed in WP3, 4, 5, and 6 will be carried out by using Minder Testbed and the results will be reported periodically. D8.9 Integration testing report (2) is the second report of this series and focuses on defining test cases to perform integration testing of the LIGHT^{est} components. Although the testing duties within the LIGHT^{est} project include conformance and interoperability testing and code quality review within the WP8 activities, Task 8.4 is dedicated to the automatic integration testing of the LIGHT^{est} components.

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5. Integration Testing Overview

5.1 System Components Overview

The LIGHT^{est} reference architecture has three main components to be tested: Trust Scheme Publication Authority (TSPA), Trust Translation Authority (TTA), and Delegation Publisher (DP) seen in Figure 1.



Figure 1 LIGHT^{est} Reference Architecture

5.2 Testing Methodology

The main testing methodology is already described in D8.8 Testing Methodology section. Figure 2 depicts the general anatomy of a OASIS Test Model Case, where Test cases are derived from Test assertions in form of Test Suites.

Test Suite/Case management feature is supported by Minder Test Manager.

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Figure 2 The relation between Test Assertions and Specifications.

5.2.1 Test Case Generation Guideline

Following the same methodology in D8.8 Section 5, test cases are derived from test assertions. The details about the test case derivation methodology is given in *Appendix A. Deriving a Test Case from a Test Assertion* given in (<u>http://docs.oasis-open.org/tag/guidelines/v1.0/guidelines-v1.0.pdf</u>).

As a summary, conditions to derive a test case from a test assertion are given as follows:

- When a Target instance is not qualified for a Test Assertion, a Test Case derived from this Test Assertion does not indicate whether the Target instance fulfills or not the Normative Statement addressed by the Test Assertion.
- When a Target instance is qualified for a Test Assertion and satisfies the Test Assertion Predicate, a Test Case derived from this Test Assertion either indicates that the Target instance fulfills the Normative Statement addressed by the test assertion, or does not indicate anything.
- When a Target instance is qualified for a Test Assertion and does not satisfy the Test Assertion Predicate, a Test Case derived from this Test Assertion either indicates that the Target instance does not fulfill the Normative Statement addressed by the test assertion, or does not indicate anything.

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5.3 Testing Architecture Overview

As already defined in D8.8 Testing Architecture Overview, integration testing involves component integration testing that establishes the interaction between integrated modules in one system.

The second iteration integration testing plan includes the identification of test cases derived from test assertions that aims to verify the integration of TSPA, TTA and DP components with *Minder Adapters*.

For the Minder Testbed applied architecture overview please see Figure 3.



Figure 3 Minder Testbed Applied Architecture

The communication between Minder and the TSPA, and TTA, is handled directly via Minder's own DNS Client component, likewise, the communication between Minder and the DP can be

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handled via Minder's HTTP component eliminating the need for adapters for all these components.

Automatic Trust Verifier (Minder-ATV) component has been re-implemented/developed and included in the testing architecture for testing purposes to manage the scenarios that include the usage of REST services provided by TSPA, TTA and DP components.

During the test case identification, features that support the management of test cases/suits and test executions are also developed within Minder Testbed architecture. The new feature is called as "Minder Test Manager" and the source codes are included in the Minder Testbed sources. The "Minder Test Manager" also uses the same DNS Client and HTTP Client components to gain access to the APIs provided by TSPA, TTA and DP components.

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6. Integration Testing Scenarios:

The basic integration testing scenarios that are extracted from the general scenarios detailed in D2.14, D3.2, D3.4, D4.2, D4.4, D5.2 and D5.4. are already given in D8.8 Integration Testing Scenarios section. The scenarios are given as follows.

- 1. Querying of Trust Scheme Membership
- 2. Querying of Trust Translation List
- 3. Discovering of Trust Delegation

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7. Integration Test Assertions and Test Cases

This section lists the second release of test assertions for TSPA, TTA, and DP, and first release of test cases derived from test assertions TSPA, TTA, and DP for respectively. First release of test assertions are already given in D8.3. This section includes the updated version of assertions. Also, this section includes the initial version of test cases that will be used for test executions.

Following the methodology described in the previous section, we first analyze the normative sources together with their references, and the test assertions to elicit test cases for conformance to these specifications.

For traceability purposes, the identifiers of the test case definitions are done using the following convention: **TC_LightestComponentName**(**TSPA**,**TTA**,**DP**)_**TestCaseID**

7.1 ATV – TSPA Integration Testing

7.1.1 ATV – TSPA Integration Testing Conformance Clauses

CC_TSPA_1: ATV queries an electronic transaction from TSPA, where the trust lists are managed, whether the transaction is trustworthy.

7.1.2 ATV – TSPA Integration Normative Sources

For brevity, we removed ATV – TSPA Integration Normative Sources from this deliverable. Since there has not been any modifications to the normative statements, readers can refer to D8.8 Integration Testing Report (1) for further details.

7.1.3 ATV – TSPA Integration Test Assertions	S
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	C C
TA ID	TA_TSPA_1
Normative Source	NS_TSPA_1
Target	ATV – TSPA Interface
Prerequisite	Trust policy and electronic transaction exist as test assets.
Prescription Level	Mandatory
Predicate	IP address of the TSPA DNS server exists and can be listed on the configurations and is already set on the TCP/IP Properties (DNS Server Address settings)

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TA ID	TA_TSPA_2
Normative Source	NS_TSPA_4, NS_TSPA_5
Target	ATV – TSPA Interface
Prerequisite	The TSPA DNS Name Server is up and running and TSPA contains trust scheme membership declarations. The ATV has issued an IssuerName query to the TSPA.
Prescription Level	Mandatory
Predicate	The RR response to the IssuerName query is a PTR Record and its DNSSEC validation is successful.

TA ID	TA_TSPA_3
Normative Source	NS_TSPA_4, NS_TSPA_5, NS_TSPA_14
Target	ATV – TSPA Interface
Prerequisite	The TSPA DNS Name Server is up and running. TSPA contains trust scheme membership declarations. The ATV has issued a SchemeNameLocation query to the TSPA.
Prescription Level	Mandatory
Predicate	The RR response to the SchemeNameLocation query is a URI Record and its DNSSEC validation is successful

TA ID	TA_TSPA_4						
Normative Source	NS_TSPA_4, NS_TSPA_5, NS_TSPA_15						
Target	ATV – TSPA Interface						
Prerequisite	The TSPA DNS Name Server is up and running. TSPA contains trust scheme membership declarations with signed trust list URIs. The ATV						
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	has issued an IssuerName_SchemeNameAssociation query to the TSPA.
Prescription Level	Mandatory
Predicate	The RR response to the IssuerName_SchemeNameAssociation query is a signed association and its signature validation is successful

TA ID	TA_TSPA_5
Normative Source	NS_TSPA_4, NS_TSPA_5
Target	ATV – TSPA Interface
Prerequisite	The TSPA DNS Name Server is up and running. The ATV has issued a SchemeNameTuples query to the TSPA.
Prescription Level	Mandatory
Predicate	The RR response to the SchemeNameTuples query is a set of tuples retrieved from the pointer of the respective trust list entry.

TA ID	TA_TSPA_6
Normative Source	NS_TSPA_11
Target	ATV – TSPA Interface
Prerequisite	The TSPA DNS Name Server is up and running. The ATV has issued an IssuerName query to the TSPA.
Prescription Level	Mandatory
Predicate	The received DNS query is of the form schemetrust.IssuerDomainName IN PTR

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Normative NS_TSPA_13, NS_TSPA_7 Source	
Target ATV – TSPA Interface	
Prerequisite The TSPA DNS Name Server is up and running. The ATV has issued SchemeNameLocation query to the TSPA.	а
Prescription Mandatory Level	
Predicate The received DNS query is of the form _schemetrust.SchemeNameDomainName IN URI	

TA ID	TA_TSPA_8
Normative Source	NS_TSPA_16
Target	ATV – TSPA Interface
Prerequisite	The TSPA DNS Name Server is up and running. The ATV has issued a CertificateConstraints query to the TSPA.
Prescription Level	Mandatory
Predicate	The received DNS query is of the form
	_schemetrust. SchemeNameDomainName IN SMIMEA

TA ID	TA_TSPA_9					
Normative Source	NS_TSPA_12, NS_TSPA_10, NS_TSPA_8					
Target	ATV – TSPA Interface					
Prerequisite	The TSPA DNS Name Server is up and running. The ATV has issued an IssuerName query to the TSPA.					
Prescription	Mandatory					
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Predicate The RR response to the IssuerName query is a PTR Record containing the domain name of the SchemeName if the queried trust scheme is Boolean.

TA ID	TA_TSPA_10
Normative Source	NS_TSPA_12, NS_TSPA_10, NS_TSPA_8
Target	ATV – TSPA Interface
Prerequisite	The TSPA DNS Name Server is up and running. The ATV has issued an IssuerName query to the TSPA.
Prescription Level	Mandatory
Predicate	The RR response to the IssuerName query is a PTR Record containing levelName.domainName of the SchemeName if the queried trust scheme is Ordinal.

7.1.4 ATV - TSPA Integration Test Cases

This section includes the list of test cases and the descriptions of the test cases.

7.1.4.1 ATV – TSPA Integration Test Case List

Table 1 List of ATV – TSPA integration test cases

ID	Pu	rpose					
TC_TSPA_1	Che	Check if TSPA-DNS server exists and is configured to be used by TSPA.					
TC_TSPA_2	Ver vali	Verify that RR response to the issuername is a PTR record and DNSSec validation is successfull					
TC_TSPA_3	Ver vali	Verify that RR response to the issuername is a URI record and DNSSec validation is successfull					
TC_TSPA_4	Ver suc	Verify that trust list pointed on the URI RR record, signature validation is successful					
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TC_TSPA_5	Verify that an invalid trust list pointed on the URI RR record, signature validation fails
TC_TSPA_6	Verify that TSPA could provide trust scheme declarations successfully
TC_TSPA_7	Verify that TSPA could provide trust list URLs for the trust scheme successfully
TC_TSPA_8	Verify that TSPA-DNS provides certificate constraints to validate trust lists successfully
TC_TSPA_9	Verify that trust list validation fails in case of invalid certificate
TC_TSPA_10	Verify that TSPA can persist Boolean trust scheme declarations successfully
TC_TSPA_11	Verify that TSPA can persist ordinal trust scheme declarations successfully
TC_TSPA_12	Verify that received DNS works in synchronization with TSPA
TC_TSPA_13	Verify that received TSPA works in synchronization with DNS entries

7.1.4.2 ATV – TSPA Integration Test Case Details

ID		TC_TSPA_1	
Assert	ion(s)	TA_TSPA_1	
Test P	urpose	Check if TSPA-DNS se TSPA.	ver exists and is configured to be used by
Pre-Te	st Conditions	TSPA should already be	e deployed
		DNS deployment should	d be available
Step	Test Activity		Expected Result
1	On the termina command: <i>dig lightest.nln</i>	I, type the following etlabs.nl	; <<>> DiG 9.10.6 <<>> lightest.nlnetlabs.nl ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 8688 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ; lightest.nlnetlabs.nl. IN A

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2	Minder sends to TSPA the following HTTP PUT request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ turkey.lightest.nlnetlabs.nl/scheme with eidas.kamusm.gov.tr-example scheme name	;; ANSWER SECTION: lightest.nlnetlabs.nl. 3600 IN A 185.49.141.61 The service should return HTTP 200 OK
3	On the terminal, type the following command: <i>dig</i> _schemetrust. <i>turkey.lightest.nlnetlabs.nl</i> PTR	; <<>> DiG 9.10.6 <<>> _scheme turkey.lightest.nlnetlabs.nl PTR ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_schemetrust.turkey.lightest.nlnetlabs.nl. IN PTR ;; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl. 3600 IN PTR _schemetrust.eidas.kamusm.gov.tr-example

ID		TC_TSPA_2	TC_TSPA_2				
Assert	ion(s)	TA_TSPA_2	TA_TSPA_2				
Test P	urpose	Verify that RR DNSSec valida	Verify that RR response to the issuername is a PTR record and DNSSec validation is successfull				
Pre-Te	st Condition	ns TSPA should a DNS deployme A valid trust sc published with	TSPA should already be deployed and running DNS deployment with DNSSec extension should be running A valid trust scheme: with eidas.kamusm.gov.tr-example should be published with turkey.lightest.nlnetlabs.nl domain name in TSPA				
Step	Test Activ	Test Activity			Result		
1	On the terr command: dig _schen turkey.light	ninal, type the follow netrust. est.nlnetlabs.nl PTR	al, type the following _trust. .nInetlabs.nl PTR		10.6 <<>> t.nlnetlabs.n ns: +cmd : R<<- opcoc ra; QUERY	_scheme nl PTR de: QUERY, stat : 1, ANSWER: 1	us: NOERROR, , AUTHORITY: 0,
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	ADDITIONAL: 1
	;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_schemetrust.turkey.lightest.nlnetlabs.nl. IN PTR
	;; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl. 3600 IN PTR 1 1_schemetrust.eidas.kamusm.gov.tr-example

ID		TC_TSPA_	TC_TSPA_3				
Assert	ion(s)	TA_TSPA_	3				
Test P	urpose	Verify that F DNSSec va	RR response lidation is su	to the issue	ername is	s a URI recor	d and
Pre-Te	st Conditio	ns TSPA shou	ld already be	e deployed a	nd runnir	ng	
		DNS deploy	ment with D	NSSec exte	nsion sho	ould be runni	ng
		A valid trust published w	t scheme: wi vith turkey.lig	th eidas.kan htest.nlnetla	nusm.gov ibs.nl dor	v.tr-example s main name in	should be TSPA
Step	Test Activ	ty		Expected	Result		
2	Minder sen HTTP PUT https://light dev.iaik.tug turkey.light with http://light with http://light ML.xml tr On the terr command: dig_schen eidas.kamu	Vinder sends to TSPA the following HTTP PUT request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ turkey.lightest.nlnetlabs.nl/trust-list with http://www. mindertestbed.org:8081/trust/TSL- XML.xml trust list parameter On the terminal, type the following command: dig scheme. trust.		The service should return HTTP 200 OK ; <<>> DiG 9.10.6 <<>> _schemetrust. <i>eidas.kamusm.gov.tr-example</i> URI ;; global options: +cmd			
	chas.namasm.gov.a example en		;; ->>HEADEI id: 53761 ;; flags: qr rd i ADDITIONAL	R<<- opcoc ra; QUERY : 1	le: QUERY, stat : 1, ANSWER: 1	us: NOERROR, , AUTHORITY: 0,	
			;; OPT PSEU ; EDNS: versi ;; QUESTION _schemetru ;; ANSWER S ;_schemetru 1 http://www.	DOSECTIC on: 0, flags SECTION ist. eidas.ka ECTION: ust.eidas.ka mindertest	DN: :; udp: 4096 : amusm.gov.tr-e; amusm.gov.tr-e; bed.org:8081/tru	kample IN URI kampl.e IN URI 1 ust/TSL-XML.xml	
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ID		TC_TSPA_4				
Assert	ion(s)	TA_TSPA_4				
Test P	urpose	Verify that trust list pointed on the URI RR record, signature validation is successful				
Pre-Te	st Conditions	TSPA should already be	e deployed and running			
		DNS deployment with D	INSSec extension should be running			
		A valid trust scheme: wi published with turkey.lig	ith eidas.kamusm.gov.tr-example should be htest.nlnetlabs.nl domain name in TSPA			
		A valid trust list is define	ed in TSPA (TC_TSPA_4 should be executed)			
Step	Test Activity		Expected Result			
1	On the terminal, type the following command: <i>dig_schemetrust.</i> <i>eidas.kamusm.gov.tr-example URI</i>		; <<>> DiG 9.10.6 <<>> _schemetrust. eidas.kamusm.gov.tr-example URI ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. eidas.kamusm.gov.tr-example IN URI ;; ANSWER SECTION: ;_schemetrust.eidas.kamusm.gov.tr-exampl.e IN URI 1 1 http://www.mindertestbed.org:8081/trust/TSL-XML.xml			
2	Minder-ATV parses the DNS query and Execute Minder-ATV <i>downloadservice</i> with http://www. mindertestbed.org:8081/trust/TSL- XML.xml parameter		The trust list should be downloaded and should be opened via an XML editor			
3	Execute Minder-ATV verifyTrustList service that performs signature validation		The trust list verification should return TRUE			
4	On the termina command: dig _scheme eidas.kamusm SMIMEA	l, type the following <i>trust.</i> .gov.tr-example	; <<>> DiG 9.10.6 <<>> _schemetrust. eidas.kamusm.gov.tr-example SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761			

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	;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
	;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. <i>eidas.kamusm.gov.tr-example IN</i> SMIMEA ;; ANSWER SECTION: _schemetrust.eidas.kamusm.gov.tr-example IN SMIMEA (3 0 1 0) with the full certificate

ID			TC_TSPA_5					
Assert	ion(s)		TA_TSPA_4					
Test P	urpose		Verify that an in validation fails	nvalid tru	st list pointe	d on the l	URI RR reco	rd, signature
Pre-Te	st Conditio	าร	TSPA should a	Iready be	e deployed a	nd runnir	ng	
			DNS deployme	ent with D	NSSec exte	nsion sho	ould be runni	ng
			A valid trust sc published with	A valid trust scheme: with eidas.kamusm.gov.tr-example should be published with turkey.lightest.nlnetlabs.nl domain name in TSPA				should be TSPA
Step Test Activity					Expected	Result		
1	Minder sen HTTP PUT https://light dev.iaik.tug turkey.light with http:// mindertest TSL-XML.>	ds to request- graz. est.r www bed. (ml t	o TSPA the follo uest: at/tspa/api/v1/ nInetlabs.nl/trust v org:8081/trust/Ir rust list paramet	wing - <i>list</i> nvalid- er	The service should return HTTP 200 OK			
2	On the terminal, type the following command: dig _schemetrust. eidas.kamusm.gov.tr-example URI				<pre>; <<>> DiG 9.10.6 <<>> _schemetrust. eidas.kamusm.gov.tr-example URI ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. eidas.kamusm.gov.tr-example IN URI ;; ANSWER SECTION: ; schemetrust.eidas.kamusm.gov.tr-example IN URI ;; ANSWER SECTION:</pre>			
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		XML.xml
3	Minder-ATV parses the DNS query and Execute Minder-ATV downloadservice with http://www. mindertestbed.org:8081/trust/TSL- XML.xml parameter	The trust list should be downloaded and should be opened via an XML editor
4	Execute Minder-ATV <i>verifyTrustList</i> service that performs signature validation	The trust list verification should return FALSE
5	On the terminal, type the following command: <i>dig _schemetrust.</i> <i>eidas.kamusm.gov.tr-example</i> <i>SMIMEA</i>	; <<>> DiG 9.10.6 <<>> _schemetrust. eidas.kamusm.gov.tr-example SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. eidas.kamusm.gov.tr-example IN SMIMEA ;; ANSWER SECTION: _schemetrust.eidas.kamusm.gov.tr-example IN SMIMEA (3 0 1 0) with the full certificate
6	Execute Minder-ATV checkCertificatefromSMIMEA service to verify the certificate used to sign the trust list	Certificate validation result should NOT be successfull

ID		TC_TSPA_6					
Assert	ion(s)	TA_TSPA_5, TA_TSPA_6					
Test P	urpose	Verify that TSPA could provide trust scheme declarations successfully					
Pre-Te	st Conditions	TSPA should already be deployed and running					
		DNS deployment with DNSSec extension should be running					
		A valid trust scheme: with eidas.kamusm.gov.tr-example should be published with turkey.lightest.nlnetlabs.nl domain name in TSPA					
Step	Test Activity	Expected Result					

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1	Minder sends to TSPA the following HTTP GET request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/scheme/t urkey.lightest.nlnetlabs.nl	The service should return HTTP 200 OK
2	On the terminal, type the following command: dig _schemetrust. /turkey.lightest.nlnetlabs.nl PTR	; <<>> DiG 9.10.6 <<>> _scheme turkey.lightest.nlnetlabs.nl PTR ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_schemetrust.turkey.lightest.nlnetlabs.nl. IN PTR ;; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl. 3600 IN PTR 1 1 scheme_trust eidas kamusm gov tr-example
		i i_schemeuusi.euas.kamusm.gov.u-example

ID TC_TSPA_7								
Assert	ion(s)	TA_TSI	PA_7					
Test P	urpose	Verify the success	hat TSP sfully	A could p	provide trust	list URL	s for the trust	scheme
Pre-Te	st Conditio	ns TSPA s	should a	Iready be	e deployed a	nd runnir	ng	
		DNS de	eployme	nt with D	NSSec exte	nsion she	ould be runni	ng
		A valid publishe	A valid trust scheme: with eidas.kamusm.gov.tr-example should be published with turkey.lightest.nlnetlabs.nl domain name in TSPA					should be I TSPA
Step	Test Activity				Expected Result			
1	Minder sends to TSPA the following HTTP GET request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/scheme/t			wing cheme/t	The service should return HTTP 200 OK with response data including eidas.kamusm.gov.tr-example trust scheme			
2 On the terminal, type the following command: dig_schemetrust. /turkey.lightest.nlnetlabs.nl PTR				; <<>> DiG 9.10.6 <<>> _scheme turkey.lightest.nlnetlabs.nl PTR ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761				
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		;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
		;; OPT PSEUDOSECTION:
		; EDNS: version: 0, flags:; udp: 4096
		;; QUESTION SECTION:
		;_schemetrust.turkey.lightest.nlnetlabs.nl. IN PTR
		;; ANSWER SECTION:
		_schemetrust.turkey.lightest.nlnetlabs.nl. 3600 IN PTR
		1 1_schemetrust.eidas.kamusm.gov.tr-example
3	Minder sends to TSPA the following	The service should return HTTP 200 OK
	HTTP GET request:	
	<u>https://lightest-</u>	
	dev.lalk.tugraz.at/tspa/api/v1/turkey.lig	
	http://www.	
	mindertesthed ora:8081/trust/TSL -	
	XML.xml parameter	
4	On the terminal, type the following	; <<>> DiG 9.10.6 <<>> _schemetrust.
	command:	eidas.kamusm.gov.tr-example URI
	dig _schemetrust.	;; global options: +cmd
	/turkey.lightest.nlnetlabs.nl URI	;; Got answer:
		;; ->>HEADER<<- opcode: QUERY, status: NOERROR,
		id: 53761
		;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0,
		ADDITIONAL: 1
		:: OPT PSEUDOSECTION:
		; EDNS: version: 0, flags:; udp: 4096
		;; QUESTION SECTION:
		_schemetrust. eidas.kamusm.gov.tr-example IN URI
		;; ANSWER SECTION:
		;_schemetrust.eidas.kamusm.gov.tr-exampl.e IN URI 1
		1 http://www. mindertestbed.org:8081/trust/TSL-XML.xml

ID			TC_TSPA_8					
Assertion(s) TA_TSPA_8								
Test Purpose			Verify that TSPA-DNS provides certificate constraints to validate trust lists successfully					
Pre-Te	st Conditio	าร	TSPA should a	Iready be	e deployed a	ind runnir	ng	
			DNS deployment with DNSSec extension should be running					
			A valid trust scheme: with eidas.kamusm.gov.tr-example should be published with turkey.lightest.nlnetlabs.nl domain name in TSPA					
Step Test Activity			Expected Result					
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1	Minder sen HTTP GET https://light dev.iaik.tug urkey.lighte	ds to TSPA the follo request: est- graz.at/tspa/api/v1/so est.nlnetlabs.nl	wing cheme/t	The service should return HTTP 200 OK with response data including eidas.kamusm.gov.tr-example scheme			
2	On the tern command: <i>dig _schen</i> <i>/turkey.ligh</i>	ninal, type the follow ne <i>trust.</i> test.nlnetlabs.nl PTF	ring R	turkey.lightest.nlnetlabs.nl PTR ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_schemetrust.turkey.lightest.nlnetlabs.nl. IN PTR ;; ANSWER SECTION: schemetrust.turkey.lightest.nlnetlabs.nl. 3600 IN PTR			
3	Minder sen HTTP PUT https://light dev.iaik.tug htest.nlnetl http://www. mindertesti XML.xml p	ids to TSPA the follo request: est- graz.at/tspa/api/v1/tu abs.nl/trust-list with bed.org:8081/trust/T arameter	wing rkey.lig 'SL-	The service s	hould return	n HTTP 200 O	K
4	On the tern command: <i>dig _schen</i> /turkey.ligh	ninal, type the follow netrust. test.nlnetlabs.nl UR	<pre>eidas.kamusm.gov.tr-example URI ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. eidas.kamusm.gov.tr-example IN URI ;; ANSWER SECTION: ;_schemetrust.eidas.kamusm.gov.tr-exampl.e IN URI 1 1 http://www.mindertestbed.org:8081/trust/TSL-XML.xml ;</pre>				
5	On the tern command: <i>dig</i> _schen /turkey.ligh	nınal, type the follow netrust. test.nlnetlabs.nl SM	; <<>> DiG 9.10.6 <<>> _schemetrust. eidas.kamusm.gov.tr-example SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761				
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		;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. eidas.kamusm.gov.tr-example IN SMIMEA ;; ANSWER SECTION: _schemetrust.eidas.kamusm.gov.tr-example IN SMIMEA (3 0 1 0) with the full certificate
6	Execute Minder-ATV verifyTrustList service that performs signature validation for the trust list downloaded in http://www. mindertestbed.org:8081/trust/TSL- XML.xml	Trust List validation result should be successful
7	Execute Minder-ATV checkCertificateFromSMIMEA service that includes the certificate to be used during the validation of the trust list signer certificate	The certificate validation result should be successful

ID		TC_TSPA_9			
Assert	ion(s)	TA_TSPA_8			
Test P	urpose	Verify that trust list valid	lation fails in case of invalid certificate		
Pre-Te	st Conditions	TSPA should already be deployed and running			
		DNS deployment with DNSSec extension should be running			
		A valid trust scheme: with eidas.kamusm.gov.tr-example should be published with turkey.lightest.nlnetlabs.nl domain name in TSPA			
		A valid trust list URI record is already defined on TSPA-DNS			
		An SMIMEA record including an invalid certificate to be used in trust list validation			
Step	Test Activity		Expected Result		
1	On the termina command: <i>dig _scheme</i> /turkey.lightest	l, type the following trust. .nlnetlabs.nl URI	; <<>> DiG 9.10.6 <<>> _schemetrust. eidas.kamusm.gov.tr-example URI ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1		

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		;; OPT PSEUDOSECTION:
		; EDNS: version: 0, flags:; udp: 4096
		;; QUESTION SECTION:
		_schemetrust. eidas.kamusm.gov.tr-example IN URI
		;; ANSWER SECTION:
		;_schemetrust.eidas.kamusm.gov.tr-exampl.e IN URI 1
		1 http://www. mindertestbed.org:8081/trust/TSL-XML.xml
2	On the terminal, type the following	; <<>> DiG 9.10.6 <<>> _schemetrust.
	command:	eidas.kamusm.gov.tr-example SMIMEA
	dig _schemetrust.	;; global options: +cmd
	/turkey.lightest.nlnetlabs.nl SMIMEA	;; Got answer:
		;; ->>HEADER<<- opcode: QUERY, status: NOERROR,
		id: 53761
		;; flags: gr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0,
		ADDITIONAL: 1
		;; OPT PSEUDOSECTION:
		; EDNS: version: 0, flags:; udp: 4096
		:: QUESTION SECTION:
		schemetrust. eidas.kamusm.gov.tr-example IN
		SMIMEA
		;; ANSWER SECTION:
		scheme. trust.eidas.kamusm.gov.tr-example IN
		SMIMEA (3 0 1 0) with the full certificate
3	Execute Minder-ATV verifvTrustList	Trust List validation result should be successful
-	service that performs signature	
	validation for the trust list downloaded	
	in <i>http://www</i> .	
	mindertestbed.ora:8081/trust/TSL-	
	XML.xml	
4	Execute Minder-ATV	The certificate validation result should NOT be successful
	checkCertificateFromSMIMEA service	
	that includes the certificate to be used	
	during the validation of the trust list	
	signer certificate	
	5	

ID	TC_TSPA_10			
Assertion(s)	TA_TSPA_9			
Test Purpose	Verify that TSPA can persist Boolean trust scheme declarations successfully			
Pre-Test Conditions	TSPA should already be deployed and running DNS deployment with DNSSec extension should be running			
Step Test Activity	Expected Result			

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1	Minder sends to TSPA the following HTTP PUT request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ /turkey.lightest.nlnetlabs.nl/schemes with boolean.eidas.kamusm.gov.tr- example parameter	The service should return HTTP 200 OK. (Total 2 trust scheme with . <i>eidas.kamusm.gov.tr-example and Boolean.</i> . <i>eidas.kamusm.gov.tr-example should be available</i>)
2	On the terminal, type the following command: dig _schemetrust. turkey.lightest.nlnetlabs.nl PTR	; <<>> DiG 9.10.6 <<>> _schemetrust. <i>turkey.lightest.nlnetlabs.nl</i> PTR ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: _schemetrust. <i>turkey.lightest.nlnetlabs.nl IN</i> PTR ; ANSWER SECTION: _schemetrust. <i>turkey.lightest.nlnetlabs.nl IN</i> PTR 1 1 _schemetrust. <i>eidas.kamusm.gov.tr-example</i> _schemetrust.boolean.eidas.kamusm.gov.tr-example
3	Minder sends to TSPA the following GET request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ scheme/turkey.lightest.nlnetlabs.nl/sch emes	The service should return HTTP 200 OK where it contains the 2 scheme names: <i>eidas.kamusm.gov.tr-example</i> <i>Boolean. eidas.kamusm.gov.tr-example</i>

ID		TC_TSPA_1	1				
Assertion(s)		TA_TSPA_1	0				
Test Purpose		Verify that TS successfully	Verify that TSPA can persist ordinal trust scheme declarations successfully				
Pre-Te	st Conditio	ns TSPA should	l already be	e deployed a	ınd runniı	ng	
		DNS deployr	DNS deployment with DNSSec extension should be running				
Step	Test Activ	ity		Expected	Result		
1	Minder ser HTTP PUT https://light dev.iaik.tug /turkey.ligh with ordinalleve	ds to TSPA the following request: est- raz.at/tspa/api/v1/ est.nlnetlabs.nl/schemes name.eidas.kamusm.gov.tr		The service s scheme with .eidas.kamus ordinallevelna be available)	hould retur .eidas.kam m.gov.tr-ex ame.eidas.i	n HTTP 200 Ok usm.gov.tr-exar cample and kamusm.gov.tr-e	C. (Total 3 trust nple and Boolean. example should
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	-example parameter	
2	On the terminal, type the following command: <i>dig_schemetrust.</i> <i>turkey.lightest.nlnetlabs.nl PTR</i>	; <<>> DiG 9.10.6 <<>> _schemetrust. <i>turkey.lightest.nlnetlabs.nl</i> PTR ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: _schemetrust. <i>turkey.lightest.nlnetlabs.nl IN</i> PTR ; ANSWER SECTION: _schemetrust. <i>turkey.lightest.nlnetlabs.nl IN</i> PTR ; ANSWER SECTION: _schemetrust. <i>turkey.lightest.nlnetlabs.nl IN</i> PTR 1 1 _schemetrust. <i>turkey.lightest.nlnetlabs.nl IN</i> PTR 1 1 _schemetrust.oolean.eidas.kamusm.gov.tr-example _schemetrust.ordinallevelname.eidas.kamusm.gov.tr-example
3	Minder sends to TSPA the following HTTP GET request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ scheme/turkey.lightest.nlnetlabs.nl/sch emes	The service should return HTTP 200 OK where it contains the 3 scheme names: <i>eidas.kamusm.gov.tr-example</i> <i>Boolean. eidas.kamusm.gov.tr-example</i> <i>Ordinallevelname. eidas.kamusm.gov.tr-example</i>

ID		TC_TSPA	TC_TSPA_12				
Assert	ion(s)	TA_TSPA	_10				
Test P	urpose	Verify tha	t received DNS	S works in s	ynchroniz	zation with TS	SPA
Pre-Te	st Conditio	ns TSPA sho	ould already be	e deployed a	ınd runniı	ng	
		DNS depl	oyment with D	NSSec exte	nsion she	ould be runni	ng
Step	Test Activ	ity		Expected	Result		
1	On the terminal, type the following command: dig _schemetrust. turkey.lightest.nlnetlabs.nl PTR		; <<>> DiG 9.10.6 <<>> _schemetrust. <i>turkey.lightest.nlnetlabs.nl</i> PTR ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1				
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		; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: _schemetrust. <i>turkey.lightest.nlnetlabs.nl IN</i> PTR ; ANSWER SECTION: _schemetrust. <i>turkey.lightest.nlnetlabs.nl IN</i> PTR 1 1 _schemetrust.eidas.kamusm.gov.tr-example _schemetrust.boolean.eidas.kamusm.gov.tr-example _schemetrust. ordinallevelname.eidas.kamusm.gov.tr- example
2	Minder sends to TSPA the following HTTP GET request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ scheme/turkey.lightest.nlnetlabs.nl	The service should return HTTP 200 OK where it contains the 3 scheme names: eidas.kamusm.gov.tr-example Boolean. eidas.kamusm.gov.tr-example Ordinallevelname. eidas.kamusm.gov.tr-example

		TO TODA 42				
U		10_15PA_13				
Assert	ion(s)	TA_TSPA_10				
Test P	urpose	Verify that received TS	PA works in synchronization with DNS entries			
Pre-Te	st Conditions	TSPA should already b	e deployed and running			
		DNS deployment with E	DNS deployment with DNSSec extension should be running			
Step	Test Activity		Expected Result			
1	On the termina command: <i>dig _scheme</i> <i>turkey.lightest.</i>	I, type the following trust. nInetlabs.nl PTR	; <<>> DiG 9.10.6 <<>> _schemetrust. <i>Turkey.lightest.nlnetlabs.nl</i> PTR ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PTR ; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PTR 1 1 _schemetrust.eidas.kamusm.gov.tr-example _schemetrust.boolean.eidas.kamusm.gov.tr-example _schemetrust. Ordinallevelname.eidas.kamusm.gov.tr-example			

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2	On the terminal, login to DNS with ssh with ssh -i id_rsa <u>tubitak@lightest.nlnetlabs.nl</u> Goto /usr/home/zonemgr/etc folder Edit Open the zone file with the following command: vim lightest.nlnetlabs.nl Delete the corresponding record with turkey.lightest.nlnetlabs.nl and Ordinallevelname.eidas.kamusm.gov.tr- example trust scheme Close the ssh session	DNS should be updated.
3	Minder sends to TSPA the following HTTP GET request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ scheme/turkey.lightest.nlnetlabs.nl	The service should return HTTP 200 OK where it contains the 2 scheme names: <i>eidas.kamusm.gov.tr-example</i> <i>Boolean. eidas.kamusm.gov.tr-example</i>

7.2 ATV – TTA Integration Testing

7.2.1 ATV – TTA Integration Testing Conformance Clauses

Conformance clauses are given in D8.8 Integration Testing Report (1).

7.2.2 ATV – TTA Integration Normative Sources

For brevity, we removed ATV – TTA Integration Normative Sources from this deliverable. Since there are no modifications to the normative statements, readers can refer to D8.8 Integration Testing Report (1) for further details.

7.2.3 ATV – TTA Integration Test Assertions

The updated assertions are given below.

TA ID	TA_TTA_1
Normative Source	NS_TTA_1
Target	ATV – TTA Interface
Prerequisite	The name and details (characteristics) of the trust scheme are defined in the TSPA and received from TSPA
Prescription Level	Mandatory
Predicate	ATV issues a DNS call for the trust scheme, with DNS record set as "_translate" for the aspect and "_trust" for the application with the following format and TTA

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returns the URI resource record for the trust scheme:

- ;; QUESTION SECTION: Client/ATV to the TTA
- ;_translate._trust.etimestamp.eidas.eu. IN URI

In case of Tuple&Ordinal Schemes, the assurance level (obtained from TSPA for the trust scheme) is included with the following format

;; QUESTION SECTION: Client/ATV to the TTA ;_translate._trust.**qualified**.eseal.eidas.eu. IN URI

TA ID	TA_TTA_2
Normative Source	NS_TTA_1, NS_TTA_2, TA_TTA_1
Target	ATV – TTA Interface
Prerequisite	The name and details (characteristics) of the trust scheme are defined in the TSPA and received from TSPA
Prescription Level	Mandatory
Predicate	For Boolean trust scheme, TTA returns the resource record with the following format:
	;; QUESTION SECTION: Client/ATV to the TTA ;_translatetrust.etimestamp.eidas.eu. IN URI ;; ANSWER SECTION: from the TTA
	_translatetrust.etimestamp.eidas.eu. IN URI
	https://lightest.eu/ttl_qualifiedTimestampEidas1.tpl
	_translatetrust.etimestamp.eidas.eu. IN URI
	https://lightest.eu/ttl_qualifiedTimestampEidas1.xml

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Source			
Normative	NS_TTA_1, NS_TTA_2, TA_TTA_1		
TAID	TA_TTA_3		

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Target	ATV – TTA Interface
Prerequisite	The TTA DNS Name Server is up and running and TTA contains published trust translation list declarations.
	The names of the assurance levels just published by the TSPA have to be already retrieved from the TSPA by ATV
Prescription Level	Mandatory
Predicate	For Ordinal&Tuple Trust Scheme, TTA returns the resource record with the following format::
	;; QUESTION SECTION: Client/ATV to the TTA ;_translatetrust.qualified.eseal.eidas.eu. IN URI
	;; ANSWER SECTION: from the TTA
	_translatetrust.qualified.eseal.eidas.eu. IN URI
	https://lightest.eu/ttl_qualifiedSealEidas1.tpl
	_translatetrust.qualified.eseal.eidas.eu. IN URI
	https://lightest.eu/ttl_qualifiedSealEidasN.tpl
	_translatetrust.qualified.eseal.eidas.eu. IN URI
	https://lightest.eu/ttl_qualifiedSealEidas1.xml
	_translatetrust.qualified.eseal.eidas.eu. IN URI
	https://lightest.eu/ttl_qualifiedSealEidasN.xml

TA ID	TA_TTA_4
Normative Source	NS_TTA_2,NS_TTA_3, NS_TTA_5
Target	ATV – TTA Interface
Prerequisite	The TTA DNS Name Server is up and running and TTA contains published trust translation list declarations.
Prescription Level	Mandatory

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Predicate TTA provides more than one translation schemes for the trust scheme. TTA provides/publishes a pointer to the trust translation list for each recognized trust level with Boolean, Ordinal or Tuple trust scheme types in the form of a series URI resource records.

TA ID	TA_TTA_5
Normative Source	NS_TTA_2, NS_TTA_6, NS_TTA_7, NS_TTA_8
Target	ATV – TTA Interface
Prerequisite	The TTA DNS Name Server is up and running and TTA contains published trust translation list declarations.
	Trust translation lists are already defined in the XML format for the trust schemes
	The names of the assurance levels just published by the TSPA have to be already retrieved from the TSPA by ATV, in order to build the right domain name for asking for the translation.
Prescription Level	Preferred
Predicate	Trust Translation Provider provides a file for each recognized trust level with XML and TPL . In case of XML, TTA returns the list of the trust levels equivalents to the one requested with level name and trust scheme name. In case of TPL, TTA returns the list of the trust levels equivalents to the one requested with level name, trust scheme name and TPL description

Normative N NS_TTA_4, NS_TTA_5, NS_TTA_9 Source	
Target TTA	
Prerequisite The TTA DNS Name Server is up and running and TTA contains put translation list declarations.	blished trust
Prescription Mandatory Level	

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Predicate	For Boolean trust scheme, TTA-DNS checks whether the certificate used for signing the translation files is valid according to the content of DNS-SMIMEA resource record.
	;; QUESTION SECTION: Verifying authenticity ;_translatetrust.etimestamp.eidas.eu. IN SMIMEA
	;; ANSWER SECTION: _translatetrust.etimestamp.eidas.eu. IN SMIMEA <smimea data="" record=""></smimea>

TA ID	TA_TTA_7
Normative Source	NS_TTA_4, NS_TTA_5, NS_TTA_9
Target	ATV – TTA Interface
Prerequisite	The TTA DNS Name Server is up and running and TTA contains published trust translation list declarations.
Prescription Level	Mandatory
Predicate	For Ordinal&Tuple trust scheme, TTA-DNS checks whether the certificate used for signing the translation files is valid according to the content of DNS-SMIMEA resource record including the trust scheme and level of assurance
	;; QUESTION SECTION: Verifying authenticity ;_translatetrust. qualified .eseal.eidas.eu. IN SMIMEA
	;; ANSWER SECTION: _translatetrust.qualified.eseal.eidas.eu. IN SMIMEA <smimea record data></smimea

TA ID	TA_TTA_8
Normative Source	NS_TTA_10
Target	ATV – TTA Interface
Prerequisite	The TTA DNS Name Server is up and running and TTA contains published trust translation list declarations.

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The TTA should return the signed trust translation lists

Prescription Mandatory

Level

Predicate TTA-DNS should provide certificate constraints to use for the verification of the translation list signature.

7.2.4 ATV – TTA Integration Test Cases

This section includes the list of test cases and the descriptions of the test cases.

TTA Test cases assume that scheme information is obtained from TSPA and electronic transaction is parsed on Minder-ATV and is sent to TSPA to conform the trust scheme membership.

7.2.4.1 ATV – TTA Integration Test Cases List

ID	Purpose
TC_TTA_1	Verify that TTA published more than one translation schemes for a boolean trust scheme
TC_TTA_2	Verify that TTA published more than one translation schemes for an ordinal trust scheme
TC_TTA_3	Verify that TTA published more than one translation schemes for a tuple trust scheme
TC_TTA_4	Verify that RR response to the issuername is a URI record for a boolean scheme and DNSSec validation is successful
TC_TTA_5	Verify that RR response to the issuername is a URI record for ordinal schemes and DNSSec validation is successful
TC_TTA_6	Verify that TTA published more than one translation schemes for a tuple trust scheme
TC_TTA_7	Check that the verification result of translation list signature is successful for a boolean trust scheme
TC_TTA_8	Check that the verification result of translation list signature is successful for

Table 2 List of ATV – TTA integration test cases

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	an ordinal trust scheme
TC_TTA_9	Check that the verification result of translation list signature is successful for a tuple trust scheme
TC_TTA_10	Verify that an invalid trust list, pointed on the URI RR record, signature validation fails for ordinal trust scheme
TC_TTA_11	Verify that an invalid trust list, pointed on the URI RR record, signature validation fails for tuple trust scheme
TC_TTA_12	Verify that the certificate provided by DNS is not valid and translation list verification fails due to certificate validation

7.2.4.2 ATV – TTA Integration Test Case Details

ID		TC_TTA_1	l					
Assertion(s)		TA_TTA_3	TA_TTA_3					
Test Purpose		Verify that boolean tru	Verify that TTA published more than one translation schemes for a boolean trust scheme					
Pre-Te	st Conditio	ns TTA should	d already be o	deployed an	d running)		
		DNS deplo	oyment with D	NSSec exte	nsion she	ould be runni	ng	
Step	Test Activ	ity		Expected	Result			
2	Minder sends to TTA the following HTTP PUT request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/create Translation with "test-agreement" Boolean trust scheme. Translation definition is given in Test Scenario for TTA Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation with "test agreement"			The service should return HTTP 200 OK. The return JSON value should include the translation information given in the Test Scenarion for TTA "test-agreement"				
3	3 On the terminal, type the following command: dig_translatetrust. turkey.lightest.nlnetlabs.nl URI			; <<>> DiG 9. turkey.lightest global options ;; Got answer ;; ->>HEADEI	10.6 <<>> .nlnetlabs.i :: +cmd : ?<<- opcoc	_translatetrus nl URI; de: QUERY, stat	it. us: NOERROR,	
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id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI
;; ANSWER SECTION: translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml

ID TC_TTA_2								
Assert	ion(s)	TA_TTA_	TA_TTA_3					
Test Purpose		Verify tha ordinal tru	Verify that TTA published more than one translation schemes for an ordinal trust scheme					
Pre-Te	st Conditio	ns TTA shou	ld already be	deployed an	d running	9		
		DNS depl	oyment with [DNSSec exte	nsion she	ould be runni	ng	
Step	Test Activ	ity		Expected	Result			
2	Minder sends to TTA the following HTTP PUT request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/create Translation with "test-agreement-ordinal" Ordinal trust scheme. Translation definition is given in Test Scenario for TTA Minder sends to TTA the following			The service should return HTTP 200 OK The service should return HTTP 200 OK. The return ISON value should include the translation information				
	http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation with "test-agreement-ordinal"			given in the Toordinal"	est Scenar	ion for TTA "test	-agreement-	
3	On the terminal, type the following			; <<>> DiG 9.10.6 <<>> _translatetrust.			st.	
	command:			turkey.lightest	t.nlnetlabs.	nl URI;		
ug_translatetrust. turkey lightest ninetlahs ni LIRI			global options	s: +cmd				
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	;; ->>HEADER<<- opcode: QUERY, status: NOERROR,
	id: 53761
	;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0,
	ADDITIONAL: 1
	;; OPT PSEUDOSECTION:
	; EDNS: version: 0, flags:; udp: 4096
	;; QUESTION SECTION:
	;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI
	;; ANSWER SECTION:
	_ translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN URI
	http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid
	as1.tpl
	_translatetrust.qualified.eseal.eidas.kamusm.gov.tr-
	example IN URI
	http://www.mindertestbed.org:8081/ttl/ttl_gualifiedSealEid
	asN.tpl
	example IN URI
	http://www.mindertestbed.org:8081/ttl/ttl_gualifiedSealEid
	as1.xml
	translate. trust.gualified.eseal.eidas.kamusm.gov.tr-
	example IN URI
	http://www.mindertestbed.org:8081/ttl/ttl_gualifiedSealEid
	asN.xml

ID TC_TTA_3							
Assert	ion(s)	TA_TTA_3					
Test Purpose		Verify that TT trust scheme	Verify that TTA published more than one translation schemes for a tuple trust scheme				
Pre-Te	st Condition	ns TTA should a	Iready be o	deployed an	d running)	
		DNS deploym	nent with D	NSSec exte	nsion sh	ould be runni	ng
Step	Test Activity			Expected Result			
1	Minder sends to TTA the following HTTP PUT request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/create Translation with "test-agreement-tuple" tuple trust scheme. Translation definition is given in Test Scenario for TTA			The service s	hould retur	n HTTP 200 OK	
2	Minder sends to TTA the following HTTP GET request: http://tta-			The service s JSON value s given in the T	hould retur should inclu est Scenar	n HTTP 200 OK ide the translatio ion for TTA "test	 The return on information -agreement-tuple"
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	lightest.eu:8080/ttaFM/mng/rsc/getTra	
	nslation	
	with "test-agreement-ordinal"	
3	On the terminal, type the following	; <<>> DiG 9.10.6 <<>> _translatetrust.
	command:	turkey.lightest.nlnetlabs.nl URI;
	dig _translatetrust.	global options: +cmd
	turkey.lightest.nlnetlabs.nl URI	;; Got answer:
		;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761
		;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0,
		ADDITIONAL: 1
		;; OPT PSEUDOSECTION:
		; EDNS: version: 0, flags:; udp: 4096
		;; QUESTION SECTION:
		;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI
		;; ANSWER SECTION:
		_ translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN URI
		http://www.mindertestbed.org:8081/ttl/name-and-year-of- birth/ttl-1.xml
		_translatetrust.name-and-year-of-birth.kamusm.gov.tr-
		http://www.mindertestbed.org/8081/ttl/name-and-year-of-
		birth/ttl-1.tpl
		_translatetrust.name-and-year-of-birth.kamusm.gov.tr-
		example. IN URI
		http://www.mindertestbed.org:8081/ttl/name-and-year-of-
		birth/ttl-2.xml
		_translatetrust.name-and-year-of-birth.kamusm.gov.tr-
		example. IN URI
		http://www.mindertestbed.org:8081/ttl/name-and-year-of- birth/ttl-2.tpl

ID	TC_TTA_4
Assertion(s)	TA_TTA_2
Test Purpose	Verify that RR response to the issuername is a URI record for a boolean scheme and DNSSec validation is successful
Pre-Test Conditions	TTA should already be deployed and running
	DNS deployment with DNSSec extension should be running
	Published trust translation list declarations are available for "test- agreement"

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Step	Test Activity	Expected Result
1	Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation with with "test-agreement" boolean trust scheme. Translation definition is given in Test Scenario for TTA	The service should return HTTP 200 OK and JSON return value is the agreement details given in Test Scenario for TTA. The result should include the following translation lists: http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml
2	On the terminal, type the following command: <i>dig _translatetrust.</i> <i>turkey.lightest.nlnetlabs.nl URI</i>	; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ; _translatetrust.turkey.lightest.nlnetlabs.nl. IN URI ;; ANSWER SECTION: _ translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.txnl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml

ID	TC_TTA_5
Assertion(s)	TA_TTA_1, TA_TTA_5
Test Purpose	Verify that RR response to the issuername is a URI record for ordinal schemes and DNSSec validation is successful
Pre-Test Conditions	TTA should already be deployed and running

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		DNS deployment with DNSSec extension should be running			
		Published trust translation agreement-ordinal"	on list declarations are available for "test-		
Step	Test Activity		Expected Result		
1	Minder sends to TTA the following <i>HTTP GET request:</i> <i>http://tta-</i> <i>lightest.eu:8080/ttaFM/mng/rsc/getTra</i> <i>nslation</i> <i>with "test-agreement-ordinal"</i> Ordinal trust scheme. Translation definition is given in Test Scenario for TTA		The service should return HTTP 200 OK. The result should include the following translation lists: http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid asN.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml		
2	Minder sends to TTA the following HTTP GET request: <u>http://tta-</u> <u>lightest.eu:8080/ttaFM/mng/rsc/getTra</u> <u>nslation</u> with "test-agreement-ordinal"		The service should return HTTP 200 OK. The return JSON value should include the translation information given in the Test Scenarion for TTA "test-agreement-ordinal"		
3	On the termina command: <i>dig _translate.</i> _ <i>turkey.lightest.</i>	I, type the following _trust. nInetlabs.nl URI	; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ; _translatetrust.turkey.lightest.nlnetlabs.nl. IN URI ;; ANSWER SECTION: _ translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.tpl _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.tpl _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI		

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asN.xml

ID		TC_TTA_6					
Assert	ion(s)	TA TTA 1					
Test P	urpose	Verify that TTA trust scheme	A publishe	ed more than one translation schemes for a tuple			
Pre-Te	st Conditio	IS TTA should alr	ready be	e deployed and running			
		DNS deployme	ent with D	DNSSec extension should be running			
		Published trus agreement-tup	t translati ble"	on list decla	rations ar	e available fo	or "test-
Step	Test Activ	ty		Expected	Result		
1	Minder sen HTTP GET http://tta- lightest.eu: nslation with "test-a scheme. Tr in Test Sce	ds to TTA the follow request: 8080/ttaFM/mng/rso greement-tuple" tup anslation definition nario for TTA	ving c/getTra ble trust is given	The service s translation file http://www.mi birth/ttl-1.xml <u>http://www.mi</u> birth/ttl-1.tpl http://www.mi birth/ttl-2.xml <u>http://www.mi</u> birth/ttl-2.tpl	hould return es should be indertestbee indertestbee indertestbee	n HTTP 200 Ok e included: d.org:8081/ttl/na d.org:8081/ttl/na d.org:8081/ttl/na d.org:8081/ttl/na	K. The following ame-and-year-of- ame-and-year-of- ame-and-year-of- ame-and-year-of-
2	Minder sends to TTA the following HTTP GET request: <u>http://tta-</u> <u>lightest.eu:8080/ttaFM/mng/rsc/getTra</u> <u>nslation</u> with "tost agroement tuple"		The service s JSON value s given in the T	hould returi should inclu est Scenari	n HTTP 200 Ok de the translation for TTA "test	K. The return on information -agreement-tuple"	
3	with "test-agreement-tuple" On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI		; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI ;; ANSWER SECTION:			st. Sus: NOERROR, I, AUTHORITY: 0, s.nl. IN URI	
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http://www.mindertestbed.org:8081/ttl/name-and-year-of- birth/ttl-1.xml _translatetrust.name-and-year-of-birth.kamusm.gov.tr- example. IN URI
http://www.mindertestbed.org:8081/ttl/name-and-year-of- birth/ttl-1.tpl _translatetrust.name-and-year-of-birth.kamusm.gov.tr-
example. IN URI http://www.mindertestbed.org:8081/ttl/name-and-year-of- birth/ttl-2.xml
_translatetrust.name-and-year-of-birth.kamusm.gov.tr- example. IN URI <u>http://www.mindertestbed.org:8081/ttl/name-and-year-of-</u> <u>birth/ttl-2.tpl</u>

ID		TC_TTA_7					
Assert	ion(s)	TA_TTA_8	TA_TTA_8				
Test P	urpose	Check that the successful for	Check that the verification result of translation list signature is successful for a boolean trust scheme				re is
Pre-Te	st Conditio	ns TTA should already be deployed and running					
		DNS deployment with DNSSec extension should			ould be runni	ng	
		A valid translat	A valid translation with test-agreement scheme name is defined on TTA				efined on TTA
Step	Test Activity			Expected	Result		
1	Test Activity On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI		; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0 ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI ;; ANSWER SECTION: _ translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN UR http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesi mpEidas1.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesi		t. us: NOERROR, I, AUTHORITY: 0, s.nl. IN URI s.nl. 3600 IN URI _qualifiedTimesta _qualifiedTimesta		
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		mpEidasN.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.xml
2	Minder-ATV parses the DNS query and Execute Minder-ATV <i>downloadservice</i> for the following translation lists http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidas1.tpl http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidasN.tpl http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidas1.xml http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidas1.xml	The trust lists should be downloaded and should be opened via an XML editor
3	Execute Minder-ATV <i>verifyTrustList</i> service that performs signature validation	The trust list verification should return TRUE
4	On the terminal, type the following command: <i>dig_translatetrust.</i> <i>turkey.lightest.nlnetlabs.nl SMIMEA</i>	; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _translatetrust. turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA ;; ANSWER SECTION: _translate_trust. turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA ;; ANSWER SECTION: _translate_trust. turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA (3 0 1 0) with the full certificate

ID	TC_TTA_8	TC_TTA_8				
Assertion(s)	TA_TTA_8, TA	TA_TTA_8, TA_TTA_8				
Test Purpose	Check that the successful for a	Check that the verification result of translation list signature is successful for an ordinal trust scheme				
Pre-Test Condition	ns TTA should alr	TTA should already be deployed and running				
	DNS deployme	DNS deployment with DNSSec extension should be running				
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		A valid translation with test-agreement-ordinal scheme name is defined on TTA			
Step	Test Activity		Expected Result		
1	On the terminal, type the following command: <i>dig _translatetrust.</i> <i>turkey.lightest.nlnetlabs.nl URI</i>		; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1		
			;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI		
			;; ANSWER SECTION: _ translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.tpl _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid asN.tpl _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml _translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid asN.xml		
2	Minder-ATV pa and Execute M downloadservi translation lists http://www.min ttl_qualifiedSea http://www.min ttl_qualifiedSea http://www.min ttl_qualifiedSea http://www.min ttl_qualifiedSea	rses the DNS query linder-ATV ce for the following : dertestbed.org:8081/ttl/ alEidas1.tpl dertestbed.org:8081/ttl/ alEidasN.tpl dertestbed.org:8081/ttl/ alEidas1.xml dertestbed.org:8081/ttl/ alEidasN.xml	The trust lists should be downloaded and should be opened via an XML editor		

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3	Execute Minder-ATV <i>verifyTrustList</i> service that performs signature validation	The trust list verification should return TRUE
4	On the terminal, type the following command: <i>dig _translatetrust.</i> <i>turkey.lightest.nlnetlabs.nl SMIMEA</i>	; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _translatetrust. turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA ;; ANSWER SECTION: _translate_trust. turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA (3 0 1 0) with the full certificate

ID		TC_TTA_9		
Assert	ion(s)	TA_TTA_7, TA_TTA_8		
Test PurposeCheck that the verifical successful for a tuple to			on result of translation list signature is ust scheme	
Pre-Te	st Conditions	TTA should already be	deployed and running	
		DNS deployment with D	DNSSec extension should be running	
		A valid translation with test-agreement-tuple scheme name is defined on TTA		
Step	Test Activity		Expected Result	
1	On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI		; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI	

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		;; ANSWER SECTION: _ translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN URI
2	Minder-ATV parses the DNS query and Execute Minder-ATV <i>downloadservice</i> for the following translation lists : http://www.mindertestbed.org:8081/ttl/ name-and-year-of-birth/ttl-1.xml http://www.mindertestbed.org:8081/ttl/ name-and-year-of-birth/ttl-1.tpl http://www.mindertestbed.org:8081/ttl/ name-and-year-of-birth/ttl-2.xml http://www.mindertestbed.org:8081/ttl/ name-and-year-of-birth/ttl-2.tpl	The trust lists should be downloaded and should be opened via an XML editor
3	Execute Minder-ATV <i>verifyTrustList</i> service that performs signature validation	The trust list verification should return TRUE
4	On the terminal, type the following command: <i>dig _translatetrust.</i> <i>turkey.lightest.nlnetlabs.nl SMIMEA</i>	; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _translatetrust. turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA ;; ANSWER SECTION: _translate_trust. turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA (3 0 1 0) with the full certificate

ID	TC_TTA_10
Assertion(s)	TA_TTA_06
Test Purpose	Verify that an invalid trust list, pointed on the URI RR record, signature validation fails for ordinal trust scheme
Pre-Test Conditions	TTA should already be deployed and running
	DNS deployment with DNSSec extension should be running
	There exists an translation agreement "invalid-agreement-ordinal" that

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	includes an invalid trust	list for a ordinal trust scheme
Step	Test Activity	Expected Result
1	Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation with "invalid-agreement-ordinal" parameter	The service should return HTTP 200 OK. The following translations should be listed: <u>http://www.mindertestbed.org:8081/ttl/ttl_invalidloweviden</u> <u>ceEidas1.tpl</u> http://www.mindertestbed.org:8081/ttl/ttl_invalidloweviden ceEidas1.xml
2	On the terminal, type the following command: <i>dig _translatetrust.</i> <i>turkey.lightest.nlnetlabs.nl URI</i>	; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI ;; ANSWER SECTION: <u>http://www.mindertestbed.org:8081/ttl/ttl_invalidloweviden</u> <u>ceEidas1.tpl</u> http://www.mindertestbed.org:8081/ttl/ttl_invalidloweviden ceEidas1.xml
3	Minder-ATV parses the DNS query and Execute Minder-ATV <i>downloadservice</i> with the following files: <u>http://www.mindertestbed.org:8081/ttl/</u> <u>ttl_invalidlowevidenceEidas1.tpl</u> http://www.mindertestbed.org:8081/ttl/ ttl_invalidlowevidenceEidas1.xml	The trust list should be downloaded and should be opened via an XML editor
4	Execute Minder-ATV <i>verifyTrustList</i> service that performs signature validation	The trust list verification should return FALSE
5	On the terminal, type the following command: <i>dig _translatetrust.</i> <i>turkey.lightest.nlnetlabs.nl SMIMEA</i>	; <<>> DiG 9.10.6 _translatetrust. turkey.lightest.nlnetlabs.nl SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

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		;; OPT PSEUDOSECTION:
		; EDNS: version: 0, flags:; udp: 4096
		;; QUESTION SECTION:
		_translatetrust.turkey.lightest.nlnetlabs.nl /N SMIMEA
		;; ANSWER SECTION:
		_translatetrust turkey.lightest.nlnetlabs.nl IN SMIMEA
		(3 0 1 0) with the full certificate
6	Execute Minder-ATV	Certificate validation result should NOT be successful,
	to verify the certificate used to sign	
	the trust list	

ID			TC_TTA_11						
Assert	ion(s)		TA_TTA_07						
Test Purpose Verify that an invalid trust list, pointed on the URI RR record, sign validation fails for tuple trust scheme					ord, signature				
Pre-Te	st Conditio	ns	TTA should alre	eady be o	deployed an	d running]		
			DNS deployme	nt with D	NSSec exte	nsion she	ould be runni	ng	
		There exists an translation agreement "invalid-agreement-tuple" that includes an invalid trust list for a tuple trust scheme				-tuple" that			
Step	Test Activ	ity			Expected	Result			
1	Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation with "invalid-agreement-tuple"			ng /getTra	The service should return HTTP 200 OK. The following translations should be listed: <u>http://www.mindertestbed.org:8081/ttl/invalidname-and-year-of-birth/ttl-1.tpl</u> http://www.mindertestbed.org:8081/ttl/invalidname-and-year-of-birth/ttl-1.xml				
2	On the terr command: dig _transla turkey.light	ninal ate est.r	al, type the following ; <<>> DiG 9.10.6 <<>> _translatetrust. trust. ;; Got answer: :.nlnetlabs.nl URI ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERRO id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORIT ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ;; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;; translatetrust.turkey.lightest.nlnetlabs.nl. IN URI ;; ANSWER SECTION:				t. us: NOERROR, , AUTHORITY: 0, s.nl. IN URI <u>avalidname-and-</u>		
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		http://www.mindertestbed.org:8081/ttl/invalidname-and- year-of-birth/ttl-1.xml
3	Minder-ATV parses the DNS query and Execute Minder-ATV <i>downloadservice</i> with the following files: <u>http://www.mindertestbed.org:8081/ttl/i</u> nvalidname-and-year-of-birth/ttl-1.tpl	The trust list should be downloaded and should be opened via an XML editor
	http://www.mindertestbed.org:8081/ttl/i nvalidname-and-year-of-birth/ttl-1.xml	
4	Execute Minder-ATV <i>verifyTrustList</i> service that performs signature validation	The trust list verification should return FALSE
5	On the terminal, type the following command: <i>dig _translatetrust.</i> <i>turkey.lightest.nlnetlabs.nl SMIMEA</i>	; <<>> DiG 9.10.6 _translatetrust. turkey.lightest.nlnetlabs.nl SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _translatetrust.turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA ;; ANSWER SECTION: _translatetrust turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA (3 0 1 0) with the full certificate
6	Execute Minder-ATV checkCertificatefromSMIMEA service to verify the certificate used to sign the trust list	Certificate validation result should NOT be successful,

ID	TC_TTA_12
Assertion(s)	TA_TTA_07
Test Purpose	Verify that the certificate provided by DNS is not valid and translation list verification fails due to certificate validation
Pre-Test Conditions	TSPA should already be deployed and running
	DNS deployment with DNSSec extension should be running

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	A valid trust list URI rec	cord is already defined on TSPA-DNS	
	An SMIMEA record including an invalid certificate to be used in translation list validation exists on the DNS		
Step	Test Activity	Expected Result	
1	On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI	; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI ;; ANSWER SECTION: translatetrust.turkey.lightest.nlnetlabs.nl. 3600 IN URI http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml	
2	On the terminal, type the following command: <i>dig_schemetrust.</i> /turkey.lightest.nlnetlabs.nl SMIMEA	; <<>> DiG 9.10.6 <<>> _schemetrust. eidas.kamusm.gov.tr-example SMIMEA ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. eidas.kamusm.gov.tr-example IN SMIMEA ;; ANSWER SECTION: _schemetrust.eidas.kamusm.gov.tr-example IN SMIMEA (3 0 1 0) with the full certificate	

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3	Execute Minder-ATV verifyTrustList service that performs signature validation for the trust list downloaded in http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidas1.tpl http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidasN.tpl http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidas1.xml http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidas1.xml	Trust List validation result should be successfull
4	Execute Minder-ATV checkCertificateFromSMIMEA service that includes the certificate to be used during the validation of the trust list signer certificate	The certificate validation result should NOT be successfull

7.3 ATV – DP Integration Testing

7.3.1 ATV – DP Integration Testing Conformance Clause

Conformance clause for ATV-DP is given in D8.8 Integration Testing Report (1)

7.3.2 ATV – DP Integration Normative Statements

For brevity, we removed ATV - DP Integration Normative Sources from this deliverable. Since there has not been any modifications to the normative statements, readers can refer to D8.8 Integration Testing Report (1) for further details.

7.3.3 ATV – DP Integration Test Assertions

For brevity, we removed ATV – DP Integration Test Assertions from this deliverable. Since there has not been any modifications to the assertions, readers can refer to D8.8 Integration Testing Report (1) for further details.

7.3.4 ATV – DP Integration Test Cases

This section includes the list of test cases and the descriptions of the test cases.

7.3.4.1 ATV – DP Integration Test Case List

Table 3 List of ATV – DP integration test cases

ID	Purpose
TC_DP_1	Verify that DP publishes the delegation successfully

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TC_DP_2	Verify that DP does not publish an invalid delegation
TC_DP_3	Verify that DP does not publish a valid delegation with publicKeyHash not belonging to Proxy
TC_DP_4	Check that DP verifies the delegation successfully
TC_DP_5	Check the content of delegation from the response when delegation is verified.
TC_DP_6	Check the response of the revoked delegation
TC_DP_7	Check the response of the valid delegation queried on DP
TC_DP_8	Check the response that DP should return error if verifier sends more than one revocation query at the time
TC_DP_9	Check if a revoke command interface on DP is available
TC_DP_10	Check revocation response when verifier sends a revocation query.
	Check the signed revocation response with the certificate that is issued by Mandator for the revocation purpose.
	Check if delegation id id hash of delegation.
	Check if the response includes the delegation that is given to DP, the certificates that is used to sign and all certificates to build the trust chain.
TC_DP_11	Check if the delegation id is the hash of delegation when querying on DP.
TC_DP_12	Check that DP publishes delegation key successfully
TC_DP_13	Verify that DP respond with an error/notification message if delegation is not found

7.3.4.2 ATV – DP Integration Test Case Details

ID	TC_DP_1
Assertion(s)	TA_DP_1
Test Purpose	Verify that DP publishes the delegation successfully

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Pre-Te	Pre-Test Conditions Delegation Provider is accessible.			
Delegation is prepared encrypted delegation in in Test Scenario for DP			by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined	
		Proxy is TUBITAK Teste	er	
		dpUrIAddress: to be de	fined when DP deployment is completed	
Step	Test Activity		Expected Result	
1	Minder-ATV sends to DP the following HTTP POST request: <u>https://dpUrIAddress/1/publish with</u> <u>delegation.xml</u> (delegation.xml, pk and publicKeyHash) parameters		The service should return HTTP 201. The response data should include the receipt including delegation type, Mandator's private key, Proxy public key, validity time, domain settings and address of DP.	
2	2 Execute Minder-ATV <i>downloadservice</i> with the following parameter: delegation URL		https://mindertestbed.org/delegation/tubitak_delegation.xm I should be downloded and opened in an XML editor	

ID		TC_DP_2		
Assert	ion(s)	TA_DP_1		
Test P	urpose	Verify that DP does not publish an invalid delegation		
Pre-Test ConditionsDelegation Provider is a Delegation is prepared I encrypted delegation in in Test Scenario for DP Proxy is TUBITAK Teste dpUrlAddress: to be def		Delegation Provider is a Delegation is prepared l encrypted delegation in in Test Scenario for DP Proxy is TUBITAK Teste dpUrlAddress: to be def	accessible. by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined er ined when DP deployment is completed	
Step	Step Test Activity		Expected Result	
1 Minder-ATV sends to DP the following HTTP POST request: <u>https://dpUrlAddress/1/publish with</u> <u>delegation.xml</u> (invaliddelegation.xml, pk and publicKeyHash) parameters		nds to DP the following equest: ddress/1/publish with (invaliddelegation.xml, eyHash) parameters	The service should return HTTP 500.	

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ID		TC_DP_3			
Asserti	on(s)	TA_DP_1, TA_DP_3			
Test Pu	urpose	Verify that DP does not publish a valid delegation with publicKeyHash not belonging to Proxy			
Pre-Te	-Test Conditions Delegation Provider is accessible.				
		Delegation is prepared by TUBITAK as Mandator as a signed and encrypted delegation in XML format. Details of the delegation is defined in Test Scenario for DP			
Proxy is TUBITAK Tester			er		
dpUrIAddress: to be defined when			fined when DP deployment is completed		
		It is assumed that DP does not publish delegation in this case.			
Step	Test Activity		Expected Result		
1	Minder-ATV sends to DP the following HTTP POST request: <u>https://dpUrlAddress/1/publish with</u> <u>delegation.xml</u> (delegation.xml, pk and publicKeyHash) parameters Note that publicKeyHash does not belong to Proxy		The service should return HTTP 500		

ID	TC_DP_4
Assertion(s)	TA_DP_1, TA_DP_3
Test Purpose	Check that DP verifies the delegation successfully
Pre-Test Conditions	Delegation Provider is accessible. Delegation is prepared by Mandator as a signed and encrypted delegation in XML format. Details of the delegation is defined in Test Scenario for DP dpUrIAddress : to be defined when DP deployment is completed

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Step	Test Activity	Expected Result
1	Mandator creates a delegation for TUBITAK Tester.	Delegation.xml that conforms to ETSI 119 621 is created
2	Execute Minder-ATV <i>verifydelegationservice</i> with the following parameter: delegation.xml	The expected result is True
2	Minder-ATV sends to DP the following HTTP POST request: <u>https://dpUrlAddress/1/publish with</u> <u>delegation.xml</u> (delegation.xml, pk and publicKeyHash) parameters	The service should return HTTP 201. The response data should include the receipt including delegation type, Mandator's private key, Proxy public key, validity time, domain settings and address of DP.

ID		TC_DP_5			
Asserti	ion(s)	TA_DP_1, TA_DP_3			
Test Pu	urpose	Check the content of delegation from the response when delegation is verified.			
Pre-Tes	st Conditions	Delegation Provider is a	ccessible.		
	Delegation is prepared by TUBITAK as Mandator as a signed and encrypted delegation in XML format. Details of the delegation is d in Test Scenario for DP				
		Proxy is TUBITAK Teste	er		
		dpUrIAddress: to be defined when DP deployment is completed			
Step	Test Activity		Expected Result		
1	Minder-ATV sends to DP the following HTTP POST request: <u>https://dpUrIAddress/1/publish with</u> <u>delegation.xml</u> (delegation.xml, pk and publicKeyHash) parameters		The service should return HTTP 201. The response data should include the receipt including validity time, Sequence Number, IssuedDate, Proxy, Mandator, validity, notAfter, notBefore, flags, server fields.		
2	Execute Minder-ATV <i>downloadservice</i> with the following parameter: delegation URL		https://mindertestbed.org/delegation/tubitak_delegation.xm		

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ID		TC_DP_6			
Asserti	ion(s)	TA_DP_2, TA_DP_1, TA_DP_6			
Test Purpose Check the response of the revoked delegation			he revoked delegation		
Pre-Test Conditions Delegation Provider is a		Delegation Provider is a	ccessible.		
		Delegation is prepared encrypted delegation in in Test Scenario for DP	by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined		
		Proxy is TUBITAK Tester			
		dpUrIAddress: to be de	rlAddress: to be defined when DP deployment is completed		
	A Revoked delegation for TUBITAK Tester is published in DP				
Step	Test Activity		Expected Result		
1 Minder-ATV sends http request below to DP searchServer to query status of delegation https://dpl.lrlAddress/search?delegatio		nds http request below erver to query status of dress/search?delegatio	DP service sends a response that the delegation is revoked.		
n{id}?&token={token}		token}	To be defined when implemented.		
2	Minder-ATV executes verifyRevocationResponse service to validate the revocation result		The verification result should be successful.		

ID	TC_DP_7
Assertion(s)	TA_DP_1, TA_DP_3
Test Purpose	Check the response of the valid delegation queried on DP
Pre-Test Conditions	Delegation Provider is accessible. Delegation is prepared by TUBITAK as Mandator as a signed and encrypted delegation in XML format. Details of the delegation is defined in Test Scenario for DP

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		Proxy is TUBITAK Teste	er	
		dpUrIAddress: to be de	efined when DP deployment is completed	
A valid delegation for TL		A valid delegation for T	UBITAK Tester is published in DP	
Step	Test Activity		Expected Result	
1	Minder-ATV sends HTTP request below to DP searchServer to query status of delegation https://dpUrlAddress/search?delegatio n{id}?&token={token}		DP service sends a response that the delegation is valid. To be defined when implemented.	

ID		TC_DP_8			
Assert	ion(s)	TA_DP_4			
Test P	urpose	Check the response that DP should return error if verifier sends more than one revocation query at the time			
Pre-Test Conditions Delegation Provider is a			accessible.		
		Delegation is prepared by TUBITAK as Mandator as a signed and encrypted delegation in XML format. Details of the delegation is defined in Test Scenario for DP			
		Proxy is TUBITAK Tester			
		dpUrIAddress: to be de	IpUrIAddress: to be defined when DP deployment is completed		
A valid delegation for TL			JBITAK Tester is published in DP		
Step	Test Activity		Expected Result		
1 Minder-ATV sends two revocation query at the same time.		nds two revocation me time.	Service returns error message.		
https://dpUrlAddress/search?delegatio n{idbfgbfgbgf}?&token={token} https://dpUrlAddress/search?delegatio n{iddddd}?&={token}		dress/search?delegatio 2&token={token} dress/search?delegatio token}	To be defined when implemented.		

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ID		TC_DP_9	DP_9			
Asserti	on(s)	TA_DP_1, TA_DP_5				
Test Pu	irpose	Check if a revoke comm	mand interface on DP is available			
Pre-Tes	st Conditions	Delegation Provider is a	accessible.			
Delegation is prepared encrypted delegation ir in Test Scenario for DF			by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined			
		Proxy is TUBITAK Teste	er			
		dpUrIAddress: to be de	efined when DP deployment is completed			
A valid delegation for T			JBITAK Tester is published in DP			
Step	Test Activity		Expected Result			
1	Mandator send to DP searchSe	s HTTP request below erver to query status of	DP service sends a response that the delegation is valid.			
	delegation https://dpUrlAd n{id}?&token={	dress/search?delegatio id}	To be defined when implemented.			
2 Mandator sends delegation Id (hash of delegation), certificate signed by mandator and revocation delegation to		s delegation Id (hash of rtificate signed by revocation delegation to	DP revokes the delegation and stores the revocation time with the revocation.			
			To be defined when implemented.			
3	Minder-ATV ex verifyRevocation validate the rev	ecutes onResponse service to vocation response	Verification should be successful			

ID		TC_DP_10				
Assertion(s)		TA_DP_1, TA_DP_6, TA_DP_7				
Test Purpose		Check revocation response when verifier sends a revocation query. Check the signed revocation response with the certificate that is issue by Mandator for the revocation purpose.			ation query. te that is issued	
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		Check if delegation id id hash of delegation.					
		Check if the response in certificates that is used	the response includes the delegation that is given to DP, the es that is used to sign and all certificates to build the trust chain.				
Pre-Te	st Conditions	 Delegation Provi Revoked delegation 	der is accessible. tion file is needed.				
Step	Test Activity	y Expected Result					
1	1 Verifier sends http request below searchServer to query status of delegation		DP searches revocation archive and prepares the response.				
	n{id}?&token={	id}	To be defined when implemented.				
2	DP sends resp	onse which is signed.	Verifier checks the response.				
			To be defined when implemented.				

ID		TC_DP_11			
Assertion(s)TA_DP_6, TA_DP_7					
Test PurposeCheck if the delegationDP.		Check if the delegation DP.	id is the hash of delegation when querying on		
Pre-Test Conditions Delegation Provider is Delegation does not ex Delegation does not ex		Delegation Provider is a Delegation does not exis	ccessible. st on DP		
Step	Test Activity		Expected Result		
1	Minder-ATV sends HTTP request below to DP searchServer to query status of delegation https://dpUrlAddress/search?delegatio n{id}?&token={id}		DP searches revocation archive and sends error message. To be defined when implemented.		

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ID		TC_DP_12		
Asserti	ion(s)	TA_DP_2, TA_DP_1		
Test Purpose Check that DP published		Check that DP publishe	s delegation key successfully	
Pre-Test Conditions Delegation Provider is a Encrypted delegation keep		Delegation Provider is a Encrypted delegation ke	ccessible. ey is needed.	
Step	Test Activity		Expected Result	
1	Client sends th key to publicati HTTP POST re address: https://dpUrlAd	e encyrpted delegation on server. equest to the following dress/1/publish_key	The service should return HTTP 201	

ID		TC_DP_13				
Assertion(s) TA_DP_1, TA_DP_8		TA_DP_1, TA_DP_8				
Test PurposeVerify that DP respondent not found		Verify that DP respond v not found	with an error/notification message if delegation is			
Pre-Test ConditionsDelegation Provider is aDelegation is prepared I encrypted delegation in in Test Scenario for DP			ccessible. by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined			
Step	Test Activity		Expected Result			
1	Mandator sends HTTP request below to DP searchServer to query status of delegation <u>https://dpUrIAddress/search?delegatio</u> <u>n{id}?&token={id}</u> id is the id that does not exist on DP		DP service sends a response that the delegation is not found for the intended id. To be defined when implemented.			

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8. References

LIGHTest. (2017, 04 28). *D2.3 – Requirements and Use Cases*. Fraunhofer Livelink: https://dms-prext.fraunhofer.de/livelink/livelink.exe?func=Il&objaction=overview&objid=20539492

LIGHTest. (2017, 02 28). *D2.14 – Reference Architecture.* Fraunhofer Livelink: https://dmsprext.fraunhofer.de/livelink/livelink.exe?func=ll&objaction=overview&objid=20534069

LIGHTest. (2017, 04 28). *D*3.3 – *DNS-based Publication of Trust Schemes*. Fraunhofer Livelink: https://dms-prext.fraunhofer.de/livelink/livelink.exe?func=ll&objaction=overview&objid=20539083

LIGHTest. (2017, 04 28). D3.4 – Discovery of Trust Scheme Publication Authorities. Fraunhofer Livelink: https://dms-

prext.fraunhofer.de/livelink/livelink.exe?func=ll&objaction=overview&objid=20531317

LIGHTest. (2017, 04 28). *D4.3 – DNS-based Publication of Trust Translation Schemes*. Fraunhofer Livelink: https://dmsprext.fraunhofer.de/livelink/livelink.exe?func=ll&objaction=overview&objid=20531524

LIGHTest. (2017, 04 28). *D4.4 – Discovery of Trust Translation Authorities*. Fraunhofer Livelink: https://dms-prext.fraunhofer.de/livelink/livelink.exe?func=ll&objaction=overview&objid=20538593

LIGHTest. (2017, 04 28). *D5.2 – Conceptual Framework for Delegations (2)*. Fraunhofer Livelink: https://dms-prext.fraunhofer.de/livelink/livelink.exe?func=ll&objaction=overview&objid=20816230

LIGHTest. (2017, 04 28). *D8.8 – Integration Testing Report (1)*. Fraunhofer Livelink: https://dms-prext.fraunhofer.de/livelink/livelink.exe?func=ll&objaction=overview&objid=21147387

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9. **Project Description**

LIGHTest project to build a global trust infrastructure that enables electronic transactions in a wide variety of applications

An ever increasing number of transactions are conducted virtually over the Internet. How can you be sure that the person making the transaction is who they say they are? The EU-funded project LIGHTest addresses this issue by creating a global trust infrastructure. It will provide a solution that allows one to distinguish legitimate identities from frauds. This is key in being able to bring an efficiency of electronic transactions to a wide application field ranging from simple verification of electronic signatures, over eProcurement, eJustice, eHealth, and law enforcement, up to the verification of trust in sensors and devices in the Internet of Things.

Traditionally, we often knew our business partners personally, which meant that impersonation and fraud were uncommon. Whether regarding the single European market place or on a Global scale, there is an increasing amount of electronic transactions that are becoming a part of peoples everyday lives, where decisions on establishing who is on the other end of the transaction is important. Clearly, it is necessary to have assistance from authorities to certify trustworthy electronic identities. This has already been done. For example, the EC and Member States have legally binding electronic signatures. But how can we query such authorities in a secure manner? With the current lack of a worldwide standard for publishing and querying trust information, this would be a prohibitively complex leading to verifiers having to deal with a high number of formats and protocols.

The EU-funded LIGHTest project attempts to solve this problem by building a global trust infrastructure where arbitrary authorities can publish their trust information. Setting up a global infrastructure is an ambitious objective; however, given the already existing infrastructure, organization, governance and security standards of the Internet Domain Name System, it is with confidence that this is possible. The EC and Member States can use this to publish lists of qualified trust services, as business registrars and authorities can in health, law enforcement and justice. In the private sector, this can be used to establish trust in inter-banking, international trade, shipping, business reputation and credit rating. Companies, administrations, and citizens can then use LIGHTest open source software to easily query this trust information to verify trust in simple signed documents or multi-faceted complex transactions.

The three-year LIGHTest project starts on September 1st and has an estimated cost of almost 9 Million Euros. It is partially funded by the European Union's Horizon 2020 research and innovation programme under G.A. No. 700321. The LIGHTest consortium consists of 14 partners from 9 European countries and is coordinated by Fraunhofer-Gesellschaft. To reach out beyond Europe, LIGHTest attempts to build up a global community based on international standards and open source software.

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The partners are ATOS (ES), Time Lex (BE), Technische Universität Graz (AT), EEMA (BE), G&D (DE), Danmarks tekniske Universitet (DK), TUBITAK (TR), Universität Stuttgart (DE), Open Identity Exchange (GB), NLNet Labs (NL), CORREOS (ES), University of Piraeus Research Center (GR) and Ubisecure (FI). The Fraunhofer IAO provides the vision and architecture for the project and is responsible for both, its management and the technical coordination. The Fraunhofer IAO provides the vision and architecture for both, its management and the technical coordination.

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