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Firmato digitalmente da

T2S EXTERNAL NETWORKS

EUROSYSTEM NETWORK ACCEPTANCE TESTS

- Attachment 6 to the Licence Agreement -

TABLE OF CONTENT

1. Introduction

The "Technical Requirements (Attachment 1 to the Licence Agreement)" lists and explains the technical requirements the T2S Platform has to fulfil. Each of these requirements is normally mapped into a test case and presented in this "Eurosystem Network Acceptance Tests" document. Acceptance tests are a series of tests on the completed Network delivered by the NSP, which check, prior to its delivery, that all the required services fully comply with the Technical Requirements. The acceptance tests are run on the production environment only.

Acceptance testing covers a period of up to six (6) months.

2. Scope of the document

This document lists and describes the acceptance test cases. The test cases comprehensively reflect the Technical Requirements: 148 technical requirements are mapped into 142 acceptance test cases. Test cases are classified and grouped into six different sections, grouping test cases according to content:

- o *General service description* - test cases
- o *Network connectivity* - test cases
- o *Messaging services* - test cases
- o *Security services* - test cases
- o *Operational services* - test cases
- o *Implementation* - test cases

3. Competent Personnel

Test cases are run by Eurosystem's and the NSP's technical staff under the coordination of Eurosystem.

4. Guidelines

4.1 General Guidelines

All tests will be conducted on site in the cooperation of the Eurosystem, the NSP and the Directly Connected T2S Actors. Test cases are uniquely identified, and numbered, using the Technical Requirement "Reference ID" field. Every test case will be conducted in the six following steps:

1. *Description*: what is the test about, what functionality/environment is under test;
2. *Expected result*: describes the test's expected outcome;
3. *Detailed test procedure*: describing how to perform the test;
4. *Outcome*: describing the expected conclusion reached through a successful testing process;

5. *Result*: a test can either fail or pass, if it fails then a follow up action is triggered, if it passes then no follow up action is needed and it is possible to proceed with the next test;

6. *Formal acceptance*: contains the signatures of the Eurosystem testing team staff and the NSP testing team staff performing the test all formally accepting the test result.

Some tests are run in *negative mode.* In consequence, not only the functionality of the given test condition must be shown, but also additional tests are run to show that in the case that the test condition is not fulfilled, the test result is either a reject or drop.

If a test case identifies a defect and triggers corrective actions, these actions shall be addressed before the user testing phase. Any defect should be remedied or a workaround must have been agreed before the formal acceptance of the Network

4.2 Eurosystem Network Acceptance Test Criteria

Three types of criteria govern the Eurosystem Network Acceptance Test. The *entrance criteria* have to be met before the Eurosystem Network Acceptance Test is started. The *acceptance criteria* determine the successful completion of the test cases. If the *termination criteria* are fulfilled, the testing has to be suspended due to major technical issues or Network immaturity.

4.2.1 Eurosystem Network Acceptance Test entrance criteria

As an entrance criterion, the NSP has communicated to the Eurosystem the readiness of its Network for acceptance testing. The NSP has provided to the Eurosystem evidence of the successful completion of the NSP's internal tests. After the Eurosystem confirmed the readiness of the Network for the Eurosystem Network Acceptance Test,   an acceptance entrance meeting has been held and the Eurosystem and the NSP have agreed to start acceptance testing activities.

4.2.2 Eurosystem Network Acceptance Tests acceptance criteria

The acceptance testing phase is completed when the flow described in the article 5.4 of the Licence Agreement is completed and when all of the following conditions are matched:

- all acceptance test cases have been executed,

- except otherwise agreed, the NSP has resolved all reported defects classified with critical severity,

- all contingency plans and procedures have been successfully tested,

- the NSP's Network has been running without major issues/delays for at least 15 consecutive days,

- evidence of the successful completion of the non-functional tests executed by the NSP in order to confirm the readiness of the production environment of the NSP's Network are produced and indicate that the NSP's production environment is prepared, operational and stable,

- the NSP has confirmed that its internal operational procedures have been successfully validated,

- the NSP and the Eurosystem have held an acceptance testing exit meeting and agree that the acceptance testing stage has been successfully completed.

The Eurosystem Network Acceptance Tests acceptance criteria are defined in a flow described in the article 5.4 of the Licence Agreement. The following picture gives a visual representation of the article.
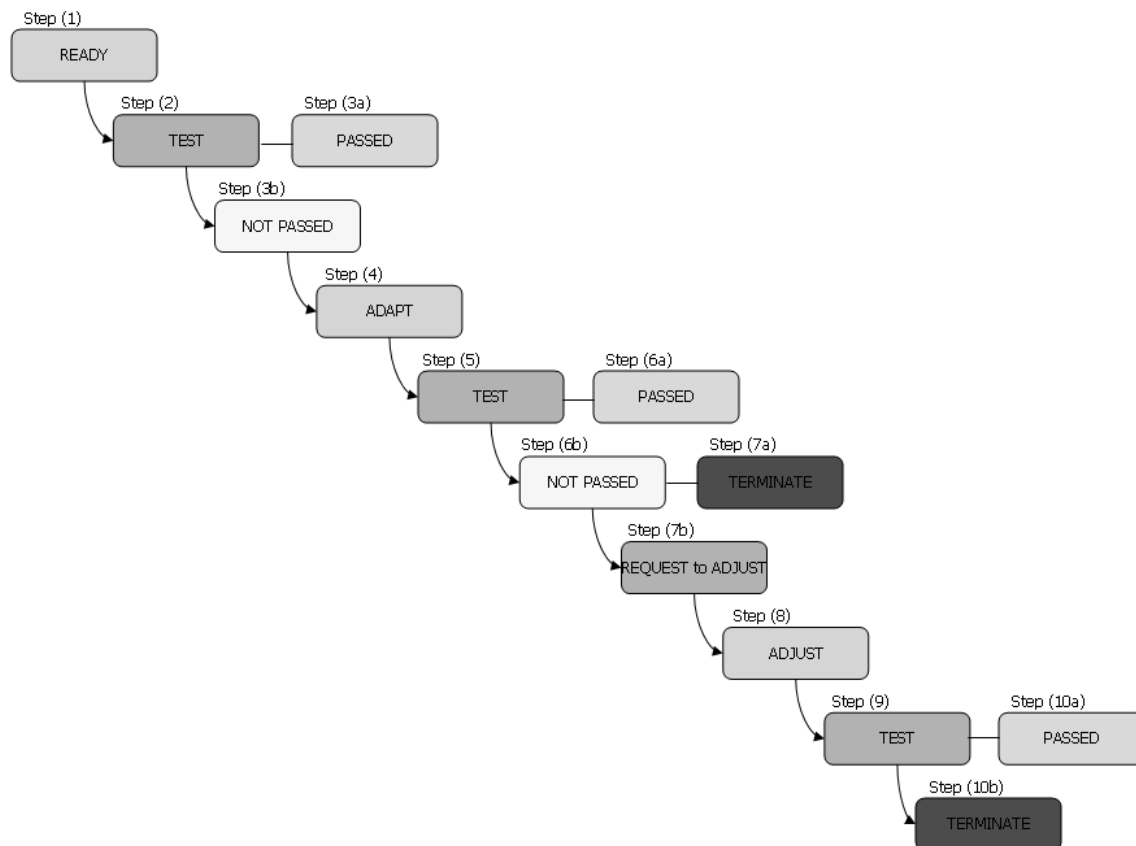
The acceptance flow and it can be split into 10 different steps: (step 1) ready for acceptance, (step 2) performing the tests, (step 3a) all tests are passed, or (step 3b) some tests are not passed, (step 4) adapt, (step 5) tests are repeated, (step 6) some tests are not passed, (step 7a) terminate the agreement, or (step 7b) request to adjust, (step 8) adjust, (step 9) tests are repeated, (step 10a) all tests are passed, or (step 10b) terminate the agreement.

4.2.3   Eurosystem Network Acceptance Tests termination criteria

If 12 consecutive (or not consecutive) tests have failed, acceptance testing is interrupted for a week. A meeting will be scheduled to check if corrective measures have to be taken. The persons involved in the acceptance testing shall agree on the measures and a schedule for the next steps.

4.3 Deadlines

The Eurosystem Network Acceptance Test shall be completed in accordance with the milestones indicated in the article 3 of the License Agreement.

5. SECTION I - General Service Description - Test Cases

Technical infrastructure

Reference ID	T2S.UC.TC.11010	

Description:	Technical infrastructure (HW) and software (SW) components have been delivered by the NSP and are in place.
Expected result:	All equipment and applications have been delivered in full.
Detailed test procedure:	Check against the detailed technical design part list and verify jointly that all HW and SW has been installed and configured.
Outcome:	HW part lists are matched at all four Sites. All SW components are installed and configured.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Delivery point for Connectivity Services

Reference ID	T2S.UC.TC.11050	

Description:	Connectivity Services have been delivered in Italy and Germany.
Expected result:	All Wide Area Network (WAN) links are installed, all Virtual Private Networks (VPN) have been deployed and so are messaging services.
Detailed test procedure:	Verify that in Region 1 and Region 2 all the WAN links, VPNs appliances, and messaging service gateways have been delivered.
Outcome:	WAN links are available and functional. VPN links are available and functional. Messaging services are available and functional.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Location of equipment

Reference ID	T2S.UC.TC.11060	

Description:	The minimal set of necessary devices to deliver the Connectivity Services is in place.
Expected result:	The T2S Platform is connected to the Network Service Provider.
Detailed test procedure:	Verify that all four T2S Sites are equipped with the network equipment necessary to connect the T2S Platform to the NSP, such as link termination devices, routers, and VPNs appliances.
Outcome:	All network equipment has been deployed at all T2S Sites.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____

Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Hosting

Reference ID	T2S.UC.TC.11065	

Description:	The NSP and the Banca d'Italia and the Deutsche Bundesbank have entered into hosting agreements at the terms and conditions set out in the Hosting Terms and Conditions (Attachment 3 to the Licence Agreement).
Expected result:	A hosting agreement has been concluded.
Detailed test procedure:	Verify with the Banca d'Italia and Deutsche Bundesbank whether the hosting terms and conditions were adhered to. Verify with the NSP whether the hosting terms and conditions were adhered to.
Outcome:	Hosting procedure has been completed as described in the Article 5.1 of the Licence Agreement.
Result:	Is the outcome matching the expected result? [] PASSED

	[] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

The boundaries of responsibility

Reference ID	T2S.UC.TC.11070	

Description:	The responsibilities demarcation line between the Eurosystem and the NSP, is clearly defined.
Expected result:	A clear boundary of responsibilities has been defined.
Detailed test procedure:	From the service perspective (such as Service Level Agreements, Organisational Level Agreement) to the physical perspective (demarcation patch panel) there is a clear boundary of responsibilities between the Eurosystem and the NSP.
Outcome:	There are no outstanding issues between the two counterparts, all services and responsibilities have been clearly identified.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Chain of trust relationship

Reference ID	T2S.UC.TC.11080	

Description:	NSP ensures that the functional and non-functional requirements expressed in the Technical Requirements are satisfied inside the NSP domain, and between NSP and the Directly Connected T2S actor.
Expected result:	An end-to-end chain of trust relationship has been established, where on one end there is the T2S Platform and on the other the Directly Connected T2S Actor, with the NSP in between.
Detailed test procedure:	Performance practices and security practices in place between the T2S and the NSP are reflected between NSP and the Directly Connected T2S Actor.
Outcome:	The chain of trust relationship is end-to-end.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Independence of interfaces on the T2S Platform's and Directly Connected T2S Actors' sites

Reference ID	T2S.UC.TC.11090	

Description:	Independence between the connection of the T2S Platform to the NSP's interface on one hand and the NSP's interface to the Directly Connected T2S Actors' interfaces on the other.
Expected result:	Full decoupling between the T2S / NSP from NSP / Directly Connected T2S actor.
Detailed test procedure:	The NSP ensures that the technical solution adopted for the interface T2S / NSP does not affect technical solutions adopted for the interface on the NSP / T2S interface. Any change on the T2S / NSP interface has no impact on the

	NSP / T2S interface and vice versa. Apply a change on the T2S / NSP interface and verify that there is no impact.
Outcome:	Full interface independency.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Single interface on the T2S Sites

Reference ID	T2S.UC.TC.11100	

Description:	The NSP complies with the single T2S communication interface as described in the GTD document.
Expected result:	Middleware and/or gateway functions link the T2S application with the NSP's Connectivity Services.
Detailed test procedure:	The NSP is not directly connected to the T2S middleware, but in the T2S Platform there are ad hoc sanitisation devices, such as XML firewall, reverse

	proxies, gateways (please note the list is not exhaustive).
Outcome:	Sanitisation devices are interposed between the NSP and the T2S.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Interface on the Directly connected T2S Actor's Site

Reference ID	T2S.UC.TC.11110	

Description:	The NSP / Directly Connected T2S Actor interface requires no constrains to T2S.
Expected result:	Design and implementation of the NSP / Directly Connected T2S Actor

	interface imposes no compliance limits to the T2S design and implementation.
Detailed test procedure:	To verify the full imperceptibility for the communication interface on the T2S Platform site a change is applied to the NSP / Directly Connected T2S Actor interface.
Outcome:	No special handling is required on the T2S Site after the change.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Security of interface at the Directly Connected T2S Actor's site

Reference ID	T2S.UC.TC.11115	

Description:	Check the compliance with the T2S security requirements.

Expected result:	All security aspects of all the NSP / Directly Connected T2S Actor interface comply with the T2S security requirements.
Detailed test procedure:	Testing teams jointly check the security related documentation supplied by the NSP against the T2S security requirements and perform a gap analysis. Identified gaps are addressed in an action list. The measures on that list must be completed before the user tests.
Outcome:	T2S security requirements are fully complied with.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Monitoring facilities

Reference ID	T2S.UC.TC.11130	

Description:	Eurosystem is able to monitor the NSP's technical operations.
Expected result:	Eurosystem has received facilities allowing the monitoring of the Connectivity Services.
Detailed test procedure:	The technical operations monitoring facility records and shows recent events. 1. Simulate a WAN failure and check the relevant indication on the monitoring facility. Restore to normal operation. 2. Simulate a VPN failure and check the relevant indication on the monitoring facility. Restore to normal operation. 3. Simulate a messaging gateway failure and check the relevant indication on the monitoring facility. Restore to normal operation.
Outcome:	All the events related to the failure of any Connectivity Services equipment between the NSP and the T2S Platform are visible on the monitoring facility and an alarm is triggered.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Time synchronisation

Reference ID	T2S.UC.TC.11140	

Description:	NSP's gateways are time synchronised with the T2S time source.
Expected result:	Time consistency
Detailed test procedure:	Verify the Network Time Protocol (NTP) association between the gateways and the T2S time source.
Outcome:	Gateways are time synchronised with the T2S time sources.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

6. SECTION II - Network Connectivity - test cases

Layer 1 requirement - **T2S Sites served by WAN links**

Reference ID	T2S.UC.TC.20100	

DDescription:	Four T2S Sites are served by NSP's WAN links.
Expected result:	All region 1 and region 2 Sites are interconnected to the NSP's sites.
Detailed test procedure:	Conduct a site survey the four T2S Sites and verify four WAN services links are available to interconnect to the NSP.
Outcome:	All T2S Sites are connected to all NSP's sites.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Layer 1 requirement - **Link bandwidth**

Reference ID	T2S.UC.TC.20105	

Description:	Each WAN link has a 1Gbps bandwidth.
Expected result:	Each link has an available maximum bandwidth of 1Gbps.
Detailed test procedure:	Install an IP packet generator on the T2S Site under test and install either a packet receiver at the corresponding NSP site or a loop, generate a sustained traffic flow of 1Gbps at one end and verify all traffic is received at the other end. Continue the test for half an hour. Repeat the procedure for each T2S Site.
Outcome:	All WAN links have an available bandwidth of 1Gbps.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date

	____/____/____
	NSP testing team _____ date ____/____/____

Layer 1 requirement - **Link delay**

Reference ID	T2S.UC.TC.20115	

Description:	Measure WAN link delay.
Expected result:	Each link has a one way delay of maximum 40 msec.
Detailed test procedure:	Either deploy two GPS synchronised packet generators, generating IP packets at the maximum link bandwidth for 1 hour, then measure the one way latency at the WAN link ends or deploy one GPS synchronised packet generators at one link end and a loop at the other link end, generate IP packets at the maximum link bandwidth for 1 hour, then measure the round trip latency and divide it by two.
Outcome:	WAN link delay (latency) is less or equal to 40 msec.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

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Layer 1 requirement - **Link recovery time**

Reference ID		
	T2S.UC.TC.20120	

Description:	Measure the link recovery time.
Expected result:	Any link is able to recover a single failure within 50 msec.
Detailed test procedure:	Generate a WAN link failure, for example disconnecting a fibre on the Network terminating equipment. Interruption is recovered by the optical protection mechanism/s within 50 msec. Reconnect the disconnected fibre at the end of the test.
Outcome:	A single link failure is recovered in 50 msec.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Layer 1 requirement - **Link Bit Error Rate (BER).**

Reference ID	T2S.UC.TC.20125	

Description:	Measure the WAN link Bit Error Rate (BER).
Expected result:	Each link has a Bit Error Rate (BER) less or equal to 10^{-18}.
Detailed test procedure:	Inject Ethernet frames at the maximum link speed (i.e. 1Gbps) and measure the BER end to end for a 2 hours time interval.
Outcome:	Bit Error Rate (BER) less or equal to 10^{-18}
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action:

	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Layer 1 requirement - **Regional link service availability**

Reference ID	T2S.UC.TC.20130	

Description:	Estimate the annual regional link service availability by measuring the regional link service availability on a one week time scale.
Expected result:	Two links within the same region (regional links) have an annual availability of 99.9%.
Detailed test procedure:	Sample WAN link availability for a one week time and extrapolate linearly the availability value on a one year time scale.
Outcome:	The two regional links have availability equal or higher to 99.9%.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Layer 1 requirement - **Link port specification (1Gbps Ethernet local interface)**

Reference ID	T2S.UC.TC.20135	

Description:	WAN links are physically delivered via a 1Gbps Ethernet local interface.
Expected result:	Connectivity Services are delivered via network equipment with 1GbE ports.
Detailed test procedure:	Visually inspect the network terminating equipment and verify it has either a 1000Base-T interface or a 1000Base-SX one.
Outcome:	WAN links are delivered via a 1Gbps Ethernet local interface.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Layer 1 requirement - **Path diversification**

Reference ID	T2S.UC.TC.20140	

Description:	Verify the path diversification from T2S Sites to POPs, from POPs to backbone.
Expected result:	All paths are diversified end-to-end and share no common infrastructure.
Detailed test procedure:	The NSP delivers detailed maps containing all the local loops physical paths from T2S sites to POP. The NSP describes with a high level map how paths are diversified across the backbone from POP to POP.
Outcome:	There is a full path diversification end to end.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Layer 1 requirement - **All links from the same NSP are provided by a single network provider**

Reference ID	T2S.UC.TC.20145	

Description:	Verify that all the NSP's links are provided by a single network provider.
Expected result:	Full end-to-end path diversification is guaranteed by the single WAN link provider.
Detailed test procedure:	The single network provider describes all links serving the NSP. Produced documentation is jointly analysed and gaps are eventually flagged (if any).
Outcome:	All WAN links have been supplied under the supervision of a single provider. The single provider knows all physical paths for all links and is aware there is no shared infrastructure.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Layer 2 requirement - **Layer 2 connectivity at continental distances**

Reference ID	T2S.UC.TC.20150	

Description:	Layer 2 connectivity from the T2S Sites to the NSP's sites is verified.
Expected result:	Links are able to transport layer 2 protocols end-to-end.
Detailed test procedure:	Generate any multicast or broadcast traffic at one end of the link and verify that it is received on the other end of the link. A network analyser (i.e. Wireshark or equivalent) is used for verification. Please note this test excludes the usage of the VPN equipment, but is performed from Network Terminating Equipment to Network Terminating Equipment.
Outcome:	Multicast and broadcast are transmitted end to end.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Layer 3 requirement - **IPv4**

Reference ID	T2S.UC.TC.20155	

Description:	All traffic is IPv4.
Expected result:	Internet Protocol (IP) version 4 (IPv4) protocol is used between the T2S Platform, Directly Connected T2S Actor and the NSP.
Detailed test procedure:	1. Jointly inspect the documentation describing the Network, including network diagrams and verify only IPv4 addresses are transport. 2. Capture traffic with a network analyser and verify only IPv4 packets are transported across the network.
Outcome:	All traffic is IPv4.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action:

	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

<u>*Layer 3 requirement*</u> - **IP addressing schema**

Reference ID	T2S.UC.TC.20160	

Description:	IP addressing schema
Expected result:	The NSP has to use an IP address range which is "public" in terms of RFC1918.
Detailed test procedure:	Verify on the documentation shared between Eurosystem and the NSP that only addresses for Private Internets are allocated, i.e. 10.0.0.0 - 10.255.255.255 (10/8 prefix), 172.16.0.0 - 172.31.255.255 (172.16/12 prefix), 192.168.0.0 - 192.168.255.255 (192.168/16 prefix).
Outcome:	No IPv4 public addresses are used.
Result:	Is the outcome matching the expected result?

	[] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Layer 3 requirement - **Confidentiality and integrity of data in transit across the public soil**

Reference ID	T2S.UC.TC.20165	

Description:	Confidentiality and integrity of data in transit across the public soil is ensured via VPN devices.
Expected result:	All data leaving the T2S Platform to the NSP, and vice versa, is cryptographically protected.
Detailed test procedure:	Verify all traffic is encrypted and authenticated. An example of an "appropriate measure" is an IPSec VPN tunnel.
Outcome:	Only authenticated parties access T2S Services.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Layer 3 requirement – **Data compression**

Reference ID	T2S.UC.TC.20170	

Description:	Verify data compression.
Expected result:	Data is compressed using market standard algorithms.
Detailed test procedure:	Verify on the configuration of the IPSec VPN appliances that a compression algorithm is enabled.
Outcome:	WAN links transport only compressed data.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Layer 3 requirement – **Static Routing**

Reference ID	T2S.UC.TC.20175	

Description:	Verify the routing between the T2S Platform and the NSP is static.
Expected result:	Between the NSP and the T2S Platform only static routes are used.
Detailed test procedure:	Check network equipment configuration and verify there is no dynamic routing protocol between the NSP and the T2S Platform and vice versa.
Outcome:	Between the NSP and the T2S Platform routing is static.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date

	____/____/____
	NSP testing team _____ date ____/____/____

Layer 4 requirement - **Load balancing among the two NSP links within a region.**

Reference ID	T2S.UC.TC.20180	

Description:	TCP session load balancing among two links in the same region.
Expected result:	TCP sessions are load balanced across the two links within the same region (where "region" is site A + site B or site C + site D).
Detailed test procedure:	Verify/count the number of TCP sessions active on one link and the number of TCP sessions active on the other link of the same region.
Outcome:	The number of sessions active on one link is similar to the number of sessions active on the other link.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED

	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Layer 4 requirement – **TCP/UDP.**

Reference ID	T2S.UC.TC.20181	

Description:	TCP sessions are possible from T2S to a Directly Connected T2S Actor; it is possible to transport UDP packets from T2S to a Directly Connected T2S Actor.
Expected result:	It is possible an end-to-end TCP / UDP communication between T2S and the Directly Connected T2S Actors.
Detailed test procedure:	Identify a TCP destination at the T2S Site, generate a session from the Directly Connected T2S Actor site and verify session is acknowledged. Then identify a TCP destination at the Directly Connected T2S Actor, generate a session from the T2S Site, then verify it is acknowledged. Repeat the test for a UDP session.
Outcome:	TCP and UDP end-to-end communication is possible.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Layer 7 requirement - **Domain Name System**

Reference ID	T2S.UC.TC.20185	

Description:	A DNS service is available.
Expected result:	The NSP offers a DNS service for hostname resolution.
Detailed test procedure:	Query from a system at the NSP for a T2S address, the NSP's DNS requests are forwarded to the authoritative name servers of T2S. Repeat the test for a reverse lookup.
Outcome:	DNS lookup and reverse lookup of DNS of T2S addresses are resolved by T2S domain name servers.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Service requirements - **One face to the customer**

Reference ID	T2S.UC.TC.20300	

Description:	Verify the "one face to the customer" model.
Expected result:	From a service management perspective the NSP is a single interface to T2S. All links share the same Service Level Agreement (SLA), same Network Operations Centre (NOC), and same Service Desks (SD).
Detailed test procedure:	Involve operation service management teams and verify all WAN links are managed under the same "umbrella" from the SLA/NOC/SD perspectives. Identify gaps, if any, produce an action list.
Outcome:	All WAN links share the same SLA/NOC/SD.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date

	____ / ____ / ____ NSP testing team _____ date ____ / ____ / ____

Service requirements - **Demarcation line between the NSP and T2S**

Reference ID	T2S.UC.TC.20305	

Description:	Demarcation line between the NSP and the T2S Platform.
Expected result:	The NSP delivers the 1Gbps interface in a patch panel defining a clear demarcation line between the NSP and the T2S Platform.
Detailed test procedure:	The NSP delivered at the four T2S Sites one or more network devices (for example DWDM + router + VPN or DWDM + VPN), which present the 1GbE interface to T2S. This interface is connected to a demarcation patch panel. Verify the demarcation panel is in place.
Outcome:	WAN services are delivered at a demarcation patch panel.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

7. SECTION III - Messaging Services - test cases

The "application to application" (A2A) and "user to application" (U2A) modes

Reference ID	T2S.UC.TC.30010	

Description:	Verify the NSP offers two interaction modes "application to application" (A2A) and "user to application" (U2A).
Expected result:	The NSP offers A2A and U2A data exchanging services to T2S and to all its Directly Connected T2S Actors.
Detailed test procedure:	1. Use the application in A2A mode. 2. Use the application in U2A mode.
Outcome:	U2A mode and A2A mode are both available.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

The "real-time" and "store and forward" transfers

Reference ID	T2S.UC.TC.30020	

Description:	Verify the "real-time" and "store-and-forward" transfer services.
Expected result:	The NSP offers message and file exchange, in the A2A mode, via the "real-time" and the "store-and-forward" transfer services to T2S and to all its Directly Connected T2S Actors.
Detailed test procedure:	1. use the A2A application in "real-time". 2. Use the A2A application in "store-and-forward".
Outcome:	"Real-time" and "store-and-forward" are both available.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date

	____/____/____
	NSP testing team _____ date ____/____/____

Real-time timeout management and flexibility

Reference ID	T2S.UC.TC.30030	

Description:	Verify the real-time timeout management and flexibility.
Expected result:	The NSP shall manage the timeout for real-time message/file exchange.
Detailed test procedure:	Position the receiver as not being able to receive files / messages. Send files / messages to the receiver. Verify a time out after 60 seconds.
Outcome:	The timeout occurs if the receiver is not available to receive the message/file in the timeout timeframe duration.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action:

	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

The "application to application" (A2A) mode

Reference ID	T2S.UC.TC.30040	

Description:	Verify the "application to application" (A2A) mode
Expected result:	The NSP supports file/message exchanges in the A2A mode via the "real-time" and "store-and-forward" transfer services in the "push" mode only.
Detailed test procedure:	Send files (A2A mode) via the "real-time" with "push" mode. Send files (A2A mode) via the "store-and-forward" with "push" mode. Repeat previous tests for messages.
Outcome:	It is possible to exchange both files and messages via the A2A "real-time" and the A2A "store-and-forward".
Result:	Is the outcome matching the expected result?

	[] PASSED
	[] FAILED
	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

The "user to application" (U2A) mode

Reference ID	T2S.UC.TC.30050	

Description:	Verify the "user to application" (U2A) mode.
Expected result:	The NSP supports the U2A mode interactions through the web access (HTTPs protocol) to the T2S Platform.
Detailed test procedure:	Open an U2A HTTPs session from the Directly Connected T2S Actor to T2S via the NSP.
Outcome:	Https session successfully completed.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

DEP usage for messages and files

Reference ID	T2S.UC.TC.30060	

Description:	Verify the Data Exchange Protocol (DEP) usage for messages and files.
Expected result:	The NSP manages messages/files exchanges according to the following format: 1. the Exchange Header (or Technical Envelope), and 2. the Exchange Payload.
Detailed test procedure:	Jointly analyse the contents of the EH and EP and verify they are in line with the Technical Requirements. Identify defects, each defects shall be recorded in an action plan. The defect has to be before the user tests.

Outcome:	EH and EP are in line with the Technical Requirements, gaps are identified and timely acted upon.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

DEP maintenance and evolution

Reference ID	T2S.UC.TC.30065

Description:	Verify the DEP maintenance and evolution.
Expected result:	The NSP supports the Eurosystem in the maintenance and evolution of DEP protocol. Protocol updates to the protocol are jointly agreed.
Detailed test procedure:	Analyse the service model documentation to verify that the Eurosysem is adequately supported in the DEP's maintenance and evolution. Verify a

	commonly shared change management process is agreed and shared between the Eurosystem and the NSP.
Outcome:	It is possible to maintain and evolve the DEP protocol, a common service model and change management process is equally received.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

A2A message and file size limitations

Reference ID	T2S.UC.TC.30070	

Description:	Verify A2A message and file size limitations

Expected result:	The NSP offers A2A services in compliance with the size limitations described in the Technical Requirement document.
Detailed test procedure:	Send messages equal or less than 32 KB. Send messages larger than 32 KB. Send files less than 32KB. Send files between 32KB and 32MB. Send files larger than 32 MB.
Outcome:	It is possible to send messages up to 32 KB. It is possible to send files up to 32MB.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

A2A message and file size flexibility

Reference ID	T2S.UC.TC.30075	

Description:	Verify the A2A message and file size flexibility.

Expected result:	The NSP manages limitations on the size of messages and files in a flexible way.
Detailed test procedure:	Testing teams jointly evaluate the impacts of changing the message/file size and perform a fault analysis, identify fault which are addressed in an action list. The tasks recorded in that list have to be completed before the user tests.
Outcome:	Changing message / file upper size limits has a minimal impact, no infrastructural change is needed and only minimal application change fill the flexibility.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

A2A message and file size management

Reference ID	T2S.UC.TC.30080	

Description:	Verify the A2A message and file size management
Expected result:	The NSP rejects any message or file that is not in the allowed size range. The originator receives a negative acknowledgement message.
Detailed test procedure:	1a) Generate from a Directly Connected T2S Actor an undersized file, file is dropped and does not reach the T2S Platform. 1b) Generate from a Directly Connected T2S Actor an oversized file, file is dropped and does not reach the T2S Platform. 2) Generate from a Directly Connected T2S Actor an oversized message; message is dropped and does not reach the T2S Platform.
Outcome:	Please refer to "detailed test procedure" above.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

No message/file duplication

Reference ID	T2S.UC.TC.30085	

Description:	Verify no message/file can be duplicated.
Expected result:	The NSP delivers messages and files once, and only once.
Detailed test procedure:	Send the same message twice. Send the same file twice.
Outcome:	Duplicated messages do not reach T2S. Duplicated files do not reach T2S.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____

	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Message against file priority

Reference ID	T2S.UC.TC.30090	

Description:	Verify the message against file priority.
Expected result:	The NSP avoids that massive exchange of files negatively affects the messages delivery.
Detailed test procedure:	Send a bulk quantity of files and simultaneously send a bulk quantity of messages. To avoid message queuing starvation in case of bulk file transfers in the Network, the NSP has installed a queuing / prioritising function.
Outcome:	Messages are timely delivered also during bulk file transfers.
Result:	Is the outcome matching the expected result?

	[] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Websphere MQ product version

Reference ID	T2S.UC.TC.30095	

Description:	Verify the MQ Series product version.
Expected result:	The NSP adopts an MQ Series version compliant with the MQ Series version adopted by the T2S Platform.
Detailed test procedure:	Check the MQ Series version on all NSP's systems. Check the MQ Series version on all T2S Platform's' systems.
Outcome:	MQ Series versions are either the same or compliant.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Websphere MQ channels

Reference ID	T2S.UC.TC.30100	

Description:	Verify the MQ Series channels.
Expected result:	Each kind of flow (1. Messages real-time, 2. Files real-time, 3. Messages store-and-forward, 4. Files store-and-forward) has at least one MQ Series channel.
Detailed test procedure:	1. Count the number of MQ Series channels available for messages real-time; 2. count the number of MQ Series channels available for files real-time; 3. count the number of MQ Series channels available for messages store-and-forward; 4. count the number of MQ Series channels available for files store-and-forward.

Outcome:	At least one MQ Series channel is available for the above mentioned categories.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Websphere MQ channels SSL connection

Reference ID	T2S.UC.TC.30105	

Description:	Verify the MQ Series channels SSL connection.
Expected result:	MQ Series channel connections are secured using SSL certificates. SSL certificates are distributed by T2S.
Detailed test procedure:	Check that MQ Series channels are secured with SSL certificates.

	Read which CA signed the certificates.
Outcome:	All MQ Series channels are secured with SSL certificates. Certificates are signed by the T2S CA.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Websphere MQ channels type

Reference ID	T2S.UC.TC.30110	

Description:	Verify the MQ Series channels type.
Expected result:	The NSP connects to T2S MQ Series either in server-server or client-server

	mode.
Detailed test procedure:	Check if the NSP connects to T2S' MQ Series in server-server (channels SDR/RCVR located at both site) mode. Check if the NSP connects to T2S' MQ Series in client-server mode (channels SVRCONNN located at T2S platform site) mode.
Outcome:	Connection to MQ Series is either in server-server or client-server mode.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Websphere MQ message queues

Reference ID	T2S.UC.TC.30115	

Description:	Verify the MQ Series queues.

Expected result:	Up to four queues are set up for incoming and outgoing traffic for each specific traffic flow. Queue names follow the T2S naming convention.
Detailed test procedure:	Count the number of queues set up for incoming and outgoing traffic for each specific traffic flow. Check queue names.
Outcome:	Each traffic flow has up to four queues. Queue names are in line with T2S naming convention.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Websphere MQ messages management – load balancing

Reference ID	T2S.UC.TC.30120	

Description:	Verify the MQ Series messages management – load balancing.
Expected result:	The NSP load balances in round-robin incoming messages/files across MQ Series queues.
Detailed test procedure:	Check that there is a messages load balancing mechanism across MQ Series queues. Check load balancing mechanism is round-robin. Repeat the test for files.
Outcome:	MQ Series queues are load balanced using a round-robin algorithm.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Websphere MQ messages management – grouping and segmentation

Reference ID	T2S.UC.TC.30125	

Description:	Verify the MQ Series messages management – grouping and segmentation
Expected result:	The NSP manages the MQ Series message grouping and segmentation.
Detailed test procedure:	Check the message grouping and segmentation.
Outcome:	In the MQ Series it is possible to group and segment messages.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Websphere MQ message description section – CCSID

Reference ID	T2S.UC.TC.30130	

Description:	Verify the MQ Series message description section – CCSID
Expected result:	The NSP manages the MQ Series message description section field CCSID XXX.
Detailed test procedure:	Inspect the message description section field CCSID XXX. Take note of field value.
Outcome:	MQ Series message description section field CCSID XXX is populated with a significant and meaningful value.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____

Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Websphere MQ message description section – MsgType

Reference ID	T2S.UC.TC.30135	

Description:	Verify the MQ Series message description section – MsgType.
Expected result:	The NSP manages the MQ Series messages having the following MsgType: request, reply, report, and datagram.
Detailed test procedure:	Inspect the MsgType in the MQ Series messages. Check request, reply, report, and datagram.
Outcome:	All of the four above mentioned MsgType are managed in the MQ Series messages.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action:

	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Websphere MQ message description section – Format

Reference ID	T2S.UC.TC.30140	

Description:	Verify the MQ Series message description section – Format.
Expected result:	The NSP manages the MQ Series messages having the String Format.
Detailed test procedure:	Check the String Format in the MQ Series messages.
Outcome:	String Format in the MQ Series messages are handled as described in the Technical Requirements.
Result:	Is the outcome matching the expected result?

	[] PASSED
	[] FAILED
	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Websphere MQ additional header – RFH2

Reference ID	T2S.UC.TC.30145	

Description:	Verify the MQ Series additional header – RFH2.
Expected result:	NSP manages the additional header structure RFH2 in MQ Series.
Detailed test procedure:	Check the additional header structure RFH2 in the MQ Series messages.
Outcome:	Additional header structure RFH2 in the MQ Series messages are handled as described in the Technical Requirements.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Websphere MQ message structure

Reference ID	T2S.UC.TC.30150	

Description:	Verify the A2A MQ Series message structure.
Expected result:	The NSP manages the message / file exchange based on a MQ Series message.
Detailed test procedure:	A MQ Series message is composed by a "Message Description" part (MQMD) and by a "Message Text" part. Supported MQ Series message are: MQMD.MsgType, MQMD.Format, MQMD.Enconding, MQMD.CodeCharacterSetId, MQMD.Report option, MQMD.Expiry. Messages are generated for each of the above types and the correct transport and delivery of the messages is verified.

Outcome:	All of the above mentioned Message Descriptions are correctly handled system wide.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Compression flag and compression algorithm management

Reference ID	T2S.UC.TC.30170	

Description:	Verify Compression flag and compression algorithm management.
Expected result:	The NSP forwards the "Compression" and "Compression algorithm" fields of the technical envelope to the receiver.
Detailed test procedure:	Inspect the "Compression" and "Compression algorithm" fields of the technical envelope on one end and inspect the same envelope on the other end, make sure the contents of the two fields are still the same.

Outcome:	Technical envelope's "Compression" and "Compression algorithm" fields are transported end to end.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Non-repudiation flag management

Reference ID	T2S.UC.TC.30175	

Description:	Verify Non-Repudiation flag management
Expected result:	The NSP manage correctly the non repudiation flag of the technical envelope.
Detailed test procedure:	Inspect the content of the Technical Ack in case of the original message is sent by T2S with the "dep:NonRepudiation" field set to yes.

	The Technical Ack must be signed by the NSP gateway as well as the original message must be signed by the T2S Platform
Outcome:	The check of the signature must be done. If a failure occurs, a NAN Technical ack must be returned
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Message and file unique identification

Reference ID	T2S.UC.TC.30180	

Description:	Verify the message and file unique identification

Expected result:	The NSP identifies all messages and files with a unique identifier according to the format indicated in the "technical envelope" description section.
Detailed test procedure:	Inspect the field NSP Communication ID in the technical envelope, field value is the same both in the path from T2S to NSP and from NSP to Directly Connected T2S Actor.
Outcome:	The NSP inserts the unique identifier in the envelope of all messages and file exchanged. The same identifier shall be used in the data exchange with the Directly Connected T2S Actor.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

A2A Protocol Interface

Reference ID	T2S.UC.TC.30185	

Description:	Verify the A2A Protocol Interface.

Expected result:	The NSP interfaces T2S to the provided specification based on the IBM MQ (Message Queuing) transport protocol.
Detailed test procedure:	An organizational process is in place to keep addressing schema aligned between the NSP and the Eurosystem. This change management process is jointly assessed, acknowledged and documented.
Outcome:	The Eurosystem and the NSP align addressing schemas of the A2A protocol interface accordingly to a shared change management process.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

A2A Message patterns

Reference ID	T2S.UC.TC.30190	

Description:	Verify A2A message patterns.
Expected result:	The NSP manages message / file exchanges in accordance with the workflows described in the Technical Requirements.
Detailed test procedure:	1. Send message and file in Real-time outgoing pattern; 2. send message and file in Real-time incoming pattern; 3. send message and file in Store-and-forward outgoing pattern; 4. send message and file in Store-and-forward incoming pattern. Verify that Technical Acknowledgements are received.
Outcome:	All the above message/file patterns generate a "Technical Acknowledgement" message to confirm the reception of the message/file.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Technical Acknowledgment management

Reference ID	T2S.UC.TC.30195	

Description:	Verify the Technical Acknowledgment management.
Expected result:	The NSP manages the Technical Acknowledgement, which can be either Positive Application Notification (PAN) or Negative Application Notification (NAN).
Detailed test procedure:	Verify the structure of the Technical Acknowledgement structure contains: 1. MQMD.Feedback, 2. "Application Identity Data", 3. "Correlation Id", 4. "Message Text" as described in the Technical Requirements.
Outcome:	Check both PANs and NANs contain the appropriate (as described in the Technical Requirements) fields.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____

Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Negative Technical Acknowledgment – Error description fields

Reference ID	T2S.UC.TC.30200

Description:	Verify the Negative Technical Acknowledgment – Error description fields
Expected result:	
Detailed test procedure:	Inspect "dep:ExchangeStatus" and "dep:ErrorDescription" field in case a NAN must be returned to the message originator. Flag differences if the result differs from the expected result. Trigger corrective actions.
Outcome:	In this case a NAN must be returned to the message originator. The "dep:ExchangeStatus" field must be set to the value "KO" and the "dep:ErrorDescription" field must be set in accordance with the table in the Technical Requirements.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action:

	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Real-time outgoing management

Reference ID	T2S.UC.TC.30205	

Description:	Verify the NSP's real-time outgoing management
Expected result:	The NSP manages the real-time outgoing message pattern as detailed in the Technical Requirements.
Detailed test procedure:	Send a message from T2S to Directly Connected T2S Actor in real-time mode. Follow the seven steps sequence described in the Technical Requirements. Inspect the message sent by the T2S Platform to the NSP's gateway at the step #2. Inspect the Technical Acknowledgment sent by the NSP to the T2S Platform at the step #3. Inspect the response sent by the NSP to the T2S Platform at the step #6. Repeat the test in negative mode. Repeat the same test for a file.
Outcome:	Step #2, step #3 and step #6 for file and message sent from the T2S Platform to a Directly Connected T2S Actor in real-time mode match the description in the Technical Requirements.
Result:	Is the outcome matching the expected result?

	[] PASSED
	[] FAILED
	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Real-time incoming management

Reference ID	T2S.UC.TC.30210	

Description:	Verify the real-time incoming management.
Expected result:	The NSP manages the real-time incoming message pattern as detailed in the Technical Requirements.
Detailed test procedure:	The T2S Platform receives a message in real-time mode from a Directly Connected T2S Actor. It goes through the eight steps sequence described in the Technical Requirements. Inspect message at step #2. Repeat the test in negative mode. Repeat same test for a file.
Outcome:	Step #2 for file and message sent from Directly Connected T2S Actor to T2S in real-time mode match the description in the Technical Requirements.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Store-and-forward outgoing management

Reference ID	T2S.UC.TC.30215	

Description:	Verify the Store-and-forward outgoing management.
Expected result:	The T2S Platform sends a message in Store-and-forward mode to a Directly Connected T2S Actor. The message sequence matches the six steps in the Technical Requirements describing this sequence.
Detailed test procedure:	In guaranteed delivery (store-and-forward) mode send a message from T2S to T2S Actor. Inspect message at step #2, and at step #3. Repeat the test in negative mode. Repeat same test for a file.
Outcome:	Step #2 and step #3 both match the expectation described in the Technical Requirements.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Store-and-forward incoming management

Reference ID	T2S.UC.TC.30220	

Description:	Verify the Store-and-forward incoming management.
Expected result:	The NSP manages the Store-and-forward incoming message pattern as detailed in the Technical Requirements document.
Detailed test procedure:	T2S receives a message in guaranteed delivery (store-and-forward) mode from a Directly Connected T2S Actor. Message goes through a six steps sequence. Verify all six steps are in line with what described in the Technical Requirements document. Repeat the test in negative mode. Repeat the same test for a file.

Outcome:	When T2S receives a message in guaranteed delivery (store-and-forward) mode from a Directly Connected T2S Actor, the message goes through the six steps sequence described in the Technical Requirements.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Enable/Disable store-and-forward traffic

Reference ID	T2S.UC.TC.30225	

Description:	Verify the enable/disable Store-and-forward.
Expected result:	The NSP manages the Store-and-forward "service traffic" as detailed in the Technical Requirements.
Detailed test procedure:	The T2S Platform sends an "EnableSnfTraffic" to the NSP. Inspect the message, then inspect the response to the message. Repeat the test in negative mode.

Outcome:	The T2S Platform enables/disables the exchanging of Store-and-forward traffic, via the "EnableSnfTraffic".
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

U2A Interface with the T2S Platform

Reference ID	T2S.UC.TC.30230	

Description:	Verify the U2A Interface with the T2S Platform.
Expected result:	The NSP interface at the T2S Platform site is based on the HTTPs protocol.

Detailed test procedure:	Check that U2A connection from a Directly Connected T2S Actor to the T2S Platform can be established only via HTTPs.
Outcome:	All U2A connections are HTTPs based.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

U2A security

Reference ID	T2S.UC.TC.30235	

Description:	Verify the U2A security.

Expected result:	The NSP supports U2A connectivity via HTTPs using a browser.
Detailed test procedure:	Connect from a Directly Connected T2S Actor to the T2S Platform via a browser using HTTPs. Verify that only HTTPs connections are possible.
Outcome:	U2A connectivity is possible only via HTTPs using a browser.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

U2A user authentication

Reference ID	T2S.UC.TC.30245	

Description:	Verify the U2A user authentication.

Expected result:	The NSP distributes to Directly Connected T2S Actors the credentials to access the T2S Platform. The certificates for U2A are delivered by the NSP to the end users (with a smart-card).
Detailed test procedure:	Verify that the Directly Connected T2S Actor cooperating in the tests has received the credential in form of a smart-card.
Outcome:	U2A user authentication is possible via the use of smart-cards and Directly Connected T2S Actor taking part to tests has received it.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

U2A Closed Group of User authorization

Reference ID	T2S.UC.TC.30250	

Description:	Verify the U2A Closed Group of User authorization.
Expected result:	The NSP checks the Directly Connected T2S Actor's authorization to access T2S U2A based on: 1. the IP address from which the Directly Connected T2S Actor is accessing , and 2. the Directly Connected T2S Actor opening an SSL VPN.
Detailed test procedure:	The Directly Connected T2S Actor attempts to access the T2S Platform from an authorised IP address -> access is granted. The Directly Connected T2S Actor attempts to access the T2S Platform from an unauthorised IP address -> access is denied. Both attempts are via an SSL VPN connection.
Outcome:	When a Directly Connected T2S Actor accesses from an IP address authorised by the NSP, access to T2S U2A is granted, otherwise rejected. Access will only be granted via a SSL VPN.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

A2A Interface with the users

Reference ID	T2S.UC.TC.30255	

Description:	Verify the A2A interface with the users.
Expected result:	The NSP offers an interface to the users able to manage A2A flows described in the Technical Requirements.
Detailed test procedure:	The Directly Connected T2S Actor's A2A attempts to access the T2S Platform from an authorised IP address and access is granted. The Directly Connected T2S Actor's A2A attempts to access the T2S Platform from an unauthorised IP address and access is denied.
Outcome:	NSP offers an A2A access to Directly Connected T2S Actor.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____

Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

U2A Interface with the users

Reference ID	T2S.UC.TC.30260	

Description:	Verify the U2A Interface with the users.
Expected result:	The NSP interface at the T2S user's site is based on HTTPs protocol.
Detailed test procedure:	The Directly Connected T2S Actor accesses the U2A, check that access is granted via the HTTPs protocol.
Outcome:	U2A access is via HTTPs protocol only.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED

	If failed, then description of the follow up action:
	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

U2A Interface with the users – minimal requirement

Reference ID	T2S.UC.TC.30265	

Description:	Verify the U2A interface with the users – minimal requirement.
Expected result:	The interface between Directly Connected T2S Actor and NSP supports the requirements listed in the Technical Requirements.
Detailed test procedure:	N.A. This test is considered passed when all previous 5 U2A test cases are passed.
Outcome:	U2A web browsing features described in the Technical Requirements are fully complied with, and the previous 5 U2A tests are passed.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

8. SECTION IV - Security Services - test cases

Technology and organisational processes

Reference ID	T2S.UC.TC.41010	

Description:	Verify the technology and organisational processes from the security perspective.
Expected result:	The NSP offers state of the art technology and organisational processes to support in an effective and efficient way the security of the T2S infrastructure and information.
Detailed test procedure:	Acknowledge the NSP's choice to conform to Statement on Auditing Standards (SAS) No. 70 best practices and/or the ISO27001 standard. Assess deviations of the implementation from the above mentioned best practices / standard. Produce a deviation analysis; devuatuibs (if any) trigger an action list. Measures recorded on this list have be addressed before the user tests.
Outcome:	NSP complies with the Statement on Auditing Standards (SAS) No. 70 best practices and/or the ISO27001 standard.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Security platform as a service

Reference ID	T2S.UC.TC.41020	

Description:	Verify the security platform as a service.
Expected result:	The NSP delivers a technical infrastructure and software components to the Directly Connected T2S Actor and to the T2S Platform allowing management of the T2S security.
Detailed test procedure:	N.A. This test is considered passed when all Security Services test cases are passed.
Outcome:	The NSP operates its T2S security platform assuring compliance with the T2S security requirements laid out in Technical Requirements.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____

Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Operational readiness

Reference ID	T2S.UC.TC.41030	

Description:	Verify the operational readiness.
Expected result:	The NSP guarantees the operational readiness of all relevant security devices and components of its security platform according to the relevant service levels.
Detailed test procedure:	List security devices and components, both HW and SW, e.g. network encryption device, signing software, PKI services, etc. Verify the operational status of each.
Outcome:	Security devices and components are operationally ready.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED

	If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Encryption of all incoming and outgoing traffic

Reference ID	T2S.UC.TC.42040	

Description:	Verify all incoming and outgoing traffic is encrypted.
Expected result:	The NSP ensures confidentiality of all T2S information in transit over its Network. The NSP's gateway encrypts all incoming and outgoing traffic.
Detailed test procedure:	Jointly analyse end-to-end (from the Directly Connected T2S Actor to the NSP, within the Network, from the NSP to the T2S Platform) which network segments (if any) transport unencrypted data. Assess if it is possible for the NSP's staff or third parties to access the unencrypted data. Flag gaps (if any) and identify corrective measures to be addressed before the user tests.
Outcome:	The NSP ensures that its staff and other parties cannot access or copy unencrypted data exchanged over its network (except when subject to access controls, security logging and reporting).
Result:	Is the outcome matching the expected result? [] PASSED

	[] FAILED
	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Segregation of data

Reference ID	T2S.UC.TC.42050	

Description:	Verify the segregation of data.
Expected result:	The NSP ensures that Directly Connected T2S Actor can access only their own incoming and outgoing traffic.
Detailed test procedure:	1. a Directly Connected T2S Actor can access in A2A his own relevant data;
	2. a Directly Connected T2S Actor can access in U2A his own relevant data;
	3. a Directly Connected T2S Actor can not access in A2A data relevant to other Directly Connected T2S Actors;
	4. a Directly Connected T2S Actor can not access in U2A data relevant to other Directly Connected T2S Actors.
Outcome:	NSP ensures that the Directly Connected T2S Actor can access only their own incoming and outgoing traffic.

Result:	Is the outcome matching the expected result?
	[] PASSED
	[] FAILED
	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Digest algorithms

Reference ID	T2S.UC.TC.43060	

Description:	Verify digest algorithms.
Expected result:	The NSP uses only strong and not deprecated digest (hash) algorithms end to end (from Directly Connected T2S Actor to NSP, within the NSP and from NSP to the T2S Platform).
Detailed test procedure:	List end to end (from Directly Connected T2S Actor to NSP, within the NSP and from NSP to the T2S Platform) which digest (hash) algorithms are used and where.

Outcome:	The NSP uses SHA-1 and MD5 weak digest algorithms to generate digests only for a limited period of time.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Integrity of traffic

Reference ID	T2S.UC.TC.43070	

Description:	Verify the integrity of traffic.
Expected result:	The NSP ensures the integrity of all traffic exchanged between Directly Connected T2S Actor and the T2S Platform.
Detailed test procedure:	Jointly analyse end-to-end (from Directly Connected T2S Actor to NSP, within the NSP, from the NSP to the T2S Platform) which network segments (if any) transport data without integrity checking the data itself. Assess if it is possible to modify data while in transit. Flag deficiencies (if any) and identify corrective measures to be addressed before the user tests.

Outcome:	Integrity of traffic is guaranteed end to end.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Integrity of software components

Reference ID	T2S.UC.TC.43090	

Description:	Verify the integrity of software components.
Expected result:	The NSP assures software components integrity. The NSP digitally signs relevant software components; the Eurosystem manages digital keys used for signing.
Detailed test procedure:	List all SW used end-to-end (i.e. signing, encryption, key management) for the A2A solution. Verify if all SW is signed and by whom. Identify unsigned

	software, list it in a deficiency analysis, and include dificiencies into a list of measures to be taken before user tests. Repeat test for the U2A. Describe the malicious code prevention strategy.
Outcome:	Integrity can be proven for all software components. All SW components are signed either by the NSP or by the producer.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Integrity of audit logs

Reference ID	T2S.UC.TC.43100	

Description:	Verify the integrity of audit logs.
Expected result:	The NSP ensures and controls the integrity of all T2S audit logs.

Detailed test procedure:	List all audit logs, specify their location, and assess the procedures in place to identify if they have been manipulated. Verify integrity can be ensured for all audit logs, and if not, then identify the gap, describe the corrective action, apply the corrective action before the user tests.
Outcome:	Audit logs integrity is ensured.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Infrastructure

Reference ID	T2S.UC.TC.44110	

Description:	Verify the presence of infrastructure and SW to support user's identity and users credentials.

Expected result:	The NSP delivers a technical infrastructure and necessary SW components to Directly Connected T2S Actor and to the T2S Platform allowing management of users identity and users credentials.
Detailed test procedure:	List all components used for users identity and users credentials, both from the infrastructural perspective and the SW perspective. Verify user management is in line with the Technical Requirements, and if not, then identify the deficiencies, describe the corrective measures, conduct the corrective measures before the user tests.
Outcome:	User management is in place and in line with the Technical Requirements.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Unique identification of users

Reference ID	T2S.UC.TC.44120	

Description:	Verify the unique identification of the T2S Platform and Directly Connected T2S Actors.

Expected result:	NSP identifies Directly Connected T2S Actor and T2S Platform uniquely.
Detailed test procedure:	Verify NSP uniquely identifies Directly Connected T2S Actor via digital certificates. Verify NSP uniquely identifies T2S via digital certificates.
Outcome:	The NSP guarantees the identification via digital certificates.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Multi-identification of a user

Reference ID	T2S.UC.TC.44130	

Description:	Verify the multi-identification of a Directly Connected T2S Actor or the T2S Platform.
Expected result:	NSP allows multi-identification of a Directly Connected T2S Actor ot the T2S Platform.
Detailed test procedure:	Use a U2A application, from a Directly Connected T2S Actor, with a certain user account. Use a U2A application, from the same Directly Connected T2S Actor, with a different user account. Repeat the test for an A2A application.
Outcome:	NSP accommodates multi-identification of a Directly Connected T2S Actor consistently: it is possible to discriminate single users coming from the same institution.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Decentralised management of users

Reference ID	T2S.UC.TC.44140	

Description:	Verify the decentralised management of users.
Expected result:	NSP allows Directly Connected T2S Actor' local security administrators and T2S' / Eurosystem's local security administrators to manage users' identity and credentials required to access T2S.
Detailed test procedure:	The local security administrator creates a new user and assigns credentials (user provisioning), T2S' / Eurosystem's security administrator approves access privilege granting access to the T2S Platform (service provisioning).
Outcome:	Local security administrators manage users' identity and credentials. T2S' / Eurosystem's security administrator is able to approve access privilege granting access to the T2S Platform.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____

Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Identification

Reference ID	T2S.UC.TC.44150	

Description:	Directly Connected T2S Actor and the T2S Platform identification.
Expected result:	The NSP identifies Directly Connected T2S Actor and the T2S Platform every time a new session opened via the NSP's gateway. Identity of the sender is in the message / file envelope.
Detailed test procedure:	Open a new A2A session, from Directly Connected T2S Actor to the NSP, send a message, and inspect the field relevant to sender's identity. Repeat test for a file. Repeat both tests test from the T2S Platform to the NSP.
Outcome:	In A2A NSP inputs the identity of the sender in the message and file envelope, receiver trusts this identity without checking it.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED

	If failed, then description of the follow up action:
	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Authentication

Reference ID	T2S.UC.TC.44160	

Description:	Verify the authentication.
Expected result:	The NSP authenticates (via digital keys stored in HSM) Directly Connected T2S Actor and the T2S Platform every time a new session to the gateway is opened. The NSP checks validity of digital certificates.
Detailed test procedure:	Open a new session to the gateway, read authentication logs, verify authentication logs are relevant to digital keys stored in HSM. Read logs about digital certificates validity.
Outcome:	Cf. expected result.
Result:	Is the outcome matching the expected result?

	[] PASSED
	[] FAILED
	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

User access

Reference ID	T2S.UC.TC.45200	

Description:	Verify user's access.
Expected result:	NSP restricts access only to identify and authorised users, according to the specifications described in the Technical Requirements.
Detailed test procedure:	Access using an authorised user is granted. Access using an unauthorised user is denied.
Outcome:	Access is granted only to identified and authorised users. Access restriction is applied by the NSP.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Logically segregated groups of users

Reference ID	T2S.UC.TC.45210	

Description:	Verify groups of users are logically segregated.
Expected result:	The NSP allows creation and removal of logically segregated groups of users. The NSP manages all the groups, with the distinction between production environment and test & training environment. The NSP can implement additional groups.
Detailed test procedure:	Create a new user group. Assign some users to the new user group. Check the new user is able to operate. Remove the previously created user group. Remove users assigned to it. Verify the Internet electronic workflow for user / group creation /deletion

Outcome:	In addition to the expected result, user and group creation is in line with the process described in the Technical Requirements.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Segregation of traffic

Reference ID	T2S.UC.TC.45220	

Description:	Verify the segregation of traffic: 1. separation of users, and 2. separation of environments.
Expected result:	The NSP ensures segregation of data traffic between different groups of users. The NSP ensures segregation of environments (production and test & training).
Detailed test procedure:	1. Send a message to a user belonging to a different user group. Repeat test for a file. Both attempts are expected to fail. 2. Using a test & training user account, send messages to the production environment. Repeat test for a file. Both attempts are expected to fail.

Outcome:	Different groups of users can not exchange data with each other. Environments (production and test & training) are segregated; messages / files can not be swapped between two environments.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Physical and logical access control of the NSP's infrastructure

Reference ID	T2S.UC.TC.45230	

Description:	Verify the physical and logical access control of the NSP's infrastructure.
Expected result:	The NSP protects the essential network components with physical and logical access controls. In particular, the NSP protects access to administration interfaces (such as encryption devices, NSP gateways, other network devices).
Detailed test procedure:	Assess the security posture of the NSP's network components, list and evaluate physical and logical access controls, inspect network diagrams and network

	components configurations, jointly identify deficiencies and possible points of improvement, prepare an action list and target all actions before user tests. Repeat the same process for administration interfaces.
Outcome:	Access to the NSP network components and administration interfaces are adequately protected with physical and logical access controls.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Audit log

Reference ID	T2S.UC.TC.46240	

Description:	Verify encryption devices / network devices audit logs.
Expected result:	NSP's encryption devices / network devices provided have a logging functionality enabled.

Detailed test procedure:	Check encryption devices / network devices are able to log and have logging enabled. Identify which external logging servers are configured; verify they are actually receiving logs.

Verify that an organisational procedure specifies which logs have to be available at which place. |
| *Outcome:* | There is a shared procedure specifying what encryption devices / network devices log where, and these logs are actually available where they should be. |
| *Result:* | Is the outcome matching the expected result?

[] PASSED

[] FAILED

If failed, then description of the follow up action:

_____

_____ |
| *Formal acceptance:* | Eurosystem testing team _____ date ____/____/____

NSP testing team _____ date ____/____/____ |

Audit logging

Reference ID	T2S.UC.TC.46250	

Description:	Verify session logging and network components audit logging.

Expected result:	NSP logs each data session established between its Directly Connected T2S Actor and the T2S Platform. NSP securely logs all network component changes, access attempts and security attacks/breaches on the network components.
Detailed test procedure:	For each of the following events check it is logged, document how and where: 1. start a new session; 2. change a network component configuration; 3. successfully access a network component; 4. fail three consecutive time the login to a network component; 5. attack a network component and breach in.
Outcome:	Session audit logging is available and so is network components audit logging for the above mentioned significant events.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Monitoring facilities

Reference ID	T2S.UC.TC.47260	

Description:	Verify network components' monitoring facilities.

Expected result:	The Eurosystem monitors, from an operational and a configuration point of view, the NSP's network components that provide security features (e.g. signing, encryption, key management…).
Detailed test procedure:	1. List NSP's network components providing security features (e.g. signing, encryption, key management…). Check if the Eurosystem is able to monitor operational changes and configuration changes. 2. Jointly assess how the NSP monitors the infrastructure for security vulnerabilities, breaches and attacks. Assess the change management process relevant to device update/patching. Evaluate how the T2S Platform interacts with this change management process. Identify possible improvements and convert them into actions.
Outcome:	The NSP monitors its infrastructure for security vulnerabilities, breaches and attacks and ensures quick updates of all devices whenever proven security patches are available. The NSP reports all issues to the Eurosystem using collaboration tools (such as e-mail, instant messages).
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Automated alerts

Reference ID	T2S.UC.TC.47270	

Description:	Verify the automated alerts in the event of a device failure, breach or attempted breach.
Expected result:	The NSP triggers automated alerts in the event of a device failure, breach or attempted breach. The NSP immediately provides alerts to the Eurosystem, using SNMP protocol v.3.
Detailed test procedure:	1. Power off a device, verify a SNMP v.3 trap is sent from NSP to the T2S Platform. 2. Attempt to breach a device, verify a SNMP v.3 trap is sent from the NSP to the T2S Platform. 3. Breach a device; verify a SNMP v.3 trap is sent from NSP to the T2S Platform.
Outcome:	SNMP v.3 traps are sent from the NSP to the T2S Platform in case any of the following events takes place: device failure, breach or attempted breach.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Change management

Reference ID	T2S.UC.TC.47280	

Description:	Network components change management process.
Expected result:	The NSP applies a strict change management procedure to its network components that provide security features to T2S. The NSP agrees with the Eurosystem upon the change management process.
Detailed test procedure:	Jointly assess the SLA documentation describing the change management process, more specifically focus on the part relevant to network components. Identify possible points of improvement (if any); record them as measures to be addressed before the user tests.
Outcome:	Change management process is agreed in a SLA.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

Network encryption failure

Reference ID	T2S.UC.TC.47290	

Description:	Verify a network encryption failure.
Expected result:	The NSP has designed and implemented procedures determining Network encryption failures which might not be identified by T2S. The NSP has designed and implemented procedures resuming the encryption functionality in such circumstances.
Detailed test procedure:	Jointly check if a scenario under which unencrypted traffic might not be identified by the T2S has been defined (if any). Check if an operational procedure to resume the encryption has been defined (if any).
Outcome:	The NSP agrees with T2S specific procedures under which unencrypted traffic might be allowed by T2S.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____

	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Encryption algorithms

Reference ID	T2S.UC.TC.48300	

Description:	Verify encryption algorithms.
Expected result:	The NSP implements 3DES or AES encryption algorithms with a minimum key length of 128 bit for symmetric keys and 1024 bit for asymmetric ones.
Detailed test procedure:	List equipment / systems using encryption algorithms; populate the list with the information of which encryption algorithms are used and corresponding key lengths.
Outcome:	All equipment / systems use either 3DES or AES encryption algorithms with a minimum key length of 128 bit for symmetric keys and 1024 bit for asymmetric keys.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED

	If failed, then description of the follow up action:
	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Encryption devices

Reference ID	T2S.UC.TC.48310	

Description:	Verify the encryption devices.
Expected result:	The NSP installs encryption devices in all T2S Sites. The NSP installs encryption devices in all its Directly Connected T2S Actor sites.
Detailed test procedure:	Check all T2S Sites have encryption devices. Check all Directly Connected T2S Actors' sites have encryption devices. Check the encryption devices specifications.
Outcome:	The encryption devices comply with security specifications stated in the Technical Requirements.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Management of encryption devices

Reference ID	T2S.UC.TC.48320	

Description:	Verify the management of encryption devices under NSP's responsibility.
Expected result:	The NSP manages all encryption devices under its own responsibility. In case of failure or disaster, the NSP has the possibility to manage these devices remote in a highly secured way.
Detailed test procedure:	Verify that the SLA clearly states that the NSP is responsible for devices. Collect information on the default/standard way the NSP manages devices. Collect information on the way the NSP manages devices during a failure and during a disaster. Assess this third scenario from a security perspective, identify possible improvement and record the agreed measures which shall be addressed before user tests.
Outcome:	Encryption devices under the NSP's responsibility. NSP has a way to manage

	them under normal operations, under the event of a failure and under the event of a disaster.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Public Key Infrastructure

Reference ID	T2S.UC.TC.48330	

Description:	The NSP delivers digital certificates via a Public Key Infrastructure (PKI) compliant with the X.509 ver. 3 standard.
Expected result:	Infrastructure provides the following components: 1. Certificate Authority, 2. Hardware Security Modules, and 3. Directory services.
Detailed test procedure:	Check that the NSP has a Public Key Infrastructure (PKI) compliant with X.509 ver. 3. Check that the NSP has in place: 1. Certificate Authority, 2. Hardware Security Modules, and 3. Directory services. Check Directly Connected T2S Actor has received the certificates.

Outcome:	The NSP has a Public Key Infrastructure (PKI) compliant with the X.509 ver. 3 standard. A Certificate Policy/ Certificate Practices Statement has been agreed with Directly Connected T2S Actor and the relevant infrastructure is in place.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Certification Authority compliance

Reference ID	T2S.UC.TC.48331	

Description:	Verify the Certification Authority compliancy to European legislation on eSignature.
Expected result:	The NSP is compliant to European legislation on eSignature.
Detailed test procedure:	Download the human readable version of the "European Commission: List of Trusted List information as notified by Member States", check if the NSP belongs to the Trusted List of Certification Service Providers.

	The above mentioned list is available here (http://ec.europa.eu/information_society/policy/esignature/eu_legislation/trusted_lists/index_en.htm)
Outcome:	NSP belongs to the Trusted List of Certification Service Providers.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Certification Authority

Reference ID	T2S.UC.TC.48340	

Description:	Verify the NSP's Certification Authority functions.
Expected result:	The NSP delivers Certification Authority (CA) functions to Directly Connected T2S Actor and the T2S Platform, i.e. generation, management, storage, deployment, and revocation of public key certificates.

Detailed test procedure:	A Directly Connected T2S Actor generates a certificate using the NSP's CA. The Directly Connected T2S Actor is able to manage the certificate life cycle (store, deploy and eventually revoke certificates). Compare the life cycle with Certificate Policy and Certificate Practices Statement. The T2S Platform repeats the test.
Outcome:	The NSP ensures the above mentioned functions within the Certificate Policy and Certificate Practices Statement context.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Certificate Policy

Reference ID	T2S.UC.TC.48350	

Description:	Verify the Certificate Policy.
Expected result:	The NSP delivers to the T2S Platform the Certification Policy for the CA

	functions it performs.
Detailed test procedure:	Jointly analyse the NSP CA Certification Policy, in the analysis give a focus on responsibilities usage, enrolment, issuance, revocation, and liability.
Outcome:	The certificate policy focuses on certificates and the NSP (CA) responsibilities regarding these certificates. It defines certificate characteristics such as usage, enrolment, issuance and revocation procedures, as well as liability issues.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Certificate Practices Statement

Reference ID	T2S.UC.TC.48360	

Description:	Verify the Certificate Practices Statement.

Expected result:	The NSP delivers to the T2S Platform the Certificate Practices Statement for the CA functions it performs.
Detailed test procedure:	List the CA functions the NSP performs. Jointly inspect the Certificate Practices Statement, with a special focus on operational procedures.
Outcome:	The Certificate Practice Statement concentrates on the operational procedures related to the certification authority functions.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Hardware Security Modules

Reference ID	T2S.UC.TC.48370	

Description:	Verify Hardware Security Modules (HSM): tamper-proof and FIPS 140.

Expected result:	The NSP provides tamper-proof Hardware Security Modules (HSM) for storing all digital keys used in the connectivity solution (for both the U2A and A2A services).
Detailed test procedure:	1. Check if all digital keys used in the Network are stored in the HSM; 2. check if the HSM(s) is FIPS 140 - L3 compliant; 3. check if the HSM(s) are installed in the T2S premises.
Outcome:	The HSM(s) complies with FIPS 140 for security level 3. HSM(s) is/are installed at the T2S Sites.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Smart Cards

Reference ID	T2S.UC.TC.48371	

Description:	Verify if smart cards are FIPS 140 - L3 or Common Criteria EAL4+ compliant.
Expected result:	The smart cards provided by the NSP comply with FIPS 140 - L3 or Common Criteria EAL4+.
Detailed test procedure:	Check if smart cards are FIPS 140 - L3 compliant. Check if smart cards are Common Criteria EAL4+.
Outcome:	All smart cards are FIPS 140 - L3 or Common Criteria EAL4+ compliant.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Smart Card Readers

Reference ID	T2S.UC.TC.48372	

Description:	Verify the Smart Card Readers specifications.
Expected result:	The smart card readers provided by the NSP comply with the specifications listed in the Technical Requirements.
Detailed test procedure:	Check the smart card specifications.
Outcome:	Cf. expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Public Key Certificates

Reference ID	T2S.UC.TC.48380	

Description:	Verify the Public Key Certificates.
Expected result:	The NSP describes the format for the public key certificates in use.
Detailed test procedure:	View the certificates and check the details of the semantic profile.
Outcome:	The certificates have been submitted and their format is based on the X.509 standard. The certificates include a detailed semantic profile of its public key certificates.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____

Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Public Key Certificates Directory Service

Reference ID	T2S.UC.TC.48381	

Description:	Verify the Public Key Certificates Directory Service.
Expected result:	The NSP delivers an LDAP Directory Service accessible from the T2S Platform.
Detailed test procedure:	View contents of the LDAP Directory Service, list which parameters uniquely identify the user.
Outcome:	The Directory Service provides, for each user, a single entry containing surname, name, fiscal code (or equivalent) and public key certificates.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED

	If failed, then description of the follow up action:
	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Certificate Extensions

Reference ID	T2S.UC.TC.48390	

Description:	Verify the Certificate Extensions
Expected result:	The NSP delivers a description of the certificate extensions which are in use (if any).
Detailed test procedure:	Check whether the NSP has certificate extension in use (if any). Inspect digital signature certificates Non-Repudiation bit in the "Key usage" extension.
Outcome:	Certificate extension in use (if any) have been submitted and documented. The Non-Repudiation bit of digital signature certificates are set in the "Key usage" extension.

Result:	Is the outcome matching the expected result?
	[] PASSED
	[] FAILED
	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Certificate revocation list

Reference ID	T2S.UC.TC.48395	

Description:	Verify the Certificate revocation list.
Expected result:	The NSP provides the CRL in the HTTP, LDAP and OCSP formats.
Detailed test procedure:	1. Query the NSP's CRL using HTTP;
	2. Query the NSP's CRL using LDAP;
	3. Query the NSP's CRL using OCSP.

Outcome:	It is possible to read the CRL using any of the following protocols: HTTP, LDAP and OCSP. The Eurosystem will choose the protocol it deems most appropriate from a performance point of view).
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Digital Signature management

Reference ID	T2S.UC.TC.48396	

Description:	Verify the digital signature management.
Expected result:	The digital signature is created with the certificate provided to the sender by the NSP and the receiver of the message/file is able to check the validity of this signature.
Detailed test procedure:	The sender digitally signs a message; the receiver of the message is able to check the validity of the signature. Run the test with a Directly Connected T2S Actor as sender and the T2S Platform as a receiver. Run the test with the T2S Platform as sender and a Directly Connected T2S Actor as a receiver.

	Repeat the test for a file.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Responsibilities for management of cryptographic keys

Reference ID	T2S.UC.TC.48398	

Description:	Verify that the responsibility to manage the cryptographic keys lies with the Eurosystem.
Expected result:	The management of cryptographic keys is under the sole responsibility of the Eurosystem, which is the only entity having operational and physical access to key storage devices (HSM) delivered by the NSP.
Detailed test procedure:	Verify whether a Directly Connected T2S Actor is able to access crypto keys in the HSM; verify whether the NSP is able to access them; verify that the

	Eurosystem is able to access crypto keys.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Administration of symmetric and asymmetric cryptographic keys

Reference ID	T2S.UC.TC.48410	

Description:	Administration of symmetric and asymmetric cryptographic keys
Expected result:	The NSP ensures the following administration functions for symmetric and asymmetric cryptographic keys: 1. Generation, 2. Distribution, 3. Renewal, 4.

	Storage, and 5. Revocation.
Detailed test procedure:	The NSP generates symmetric cryptographic keys. The NSP distributes symmetric cryptographic keys. The NSP renews symmetric cryptographic keys. The NSP stores symmetric cryptographic keys. The NSP revokes symmetric cryptographic keys. Repeat test for asymmetric keys.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Certificate independence

Reference ID	T2S.UC.TC.48420	

Description:	Verify the certificate independence of the location of the T2S Platform.

Expected result:	The certificates issued by the PKI are usable without any constraint to the physical location hosting The T2S Platform.
Detailed test procedure:	Use the certificate in one region, rotate the production to the other region, and verify application services still work correctly with the same certificate as used in the initial region.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Back up

Reference ID	T2S.UC.TC.49422	

Description:	Verify message and file backup policy.

Expected result:	The NSP provides back-up copies of information exchanged every day and stores them for a period of six (6) months .
Detailed test procedure:	Check the functionality of the message back-up, check where and for how long the messages are stored. Repeat the test for files.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Security framework (adopted or proposed)

Reference ID	T2S.UC.TC.49430	

Description:	Verify the possibility of an assessment of the security framework.
Expected result:	The NSP provides the security framework adopted for the security assessment, security strategy, deployment, management, and audit.
Detailed test procedure:	Check the SLA. Verify that the Eurosystem has the right to request an external company to execute or directly execute any security assessment. Receive the NSP's commitment to implement the recommendations issued. The NSP and the Eurosystem will agree on an action plan.
Outcome:	SLA documents that the Eurosystem can request or execute any security assessment and receive a commitment to apply the recommendations issued.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

9. SECTION V - Operational Services - test cases

Connectivity Services catalogue

Reference ID	T2S.UC.TC.51010	

Description:	The NSP develops a catalogue of Connectivity Services for Directly Connected T2S Actor as part of the T2S overall service catalogue.
Expected result:	The NSP has a service catalogue with the expected contents as described in the Technical Requirements.
Detailed test procedure:	Jointly read the Connectivity Service catalogue, verify that it includes a description of detailed services and service levels. The Connectivity Service catalogue contains: detailed services, service levels, volume related services, dedicated connectivity solutions, backup/alternative network access solutions, procedures to assure the Business Continuity, and information about services configuration and operation.
Outcome:	Connectivity Sservice catalogue includes contents described in the detailed test procedure.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

SLA, Operation and Escalation manual

Reference ID	T2S.UC.TC.51020	

Description:	Verify the SLA, the Operations Manual, the Escalation Manual, and the User Guides.
Expected result:	The NSP provides and maintains jointly with Eurosystem the Service Level Agreement, two reference manuals and several user guides.
Detailed test procedure:	Read the following documentation, written by the NSP, and check if it is in line with Technical Requirements: 1. the SLA, 2. the Operations Manual, 3. the Escalation Manual, and 4. the User Guides.
Outcome:	Above mentioned documents exists and responsibilities are as follows: The NSP is the owner of the manuals and is responsible for updates. The Eurosystem is responsible for verifying the accuracy of the manuals and for contributing to updates.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

NSP Support Teams

Reference ID	T2S.UC.TC.52030	

Description:	Verify that the NSP offer to the Eurosystem and Directly Connected T2S Actor a Service Desk.
Expected result:	The Eurosystem and Directly Connected T2S Actor can contact NSP Support Teams 24 h/day, seven days a week all year around. The NSPs Support Teams can trigger the procedure described in the Escalation Manual agreed on with the Eurosystem.
Detailed test procedure:	Interview a Directly Connected T2S Actor and check if it can contact the NSP Support Teams. Read the SLA offered by the NSP to Directly Connected T2S Actor, and check the service hours. Verify whether an escalation procedure is contained in the manual.
	Repeat the same test for the Eurosystem.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result?
	[] PASSED
	[] FAILED
	If failed, then description of the follow up action:
	_____

	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Trouble ticketing management

Reference ID	T2S.UC.TC.52040	

Description:	Verify the trouble ticketing management.
Expected result:	The NSP's Trouble Ticketing System (TTS) records all actions and time stamps at which a service request/update takes place. TTS is accessible via Internet both by the Directly Connected T2S Actors and the T2S Platform.
Detailed test procedure:	A Directly Connected T2S Actor logs in the NSPs TTS via the internet, opens a case for testing purposes, verifies case time stamp. Repeat the test from the T2S Platform.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED

	If failed, then description of the follow up action:
	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Trouble ticketing report

Reference ID	T2S.UC.TC.52050	

Description:	Verify the contents of the trouble ticketing report.
Expected result:	The NSP provides the Eurosystem on a monthly basis with a list of all severe, blocking and major incidents treated during the reporting period, including incidents where only final users are impacted.
Detailed test procedure:	Check the format and contents of the NSP's monthly reports. Look for the following information: case creation date/time, case closure date/time, impacted customers, severity of the incident and incident description and reason for closure. Ask the NSP further details about parameters and values contained in the report.
Outcome:	The NSP provides a monthly report containing all the information described in the Technical Requirements.
Result:	Is the outcome matching the expected result?

	[] PASSED
	[] FAILED
	If failed, then description of the follow up action:
	_____
	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

Incident management and escalation

Reference ID	T2S.UC.TC.52060	

Description:	Verify the incident management and escalation procedure.
Expected result:	A maximum time for intervention is set, a first update maximum time is set, incident reports are produced after a day, and proactive support is available.
Detailed test procedure:	View the SLA between the NSP and the Eurosystem and check that all the service metrics as described in the Technical Requirements are provided. Open a test incident and go through the process.
Outcome:	The NSP starts resolving each incident within 15 min after the incident has been reported and provides the first update within 30 min. The NSP produces an incident report within 24 hours from the start of the incident. The NSP

	informs the Eurosystem in advance about any known problems and any possible workarounds.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Escalation of connectivity failures

Reference ID	T2S.UC.TC.52070	

Description:	Verify the escalation of connectivity failures.
Expected result:	The NSP has developed a sound processes to detect, notify, escalate and resolve connectivity failures.
Detailed test procedure:	Read the section in the SLA concerning connectivity failures and the relevant process description. Simulate a connectivity failure by disconnecting an Ethernet cable between the NSP's line and the NSP's security device. Verify this event is perceived by the NSP's monitoring, check if it triggers an event, see how the event is handled, and follow it through the incident management process. Identify possible ways to improve the process (if any).

Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Proactive monitoring

Reference ID	T2S.UC.TC.53080	

Description:	Verify the permanent connections proactive monitoring.
Expected result:	The NSP undertakes proactive monitoring of the T2S permanent connections.
Detailed test procedure:	The Eurosystem and the NSP have jointly prepared an Operation Manual. Read the manual. List the elements monitored in the Operation Manual. List the permanent connections. Compare the two lists in order to verify the completeness of the Manual. Identify possible improvements of the Operation Manual (if any).

Outcome:	In line with the Operation Manual, the T2S' permanent connections are under the NSP's proactive monitoring.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Availability and bandwidth utilization report

Reference ID	T2S.UC.TC.53090	

Description:	Verify the availability and bandwidth utilization report.
Expected result:	The NSP prepares, on a monthly basis, reports on the availability of the monitored communication elements and on the bandwidth utilization of the permanent connections.
Detailed test procedure:	Read the monthly report on monitored communication elements. Check that the bandwidth utilization chart/values are available.

Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Transparency of the T2S Business Continuity towards the Directly Connected T2S Actors

Reference ID	T2S.UC.TC.54100	

Description:	Verify the imperceptibility of the T2S Business Continuity by the users.
Expected result:	The NSP supports the T2S Business Continuity imperceptibla to its Directly Connected T2S Actors, i.e. without any necessary intervention by a Directly

	Connected T2S Actor or impact on their technical configuration.
Detailed test procedure:	Simulate a T2S Business Continuity scenario, i.e. a rotation or an active site isolation. When the Business Continuity scenario is completed, check if the Directly Connected T2S Actor is able to access the T2S Platform seamlessly (without any impact or change to their configuration).
Outcome:	The NSP supports the T2S Business Continuity without any user intervention or impact on Directly Connected T2S Actor's technical configuration.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Periodic rotations of the T2S Platform

Reference ID	T2S.UC.TC.54110	

Description:	Verify the T2S Platform can periodically rotate.

Expected result:	In compliance with the T2S-specified service levels, the NSP supports the periodic rotations and backup procedures for the T2S Business Continuity.
Detailed test procedure:	Rotate T2S from one site in one region to the other site in the same region. Verify the impact on Directly Connected T2S Actors, no impact or configuration change is expected on their side. When the service is back, the Directly Connected T2S Actor accesses theT2S Platform in the same way as before, no configuration changes in the Directly Connected T2S Actor's systems are required. Repeat the test rotating the T2S from one site in one region to the other site in the other region.
Outcome:	The NSP supports traffic routing for periodic site rotations and backup procedures for the Business Continuity seamlessly for Directly Connected T2S Actor. A Directly Connected T2S Actor does not perceive in which site the T2S application is running. The rotation is fully invisible to CSDs, DCPs, NCBs and to the market infrastructures.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

T2S Business Continuity time objectives

Reference ID	T2S.UC.TC.54120	

Description:	Verify the T2S Business Continuity time objectives.

Expected result:	The NSP supports the T2S Business Continuity with the time goals described in the Technical Requirements.
Detailed test procedure:	Test the three following business continuity scenarios and take note of how long it takes to recover the full service operation: *scenario 1* - intra-region recovery, swap service between primary and secondary site in the same region; *scenario 2* - inter-region recovery, swap service between two sites in two different regions; and *scenario 3* - periodic rotation (same as scenario 2 but using the planned procedure rather than the emergency one).
Outcome:	Intra-region recovery (scenario 1) is completed in less than 15 minutes; inter-region recovery (scenario 2) is completed in less than 30 minutes; and periodic rotation (scenario 3) is completed in less than 30 minutes.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

No single point of failure

Reference ID	T2S.UC.TC.54130	

Description:	Verify that there is no single point of failure.
Expected result:	The NSP designs and implements the Network in a way avoiding single point of failure (SPOF). Additional software and hardware components are redundant.
Detailed test procedure:	Inspect detailed technical documentation whether the technical infrastructure is designed with full redundancy. Prove there is no single point of failure. Inspect the implementation and check whether it is in line with the TechnicalRequirements. Identify deficiencies (if any) and agree on corrective measures to be taken before user testing.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

DNS functionalities for Business Continuity

Reference ID	T2S.UC.TC.54140	

Description:	Verify the DNS functionalities for Business Continuity.
Expected result:	The NSP interfaces the T2S Platform Domain Name System (DNS) in order to obtain the current location of the services for A2A and U2A services.
Detailed test procedure:	Identify the T2S DNS servers. Check that they disclose to the NSP the IP addresses of the active T2S Site for the A2A and U2A application services. The NSP is able to "route" A2A and U2A requests to the active T2S Site.
Outcome:	T2S has communicated to the NSP four IP addresses (one per site) where a DNS server is activated. The NSP uses this information to "route" A2A and U2A to the active T2S Site.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

The NSP's business continuity

Reference ID	T2S.UC.TC.54150	

Description:	Verify the NSP's business continuity
Expected result:	The NSP manages its disaster recovery solution, affecting the Connectivity Services, with the objectives described in the Technical Requirements.
Detailed test procedure:	Activate a NSP intra-region recovery; take note of the time needed by the NSP to switch the traffic to the back-up site. Verify the impacts on the T2S Platform (if any). Activate a NSP regional disaster, take note of the time needed and verify the impacts on the T2S Platform (if any).
Outcome:	Cf. the expected result and additionally check: The NSP intra-region recovery is completed within 15 minutes, has no impacts on the T2S Platform. The NSP regional disaster withouttime commitment has no impacts on the T2S Platform.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action:

	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

10.SECTION VI - Implementation - test cases

Proof of Concept Test

Reference ID	T2S.UC.TC.60010	

Description:	Verify Proof of Concept (PoC) Test have been successfully completed.
Expected result:	The contract execution with the NSP is subject to the passing of the Proof of Concept Test.
Detailed test procedure:	Review all test PoC Test cases as described in Attachment 5 to the Licence Agreement. Confirm all Tests were passed and archive PoC test cases for documentation purposes. Identify if there are still some PoC related open actions / follow up actions which have not yet been completed.
Outcome:	The NSPs passed the PoC Test. If PoC Test was not passed, the License is withdrawn.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

NSP infrastructure sizing

Reference ID	T2S.UC.TC.61030	

Description:	Verify the NSP's infrastructure sizing.
Expected result:	The NSP sizes its infrastructure based on its expected market share and ensures it meets the performance and volume requirements.
Detailed test procedure:	Stress test the current solution by linearly increasing the amount of message data up to the maximum limit. Repeat test for files. Repeat test for a messages and files.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____

	NSP testing team _____ date ____/____/____

NSP Project management

Reference ID	T2S.UC.TC.64040	

Description:	Verify that the NSP has appointed a Project Manager (PM).
Expected result:	Within ten (10) days since Licence awarding, the NSP appointed a PM.
Detailed test procedure:	The NSP' PM was appointed, he/she is the central contact person coordinating all required project activities and communicating with T2S over the entire duration of the Licence.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____

	_____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____
	NSP testing team _____ date ____/____/____

NSP Project Manager Duties

Reference ID	T2S.UC.TC.64050	

Description:	Verify PM duties.
Expected result:	The PM accomplishes the duties outlined in the Technical Requirements.
Detailed test procedure:	List the PM's duties as outlined in the NSP's documentation. Compare the list with the duties outlined in the Technical Requirements.
Outcome:	Cf. the expected result.
Result:	Is the outcome matching the expected result? [] PASSED [] FAILED

	If failed, then description of the follow up action:
	_____ _____
Formal acceptance:	Eurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____

Project documents

Reference ID	T2S.UC.TC.64080	

Description:	Verify that the NSP has delivered the documents as required pursuant to the Technical Requirements.
Expected result:	The NSP has supplied the two documents described in the Technical Requirement.
Detailed test procedure:	Check whether an "Implementation Plan" has been provided. Check whether a "Project progress report" has been provided.
Outcome:	Cf. the expected result.

Result:	Is the outcome matching the expected result? [] PASSED [] FAILED If failed, then description of the follow up action: _____ _____
Formal acceptance:	EurosystemEurosystem testing team _____ date ____/____/____ NSP testing team _____ date ____/____/____