

D8.4

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1. Executive Summary

This document is the deliverable D8.4 "Conformance and Interoperability Testing Result 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 document presents the second iteration of the "Conformance and Interoperability Testing" and is built upon D8.3 Conformance and Interoperability Testing Result Report (1) where test assertions and normative specifications are derived from design and use case documentations. In this document, test cases that are derived from TSPA, TTA, and DP assertions that are given in D8.3. Results of the testing will be provided in the last iteration of the report.

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2. Document Information

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2.2 History

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0.1	14/01/2019	TUBITAK	Initial Version
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3.3 Table of Acronyms

API	Арр	Application Program Interface					
ATV		omatic Trust Verifier					
CC	Coi	Conformance Clause					
DNS	Doi	main Name System					
DNSSEC	Doi	main Name System	SECurity	extensions			
DP	Del	egation Publisher					
eIDAS	Ele	ctronic Identification,	Authent	ication and	trust (Sei	rvices)	
eT		ctronic transaction					
FR	Fur	nctional Requirement	t				
HTTP(S)	Нур	pertext Transfer Prot	ocol (Sed	cure)			
ISTQB	Inte	ernational Software T	esting Q	ualifications	Board		
MTDL		nder Test Definition L	<u> </u>	;			
M1	Mir	der END User ATV	Adapter				
M2	Mir	nder ATV Adapter					
NS	No	rmative Statement					
OASIS	٨d	vancing Open standa	ards for ir	nformation s	ociety		
PDF	Por	table Document For	mat				
RA	Ref	ference Architecture					
PTR	Poi	nter					
REST	Re	presentational State	Transfer	(service)			
RR	Res	source Record					
S/MIME		cure/Multipurpose Int	ernet Ma	ail Extension	IS		
SUT		stem Under Test					
ТА	Tes	st Assertion					
TP	Tru	ist Policy					
TPL		st Policy Language					
TSLTS	Tru	st Service Status Lis	t Technic	cal Specifica	ation		
TSL	Tru	st Service Status Lis	t				
TSP	Tru	Trust Service Provider					
TSPA	Trust Scheme Publication Authority						
TTA	Trust Translation Authority						
URI	Uniform Resource Identifier						
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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} will basically provide an infrastructure to realize the most important principles and driving factors of eIDAS on a global level.

Conformance testing, also known as compliance testing, is a methodology used in software engineering to ensure that a product, process, computer program or system meets a defined set of standards. In this task, we will test outputs of other WPs in order to see whether they conform to the proposed specifications and standards. Interoperability testing, on the other hand, verifies whether all the systems 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 Section 6 revisits the testing methodology given in D8.3. Section 6 presents the test cases for TSPA, TTA, and DP derived from conformance and interoperability test assertions of TSPA, TTA and DP. Finally, Section 7 concludes the deliverable.

4.2 Scope

Within the course of the LIGHTest project, conformance and interoperability testing for 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. D8.4 Conformance and interoperability testing report (2) is the second report of this series and focuses on defining test cases to perform conformance and interoperability testing of the LIGHTest components.

The main contents of this deliverable include test cases that are derived from normative statements and test assertions given in D8.3 according to the applied Minder Test Assertion Model. Test assertions and the testing environment architecture have been updated to enhance the execution of the test cases and reporting.

Section 5 content is updated in this deliverable to include the implementation of ATV-Minder and Minder Test Manager components for testing. Section 6 content is updated to include the derivation methodology of test cases from test assertions. Section 7 includes the test scenario and test cases for TTA, TSPA and DP components.

Results of the test executions will be provided in the last iteration of the report.

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5. Testing Architecture

The LIGHTest reference architecture (RA) is already given in Section Testing Architecture in D8.3. There has been an update on the Minder Testbed Applied Architecture in the sense that Minder Test Manager application and Minder-ATV are implemented for testing purposes.

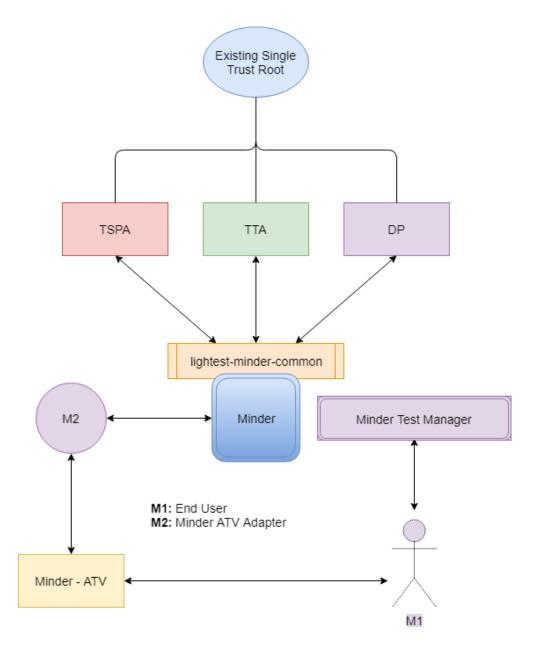


Figure 1 Minder Testbed Applied Architecture

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

In addition, features that support the management of test cases/suits and test executions have been 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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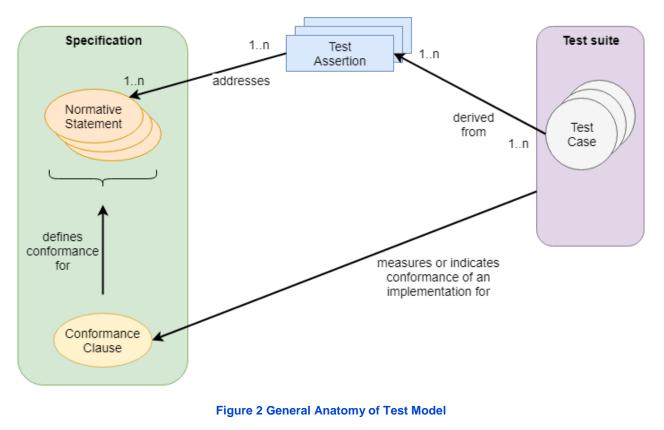


6. Testing Methodology

The main testing methodology is already described in D8.3 Section 6.

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.



6.1 Test Case Generation Guideline

Following the same methodology in D8.3 Section 6, 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.

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- 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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7. Conformance and Interoperability Test Assertions and Test Cases

This section lists the second round of test assertions for TSPA, TTA, and DP, and first round of test cases derived from test assertions TSPA, TTA, and DP for respectively. Test assertions that were extracted from the respective Conceptual Framework and Design deliverables of these components 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 elicitate test cases for conformance to these specifications.

For traceability purposes, the identifiers of the test was done using the following convention: **TC_LightestComponentName(TSPA,TTA,DP)_TestCaseID**

7.1 TSPA

7.1.1 TSPA Conformance Clauses

The conformance clauses are already provided in D8.3 TSPA Conformance Clauses section.

7.1.2 TSPA Normative Statements

The normative statements are already provided in D8.3 TSPA Normative Statements section. The only updated normative statement is given below:

NS ID	NS_TSPA_8
Reference	D3.3 Section 6.1
Description	 A TSPA is composed of a HTTP Server (Trust Scheme Provider) that contains: a. Signed Trust Lists b. Tuple-based (ordinal and Boolean included) representations of Trust Schemes, provided as pointer from Trust List and as additional information in the Trust List c. deleteService, publishService for trust scheme and trust list, getTrustSchemeService is available

7.1.3 TSPA Test Assertions

The test assertions are updated and given in this section.

TA ID Normative Source Target Prerequisite		⁻ SPA_1 TSPA_1 A					
Prescription Level	Mano	datory					
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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)
	Server Address Settings)

TA ID	TA_TSPA_2
Normative	NS_TSPA_1
Source	
Target	TSPA
Prerequisite	The TSPA DNS Name Server is up and running and TSPA contains published trust scheme membership declarations.
Prescription Level	Mandatory
Predicate	The RR responses to the TSPA scheme membership query (IssuerName, SchemeName, CertificateConstraints) are signed by a valid Zone Key.

TA ID	TA_TSPA_3
Normative	NS_TSPA_6, NS_TSPA_7
Source	
Target	TSPA
Prerequisite	The TSPA DNS Name Server is up and running and contains published trust scheme membership declarations in the form of PTR Records. 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 Normative Source	TA_TSPA_4 NS_TSPA_6, NS_TSPA_7, NS_TSPA_16
Target	TSPA
Prerequisite	The TSPA DNS Name Server is up and running and contains published scheme locations declarations in the form of URI Records. 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 Normative Source	TA_TSPA_5 NS_TSPA_6, NS_TSPA_7, NS_TSPA_17
Target Prerequisite	TSPA The TSPA DNS Name Server is up and running. The ATV has issued an IssuerName SchemeNameAssociation guery to the TSPA.
Prescription Level	Mandatory

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Predicate	The RR response to the IssuerName_SchemeNameAssociation query is a signed association and its signature validation is successful.
TA ID Normative Source	TA_TSPA_6 NS_TSPA_13, TA_TSPA_3
Target Prerequisite	TSPA The TSPA DNS Name Server is up and running and contains published trust scheme membership declarations in the form of PTR Records. The ATV has issued an IssuerName query to the TSPA.
Prescription	Mandatory
Level Predicate	The received DNS query is of the form _schemetrust.IssuerDomainName IN PTR
TA ID Normative Source	TA_TSPA_7 NS_TSPA_15, NS_TSPA_9, TA_TSPA_4
	TSPA
Target	
Prerequisite	The TSPA DNS Name Server is up and running and contains published trust scheme membership declarations in the form of PTR Records. The ATV has issued an SchemeNameLocation query to the TSPA.
Prescription	Mandatory
Level Predicate	The received DNS query is of the form _schemetrust.SchemeNameDomainName IN URI
TA ID Normative	TA_TSPA_8 NS_TSPA_18, TA_TSPA_8
Source	
Target Prerequisite	TSPA The TSPA DNS Name Server is up and running and contains published trust scheme membership declarations in the form of PTR Records. 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 Normative Source	TA_TSPA_09 NS_TSPA_14, NS_TSPA_12, NS_TSPA_10
Target	TSPA
Prerequisite	The TSPA DNS Name Server is up and running and contains published trust scheme membership declarations in the form of PTR

published trust scheme membership declarations in the form of PTR Records. The ATV has issued an IssuerName query to the TSPA.

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Prescription Level	Mandatory
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	NS_TSPA_14, NS_TSPA_12, NS_TSPA_10
Source	
Target	TSPA
Prerequisite	The TSPA DNS Name Server is up and running and contains published trust scheme membership declarations in the form of PTR Records. 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.

TA ID Normative	TA_TSPA_11 NS_TSPA_8
Source Target Prerequisite	TSPA The TSPA DNS Name Server is up and running and contains
-	published trust scheme membership declarations in the form of PTR Records. The ATV has issued an IssuerName query to the TSPA.
Prescription Level Predicate	Mandatory
Freuicate	A delete service should be provided by TSPA

TA ID Normative Source	TA_TSPA_12 NS_TSPA_6, NS_TSPA_7
Target	TSPA
	The TSPA DNS Name Server is up and running and contains published trust list declarations in the form of signed trust lists. The ATV has issued an 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.

7.1.4 TSPA Test Scenario

Electronic Signature Law of Turkey:

Turkey does not have a public trust list published under any domain presently. Therefore, the process described here is from an educated guess on how it should be accessed if it was

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published on a domain (turkey.lightest.nlnetlabs.nl) We use the eIDAS format as a template for Turkey also.

The trust verification for a certificate issued by an eIDAS qualified trust service is shown on tests. The name of the trust service is "eIDAS electronic signature trust service". It is assumed that there is a Root CA and 2 issuers under this CA (issuera and issuerb) It is assumed that the electronic transaction is simply a signed document containing an invoice prepared according to "urn:oasis:names:specification:ubl:schema:xsd:Invoice-2" schema.

It is signed with a certificate issued by the Turkey Trust Provider (A fictional trust provider), which is a qualified trust service provider for Turkey (signerA). Either the certificate contains the Issuer Alternative Name extension with a domain name value of **turkey.lightest.nlnetlabs.nl** or the issuer certificate (issuerA) used for signing the certificate contains the Subject Alternative Name with that domain name value.

In order to discover the trust scheme(s) this trust service is a member, the verifier will perform a DNS query for PTR records.

This indicates to the verifier that Turkey Trust Provider claims a membership with a trust scheme identified as *eidas.kamusm.gov.tr-example* (which is the fictional domain used by Turkey for their trusted list owned by Kamu SM in Turkey).

The verifier will have to discover the trust list for that via another DNS query. It should download that list and see if the issuer certificate (**signerA**) from the electronic transaction appears on that list.

The trust list is signed with "**Turkey Trust Provider CA TR**". The verifier will check whether the "**Turkey Trust Provider CA TR**" used for signing the trusted list is valid with SMIMEA record.

Assuming that all of this is checked out, the verifier now knows that the electronic transaction was signed by a certificate issued through the trust scheme: *eidas.kamusm.gov.tr-example.*

The published Trust Service Status List for Turkey includes the trust scheme memberships of the *eidas.kamusm.gov.tr-example...* Scheme. It includes the issuers that claims the membership for the *eidas.kamusm.gov.tr-example.*

From the signature part of *http://www.mindertestbed.org:8081/trust/TSL-XML.xml,* certificate is extracted, <ds:Signature> part is taken into consideration.

There will also be an invalid trust list for the eidas.kamusm.gov.tr-example trust scheme with

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http://www.mindertestbed.org:8081/trust/InvalidTSL-XML.xml

An invalid SMIMEA record will be defined on the DNS to check an invalid trust list validation.

A trust scheme under turkey.lightest.nlnetlabs.nl domain is to be used for boolean.eidas.kamusm.gov.tr-example

A trust scheme under turkey.lightest.nlnetlabs.nl domain is to be used for ordinallevelname.eidas.kamusm.gov.tr-example

A trust scheme under turkey.lightest.nlnetlabs.nl domain is to be used for *tuplesnameandbirth.eidas.kamusm.gov.tr-example*

A trust list that is to be used by deleteService is to be used with http://www.mindertestbed.org:8081/trust/TobedeletedTSL-XML.xml

A trust scheme under turkey.lightest.nlnetlabs.nl domain is to be used for verifying deleting service: *tobedeleted.eidas.kamusm.gov.tr-example*

7.1.5 TSPA Test Cases

This section includes the list of test cases and test case details.

7.1.5.1 TSPA Test Case List

Table 1 List of TSPA test cases

ID	Purpose
TC_TSPA_1	Check if TSPA-DNS server exists and is configured to be used by TSPA.
TC_TSPA_2	Verify that RR responses are signed by a valid Zone Key of DNS
TC_TSPA_3	Verify that RR response to the issuername is a PTR record and DNSSec validation is successfull
TC_TSPA_4	Verify that RR response to the issuername is a URI record and DNSSec validation is successfull
TC_TSPA_5	Verify that trust list, pointed on the URI RR record, signature validation is successful
TC_TSPA_6	Verify that an invalid trust list, pointed on the URI RR record, signature validation fails
TC_TSPA_7	Verify that received DNS query is of the form given in TA_TSPA_6
TC_TSPA_8	Verify that trust scheme and trust lists can be successfully retrieved from TSPA
TC_TSPA_9	Verify that a trust list for the given trust scheme can be published successfully
TC_TSPA_10	Verify that trust list published on TSPA validation fails in case of invalid
	certificate constraints

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TC_TSPA_11	Verify that a Boolean trust scheme can be successfully defined and published
	on TSPA
TC_TSPA_12	Verify that an ordinal trust scheme can be successfully defined and published
	on TSPA
TC_TSPA_13	Verify that trust schemes on TSPA can be successfully retrieved
TC_TSPA_14	Verify that received TSPA works in synchronization with DNS entries
TC_TSPA_15	Verify that delete service of TSPA for scheme name works successfuly
TC_TSPA_16	Verify that delete service of TSPA for trust-list works successfully
TC_TSPA_17	Verify that delete service of TSPA for trust-list works properly
TC_TSPA_18	Verify that delete service of TSPA for a trust scheme works in
	synchronization with DNS records.
TC_TSPA_19	Verify that delete service of TSPA for trust-list works in synchronization with
	DNS records.
TC_TSPA_20	Verify that tuple schemes can be defined and published on TSPA
	successfully.

7.1.5.2 TSPA Test Case Details

ID		TC_TSPA_1				
Assert	ion(s)	TA_TSPA_1				
Test P	urpose	Check if TSPA-DNS se TSPA.	rver exists and is configured to be used by			
Pre-Te	st Conditions	TSPA should already be DNS deployment should				
Step	Test Activity	Expected Result				
1	On the termina command: <i>dig lightest.nln</i>	l, 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 ;; ANSWER SECTION: lightest.nlnetlabs.nl. 3600 IN A 185.49.141.61			
2	HTTP PUT req https://lightest- dev.iaik.tugraz turkey.lightest.		The service should return HTTP 200 OK			

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3	On the terminal, type the following	; <<>> DiG 9.10.6 <<>> _scheme
	command:	turkey.lightest.nlnetlabs.nl PTR
	dig _schemetrust.	;; global options: +cmd
	turkey.lightest.nlnetlabs.nl PTR	;; 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			
Asser	tion(s)	TA_TSPA_2			
Test P	urpose	Verify that RR respons	es are signed by a valid Zone Key of DNS		
Pre-Te	est Conditions	TSPA DNS is up and running with DANE protocol enabled in the configured DNS			
Step	Test Activity	Expected Result			
1	command:	II, type the following etlabs.nl +noall	; <<>> DiG 9.10.6 <<>> lightest.nlnetlabs.nl +noall +comments ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 10833 ;; flags: qr rd ra aa; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1		

ID		TC_TSPA_3		
Assert	ion(s)	TA_TSPA_3		
Test P	urpose	Verify that RR response to the issuername is a PTR record and DNSSec validation is successfull		
Pre-Test 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 s Dublished with turkey lightest placetabs pl.domain pame in Distributest placetabs		NSSec extension should be running		
Step	Test Activity		Expected Result	
1	command: dig _scheme	il, type the following trust. <i>nlnetlabs.nl PTR</i>	; <<>> 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

ID		TC_TSPA_4			
Assert	ion(s)	TA_TSPA_4			
Test P	urpose	Verify that RR response DNSSec validation is su	e to the issuername is a URI record and uccessfull		
Pre-Te	st Conditions	TSPA should already be			
			INSSec extension should be running		
			ith eidas.kamusm.gov.tr-example should be		
	1	published with turkey.lig	ghtest.nlnetlabs.nl domain name in TSPA		
Step	Test Activity		Expected Result		
1		to TSPA the following	The service should return HTTP 200 OK		
	HTTP PUT req				
	https://lightest-				
		.at/tspa/api/v1/			
	turkey.lightest.nlnetlabs.nl/trust-list				
	with http://www.				
	XML.xml trust	l.org:8081/trust/TSL-			
2		I, type the following	; <<>> DiG 9.10.6 <<>> _schemetrust.		
2	command:	ii, type the following	eidas.kamusm.gov.tr-example URI		
	dig_scheme	trust	;; global options: +cmd		
		.gov.tr-example URI	;; Got answer:		
			;; ->>HEADER<<- opcode: QUERY, status: NOERROR,		
			id: 53761		
			;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY:		
			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_5
Assertion(s)	TA_TSPA_5

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Test P	urpose	Verify that trust list,poin successful	ted on the URI RR record, signature validation is		
Pre-Te	st Conditions	TSPA should already be DNS deployment with D A valid trust scheme: wi published with turkey.lig	e deployed and running DNSSec extension should be running ith <i>eidas.kamusm.gov.tr-example</i> should be <i>ghtest.nlnetlabs.nl</i> domain name in TSPA ed in TSPA (TC_TSPA_4 should be executed)		
Step	Test Activity		Expected Result		
1	On the termina command: dig _scheme	l, type the following trust. .gov.tr-example 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 ;; 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		
2	Minder-ATV parses the DNS query and Execute Minder-ATV downloadservice with http://www. mindertestbed.org:8081/trust/TSL- XML.xml parameter		1 http://www. mindertestbed.org:8081/trust/TSL-XML.xml The trust list should be downloaded and should be opened via an XML editor		
3	Execute Minde	r-ATV <i>verifyTrustList</i> rforms signature	The trust list verification should return TRUE		
4	command: dig_scheme	l, type the following trust. .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 ;; 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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ID		TC_TSPA_6		
Assert	ion(s)	TA_TSPA_5		
Test P	urpose	validation fails	ist list,pointed on the URI RR record, signature	
Pre-Test Conditions		TSPA should already be deployed and running DNS deployment with DNSSec extension should be running A valid trust scheme: with <i>eidas.kamusm.gov.tr-example</i> should be published with <i>turkey.lightest.nlnetlabs.nl</i> domain name in TSPA		
Step	Test Activity		Expected Result	
1	HTTP PUT req https://lightest- dev.iaik.tugraz. turkey.lightest.t with http://www mindertestbed.	at/tspa/api/v1/ nlnetlabs.nl/trust-list	The service should return HTTP 200 OK	
2	On the termina command: dig _scheme	I, type the following	; <<>> 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 http://www.mindertestbed.org:8081/trust/InvalidTSL- XML.xml	
3	and Execute M downloadservi	ce with http://www. org:8081/trust/TSL-	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	command: dig_scheme	l, type the following trust. .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 ;; 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>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
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_7		TC_TSPA_7	
Assert	ion(s)	TA_TSPA_6	
Test P	urpose	Verify that received DN	S query is of the form given in TA_TSPA_6
Pre-Te	st Conditions	TSPA should already be	
			NSSec extension should be running
			th eidas.kamusm.gov.tr-example should be
		published with <i>turkey.lig</i>	htest.nlnetlabs.nl domain name in TSPA
Step	Test Activity		Expected Result
1		to TSPA the following	The service should return HTTP 200 OK
	HTTP GET req		
	https://lightest-		
		.at/tspa/api/v1/scheme/t	
0	urkey.lightest.nlnetlabs.nl		
2	command:	II, type the following	; <<>> DiG 9.10.6 <<>> _scheme
	•••••••	truct	turkey.lightest.nlnetlabs.nl PTR
	dig_scheme	.nlnetlabs.nl PTR	;; global options: +cmd ;; Got answer:
	/luiney.iigiilesi		;; ->>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_schemetrust.eidas.kamusm.gov.tr-example

ID		TC_TSPA_8					
Assertion(s)		TA_TSPA_7					
Test Purpose		Verify that trust scheme and trust lists can be successfully retrieved from TSPA					
Pre-Test Conditio	ns	TSPA should already be deployed and running					
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	DNO depletime entitle D	NCCas automaion abould be muscing
		NSSec extension should be running
		th eidas.kamusm.gov.tr-example should be
		htest.nlnetlabs.nl domain name in TSPA
Step	Test Activity	Expected Result
1	Minder sends to TSPA the following	The service should return HTTP 200 OK with response
	HTTP GET request:	data including eidas.kamusm.gov.tr-example trust
	https://lightest-	scheme
	dev.iaik.tugraz.at/tspa/api/v1/scheme/t	
	urkey.lightest.nlnetlabs.nl	
2	On the terminal, type the following	; <<>> DiG 9.10.6 <<>> _scheme
	command:	turkey.lightest.nlnetlabs.nl PTR
	dig _schemetrust.	;; global options: +cmd
	/turkey.lightest.nlnetlabs.nl PTR	;; Got answer:
	,	;; ->>HEADER<<- opcode: QUERY, status: NOERROR,
		id: 53761
		;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0,
		ADDITIONAL: 1
		ADDITIONAL. I
		;; 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:	
	https://lightest-	
	dev.iaik.tugraz.at/tspa/api/v1/turkey.lig	
	htest.nlnetlabs.nl/trust-list with	
	http://www.	
	mindertestbed.org: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

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ID		TC_TSPA_9		
Assert	ion(s)	TA_TSPA_8		
	urpose	successfully	r the given trust scheme can be published	
Pre-Test Conditions		TSPA should already be deployed and running DNS deployment with DNSSec extension should be running A valid trust scheme: with <i>eidas.kamusm.gov.tr-example</i> should be published with <i>turkey.lightest.nlnetlabs.nl</i> domain name in 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 urkey.lightest.nlnetlabs.nl		The service should return HTTP 200 OK with response data including eidas.kamusm.gov.tr-example 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 ;; 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	HTTP PUT req https://lightest- dev.iaik.tugraz. htest.nlnetlabs http://www.	at/tspa/api/v1/turkey.lig .nl/trust-list with org:8081/trust/TSL-	The service should return HTTP 200 OK	
4	On the termina command: dig _scheme	I, type the following	; <<>> 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:	

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		_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
5	On the terminal, type the following command: <i>dig _schemetrust.</i> <i>/turkey.lightest.nlnetlabs.nl 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 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 successfull
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 successfull

ID		TC_TSPA_10		
Assert	tion(s)	TA_TSPA_8		
Test P	urpose	Verify that trust list published on TSPA validation fails in case of invalid certificate constraints		
Pre-Te	est Conditions	TSPA should already be deployed and running DNS deployment with DNSSec extension should be running A valid trust scheme: with <i>eidas.kamusm.gov.tr-example</i> should be published with <i>turkey.lightest.nlnetlabs.nl</i> 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		

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1	On the terminal, type the following command: dig _schemetrust. /turkey.lightest.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 ;; 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 command: <i>dig_schemetrust.</i> <i>/turkey.lightest.nlnetlabs.nl SMIMEA</i>	<pre>'Thtp://www.mindertestbed.org.soos/htust/TSL-XML.Xml ; <<>> 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</pre>
3	Execute Minder-ATV <i>verifyTrustList</i> 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 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

ID		TC_TSPA_11					
Assertion(s)	Assertion(s) TA_TSPA_9						
Test Purpose		Verify that a Boolean trust scheme can be successfully defined and published on TSPA					
Pre-Test Condition	e-Test Conditions TSPA should already be deployed and running						
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	DNS deployment with D	INSSec extension should be running
Step	Test Activity	Expected Result
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 .eidas.kamusm.gov.tr-example and Booleaneidas.kamusm.gov.tr-example should be available)
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 1 1 _schemetrust.eidas.kamusm.gov.tr-example _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 3 scheme names: <i>eidas.kamusm.gov.tr-example</i> <i>Boolean. eidas.kamusm.gov.tr-example</i>

ID		TC_TSPA_12	2				
Assert	ion(s)	TA_TSPA_10	TA_TSPA_10				
Test P	urpose	Verify that an published on		st scheme c	an be su	ccessfully de	efined and
Pre-Test Conditions TSPA should already be deployed and running DNS deployment with DNSSec extension should be running				ing			
Step	Test Activity			Expected	Result		
1	Iest Activity Minder sends to TSPA the following HTTP PUT request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ /turkey.lightest.nlnetlabs.nl/schemes with ordinallevelname.eidas.kamusm.gov.tr -example parameter		hemes	The service should return HTTP 200 OK. (Total 3 trust scheme with .eidas.kamusm.gov.tr-example and Booleaneidas.kamusm.gov.tr-example and ordinallevelname.eidas.kamusm.gov.tr-example should be available)			mple and e and
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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.eidas.kamusm.gov.tr-example _schemetrust.boolean.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 with no parameter	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_13			
Assertion(s)		TA_TSPA_10			
Test P	urpose	Verify that trust scheme	es on TSPA can be successfully retrieved		
Pre-Test Conditions		TSPA should already be deployed and running DNS deployment with DNSSec extension should be running			
Step	Test Activity		Expected Result		
1	Test Activity 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:		

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		_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
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: <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_14					
Assert	ion(s)	TA_TSPA_10					
	urpose st Conditior	Verify that rec IS TSPA should DNS deploym	already be	e deployed a	and runni	ing	
Step	Test Activ			Expected			3
1	On the tern command: dig _schen	ninal, type the follow	•	; <<>> DiG 9 <i>Turkey.lightea</i> ;; global optic ;; Got answer ;; ->>HEADE id: 53761 ;; flags: qr rd ADDITIONAL ; OPT PSEU ; EDNS: vers ; QUESTION _schemetru _schemetru _schemetru _schemetru	.10.6 <<>> st.nlnetlabs ons: +cmd r: R<<- opco ra; QUER .: 1 DOSECTIC ion: 0, flag SECTION: ust.turkey.li SECTION: ust.turkey.li ust.turkey.li ust.turkey.li ust.turkey.li ust.turkey.li	de: QUERY, sta Y: 1, ANSWER: ON: s:; udp: 4096 : ightest.nlnetlabs amusm.gov.tr-ex n.eidas.kamusm	tus: NOERROR, 1, AUTHORITY: 0, 5.nl IN PTR 6.nl IN PTR 1 1 kample
2	 On the terminal, login to DNS with ssh with ssh -i id_rsa tubitak@lightest.nlnetlabs.nl 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.t r-example trust scheme Close the ssh session 			DNS should I	be updated	1.	
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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>
---	--	---

ID		TC_TSPA_15	TC_TSPA_15						
Assert	ion(s)	TA_TSPA_11	TA_TSPA_11						
	urpose		Verify that delete service of TSPA for scheme name works successfuly						
Pre-Te	st Condition		TSPA should already be deployed and running DNS deployment with DNSSec extension should be running						
Step	Test Activ		ent with D			ouid be runni	ng		
1 1	On the tern command: dig _schen	ninal, type the follow		Expected Result ; <<>> 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					
2	HTTP DEL https://light dev.iaik.tug	ds to TSPA the follo ETE request: est- iraz.at/tspa/api/v1/ est.nlnetlabs.nl/scho		_schemetrust.boolean.eidas.kamusm.gov.tr-example The service should return HTTP 200 OK. eidas.kamusm.gov.tr-example Boolean. eidas.kamusm.gov.tr-example Should be deleted.				pie	
3 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: 0, 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:					
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ID		TC_TSPA_16	TC_TSPA_16					
Assert	ion(s)	TA_TSPA_11	TA_TSPA_11					
Test P	urpose	Verify that dele	ete service	e of TSPA fo	or trust-lis	t works succ	essfully	
	st Condition	TSPA should a DNS deployme A valid trust sc	TSPA should already be deployed and running DNS deployment with DNSSec extension should be running A valid trust scheme: <i>with eidas.kamusm.gov.tr-example</i> should be published with <i>turkey.lightest.nlnetlabs.nl</i> domain name in TSPA					
Step	Test Activ	ity		Expected I	Result			
1	HTTP PUT https://light dev.iaik.tug turkey.light with http://v mindertest	est [:] Iraz.at/tspa/api/v1/ est.nlnetlabs.nl/trusi vww. bed.org:8081/trust/T	t-list Tobedel	The service s	hould retur	n HTTP 200 OK		
2	etedTSL-XML.xml trust list parameter On the terminal, type the following command: dig_schemetrust. eidas.kamusm.gov.tr-example 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 ;; 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/TobedeletedTSL-XML.xml				
3	HTTP DEL https://light dev.iaik.tug	ds to TSPA the follo ETE request: est- iraz.at/tspa/api/v1/ est.nlnetlabs.nl/trust		The service s	hould retur	n HTTP 200 OK		
4	On the terminal, type the following command: dig _schemetrust. eidas.kamusm.gov.tr-example 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: 0, AUTHORITY: 0 ADDITIONAL: 1 ;; OPT PSEUDOSECTION:			us: NOERROR,	
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	; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. <i>eidas.kamusm.gov.tr-example IN</i> URI ;; ANSWER SECTION:
--	--

ID		TC_TSPA_17					
Assert	ion(s)	TA_TSPA_11					
	urpose	Verify that delete service of TSPA for trust-list works properly					
Pre-Te	st Conditions		e deployed and running DNSSec extension should be running				
Step	Test Activity		Expected Result				
1	Minder sends HTTP PUT re https://lightes dev.iaik.tugra turkey.lightes with http://ww mindertestbe	t- z.at/tspa/api/v1/ t.nlnetlabs.nl/trust-list	The service should return HTTP 200 OK				
2 On the termina command: dig_scheme		al, type the following	; <<>> 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: ; _schemetrust.eidas.kamusm.gov.tr-exampl.e IN URI 1 1 http://www. mindertestbed.org:8081/trust/TobedeletedTSL-XML.xml				
HTTP DELETE https://lightest- dev.iaik.tugraz.a			The service should return HTTP 200 OK				
4	command: dig _scheme. eidas.kamusr	al, type the following _trust. n.gov.tr-example 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: 0, 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:

ID		TC_TSPA_18					
Assert	ion(s)	TA_TSPA_11	TA_TSPA_11				
Test Pu	•	synchronization with D	Verify that delete service of TSPA for a trust scheme works in synchronization with DNS records.				
	st Conditior		TSPA should already be deployed and running DNS deployment with DNSSec extension should be running				
Step	Test Activi	Expected Result					
1	HTTP PUT https://light dev.iaik.tug turkey.light with	est- raz.at/tspa/api/v1/ est.nlnetlabs.nl/schemes d.eidas.kamusm.gov.tr-	The service s	hould retur	n HTTP 200 OK		
2	On the tern command: dig	inal, type the following	; <<>> 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.turkey.lightest.nlnetlabs.nl <i>IN</i> PTR ;; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PTR ;; schemetrust.turkey.lightest.nlnetlabs.nl IN PTR _schemetrust.turkey.lightest.nlnetlabs.nl IN PTR _schemetrust.tobedeleted.eidas.kamusm.gov.tr- example			us: NOERROR, , AUTHORITY: 0, nl <i>IN</i> PTR nl IN PTR	
3	HTTP DEL https://light dev.iaik.tug	ds to TSPA the following ETE request: est- raz.at/tspa/api/v1/ est /schemes	The service should return HTTP 404 Not Found with reasonable error message should be displayed				
4	On the tern command: dig	ninal, type the following trust.turkey.lightest.nlnetlab	; <<>> DiG 9. <i>eidas.kamusr</i> ;; global optio ;; Got answer	<i>n.gov.tr-exa</i> ns: +cmd	_schemetrust ample URI		
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;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl <i>IN</i> PTR ;; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PTR

ID		TC_TSPA_19	TC_TSPA_19					
Assert	ion(s)	TA_TSPA_11	TA_TSPA_11					
	urpose	Verify that dele with DNS reco	rds.				nchronization	
	st Conditio	DNS deployme	TSPA should already be deployed and running DNS deployment with DNSSec extension should be running					
Step	Test Activ		Expected Result					
1	HTTP PUT https://light dev.iaik.tug turkey.light with http://u mindertest	est- graz.at/tspa/api/v1/ est.nlnetlabs.nl/trust www. bed.org:8081/trust/7	t-list Tobedel	The service should return HTTP 200 OK				
2	mindertestbed.org:8081/trust/Tobedel etedTSL-XML.xml trust list parameter On the terminal, type the following command: dig _schemetrust. eidas.kamusm.gov.tr-example 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 ;; 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/TobedeletedTSL-XML.xml				
3	3 Minder sends to TSPA the following HTTP DELETE request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ turkey.lightest.nlnetlabs.nl/trust-list			The service s	hould retur	n HTTP 200 OK		
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4	On the terminal, type the following command: dig _schemetrust. eidas.kamusm.gov.tr-example 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: 0, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _schemetrust. eidas.kamusm.gov.tr-example IN URI ;; ANSWER SECTION:
5	Minder sends to TSPA the following HTTP DELETE request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ turkey.lightest.nlnetlabs.nl/trust-list	The service should return HTTP 404 Not Found with appropriate error message

Successfully. Pre-Test Conditions TSPA should already be deployed and running DNS deployment with DNSSec extension should be running Step Test Activity 1 Minder sends to TSPA the following	ID		TC_TSPA	TC_TSPA_20					
successfully. Pre-Test Conditions TSPA should already be deployed and running DNS deployment with DNSSec extension should be running Step Test Activity Expected Result 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 tuplesnameandbirth.eidas.kamusm.go v.tr-example parameter The service should return HTTP 200 OK. (Total scheme with tuplesnameandbirth.eidas.kamusm.go v.tr-example parameter 2 On the terminal, type the following command: dig_schemetrust. turkey.lightest.nlnetlabs.nl PTR ; <<>> DiG 9.10.6 <<>> _schemetrust. turkey.lightest.nlnetlabs.nl PTR 2 On the terminal, type the following command: dig_schemetrust. turkey.lightest.nlnetlabs.nl PTR ; global options: +cmd ; global options: +cmd ; Got answer: ; ->>HEADER<< opcode: QUERY, status: NOE id: 53761 ; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHO ADDITIONAL: 1 ; OPT PSEUDOSECTION: ; EDNS: version: 0, flags;; udp: 4096 ; QUESTION SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT Pocument name: D8.4 Conformance and Interoperability Testing Result Page: 37 of 80	Assertion(s)		TA_TSPA	TA_TSPA_12					
DNS deployment with DNSSec extension should be running Step Test Activity Expected Result 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 tuplesnameandbirth.eidas.kamusm.go v.tr-example parameter The service should return HTTP 200 OK. (Total scheme with tuplesnameandbirth.eidas.kamusm example should be available) 2 On the terminal, type the following command: dig_scheme_trust. turkey.lightest.nlnetlabs.nl PTR ; <<>> DiG 9.10.6 <<>> _scheme_trust. turkey.lightest.nlnetlabs.nl PTR 2 On the terminal, type the following command: dig_scheme_trust. turkey.lightest.nlnetlabs.nl PTR ; global options: +cmd ; Got answer: ; ->>HEADER<<- opcode: QUERY, status: NOE id: 53761 ;; flags: qr dra; QUERY: 1, ANSWER: 1, AUTHO ADDITIONAL: 1 2 OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: _scheme_trust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: _scheme_trust.turkey.lightest.nlnetlabs.nl IN PT 2 Decument name: D8.4 Conformance and Interoperability Testing Result Page: 37 of 80	Test Purpose		successfu	Verify that tuple schemes can be defined and published on TSPA successfully.					
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 tuplesnameandbirth.eidas.kamusm.go v.tr-example parameter The service should return HTTP 200 OK. (Total - scheme with tuplesnameandbirth.eidas.kamusm example should be available) 2 On the terminal, type the following command: dig_schemetrust. turkey.lightest.nlnetlabs.nl PTR ; <<>> DiG 9.10.6 <<>> _schemetrust. turkey.lightest.nlnetlabs.nl PTR ;; global options: +cmd i; Got answer: ; ->>HEADER<< - opcode: QUERY, status: NOE id: 53761 ;; flags: qr dr a; QUERY: 1, ANSWER: 1, AUTHO ADDITIONAL: 1 ; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT Document name: D8.4 Conformance and Interoperability Testing Result Report (2) Page: 37 of 80	Pre-Test Conditions								
HTTP PUT request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ /turkey.lightest.nlnetlabs.nl/schemes with tuplesnameandbirth.eidas.kamusm.go v.tr-example parameter scheme with tuplesnameandbirth.eidas.kamusm example should be available) 2 On the terminal, type the following command: dig_scheme_trust. turkey.lightest.nlnetlabs.nl PTR ; <<>> DiG 9.10.6 <<>> _schemetrust. turkey.lightest.nlnetlabs.nl PTR ; global options: +cmd turkey.lightest.nlnetlabs.nl PTR ; Got answer: ; ->>HEADER<<- opcode: QUERY, status: NOE id: 53761 ;; flags: qr dr a; QUERY: 1, ANSWER: 1, AUTHO ADDITIONAL: 1 ; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: _scheme_trust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: _scheme_trust.turkey.lightest.nlnetlabs.nl IN PT pocument name: Decument name: D8.4 Conformance and Interoperability Testing Result Report (2) Page: 37 of 80	Step			Expected Result					
2 On the terminal, type the following command: ; <<>> DiG 9.10.6 <<>> _schemetrust. dig _schemetrust. turkey.lightest.nlnetlabs.nl PTR ;; global options: +cmd turkey.lightest.nlnetlabs.nl PTR ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOE id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHO ADDITIONAL: 1 ; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: ; Schemetrust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT ; OPT PSEUTON: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: _schemetrust.turkey.lightest.nlnetlabs.nl IN PT ; ANSWER SECTION: <th>1</th> <th colspan="3">HTTP PUT request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ /turkey.lightest.nlnetlabs.nl/schemes with tuplesnameandbirth.eidas.kamusm.go</th> <th colspan="4"></th>	1	HTTP PUT request: https://lightest- dev.iaik.tugraz.at/tspa/api/v1/ /turkey.lightest.nlnetlabs.nl/schemes with tuplesnameandbirth.eidas.kamusm.go							
Report (2)	2	v.tr-example parameter On the terminal, type the following command: dig_schemetrust.			turkey.lightest ;; global optio ;; Got answer ;; ->>HEADEI id: 53761 ;; flags: qr rd i ADDITIONAL ; OPT PSEUE ; EDNS: versi ; QUESTION _schemetru ; ANSWER SI	<i>t.nlnetlabs.</i> ns: +cmd : R<<- opcoo ra; QUERY : 1 DOSECTIO ion: 0, flags SECTION: ist. <i>turkey.lig</i> ECTION:	nl PTR de: QUERY, stat : 1, ANSWER: 1 N: s:; udp: 4096 ghtest.nlnetlabs.	us: NOERROR, , AUTHORITY: 0, nl IN PTR	
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		_schemetrust.tuplesnameandbirth.eidas.kamusm.gov.t r-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 1 scheme name: <i>tuplesnameandbirth.eidas.kamusm.gov.tr-example</i>

7.2TTA

7.2.1 TTA Conformance Clauses

There is only one conformance clause:

CC_TTA_1: An implementation of TTA is conforming to TTA if it satisfies the conditions provided in the normative statements (NS_TTA_1-15) under the next section 7.2.2

7.2.2 TTA Normative Sources

Normative Sources given in D8.3 are not updated. For this reason, they will not be provided here.

7.2.3 TTA Test Assertions

TA ID Normative	TA_TTA_1 NS_TTA_1, NS_TTA_9
Source	
Target	TTA-DNS
Prerequisite	The name and details (characteristics) of the trust scheme are defined in the TSPA and received from TSPA
Prescription Level	Mandatory
Predicate	Depending on the operating system that TTA is working on, the IP address of the DNS server exists and can be listed on the configurations and is already set on the TCP/IP Properties (DNS Server Address settings).

TA ID Normative Source		A_TTA_2 IS_TTA_1, NS_TTA_9					
Target	TTA-	DNS					
Prerequisite	The r	TTA_1 name and details (characteristics) of the trust scheme are defined in the PA and received from TSPA				ed in the	
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Prescription Level	Mandatory
Predicate	TTA-DNS provides a means to secure DNS data by using digital signatures and public key cryptography. RR responses to the TTA translations query are signed by a valid Zone Key.
TA ID Normative Source	TA_TTA_3 TA_NS_1, NS_TTA_2, TA_NS_3, NS_TTA_4, NS_TTA_10, NS_TTA_11
Target	TTA-Trust Translation Publisher
–	The TTA DNS Name Server is up and running
Prescription	
Level	, ,
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_4
Normative Source	NS_TTA_1, NS_TTA_3, NS_TTA_5, NS_TTA_7
Target	TTA-DNS
Prerequisite	The TTA DNS Name Server is up and running
Prescription Level	Mandatory
Predicate	For Boolean trust scheme, the prefixes for the TTA DNS record is set as "_translate" for the aspect and "_trust" for the application with the following format and the received DNS query form is:
	;; 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_gualifiedTimesta
	mpEidas1.tpl
	_translatetrust.etimestamp.eidas.eu. IN URI https://lightest.eu/ttl_qualifiedTimesta mpEidas1.xml

TA ID	TA_TTA_5
Normative	TA_NS_1, TA_NS_3, NS_TTA_4
Source	
Target	TTA-DNS
Prerequisite	The TTA DNS Name Server is up and running
	The names of the assurance levels just published by the TSPA have to be already retrieved from the TSPA by ATV

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Prescription Level	Mandatory				
Predicate	For Ordinal&Tuple Trust Scheme, the prefixes for the TTA DNS record are set as _translate" for the aspect and "_trust" for the application and the assurance level obtained from TSPA for the trust scheme) with the following format and the received DNS query form is :				
	;; 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_qualifiedSealEid asl.tpl				
	_translatetrust.qualified.eseal.eidas.eu. IN URI https://lightest.eu/ttl_qualifiedSealEid asl.xml				

TA ID Normative Source	TA_TTA_6 NS_ TTA_2, NS_ TTA_3, NS_ TTA_4, NS_ TTA_5
Target Prerequisite	TTA-Trust Translation Provider The TTA DNS Name Server is up and running
Prescription Level	Mandatory
Predicate	Trust Translation Provider provides a file for each recognized trust level with XML and TPL formats for the trust scheme. 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 sequivalents to the one requested with levels equivalents to the one requested with level name, trust scheme name and TPL description.

TA ID	TA_TTA_7
Normative Source	NS_TTA_1, NS_TTA_3, NS_TTA_4, NS_TTA_8, NS_TTA_9
Target Prerequisite	TTA The TTA DNS Name Server is up and running
Prescription Level	Mandatory

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Predicate	For Boolean trust scheme, TTA-DNS checks whether the certificate used for signing the translation files is valid according with 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 record<="" th=""></smimea>

TA ID	TA_TTA_8
Normative	NS_TTA_1, NS_TTA_3, NS_TTA_4, NS_ TTA_8, NS_TTA_9
Source	
Target	TTA
Prerequisite	The TTA DNS Name Server is up and running
Prescription	Mandatory
Level	
Predicate	For Ordinal&Tuple trust scheme, TTA-DNS checks whether the certificate used for signing the translation files is valid according with 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 Normative Source	TA_TTA_9 NS_ TTA_6, NS_ TTA_8, NS_TTA_9, NS_TTA_14
Target	ТТА
	The TTA DNS Name Server is up and running Trust translation lists are already defined 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	Mandatory
Predicate	Trust translation list documents, XML or TPL formats, are signed by the TTA with X.509 certificates.

TA ID Normative Source	TA_TTA_10 NS_TTA_15
Target	TTA

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Prerequisite	The TTA DNS Name Server is up and running The TTA should return the signed trust translation lists
Prescription Level	Mandatory
Predicate	TTA-DNS should provide certificate constraints to use for the verification of the translation list signature.
TA ID	TA_TTA_11
Normative	NS_TTA_10
Source	
Target	TTA
Prerequisite	The TTA DNS Name Server is up and running
	The TTA should return the signed trust translation lists
Prescription	Mandatory
Level	
Predicate	TTA should provide a delete service to delete translations

7.2.4 TTA Test Scenario

Turkey Trust Provider has negotiated with an EU General Trust Provider on whether their schemes trust each other, and in what way. The outcomes of these negotiations are then provided to the TTA, which represents the translation scheme for automated processing in LIGHT^{est}. This means the TTA becomes a function that allows the interoperability of trust schemes published by different entities, even across different trust domains, by defining the relation between the trust scheme levels.

7.2.4.1 Discovery of the translation list for a boolean trust scheme

Agreement details:

Source Trust Scheme: *timestamp.eidas.kamusm.gov.tr-example* with qualified assurance level Target Trust Scheme: *timestamp.eidas.eu* with qualified assurance level. For this translation, there exists a translation list with TPL and XML formats on TTA. The translation is defined as follows:

{ "agreement": {

"name": "test-agreement", "status": "active",

"creation-date": "2018-08-10",

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"leaving-date": "2019-08-10",



```
"activation-date": "2018-08-10",
```

"source": {

"level": "qualified",

"name": " timestamp.eidas.kamusm.gov.tr-example",

"provider": "Turkey Trust Provider",

"params": [{

"name": "param1-name",

"value": "param1-value" },

{ "name": "param2-name",

"value": "param2-value"}]},

"target": {

"level": "qualified",

"name": " timestamp.eidas.eu ",

"provider": "EU Trust Provider",

"params": [{

"name": "param3-name",

"value": "param3-value"},

{ "name": "param4-name",

"value": "param5-value"}]}} }

A translation with an invalid translation list is defined on TTA "invalid-agreement" with the following translation lists: *http://www.mindertestbed.org:8081/ttl/ttl_invalidqualifiedTimestampEidas1.tpl* and *http://www.mindertestbed.org:8081/ttl/ttl_invalidqualifiedTimestampEidas1.xml*

7.2.4.2 Discovery of the translation list for an ordinal trust scheme

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The electronic eSeal trust service in the eIDAS trust scheme provides two levels of trust, namely, Advanced and Qualified.

A translation called "test-agreement-ordinal" translation is defined on TTA. The URI of the translation is <u>http://www.mindertestbed.org:8081/tta//eIDAS_eSeal.xml</u>

A query is sent to the TTA to know about its equivalent levels of **eseal**.*eidas*.*kamusm.gov.trexample* for qualified level name in other trust schemes. The verifier needs to check this claim by locating the trust translation declaration.

The Evidence Record trust service in the eIDAS trust scheme provides two levels of trust, namely, High and Low.

A query is sent to the TTA to know about its equivalent levels of **evidence**.*eidas*.*kamusm.gov.trexample* for qualified level name in other trust schemes. The verifier needs to check this claim by locating the trust translation declaration.

Since the contents of the files are signed, SMIMEA query is sent for certificate validation check.

A translation with an invalid translation list is defined on TTA "invalid-agreement-ordinal" with the following translation lists: http://www.mindertestbed.org:8081/ttl/ttl_invalidlowevidenceEidas1.tpl and http://www.mindertestbed.org:8081/ttl/ttl_invalidlowevidenceEidas1.xml

7.2.4.3 Discovery of the translation list for a tuple trust scheme Definition of tuple-based trust scheme in the TSPA should be: (attribute name, attribute value) A new "test-agreement-tuple" translation is defined.

STORK AQAA assigns an attribute quality assurance level to a group of attributes provides as part of an electronic ID. These assurance levels are derived from both the quality assurance level of the eID itself as well as the maximum of the quality assurance levels of each of the attributes in the group. (1-4 AQAA Level)

A fictional eID scheme eid.kamusm.gov.tr-example defines an attribute group name-and-year-ofbirth that contains the attributes for the name and year of birth of the holder of the eID.

It constructs the domain name to query as _translate._trust.name-and-year-ofbirth.kamusm.gov.tr-example and queries for URI records.

A translation with an invalid translation list is defined on TTA "invalid-agreement-tuple" with the following translation lists: *http://www.mindertestbed.org:8081/ttl/invalidname-and-year-of-birth/ttl-*

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1.tpl and http://www.mindertestbed.org:8081/ttl/invalidname-and-year-of-birth/ttl-1.xml

7.2.5 TTA Test Cases

This section includes the test case list and test case details.

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.

7.2.5.1 TTA Test Case List

Table 2 List of TTA test cases

ID	Purpose
TC_TTA_1	Check if TSPA-DNS server exists and is configured to be used by TTA.
TC_TTA_2	Verify that RR responses are signed by a valid Zone Key of DNS
TC_TTA_3	Verify that TTA published more than one translation schemes for a boolean
	trust scheme
TC_TTA_4	Verify that TTA published more than one translation schemes for an ordinal trust scheme
TC_TTA_5	Verify that TTA published more than one translation schemes for a tuple trust scheme
TC_TTA_6	Verify that RR response to the issuername is a URI record for a boolean scheme and DNSSec validation is successfull
TC_TTA_7	Verify that RR response to the issuername is a URI record for ordinal schemes and DNSSec validation is successfull
TC_TTA_8	Verify that TTA published more than one translation schemes for a tuple trust scheme
TC_TTA_9	Check that the verification result of translation list signature is successfull for a boolean trust scheme
TC_TTA_10	Check that the verification result of translation list signature is successfull for a ordinal trust scheme
TC_TTA_11	Check that the verification result of translation list signature is successfull for a tuple trust scheme
TC_TTA_12	Verify that an invalid trust list, pointed on the URI RR record, signature validation fails for boolean trust scheme
TC_TTA_13	Verify that an invalid trust list, pointed on the URI RR record, signature validation fails for ordinal trust scheme
TC_TTA_14	Verify that an invalid trust list, pointed on the URI RR record, signature validation fails for tuple trust scheme
TC_TTA_15	Verify that the certificate provided by DNS is not valid and translation list verification fails due to certificate validation
TC_TTA_16	Verify that received TTA works in synchronization with DNS entries
TC_TTA_17	Verify that delete service of TTA for scheme name works properly
TC_TTA_18	Verify that delete service of TTA for scheme name works properly
TC_TTA_19	Verify that delete service of TTA for scheme name works properly

7.2.5.2 TTA Test Case Details

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ID		TC_TTA_1			
Assert	ion(s)	TA_TTA_1			
Test P			ver exists and is configured to be used by TTA	۹.	
Pre-Te	st Conditions	TTA should already be			
		DNS deployment should	be available according to Test Scenario for TTA section		
Step	Test Activity	Test inputs are generation	Expected Result		
1		I, type the following	; <<>> DiG 9.10.6 <<>> lightest.nlnetlabs.nl		
	command:		;; global options: +cmd		
	dig lightest.nln	etlabs.nl	;; Got answer:		
			;; ->>HEADER<<- opcode: QUERY, status: NOERROR	,	
			id: 8688 ;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY:	0	
			ADDITIONAL: 1	0,	
			;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096		
			;; QUESTION SECTION:		
			;lightest.nlnetlabs.nl. IN A		
			;; ANSWER SECTION:		
			lightest.nlnetlabs.nl. 3600 IN A 185.49.141.61		
2	Minder sends to TTA the following		The service should return HTTP 200 OK		
	HTTP PUT request:				
	http://tta-				
	Translation	0/ttaFM/mng/rsc/create			
		ement" Boolean trust			
		lation definition is given			
	in Test Scenari				
4	On the termina command:	I, type the following	; <<>> DiG 9.10.6 <<>> _translatetrust.		
	dig _translate.	trust	turkey.lightest.nlnetlabs.nl URI; global options: +cmd		
		nlnetlabs.nl URI	;; Got answer:		
			;; ->>HEADER<<- opcode: QUERY, status: NOERROR	.,	
			id: 53761		
			;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: ADDITIONAL: 1	0,	
			;; 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 UI	RI	
			http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimes	sta	
			mpEidas1.tpl		

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	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 mpEidasN.xml

ID		TC_TTA_2		
Assert	ion(s)	TA_TTA_2		
Test P	urpose	Verify that RR response	ses are signed by a valid Zone Key of DNS	
Pre-Te	st Conditions			
Step	Test Activity	Expected Result		
1	command:	al, type the following etlabs.nl +noall	; <<>> DiG 9.10.6 <<>> lightest.nlnetlabs.nl +noall +comments ;; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 10833 ;; flags: qr rd ra aa; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1	

ID		TC_TTA_3	
Assert	ion(s)	TA_TTA_3	
Test Pu	urpose		ed more than one translation schemes for a
		boolean trust scheme	
Pre-Te	st Conditions	TTA should already be	
		DNS deployment with D	NSSec extension should be running
Step	Test Activity		Expected Result
1		o TTA the following	The service should return HTTP 200 OK
	HTTP PUT req	uest:	
	http://tta-		
		0/ttaFM/mng/rsc/create	
	Translation		
	with "test-agreement" Boolean trust		
		lation definition is given	
	in Test Scenari		
2		o TTA the following	The service should return HTTP 200 OK. The return
	HTTP GET req	uest:	JSON value should include the translation information
	<u>http://tta-</u>		given in the Test Scenarion for TTA "test-agreement"
	lightest.eu:8080/ttaFM/mng/rsc/getTra		
	<u>nslation</u>		
3	with "test-agreement"		Line DiC 0.10 Grant translate trust
3	3 On the terminal, type the following command:		; <<>> DiG 9.10.6 <<>> _translatetrust.
	dig _translate.	trust	turkey.lightest.nlnetlabs.nl URI; global options: +cmd
		_nlnetlabs.nl URI	:: Got answer:
	iurrey.ligiilesi.l		"GUL ANSWEL

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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_qualifiedTimesta mpEidas1.tpl 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
http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.xml

ID		TC_TTA_4	
Assert	tion(s)	TA_TTA_3	
Test P	urpose	Verify that TTA publishe ordinal trust scheme	ed more than one translation schemes for an
	est Conditions	TTA should already be DNS deployment with D	DNSSec extension should be running
Step	Test Activity		Expected Result
1	HTTP PUT req http://tta- lightest.eu:808 Translation with "test-agree trust scheme. given in Test S	<i>O/ttaFM/mng/rsc/create</i> ement-ordinal" Ordinal Franslation definition is cenario for TTA	The service should return HTTP 200 OK
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	3 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

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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: ;_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 as1.xml

ID		TC_TTA_5	
Assert	ion(s)	TA_TTA_3	
Test P	urpose		ed more than one translation schemes for a tuple
		trust scheme	
Pre-Te	st Conditions	TTA should already be	
		DNS deployment with D	INSSec extension should be running
Step	Test Activity		Expected Result
1	Minder sends t	o TTA the following	The service should return HTTP 200 OK
	HTTP PUT req	uest:	
	http://tta-		
		0/ttaFM/mng/rsc/create	
Translation			
		ement-tuple" tuple trust	
		lation definition is given	
	in Test Scenari		
2		o TTA the following	The service should return HTTP 200 OK. The return
	HTTP GET rec	uest:	JSON value should include the translation information
	<u>http://tta-</u>		given in the Test Scenario for TTA "test-agreement-tuple"
		0/ttaFM/mng/rsc/getTra	
<u>nslation</u>			
	with "test-agreement-ordinal"		
3		I, type the following	; <<>> DiG 9.10.6 <<>> _translatetrust.
	command:		turkey.lightest.nlnetlabs.nl URI;
	dig_translate.		global options: +cmd
	turkey.lightest.	nlnetlabs.nl URI	;; Got answer:

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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/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-		
<u>birth/ttl-1.tpl</u>		
_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- birth/ttl-2.tpl</u>		

ID		TC_TTA_6	
Assert	ion(s)	TA_TTA_4	
Test PurposeVerify that RR response to the issuername is a URI record for a boolean scheme and DNSSec validation is successfull			
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"			
Step	Test Activity		Expected Result
1	Step Test Activity 1 Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation with with "test-agreementagreement" 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 mpEidasN.tpl

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		http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.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 mpEidasN.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.tpl

ID		TC_TTA_7			
Assert	tion(s)	TA_TTA_5, TA_TTA_6			
Test Purpose Verify that RR response to the issuername is a URI record for schemes and DNSSec validation is successfull					
Pre-Test ConditionsTTA should already be deployed and running DNS deployment with DNSSec extension should be running Published trust translation list declarations are available for "test- agreement-ordinal"			NSSec extension should be running		
Step	Test Activity		Expected Result		
1	HTTP GET req http://tta- lightest.eu:808 nslation with "test-agree trust scheme.]	o TTA the following juest: <i>0/ttaFM/mng/rsc/getTra</i> ement-ordinal" Ordinal Franslation definition is cenario 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		

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		http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid asN.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 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_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 http://www.mindertestbed.org:8081/ttl/ttl_qualifiedSealEid as1.xml

ID		TC_TTA_8				
Assert	ion(s)	TA_TTA_5, TA_TTA_6				
Test P	urpose	Verify that TTA published more than one translation schemes for a tuple trust scheme				
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-tuple"				
Step	Test Activity	Expected Result				

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1	Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation with "test-agreement-tuple" tuple trust scheme. Translation definition is given in Test Scenario for TTA	The service should return HTTP 200 OK. The following translation files should be included: <i>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.xml http://www.mindertestbed.org:8081/ttl/name-and-year-of-birth/ttl-2.xml</i>
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-tuple"	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-tuple"
3	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/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 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.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.xml

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ID		TC_TTA_9	
Assert	ion(s)	TA_TTA_10, TTA_9	
Test P	urpose		on result of translation list signature is
Dro-To	st Conditions	successfull for a boolea	
FIC-IC	St Conditions		NSSec extension should be running
			est-agreement scheme name is defined on TTA
Step	Test Activity		Expected Result
1	On the termina command:	l, type the following	; <<>> DiG 9.10.6 <<>> _translatetrust. turkey.lightest.nlnetlabs.nl URI;
	dig _translate.	trust.	global options: +cmd
		nlnetlabs.nl URI	;; Got answer:
			;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761
	i ; /		;; 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 mpEidasN.xml
2	Minder-ATV pa and Execute M	irses the DNS query linder-ATV	The trust lists should be downloaded and should be opened via an XML editor
		ce for the following	
	translation lists	dertestbed.org:8081/ttl/	
		iestampEidas1.tpl	
		dertestbed.org:8081/ttl/	
		estampEidasN.tpl	
		dertestbed.org:8081/ttl/	
		estampEidas1.xml dertestbed.org:8081/ttl/	
		nestampEidasN.xml	
		•	
3		r-ATV verifyTrustList rforms signature	The trust list verification should return TRUE
	validation	nonna signalure	

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4	On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl SMIMEA	; <<>> 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			
Assert	ion(s)	TA_TTA_10, TA_TTA_	7, TA_TTA_9		
Test P	urpose	Check that the verificati successfull for a ordinal	on result of translation list signature is I trust scheme		
Pre-Te	st Conditions		deployed and running DNSSec extension should be running test-agreement-ordinal scheme name is defined		
Step	Test Activity		Expected Result		
1	On the termina command: dig _translate.	al, 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 asN.tpl _ translatetrust.qualified.eseal.eidas.kamusm.gov.tr- example IN URI		
Document	t name: D8	4 Conformance and Interoperability T	Sesting Result Page: 55 of 80		

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		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 parses the DNS query and Execute Minder-ATV downloadservice for the following translation lists: http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedSealEidas1.tpl http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedSealEidasN.tpl http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedSealEidas1.xml http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedSealEidas1.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 IN SMIMEA ;; ANSWER SECTION: _translate_trust. turkey.lightest.nlnetlabs.nl IN SMIMEA (3 0 1 0) with the full certificate

ID		TC_TTA_11	
Assert	ion(s)	TA_TTA_10, TA_TTA_8	
Test P	urpose	Check that the verification result of translation list signature is successfull for a tuple trust scheme	
Pre-Test Conditions		TTA should already be deployed and running DNS deployment with DNSSec extension should be running A valid translation with test-agreement-tuple scheme name is defined on TTA	
Step	Test Activity	Expected Result	

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1	On the terminal type the following	
1	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
2	Minder-ATV parses the DNS query and Execute Minder-ATV downloadservice for the following	The trust lists should be downloaded and should be opened via an XML editor
	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	
3	Execute Minder-ATV verifyTrustList	The trust list verification should return TRUE
	service that performs signature	
	validation	
4	On the terminal, type the following	; <<>> DiG 9.10.6 <<>> _translatetrust.
	command:	turkey.lightest.nlnetlabs.nl SMIMEA
	dig _translatetrust.	;; global options: +cmd
	turkey.lightest.nlnetlabs.nl SMIMEA	;; 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 SMIMEA
		;; ANSWER SECTION:
		_translate_trust. turkey.lightest.nlnetlabs.nl IN SMIMEA
		(3 0 1 0) with the full certificate

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ID		TC_TTA_12		
Assert	ion(s)	TA_TTA_9		
Test P	urpose	Verify that an invalid tru validation fails for boole	st list,pointed on the URI RR record, signature an trust scheme	
Pre-Te	st Conditions	TTA should already be deployed and running DNS deployment with DNSSec extension should be running There exists an translation agreement "invalid-agreement" that include an invalid trust list for a boolean trust scheme		
Step	Test Activity		Expected Result	
1	Minder sends t HTTP GET req http://tta- lightest.eu:808 nslation	o TTA the following juest: 0/ttaFM/mng/rsc/getTra greement" parameter	The service should return HTTP 200 OK. The following translations should be listed: http://www.mindertestbed.org:8081/ttl/ttl_invalidqualifiedTi mestampEidas1.tpl http://www.mindertestbed.org:8081/ttl/ttl_invalidqualifiedTi mestampEidas1.xml	
2	command: dig_translate	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 <i>invalidqualifiedTimestampEidas1.tpl</i> <i>http://www.mindertestbed.org:8081/ttl/ttl_invalidqualifiedTi</i> <i>mestampEidas1.xml</i>	
3	and Execute N downloadservi files: invalidqualified http://www.min	arses the DNS query linder-ATV ce with the following ITimestampEidas1.tpl dertestbed.org:8081/ttl/ fiedTimestampEidas1.x	The trust list should be downloaded and should be opened via an XML editor	
4		r-ATV verifyTrustList rforms signature	The trust list verification should return FALSE	

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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 successfull

ID		TC_TTA_13	3				
Assert	ion(s)	TA_TTA_9,	TA_TTA_07	_07			
Test P	urpose		Verify that an invalid trust list,pointed on the URI RR record, signature validation fails for ordinal trust scheme				rd, signature
Pre-Te	st Condition	DNS deploy There exists	TTA should already be deployed and running DNS deployment with DNSSec extension should be running There exists an translation agreement "invalid-agreement-ordinal" the includes an invalid trust list for a ordinal trust scheme				
Step	Test Activ	ity		Expected I	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 ceEidas1.tpl</u> http://www.mindertestbed.org:8081/ttl/ttl_invalidloweviden ceEidas1.xml			
2	On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI			turkey.lightest global options ;; Got answer ;; ->>HEADEF id: 53761 ;; flags: qr rd i ADDITIONAL ;; OPT PSEUF ; EDNS: versi ;; QUESTION	:.nInetlabs. :: +cmd : R<<- opcoo ra; QUERY : 1 DOSECTIO on: 0, flags SECTION	de: QUERY, stat : 1, ANSWER: 1 DN: ::; udp: 4096	us: NOERROR,
Document	t name:	D8.4 Conformance and Report (2)	Interoperability Te	sting Result	Page:	59 of 80	(*)
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		;; ANSWER SECTION: <u>http://www.mindertestbed.org:8081/ttl/ttl_invalidloweviden</u> <u>ceEidas1.tpl</u> http://www.mindertestbed.org:8081/ttl/ttl_invalidloweviden
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	ceEidas1.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: dig _translatetrust. turkey.lightest.nlnetlabs.nl SMIMEA	; <<>> 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_14		
Assert	ion(s)	TA_TTA_9, TA_TTA_08		
Test P	urpose	ose Verify that an invalid trust list,pointed on the URI RR record, signature validation fails for tuple 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-tuple" that includes an invalid trust list for a tuple trust scheme		
Step	Test Activity	Expected Result		

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		1
1	Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation with "invalid-agreement-tuple" parameter	The service should return HTTP 200 OK. The following translations should be listed: <u>http://www.mindertestbed.org:8081/ttl/invalidname-and-</u> <u>year-of-birth/ttl-1.tpl</u> http://www.mindertestbed.org:8081/ttl/invalidname-and- year-of-birth/ttl-1.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: <i>http://www.mindertestbed.org:8081/ttl/invalidname-and-</i> <i>year-of-birth/ttl-1.tpl</i> <i>http://www.mindertestbed.org:8081/ttl/invalidname-and-</i> <i>year-of-birth/ttl-1.xml</i>
3	Minder-ATV parses the DNS query and Execute Minder-ATV downloadservice with the following files: http://www.mindertestbed.org:8081/ttl/i nvalidname-and-year-of-birth/ttl-1.tpl http://www.mindertestbed.org:8081/ttl/i nvalidname-and-year-of-birth/ttl-1.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 ;; OPT PSEUDOSECTION:

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		; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: _translatetrust.turkey.lightest.nlnetlabs.nl <i>IN</i> SMIMEA ;; ANSWER SECTION: _ <i>translatetrust turkey.lightest.nlnetlabs.nl 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_15				
Assert	ion(s)	TA_TTA_09, TA_TTA_	08			
	urpose	Verify that the certificate provided by DNS is not valid and translation list verification fails due to certificate validation				
	st Conditions	DNS deployment with D A valid trust list URI rec An SMIMEA record incl	TSPA should already be deployed and running DNS deployment with DNSSec extension should be running A valid trust list URI record 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	command: dig _translate.	al, 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_qualifiedTimesta mpEidas1.tpl http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.tml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml			
2	On the termina command:	al, type the following	; <<>> DiG 9.10.6 <<>> _schemetrust. eidas.kamusm.gov.tr-example SMIMEA ;; global options: +cmd			

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	dig _schemetrust. /turkey.lightest.nlnetlabs.nl SMIMEA	;; 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>eidas.kamusm.gov.tr-example IN</i> SMIMEA
3	Execute Minder-ATV <i>verifyTrustList</i> 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	;; ANSWER SECTION: _schemetrust.eidas.kamusm.gov.tr-example IN SMIMEA (3 0 1 0) with the full certificate 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

ID		TC_TTA_16			
Assert	ion(s)	TA_TTA_1, TA_TTA_2			
Test P	urpose	Verify that received TT	A works in synchronization with DNS entries		
Pre-Te	st Conditions		TTA should already be deployed and running DNS deployment with DNSSec extension should be running		
Step	Test Activity		Expected Result		
1	command: dig _translate	nInetlabs.nl URI for	; <<>> 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		

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		;; 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
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: <i>vim lightest.nlnetlabs.nl</i> Delete the corresponding record with turkey.lightest.nlnetlabs.nl and http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidas1.tpl http://www.mindertestbed.org:8081/ttl/ ttl_qualifiedTimestampEidasN.tpl Close the ssh session	DNS should be updated.
3	Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation	The service should return HTTP 200 OK where it contains the 2 translation files http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.xml

ID		TC_TTA_17		
Assertio	TA_TSPA_7			
Test Pur	Test Purpose Verify that delete service of TTA for scheme name works properly			
Pre-Test Conditions TSPA should already be deployed and running				
		DNS deployment with DNSSec extension should be running		
A		A translation with "test-agreement" should be already defined on TTA		
Step 1	Test Activity	Expected Result		

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1	On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI for "test-agreement"	; <<>> 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.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidas1.xml
2	Minder sends to TTA the following HTTP DELETE request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/delete Translation for "test-agreement" translation	The service should return HTTP 200 OK.
3	On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI for "test-agreement"	; <<>> DiG 9.10.6 <<>> dig _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: 0, AUTHORITY: 0, ADDITIONAL: 1 ; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ; QUESTION SECTION: dig _translatetrust. turkey.lightest.nlnetlabs.nl IN URI ; ANSWER SECTION:

ID		TC_TTA_18		
Assert	ion(s)	TA_TTA_11		
Test P	Test Purpose Verify that delete service of TTA for scheme name works properly			
Pre-Te	Pre-Test Conditions TSPA should already be deployed and running			
		DNS deployment with DNSSec extension should be running		
A translation with "test-agreement" should be already defined on				
Step	Test Activity	Expected Result		

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1	On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI for "test-agreement"	; <<>> 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.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.xml
2	Minder sends to TTA the following HTTP DELETE request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/delete Translation for "test-agreement" translation	The service should return HTTP 200 OK.
3	On the terminal, type the following command: dig _translatetrust. turkey.lightest.nlnetlabs.nl URI for "test-agreement"	turkey.lightest.nlnetlabs.nl URI; global options: +cmd ;; Got answer: ;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53761 ;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1 ;; OPT PSEUDOSECTION: ; EDNS: version: 0, flags:; udp: 4096 ;; QUESTION SECTION: ;_translatetrust.turkey.lightest.nlnetlabs.nl. IN URI ;; ANSWER SECTION: ; ANSWER SECTION:
4	Minder sends to TTA the following HTTP GET request: http://tta- lightest.eu:8080/ttaFM/mng/rsc/getTra nslation for for "test-agreement" translation	The service should return HTTP 404 Not Found.

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ID		TC_TTA_19	
Assert	ion(s)	TA_TTA_11	
	urpose		e of TTA for scheme name works properly
Pre-Te	st Conditions		e deployed and running DNSSec extension should be running agreement" should be already defined on TTA
Step	Test Activity		Expected Result
1	command: dig_translate	nlnetlabs.nl URI for	; <<>> 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.xml http://www.mindertestbed.org:8081/ttl/ttl_qualifiedTimesta mpEidasN.xml
2	HTTP DELETE http://tta-	0/ttaFM/mng/rsc/delete	The service should return HTTP 404 Not Found.
3	HTTP GET req http://tta- lightest.eu:808 nslation	o TTA the following uest: 0/ttaFM/mng/rsc/getTra reement-dummy"	The service should return HTTP 404 Not Found.

7.3DP

In order to test if the Delegation Provider (DP) implementation conforms to the DP specifications, conformance clauses, the normative statements and the test assertions are given below.

7.3.1 DP Conformance Clauses

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CC_DP_1: An implementation of DP is conforming to DP if it satisfies the conditions provided in the normative statements NS_DP_1 to NS_DP_13.

7.3.2 DP Normative Statements

Normative Sources for DP given in D8.3 are not updated. For this reason, they will not be provided here.

7.3.3 DP Test Assertions

Test Assertions for DP given in D8.3 are not updated. For this reason, they will not be provided here.

7.3.4 DP Test Scenario

TUBITAK wants to empower an employee (TUBITAK Tester) to do purchasing tasks on behalf of the company. The employee shall only have the allowance to do purchases up to a certain amount. All purchases above that amount require the authorization of the manager of the company. The employee receives the delegation for a special purpose, as the employee will be able to do purchases on behalf of the company.

First of all, the Mandator who is the manager of the company needs to create the delegation on Delegation Provider GUI. The delegation contains the following:

- 1. delegation type,
- 2. proxy (employee) public key,
- 3. mandator private key and mandator public key,
- 4. validity time,
- 5. address of delegation provider and the attributes the Mandator wants to transfer to the Proxy.

7.3.4.1 Test Scenario for DP (publication & download services):

The Mandator needs to sign the delegation file with his private key. Signed delegation file is encrypted by mandators' symmetric key. Also, symmetric key is encrypted by proxy's public key. Encrypted delegation and encrypted symmetric key are published on the Delegation Provider at https://mindertestbed.org/keys. Publication service returns http status to Mandator. This bilateral delegation is between a Mandator and a Proxy. The structure of a delegation in XML :

```
<?xml version="1.0"?>
<delegation version="1.0">
        <!-- Mandatory Information -->
        <issuedDate> 2017-05-14T23:59:59 </issuedDate>
        <proxy> TUBITAK Tester </proxy>
        <issuer> Tubitak </issuer>
        <bilateral />
        <substitutionAllowed>false</substitutionAllowed>
        <delegationAllowed>false</delegationAllowed>
        <validity>
                 <notBefore> 2019-05-15T00:00:00 </notBefore>
                 <notAfter> 2020-15-15T23:59:59 </notAfter>
        </validity>
        <domain name="purchase" version="0">
        </domain>
        <ds:signature>
```

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</ds:signature> </delegation>

In the second step, the employee receives the delegation for a special purpose, as the employee will be able to do purchases on behalf of the company. For the client to find the delegation, the delegation information has to be included in the transaction itself. The Proxy provides the delegation information for the transaction. Also, proxy needs the symmetric key to decrypt the delegation. To do so, the Proxy needs to download the encrypted delegation and encrypted symmetric key from the Delegation Provider.

Proxy knows (assumption) that Delegation Provider is located at https://mindertestbed.org/ and called as dpUrlAddress throughout the test cases.

TUBITAK Tester delegation is published in https://mindertestbed.org/delegation/tubitak_delegation.xml

TUBITAK Tester invalid delegation is published in https://mindertestbed.org/delegation/invalidtubitak_delegation.xml

Proxy sends following http request to DP-downloadService to download the delegation: https://mindertestbed.org/download/{id}?token=xxxxxxxxx

DP-downloadService returns a response which contains encrypted delegation in XML format to proxy.

Proxy sends following HTTP request to DP-downloadService to download the symmetric key: https://mindertestbed.org/download_key/{id}?token=xxxx

DP-downloadService returns a response which contains encrypted symmetric key to proxy.

Proxy decrypts symmetric key with proxy's public key and then decrypts delegation file with symmetric key.

Third step, eTransaction which contains an invoice and delegation information embedded in ASIC-S container prepared. Verifier (company) sends eTransaction to Client. Client gets the URL which is the address of Delegation Provider from delegation.xml

Then, Client sends following http request to DP- searchService to find out status of delegation: mindertestbed.org/download/{id}?token=xxxxxxxxx

DP-searchService returns a response that the delegation is not revoked.

7.3.4.2 Test Scenario for DP (revocation & search services)

An employee leaves the company. The employee holds a delegation for purchasing purposes. Now the company has to revoke the delegation because the employee does not have an allowance to do purchases on behalf of company anymore.

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First step for revoke the delegation, Mandator search the delegation on DP to ensure that the delegation is correct.

Mandator sends following HTTP request to DP- searchService to find out status of delegation: https://mindertestbed.org/download/{id}?token=xxxxxxxxx

7.3.5 DP Test Cases

This section includes the test case list and test case details

7.3.5.1 DP Test Case List

Table 3 List of DP test cases

ID	Purpose
TC_DP_1	Check the response when DP publishes the delegation.
TC_DP_2	Verify that DP publishes a delegation successfully.
TC_DP_3	Verify that DP publishes a delegation successfully.
TC_DP_4	Check the response when DP verifies the delegation.
TC_DP_5	Check content of delegation from the response when delegation is verified.
TC_DP_6	Check the response when revoked delegation is queried
TC_DP_7	Check the response when valid delegation is queried
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 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 is 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 delegation id is hash of delegation.
TC_DP_12	Publish delegation key
TC_DP_13	Download delegation key

7.3.5.2 DP Test Case Details

ID		TC_DP_1					
Assertion(s)		TA_DP_1, TA_	TA_DP_1, TA_DP_2				
Test Purpose		Check the response when DP publishes the delegation.					
Pre-Test Condition	ons	Delegation Provider is accessible.					
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		encrypted delegation in in Test Scenario for DP Proxy is TUBITAK Teste	by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined er ined 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	Execute Minder-ATV <i>downloadservice</i> with the following parameter: delegation URL		https://mindertestbed.org/delegation/tubitak_delegation.x ml should be downloded and opened in an XML editor

ID		TC_DP_2	TC_DP_2			
Assert	ion(s)	TA_DP_1, TA_DP_2				
Test P	urpose	Verify that DP publishes a delegation successfully.				
Pre-Te	st Conditions	Delegation Provider (DP) 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 dpUrlAddress: 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://dpUrlAddress/1/publish with</u> <u>delegation.xml</u> (invaliddelegation.xml, pk and publicKeyHash) parameters		The service should return HTTP 500.			

ID		TC_DP_3					
Assertion(s)		TA_DP_1					
Test Purpose		Verify that DP publishes a delegation successfully.					
Pre-Test Conditio	ons	 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 dpUrlAddress: to be defined when DP deployment is completed 				ation is defined	
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		It is assumed that DP d	s assumed that DP does not publish delegation in this case.				
Step	Test Activity		Expected Result				
1	HTTP POST re https://dpUrlAd delegation.xml publicKeyHash	ddress/1/publish with (delegation.xml, pk and) parameters cKeyHash does not	The service should return HTTP 500				

ID		TC_DP_4		
Assert	ion(s)	TA_DP_1, TA_DP_2, TA_	A_DP_3, TA_DP_6	
Test P	urpose	Check the response wh	en DP verifies the delegation.	
Delegation delegation i Scenario fo		Delegation is prepared I delegation in XML forma Scenario for DP	ation Provider is accessible. ation is prepared by Mandator as a signed and encrypted tion in XML format. Details of the delegation is defined in Test rio for DP address: to be defined when DP deployment is completed	
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
Assertion(s)	TA_DP_7
Test Purpose	Check content of delegation from the response when delegation is verified.

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Pre-Te	est 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 define in Test Scenario for DP Proxy is TUBITAK Tester dpUrIAddress: to be defined when DP deployment is completed		
Step	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 I should be downloded and opened in an XML editor	

ID		TC_DP_6		
Assertion(s) TA_DP_8				
Test Purpose Check the response when revoked delegation is queried		en revoked delegation is queried		
Pre-Test Conditions Delegation Provider is accessible. Delegation is prepared by TUBITAK as Mandator as a signed encrypted delegation in XML format. Details of the delegation in Test Scenario for DP Proxy is TUBITAK Tester dpUrlAddress: to be defined when DP deployment is complete A Revoked delegation for TUBITAK Tester is published in DP		by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined er ined when DP deployment is completed		
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 revoked. 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					
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Asser	tion(s)	TA_DP_9		
Test Purpose Check the response when valid delegation is queried			en valid delegation is queried	
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 definint Test Scenario for DP Proxy is TUBITAK Tester dpUrlAddress: to be defined when DP deployment is completed A valid delegation for TUBITAK Tester is published in DP			by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined er ined when DP deployment is completed	
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_10			
Test P	urpose	Check the response that DP should return error if verifier sends more than one revocation query at the time			
Pre-Te	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 de in Test Scenario for DP Proxy is TUBITAK Tester dpUrlAddress: to be defined when DP deployment is completed A valid delegation for TUBITAK Tester is published in DP		by TUBITAK as Mandator as a signed and XML format. Details of the delegation is defined er ined when DP deployment is completed		
Step	Test Activity		Expected Result		
1	Minder-ATV sends two revocation query at the same time.		Service returns error message.		
	https://dpUrlAddress/search?delegatio n{idbfgbfgbgf}?&token={token} https://dpUrlAddress/search?delegatio n{iddddd}?&={token}		To be defined when implemented.		

ID	TC_DP_9
Assertion(s)	TA_DP_11
Test Purpose	Check if a revoke command interface is available

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encrypted delega in Test Scenario Proxy is TUBITA dpUrlAddress: to			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 https://dpUrlAddress/search?delegatio n{id}?&token={id}		DP service sends a response that the delegation is valid. To be defined when implemented.	
2	Mandator sends delegation Id (hash of delegation), certificate signed by mandator and revocation delegation to DP		DP revokes the delegation and stores the revocation time with the revocation. To be defined when implemented.	
3	Minder-ATV executes verifyRevocationResponse service to validate the revocation response		Verification of revocation should be successfull	

ID		TC_DP_10			
Assert	ion(s)	TA_DP_12, TA_DP_13	3, TA_DP_14, TA_DP_15		
Check the signed rev by Mandator for the re Check if delegation id Check if the response		Check the signed revoc by Mandator for the revo Check if delegation id is Check if the response ir			
Pre-Te	st Conditions	Delegation Provider is accessible. Revoked delegation file is available.			
Step	Test Activity		Expected Result		
1	Verifier sends HTTP request below to DP searchServer to query status of delegation https://dpUrlAddress/search?delegatio n{id}?&token={id}		DP searchs revocation archieve and prepares the response. To be defined when implemented.		

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2	DP sends response which is signed.	Verifier checks the response.
		To be defined when implemented.

ID		TC_DP_11	
Assertion(s) TA_DP_14			
Test Purpose Check if delegation id is		Check if delegation id is	hash of delegation.
Pre-Te	est Conditions	Delegation Provider is accessible. Delegation is not available 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 searchs revocation archieve and sends error message. To be defined when implemented.

ID TC_DP_12		TC_DP_12			
Assertion(s) TA_DP_2, TA_DP_1		TA_DP_2, TA_DP_1			
Test Purpose Publish delegation key		Publish delegation key	/		
Pre-Test Conditions		Delegation Provider is accessible. Encrypted delegation key is needed.			
Step	Test Activity		Expected Result		
1	Client sends the encyrpted delegation key to publication server. HTTP POST request to the following address: https://dpUrlAddress/1/publish_key		The service should return HTTP 201		

ID	TC_DP_13						
Assertion(s)		TA_DP_2, TA_	TA_DP_2, TA_DP_1				
Test Purpose		Download delegation key					
Pre-Test Condition	ons	Delegation Pro	ovider is a	accessible.			
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Hash of public key is needed							
Step	Test Activity		Expected Result				
1	to publication s Http GET reque address:	est to the following dress/1/download_key/{	DP searches delegation key and returns it with HTTP 200 response.				

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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.

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 Globalsign (FI). The Fraunhofer IAO provides the vision and architecture for the project and is responsible for both, its management and the technical coordination.

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