



EUROPEAN CENTRAL BANK

EUROSYSTEM

DG-MIP/MIS

ECB-UNRESTRICTED

T2

User Testing Terms of Reference (UT TOR)



EUROPEAN CENTRAL BANK
EUROSYSTEM

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Table 1: Document log

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1. Introduction

The User Testing Terms of Reference outlines the principles for the preparation, organisation and execution of User Testing, as agreed within the Eurosystem. This document covers all the aspects relevant for Release testing including regression testing, User Testing required for the onboarding of new currencies in T2 and user testing performed by joining T2 Participants and other specific tests. This document consists of the following sections:

Section 2 - Test Environment, which defines the principles and the scheduling for the usage of the test environment, processes of software deployment;

Section 3 - Testing and Readiness Subgroup (TRSG) Organisation which defines the responsibilities of the entities participating in the Release and User Testing;

Section 4 - Organisation of Release and User Testing and the principles that apply for organising and executing test phases within Release and User Testing;

Section 5 – Specific Tests – In parallel to Release and User Testing (UT), explains the additional testing activities to be carried out in Test environment;

Section 6 – UT Entry/Exit Criteria, which defines the general and any specific entry and/or exit criteria relevant for Connectivity testing, Release testing and User Testing;

Section 7 - Service Support during Release and User Testing, which defines the level of support that the Eurosystem, ECB User Testing and Migration (MTR team) and the service provider (4CB) will provide to the Central Banks during User Testing;

Section 8 – Incident Management during User Testing, which defines the workflow between the TARGET Service Desk and National Service Desk;

Section 9 - Facilitating User Testing, which defines the terms, conditions and support that the Eurosystem will provide for the various types of User Testing.

2. Test environments

UTEST will host the Release and User Testing of T2. In this context and for future references in this document, unless otherwise specified, T2 refers specifically to CLM and RTGS.

2.1 General terms of reference

Release testing schedules will be defined later in the document. Migration testing with the joining currency testing will be carried out in accordance with the Migration plan. The scheduling of testing activities by a Central Bank must not impose a constraint on the testing of other Central Banks unless it has been agreed in advance within the TRSG.

2.2 UTEST environment Operational day scheduling

This section specifies the terms of reference for the operational day scheduling scenarios in UTEST as agreed and required for testing activities mentioned in the Testing Calendar (see details in Annex C).

Three (3) operational day schedules shall apply during the Release and User Testing with the exception of migration testing which follow the migration schedule/playbook of the Migration plan of the joining currency.

Operational day schedule	Description
T2-T2S synchronised standard day	Operational day schedule that T2 uses when a synchronisation of the scheduling between T2S and T2 is required.
T2-T2S synchronised release day	Operational day schedule that T2 uses for a day in which the deployment of a bug fix release takes place.
T2-T2S Live Timing Schedule	Operational day schedule that operates on the same timings as the production environment.

The Testing Calendar will define the exact periods (start and end dates) in which a test environment will operate a specific operational day schedule during Release and User Testing and communicated by the ECB MTR team.

The UTEST environment will be available Monday to Friday except when any maintenance activities are scheduled and when a deployment of software release has been agreed. Also following are the T2 closing days:

- 1 January,
- Catholic/Protestant Maundy Thursday (only for DKK)
- Good Friday

- Easter Monday
- Ascension Day (only for DKK)
- Danish Bank closing day (only for DKK)
- Whit Monday (only for DKK)
- 1 May (Labour Day)
- 5 June DK Constitution Day (only for DKK)
- 24 December
- 25 December (Christmas Day)
- 26 December
- 31 December

The T2-T2S Synchronised Standard Day will apply as default to the UTEST environment from Monday to Thursday. On Fridays, by default T2-T2S Synchronised Release day schedule will be applied in the UTEST environment, whether or not a deployment is planned.

The scheduling for Migration testing will follow the Migration plan and the Migration Weekend Playbook when Migration Weekend (Dress) Rehearsal testing takes place. The specific requirements and scope of the migration testing will determine the processes and procedures of the Migration Weekend Playbook.

The opening hours and events of the current business days may be consulted via BDM. No UTEST environment operational day scheduling scenario will require extended operational and technical support outside the support hours. If a problem occurs outside the support hours, the TARGET Operator will address the disturbance at the beginning of the next business day (i.e. 7.00 CET when the service hours starts) with a possible delay of the start of the normal operations and informs the TARGET Service Desk. The TARGET Service Desk will communicate the details of the issue and when in position, also provides the way forward to handle the issue under analysis. When necessary, the Central Banks convey relevant information to their T2 Participants.

2.3 Deployment management

Deployment management organises the rollout of software Releases and/or configurable parameter changes to UTEST environment. During the release testing and UT, all deployment activities will be included in the Testing Calendar.

2.4 Release Note

All changes in the T2, including the common components in UTEST environment (incl. bug-fixing changes) are clearly documented and provided by the 4CB in a release note before deployment. The contents will include the PBI number and a brief description of the issue, while the specific details are provided in the PBI (e.g. BOD – Business Oriented Description) present in Trouble Management System (TMS), the incident management tool used by the TARGET Service Desk and which the Central Banks can access to know the status of their incidents). The Release Note shall detail the changes and/or enhancements that have been made in a new version of the software. Each Central Bank testing in UTEST environment where the bug fix release is to be deployed shall assess the impact of the bug fix release to its internal systems, to its T2 participants and identify whether any adjustments are needed in its internal system(s) that it has to undertake in parallel to the deployment of the bug fix release to this test environment. The Release Note shall contain the regression impact of the affected software components before issuing the final release note. For deployment on defects/bug-fixes identified in UT stage, the Release Note template provided by 4CB indicates the regression risk(s) identified (if any), and if needed, mitigation measures shall be discussed and agreed upon by the TRSG. A preliminary release note will be issued, the Friday before the deployment. The final Release Note for the release will be issued two (2) business days in advance to the deployment. The Final Release Note will be shared by the TARGET Service Desk with the Central Banks and the Central Banks share the relevant information from the Release Note with the T2 Participants. TARGET Service Desk will give the information about the full deployment as soon as it is completed.

2.5 Reference Data Propagation

In the User Testing, the data propagation from CRDM to RTGS and CLM has to be performed in the following manner.

- Reference data propagation relies on Business Data Management (BDM) to trigger the data propagation, activation and business day change
- In principle, the data propagation shall be performed automatically on a daily basis
- TARGET Service Desk team can decide to run data propagation flows manually in case of an incident, but this will not have any impact on testers/users
- T2DP (T2 Data Propagation) is cut-off for users to capture data that would be valid as of next business day. The cut-offs timing for the users depends on the applied schedule, which can be consulted via the BDM.

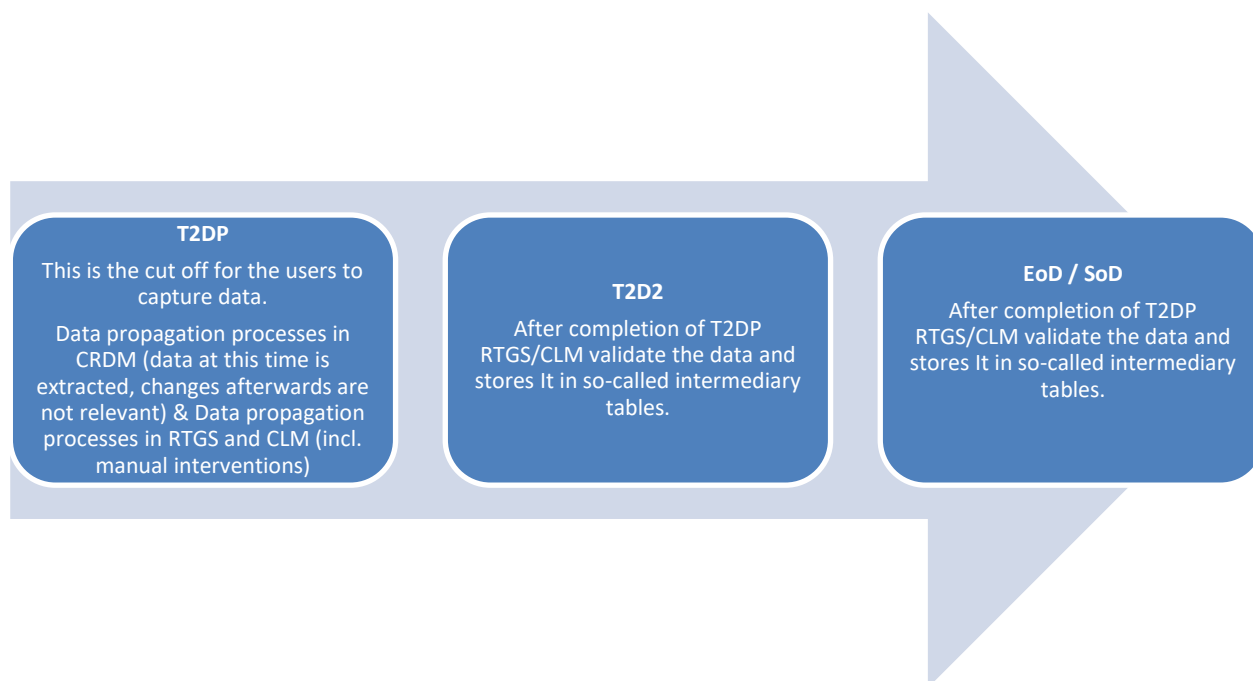


Figure 1 - Data propagation flow

3. Testing and Readiness Subgroup (TRSG) and organisation

3.1 TRSG role and responsibilities

The T2 Working Group (T2-WG) has established a dedicated “Testing and Readiness Subgroup” (TRSG) for inter alia Release and User Testing. In this respect, the TRSG is responsible for the coordination and monitoring of the testing activities.

The TRSG is responsible as well for the reporting on the status and progress of its testing activities to the T2-WG which in turn will be shared by the T2-WG with the Market Infrastructure Board (MIB). The TRSG shall plan, monitor, coordinate all testing activities that require the involvement of multiple Central Banks and escalate any testing issues to the T2-WG. Test related items for Central Banks (including new joiners) with no impact on other Central Banks/communities test activities can be managed between the Central Bank and ECB/4CB bilaterally.

3.2 TRSG calls

A fortnightly testing call is organised where the TRSG members discuss planned testing activities, the progress of testing and the nominated open incidents and defects (see chapter 8.4). The Testing Calendar will be discussed mainly to monitor the testing activities planned during the week, and the outlook for the next 8 weeks to come. The ECB MTR team will share the outcome of each call with all the TRSG members. The Central Banks can use the TRSG call to discuss any special testing requests with multilateral impact which needs to be raised at least 5 business days before the call, in order for the TARGET Service Desk to provide their analysis/feedback. In case of no items and issues for discussion, then that particular call shall be cancelled on a short notice.

In addition to the fortnightly conference call, any participant of the TRSG may request an ad hoc status call, if the TRSG member identifies an urgent issue that requires the attention, or has impact on several entities. The ECB MTR team will be responsible for the coordination of any ad hoc status calls where the TRSG will be invited to discuss on the current issue and agree on way forward.

3.3 Testing Calendar

The Target Services User Testing Calendar provides information on which and when testing-related activities are planned to take place in the UTEST environment for example, ORTs, ECONSII testing etc. The calendar provides the outlook of the known test activities. The testing calendar is treated as a dynamic document that will be updated on a weekly basis throughout UT with the coordination of all parties that are testing in the UTEST environment. The testing calendar is distributed to the TRSG/SMSG. It is not meant to be distributed to the T2 Participants as such. As some calendar items are also valid for the T2 Participants, it is up to each Central Bank to distribute this specific information to its community.

3.4 Release and User Testing Reporting and Monitoring

Release Testing reporting in T2 will follow the where the Central Banks also on behalf of their T2 community submit weekly reporting templates during the Release Testing period. Reporting of the onboarding of new currencies to T2 will follow a specific agreed reporting structure.

4. Organisation of Release and User Testing

Testing in UTEST environment can be categorised into following phases:

- User Testing for new joiners
- Release Testing in UTEST environment
- User Testing for New Currencies joining the T2 Service
- Specific testing for e.g. Migration testing, contingency procedure testing and operational testing
- Regression testing

4.1 Participating actors

The participating actors are

- The ECB User Testing and Migration (MTR) team;
- The TARGET Service Desk of the service provider;
- The Central Banks;
- The National Service Desk (NSD) at the Central Bank;
- The T2 Participants (Payment Banks)
- Ancillary Systems.

4.2 General Terms and assumptions

- The T2 Participants and the Central Banks are recommended to use the live BICs and real party data for their testing purpose in User Testing phases. Test and training BICs (with 0 at the 8th position) shall not be used as these became obsolete in ISO20022.
- In cases where a T2 Participants and/or the Central Banks has the need to perform a coordinated/specific testing, then the following terms apply
 - In case of a bilaterally coordinated tests between two T2 Participants arranged by their Central Banks, this can be planned between the testing entities without any consultation with the TRSG;

- In case a T2 Participant and/or the Central Banks coordinated test plan has a multilateral impact (i.e. it has impact on the other system entities in the environment) or would like to perform any specific test in specific time period (e.g. Ancillary system entities' testing, coordinated testing of a Change Request), then this request is to be communicated, discussed and agreed upon by the TRSG. The agreed plan will be implemented in the Testing Calendar; For such multilateral testing activities (e.g. Ancillary system, ,operational testing, etc.), the planning and details of testing shall be agreed as part of individual testing campaign to be conducted with the respective Central Banks.
- In cases where a Central Bank along with its T2 Participants, needs to perform any specific test which needs a specific set up requiring support from the TARGET Service Desk, then the Central Banks can share their requirement with the TARGET Service Desk and the TARGET Service Desk will process as a Service Request. The service request must be submitted 5 business days in advance and for testing which foresee any multilateral impact, a prior TRSG agreement is also needed (please refer to the previous bullet point).

4.3 Timeline

The timeline for release testing is elaborated in Service Transition Plan (STP) for given release. The timeline and milestone plan for the New Currency joining the T2 Service in this case DKK is shared in an accompanying Annex.

4.4 User testing for new joiners

4.4.1 Connectivity testing

Connectivity tests are the initial verification that the Central Bank¹ and its T2 Participants can communicate at the technical and application level with the T2.

The UTEST environment will be accessible via A2A and U2A. This connectivity is provided by a network service provider (NSP) chosen by the Central Bank and its T2 Participants. The dedicated connectivity guide will assist the Central Banks and their T2 Participants in their connectivity to UTEST environment. However, all NSP-specific steps and technical details (e.g. how to subscribe to the NSP's services for T2) are described in the documentation provided by the respective NSP. Thus, the T2 Participant and Central Bank must contact its NSP well in advance to gain knowledge on these additional requirements related to the connectivity configuration and set-up.

The scope of the connectivity testing phase is to ensure full technical connectivity in U2A and A2A in line with the selected NSP. The objective of the connectivity set-up and testing is to ensure full end-to-end connectivity to the UTEST environment via ESMIG.

4.4.2 Connectivity and Reference data set-up

4.4.2.1. Connectivity Guide

The “Connectivity guide” document to assist the Central Bank and T2 Participants in their connectivity is available on the ECB website. The Central Bank and its T2 Participants can start to set-up and test their connectivity in accordance to their onboarding plan [Registration and onboarding Guide](#).

4.4.2.2. Registration Form submission

For the new joiners, the initial reference data set up activity has to be completed in order to commence the User Testing. For the execution to commence as per the plan, the Central Banks shall submit their registration forms at the latest (4) weeks before the UT connectivity phase. TARGET Service Desk will create Central Banks' reference data with the details provided in their registration forms. The reference data set up by the TARGET Service Desk will be completed before the start of User Testing. The T2 Participants shall submit the registration form to their

¹ The Central Banks have to perform the connectivity testing for UTEST environment also, as the connection to ESMIG works the same way but the final URL are different, the MQ queues are different and there is a need of new provisioning with NSPs. Some firewalls/adaptations could be needed on Central Bank side for UTEST.

respective Central Banks/National Service Desk as per the planning between the Central Bank and the T2 Participants.

4.4.2.3. Subsequent reference data set-up

The Central Bank will then create T2 Participant's reference data from the registration forms received from the participant.

After this, T2 Participant should set up any additional data as per its individual testing needs.

4.5 Release testing in UTEST

The Central Banks along with their T2 Participants will perform release testing in UTEST environment based on the scope and planning as defined in STP for the given release.

4.6 New currencies joining the T2 Services

4.6.1 Scope of the Community testing phase

The section specifies the terms of reference for the new currencies UT Community testing.

The objective of the community testing phase is, for the Central Banks and their T2 Participants to test together the systems. The objective is also to enable the whole TARGET Services community to test every component available. The main focus in the UTEST environment is also to verify the operational readiness of the T2 Participants. The testing during this phase commences with the Connectivity testing for T2 Participants. This phase is followed by the reference data configuration by the Central Bank of the new currency and the subsequent configuration by its T2 Participants. The full view on the testing timeline is available in a separate Annex for the new currency DKK.

4.6.2 Scope of the Business day

The objective of the Business day testing phase is that the Central Banks and their T2 Participants test

- all operational procedures
- the End to end testing with the TARGET services (T2S and TIPS) connected to T2 in the UTEST test environment

- their internal systems to ensure that the system can follow the production schedule (T2 Participants)
- the scenarios which includes the regular business day testing as well as the Business day in abnormal situations and under contingency situations.

During this phase the Central Banks can request to apply T2 Live Timing schedule for the new currency (i.e. the schedule that is applied in production) with the exception of Fridays (release day schedule) in the UTEST environment.

4.7 UT Mandatory Testing – T2 Mandatory test cases for new joiners and new currency

All the Central Bank participants' T2 mandatory test cases should be successfully executed and reported to their respective Central Banks by the end of User Testing. The Central Bank T2 Participants' can start to run these T2 Mandatory test cases as soon as User Testing commences. The full list of T2 Mandatory test cases for the T2 Participants is available at ECB website . The T2 Mandatory test cases shall be executed during the User Testing. The Central Banks could ask their T2 Participants to perform more test cases than specified in T2 mandatory test cases (authorisation test cases). The process of submitting the test results and validating the results is under Central Bank responsibility.

4.8 Regression testing

The Central Banks will run regression test pack in UTEST environment. The test cases from regression test pack will be distributed among Central Banks. The TRSG will decide on the timing of execution. Even though regression testing is not mandatory for the T2 Participants, it is still advisable they run regression tests functionalities, which are considered the most critical in terms of their business. They could use the list of Mandatory test cases for this purpose.

5. Specific Tests – in parallel to User Testing phases

This Section specifies the different testing activities that runs in parallel to the functional test execution performed in the User Testing Community testing and User Testing Businessday testing phases.

5.1 UT Operational Testing

- The operational related tests shall be performed following the procedure defined in the Manual of Operational Procedures and as defined by the Central Bank of the new currency.
- The operational related test shall be performed during the User Testing Community and/or Business day testing phase once the TARGET services T2S and TIPS are connected to T2 in new joiners currency in the UTEST environment.
- The planning and details of testing shall be agreed as part of operational related testing campaign
- The operational tests shall be planned and performed as per the testing needs of the Central Banks and their participants provided the planning aspects are discussed and agreed in advance within the TRSG for tests with multilateral impact.
- The agreed plan after TRSG approval will be implemented in the Testing Calendar.

5.2 Contingency Scenario Testing

The objective of the contingency testing is to validate the contingency procedure/measure according to the pre-defined contingency scenarios defined by the Central Bank of the new currency. The scenarios will be described in the Contingency Procedures deliverable and selected following a risk based approach (high criticality based on probability vs. impact). The Central Bank of the new currency will communicate with its T2 Participants when these scenarios shall be tested and also the detailed procedure for testing the contingency scenarios. If there is an impact on other CBs the TRSG will agree on when these scenarios shall be tested when planning the detailed testing calendars.

5.3 Migration Testing

5.3.1 UT Migration weekend (dress) rehearsal

The section specifies the terms of reference for the Migration weekend (dress) rehearsal.

The objective of the Migration weekend (dress) rehearsal is to rehearse the initialisation of balances on T2 and their reconciliation at the Central Bank and Participants' level. It also includes the subsequent batch clearing and migration to TIPS. Participation in the Migration Weekend (Dress) Rehearsals is mandatory for both Central Bank and the T2 Participants.

The execution of the phase will follow the Migration weekend playbook defined by the ECB MTR team and the Central Bank of the new currency.

6. UT Entry/EXIT Criteria

6.1 Connectivity testing phase for new joiners

Entry Criteria

- The Central Bank completes the e-ordering and/or domain join request process with the chosen NSP for UTEST environment
- The T2 participant completes the e-ordering or domain join request process with the chosen NSP
- The T2 participant completes a pre-test of the connectivity in U2A²

Exit Criteria:

- U2A, reach landing page,
- A2A, receive a response from T2

6.2 New currency User Testing Execution

Entry Criteria:

- Participants have been registered with their responsible Central Bank for testing
- The participants' starting the User Testing have submitted the registration forms to their respective Central Banks (i.e. their National Service Desk) to perform the registration process in the test environment. The Central Bank will provide further guidance to its T2 Participants on how this process will proceed.
- Availability of UTEST environment with necessary tools to start the testing (i.e T2S simulator).
- National Service Desk is set up at the CB side
- MIB decides on the start of the UT testing stage

Exit Criteria:

² SWIFT provides a tool which allows participant to check their subscription and pre-test their U2A connectivity. For more information please visit the SWIFT portal <https://www.swift.com/join-swift/swift-usership/how-join>

- T2 participants complete their User Testing T2 Mandatory test cases
- Central Banks and their participants complete, Migration (dress)Rehearsal.
- All discovered defects with high criticality related to the functionality have been resolved
- A resolution timeline for all discovered defects with medium or low criticality related to the functionality has been approved by the MIB
- Central Bank of the new currency confirms the readiness of themselves and their communities to exit User Test Stage as part of their reporting and in a dedicated TRSG meeting
- MIB decides on the closure of the UT testing Stage based on the recommendation from Central Bank of the new currency, 4CB and ECB.

7. Service Support during User Testing

In order to fully address the UT related aspects, the Eurosystem provides support via two interlocutors - the TARGET Service Desk and the ECB MTR team. The National Service Desk at the Central Bank provides support to the T2 participants.

7.1 TARGET Service Desk

The TARGET Service Desk of the service provider (4CB), on behalf of the Eurosystem, is the interlocutor for testers and test managers of Central Banks on any matter related to test execution (e.g. reporting of incidents and defects, supporting by clarifying failing test cases, addressing functional aspects etc.). The TARGET Service Desk provides service support for User Testing on all T2 business days, between 07:00 and 19:00 CET Monday to Thursday, and between 07:00 and 17:30 CET on Friday Exceptions may apply in case of specific test campaigns with specific schedules (e.g. migration testing).

7.1.1 Responsibility

The TARGET Service Desk will support Central Banks in case of any questions on functionality, data configuration and test execution. From the Central Bank point of view, TARGET Service Desk is the single point of contact for all T2 User Testing incidents, service requests, or defects. The TARGET Service Desk conducts the active operational monitoring of testing infrastructure (e.g. test environment, message flow to/from the network service providers) and proactively informs the ECB MTR team and TRSG members about any issue impacting the overall standard processing which could lead to conference call to assess the impact and then agree on the way forward.

Provided that the Central Banks proactively informs the TARGET Service Desk of extraordinary activities/specific tests in regard to incoming volumes and other tests which could potentially stress the system, the TARGET Service Desk assesses the capacity constraints of the environment, taking into account also known activities planned on the other test environments and other TARGET services.

TARGET Service Desk provides all necessary support for the technical tools (example: Data Migration Tool and testing simulators) during the testing period.

7.2 ECB MTR team

The ECB MTR team is the interlocutor for the Central Bank test managers for coordination, planning and overall testing aspects.

7.2.1 Responsibility

The ECB MTR team will support any co-ordination activities required during the UT testing phase, especially related to the Migration rehearsal. The ECB MTR team is the interlocutor for the Central Bank Test Managers for test coordination, planning and overall testing aspects. The ECB MTR Team is responsible for coordinating the testing activities, adding all the testing activities in the Testing Calendar and also for the maintenance of the Testing Calendar. With the help of the Testing Calendar, the ECB MTR will monitor the upcoming testing activities and in turn ensures that the Central Bank and their participants' testing are progressing as planned.

The ECB MTR Team and the TARGET Service Desk will ensure that they will re-route any misrouted tasks internally without any delay to the team in charge.

7.3 NSD (National Service Desk)

7.3.1 Responsibility

National Service Desks (NSD) will be the single point of contact for the T2 participants for any questions related to User Testing organisation in terms of testing, reporting of incidents, problems and all other processes being part of User Testing. In case of any connectivity issues for T2 participants, and when the Network Service Provider (NSP) informs the National Service Desk, then this shall be communicated to the TARGET Service Desk by the National Service Desk.

The NSD will confirm the participants' successful Mandatory test cases' testing activities to the ECB MTR team after the participants testing completion. Furthermore, a NSD is the single point of contact for the distribution of any information related to TARGET Services User Testing to the T2 Participants (e.g. release notes, Test Calendar³, etc.).

7.3.2 Service Hours

The National Service Desks will be available during standard business hours, guaranteeing an integral service support for all TARGET-Services components. Each Central bank will provide more detailed information on support provided to its T2 Participants during testing.

³ The Test Calendar is distributed to the TRSG. It is not meant to be distributed to the T2 Participants as such. As some calendar items are also valid for the T2 participants, it is up to each Central Bank to distribute this specific information to its community.

8. Incident and defect management

This section specifies the terms of reference of Incident Management during User Testing, which defines the workflow between the TARGET Service Desk, Central Banks, National Service Desk and Participants.

8.1 Incident Management - TARGET Service Desk

During UT, each Central Bank can report anomalies using the template in Annex B or submit a request via telephone (00390620663333 and 004969968640333) or e-mail to the TARGET Service Desk: t2-test@target-ssp.eu. As a first step, any anomalies reported are logged and tracked within the Trouble Management System (TMS). An item can be an incident or a service request. Upon acceptance of an incident or service request the TARGET Service Desk will assign a reference number and a priority level. The incident raiser can specify the criticality of the incident to the Service Desk, however it is not mandatory for the TARGET Service Desk to take the incident raisers' prioritisation.

The consequent incident response time defines the period between the incident being detected or information about the incident received by the TARGET Service Desk and the start of the action to resolve the incident.

Incident priority	Severity	Impact	Response time	Comment
Priority 1	Critical	Complete unavailability of any of the TARGET Services.	15 min	The TARGET Service Desk informs and updates all the Central Banks and ECB MTR team on the resolution status of the incident.
Priority 2	Urgent	Partial failure, causing operational difficulties that can be worked around or blocking the test execution.	30 min	The TARGET Service Desk communicates bilaterally with the incident raiser and decides on a case by case basis in terms of communication of the resolution status with all the

				Central Banks and ECB MTR team.
Priority 3	Medium	The service is available, but some are experiencing performance problems	1 day	n/a
Priority 4	Low	Query or service request	1 day	n/a

Table 1: Classification of incidents based on the priority and the response time

In the case of the identification of a priority 1 incident all central banks will be informed within the required response time.

Each Central Bank is entitled to access detailed information of each UTEST environment related incidents or Service Requests via the TMS GUI. The key to retrieving this detailed information is the reference number which is assigned to the item immediately when the interaction between the Central Bank and TARGET Service Desk takes place. By default, the incident will be logged into the TMS system with “Broadcast” option. With this option, all the incidents raised can be accessed by all the system entities/CBs. In case an entity would prefer a non-broadcast option, then this has to be requested explicitly every time an incident is raised.

Each TMS item has a life cycle from the opening until the closure through updates and status changes. In such case, the concerned Central Bank receives a notification (with the status of the incident/ticket) to the single mail address communicated to the TARGET Service Desk with the invitation to check the item’s status.

The priority assigned to the incident reflects severity and the impact of the incident on the functioning of TARGET services. According to the priority assigned to the incident, resolution time is defined by the following table:

Incident priority	Incident resolution time
Priority 1	1 business day or as agreed
Priority 2	2-5 business days or as agreed
Priority 3	According to the agreed plan in the TMS when the incident occurs.
Priority 4	According to the agreed plan when the incident occurs (e.g. Service Request)

Table 2: Classification of incidents based on the priority and the response time

8.2 Incident Management – National Service Desk

Incidents are situations causing TARGET Services to malfunction and operating outside normal parameters. More specifically, an incident can be labelled as an event which is not part of standard operations and which causes, or may cause, an interruption to, or a reduction in, the quality of service. The effect might be immediately visible, or only detected at a later stage and it may be of a technical, operational or financial nature. Incidents identified by User Testers must be reported to the relevant National Service Desk.

To facilitate timely investigation, the following information should be included while reporting an incident (non-exhaustive list):

- Describe the error as thoroughly as possible
- Include the date and time when the incident occurred
- For U2A issues, complete screenshots (User, Header, Environment, screen access path must be visible)

The National Service Desk will log the incident with the TARGET Service Desk and receive an incident number. Incidents may result from one or more root causes such as:

- (i) a failure of any relevant component or software on the system's technical platform;
- (ii) a procedural or operational failure;
- (iii) a strike or major external event (e.g. natural disasters, large-scale power outages, terrorist attacks, coinciding events).

8.3 Environment status

The TARGET Service Desk provides daily status update on the availability of TARGET Services at 07:00 CET. It is the responsibility of the NSD of the Central Bank to forward any relevant information on the availability of TARGET Services to its participants.

The TARGET Service Desk will also inform the Central Banks if an issue occurs during the day, which impacts the availability of the services. Until resolved, The TARGET Service Desk will provide frequent updates on the status within the scheduled support hours (07:00 to 19:00 CET).

Incidents discovered must be reported to the TARGET Service Desk as soon as possible and supported by evidence documentation such as GUI screen prints.

- For A2A issues ,FULL copies of all relevant xml messages sent & received (Header, BAH, Body, Ack for the message sent)

Once reported, the TARGET Service Desk will provide an incident number. Incidents which require a software fix will be declared from TARGET Service Desk as a release Defect/Production Problem⁴ and receive a problem ticket. A defect is an event that leads to an unwanted outcome of a test case or to a misalignment between the expected outcome of a test case according to scope defining documents and the desired result. The final assessment on whether a defect is a valid defect or duplicate or not valid, etc. is made by the TARGET Service Desk. Their decision will be based on the actual incident analysis. If a new defect is positively declared, the TARGET Service Desk will assign it a new and unique problem number.

In parallel, the TARGET Service Desk closes the underlying incident and the concerned Central Bank receives a notification. The defects/problems that the Central Banks would like to discuss needs to be nominated and these will be discussed in the TRSG weekly call taking into consideration the below timeline:

- For Defects/Problems not having a Scope Defining Document (SDD) impact:
 - within 5 Business Days after opening the Defect/Problem the 4CB have to provide the BOD (Business Oriented Description)⁵;
 - the NCBs (SMSG) have to request the Defect/Problem for a certain delivery;
 - then the 4CB have further 5 Business Days to assess the pertinent feasibility;
 - After the feasibility assessment the Central Banks are asked for their agreement within the SMSG and only then the Defects/Problems implementation work will start.
- For Defects/Problems with an SDD impact this require the T2-WG approval regarding the solution detailed in the SDD-CN as additional step between BOD provision and feasibility assessment.

⁴ A release defect is a bug present only in test environment, whereas a production problem is a bug which is present in both test and prod environment. If a release defect is not solved before the software goes into PROD environment, it automatically becomes a production problem

⁵ Taking into consideration that the required complete information and data concerning the issue have been provided by the raiser.

8.4 Consolidated List of open incidents and defects

All UTEST environment open incidents and defects appear on the consolidated list of open incidents and defects, which is an Eurosystem internal document. This document is an extract from the Trouble Management System and contains incidents and defects information such as Ticket ID; Business reasoning / description; Opening date; Priority assigned by the TARGET Service Desk; Business Oriented Description; status of the incident/defect (under investigation, pending, etc.); UTEST environment resolution date in case of defect (only if available).

The consolidated list is generated on a weekly basis by the TARGET Service Desk and provided to the ECB MTR team at least 2 days in advance of the TRSG conference call or latest by Wednesday on the week when there is no TRSG call. The ECB MTR team then communicates the list accordingly to the TRSG as soon as possible upon receipt. The TRSG members shall nominate the incidents and defects/problems that need to be discussed at least 2 days in advance of the TRSG call or to be answered in written. The Settlement Managers Sub-Group (SMSG) is responsible for the prioritisation of the defects/problems and the consequent release allocation and the 4CB feasibility assessment.

If T2 Participant needs to understand the deployment plan for a PBI affecting them, they need to connect with National Service Desk who has this information.

9. Facilitating UT

9.1 Pre-Validation of messages

Central Banks and T2 Participants can verify/test the compliance of message versions in the Readiness Portal with specifications provided in the UDFS/MyStandards. The portal is a web application built on top of MyStandards. Tests with the MyStandards Readiness Portal neither require nor verify the connectivity via ESMIG. MyStandards Readiness Portal neither allows to reach nor test the CLM and RTGS functionality.

The Readiness Portal provides direct links to relevant documentation in MyStandards. Portal users need a web browser and internet access and must be registered with SWIFT. The email addresses of the portal users are stored by SWIFT and the TARGET Service Desk. Users have to be authorised to test messages using the MyStandards Readiness Portal. Progress and results of the tests can only be monitored by the individual user.

9.1 Facilitating Billing

9.1.1 Billing period

In order to assist testing, the billing module can offer the possibility to produce invoices for shorter billing periods in T2 UTEST environment with an agreement of the TRSG.

9.1.2 TARGET services invoicing

Due to the fact that invoice creations are service-specific, the testing of the creation of the invoices is independent per each service.

The default billing is monthly and automatic for all services, the Central Banks can opt to split the testing needs into shorter time periods for all the billable items combined. Other aspects to plan test of is manual correction of invoices, direct debit, invoice cancellation, A2A/U2A specific sending etc. These test scenarios can be discussed and planned during a Billing testing campaign and the agreed time periods and the testing plan shall be implemented in the Testing Calendar.

9.2 Migration Testing tools

9.2.1 Data Migration Tool (DMT)

In addition to Application-to-Application (A2A) and User-to-Application (U2A) channel, the Data Migration Tool (DMT) will allow Central Banks to upload certain reference data. The DMT is used to load the data in addition to the possibility to use the standard U2A functionalities and A2A channel.

9.3 Facilitating Rehearsal

Each rehearsal for migration of new currency usually includes several participating actors. It is therefore necessary that all the rehearsal activities are executed in the co-ordinated way and that all actors share the same understanding of the rehearsal objective, organisation, etc.

9.3.1 Summary document

For the purpose of migration (dress)rehearsal co-ordination, the summary document is produced by the ECB MTR team and shared with all rehearsal participating actors usually 1 week prior to its execution. The summary document is prepared by the ECB, in coordination with the 4CB technical team and the Central Bank of the new currency. This document is provided as part of the preparation activity for any kind of coordination/specific testing which needs planning between different testing entities (e.g. migration rehearsal, any specific testing campaigns, etc.). This document includes following information:

- General rehearsal aspects, focus of the rehearsal/testing, organisation, pre-conditions, start/end date, involved actors, contacts at the TARGET Service Desk and ECB MTR team, limitations/constraints;
- Execution details, UTEST environment operational day schedule applicable during the rehearsal/testing period, high level timing (summary of the checkpoints), communication channels during the rehearsal or any specific testing needs;
- Escalation procedure in case of any serious issues (e.g. delay in the operational day schedule);
- Specific follow-up activities.

9.3.2 Migration calls

In order to ensure the timely execution of each rehearsal, dedicated calls are organised and chaired by the ECB MTR team. These calls can be planned to take place prior, or during the rehearsal execution. All actors participating in the rehearsal are obliged to join in the call. The main objective of the call is to sum-up rehearsal preparation or execution progress and to co-ordinate any upcoming rehearsal activities.

9.3.3 Migration Information Communication (MIC)

During the execution of the rehearsal, “live” information on the progress and the completion of the rehearsal activities is available as via the Migration Information Communication (MIC) web-based application for the ECB, 4CB and the Central Bank of the new currency. T2 participants will have access to information on the progress of the rehearsal the dedicated test management tool of the new joiner.

The ECB MTR team is responsible for ensuring that the proper MIC session is available for each rehearsal, for setting up all the required MIC users and to provide them with the necessary support.

The main page of the MIC is divided into two sections, the broadcast and the list of activities to be executed during the rehearsal. The broadcast is editable only by the ECB MTR team and it is the ultimate communication channel where the ECB MTR team can make necessary announcements.

All activities listed in MIC are assigned an owner. Only the owner or the ECB MTR team can update the progress status of the activity defined in MIC. Owner should always keep progress of her/his activities up to date.

9.3.4 Reporting

For migration, after each rehearsal, the ECB MTR team will generate the report summarising the outcome of the rehearsal based on the input from all the participating actors. The report may include elements such as lessons learned and the high-level overview of the required rehearsal activities' updates.

9.4 Minimum Reserve period

In order to assist testing, the reserve maintenance calculation period can be shortened in T2 UTEST with an agreement of the TRSG.

10. Risk management

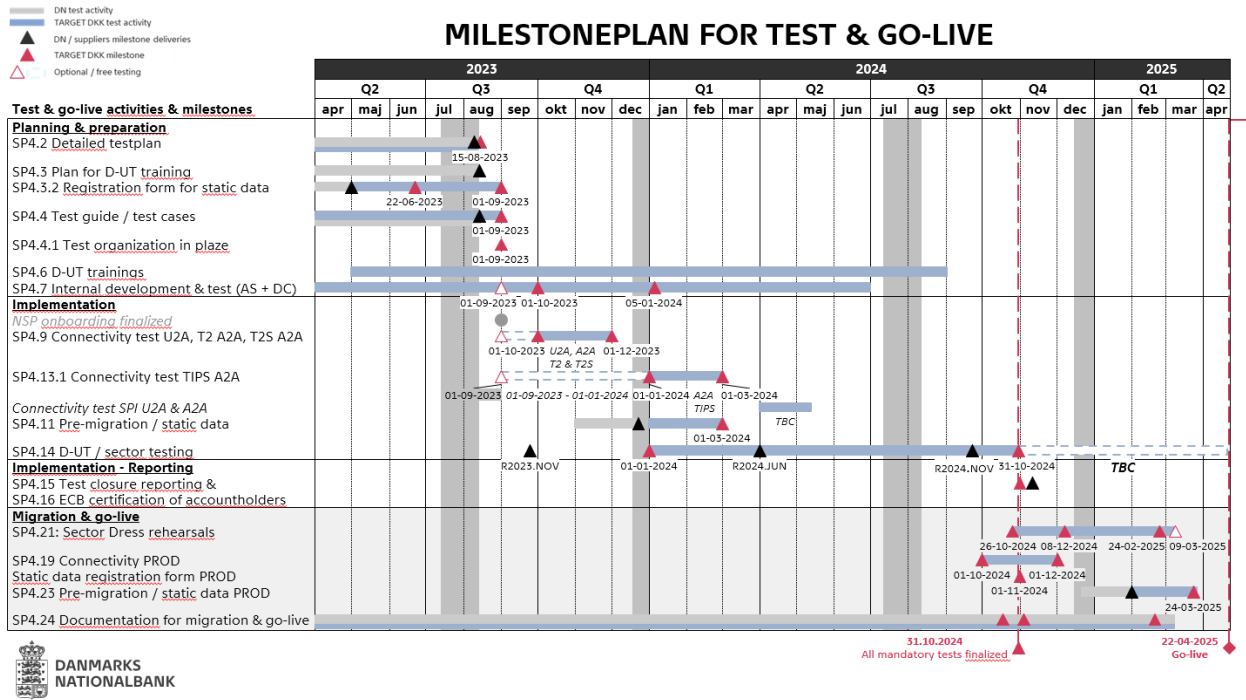
Each Central Bank can raise any identified risk related to the UT. The risk is to be brought for discussion to the TRSG. The TRSG identifies, manages, monitors, reports and escalates risks and issues to the T2WG. The T2WG is ultimately responsible for (1) assessing the risks, (2) assuring mitigation and (3) proposing resolution measures. The risk management is ensured via the TARGET Services Risk Management Framework (under elaboration).

11. Glossary

Name	Description
4CB	The Deutsche Bundesbank, the Banco de España, the Banque de France and the Banca d'Italia, collectively, in their capacity as the Central Banks responsible for building, maintaining and running the TARGET Services, in accordance with the relevant contractual arrangements and with decisions of the ECB's Governing Council.
UT	User Testing – Test stage where CBs and T2 Participants connect to T2 and ensures the interaction with TARGET services and their common components
Contingency scenarios	Procedures applied in the event of abnormal situations during the reference data set-up period or during the migration weekend.
DMT	Data Migration Tool – used to upload the reference data to the T2 system in a batch manner.
ECB	European Central Bank
ECB MTR	The ECB MTR team is the interlocutor for the Central Bank test managers for coordination, planning and overall testing aspects.
UTEST	User Testing test environment to be used by the Central Banks and T2 participants for their testing during User Testing Stage.
ESMIG	Eurosystem Single Market Infrastructure Gateway: The common entry point for all interaction with the Eurosystem Market Infrastructures (T2, T2S, TIPS and potential future services like ECMS). Based on common technical specifications, ESMIG will be network agnostic, i.e. it will not rely on network specific features. It will allow participants to connect through one or multiple service providers for both A2A and U2A interfaces, offering cost-effective and secure access to the various services.
TRSG	Testing Readiness Sub Group – A subgroup of T2WG with test managers planning and organising the testing stages

MIB	Market Infrastructure Board
NSP	Network Service Provider – who provides the technical channel for the CBs and the T2 participants to connect to ESMIG
NSD	National Service Desk is the first point of contact for the T2 Participants for T2 User Testing aspects which are operated by the respective National Central Banks.
Release Note	A note detailing the changes and/or enhancements provided by the TARGET Service Desk in a new version of the T2 software. It also documents any known defects in the software release.
RTGS	Real-Time Gross Settlement
Simulators	Tools connected to T2 in the absence of the TARGET Services in the testing environment. The tool is used to simulate the functions of liquidity monitoring in CLM, Inter-service liquidity transfer simulator and General ledger file processing
T2	refers specifically to CLM and RTGS
T2S	The set of hardware, software and other technical infrastructure components through which the Eurosystem provides the services for CSDs and central banks that allow core, neutral and borderless settlement of securities transactions on a DvP basis in central bank money
TARGET Services	T2, T2S and TIPS are all categorised as TARGET services for cash, Securities and Instant Payments respectively.
TARGET Service Desk	Single point of contact for the CBs for handling all incidents, queries and requests related to operational, functional or technical issues.
TIPS	TARGET Instant Payment Settlement: Eurosystem Real-time settlement system for retail payments settled in Central Bank Money.
TMS	Trouble Management System - A software application used by the TARGET Service Desk to manage the life cycle of incidents, problems and service requests

12. Annex A – Timeline for DKK testing



13. Annex B - TMS Ticket reporting template

Double-click the attached file to open the full ticket reporting template



Issues Template
Reporting_v3.0.docx



TARGET SERVICE DESK CONTACT DETAILS:

Test and Training

e-mail: t2-test@target-ssp.eu

phone: +39 0620663333 / +49 69968640333

Submission Date –

Production

e-mail: t2@target-ssp.eu

phone: +39 0620663366 / +49 69968640366

Field Name	M / O	Incident details
Incident detected by	M	TRGTXEPM – BIC of NCB
High-level summary	M	
Keyword	M	<input type="checkbox"/> [EAT] <input type="checkbox"/> [CBT] <input type="checkbox"/> [UT] <input type="checkbox"/> [PROD]
T2 environment	M	<input type="checkbox"/> EAC <input type="checkbox"/> UTEST <input type="checkbox"/> PROD
Module	O	<input type="checkbox"/> ESMIG <input type="checkbox"/> CRDM <input type="checkbox"/> RTGS <input type="checkbox"/> CLM <input type="checkbox"/> BDM <input type="checkbox"/> ECONS II <input type="checkbox"/> DWH <input type="checkbox"/> DMT
Connection	M	<input type="checkbox"/> A2A <input type="checkbox"/> U2A
Detailed description	M	Please provide scenario, expected result and received result. You can insert full screenshots on page 2
Setup	M	User: <input type="text"/> Parent BIC: <input type="text"/> Party BIC: <input type="text"/>
Timestamp execution	M	Date: <input type="text"/> select date Time: <input type="text"/>
Additional information	O	Priority: <input type="checkbox"/> URGENT <input type="checkbox"/> MEDIUM <input type="checkbox"/> LOW
	O	General information: <input type="text"/> Impact: <input type="text"/>
Customer Ticket ID	O	<input type="text"/>
Reference from T2 scope defining document	O	Please provide version of document, page, chapter <input type="text"/>
Publication	O	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Broadcast

¹ Please attach (in the E-Mail) all relevant Incoming and Outgoing full messages (incl. header as xml files)
² Please attach full GUI screenshots as extra attachment (e.g. word, excel) => including user, date, time and session ID
³ Final Prioritization will be done by Target Service Desk

14. Annex C – UTEST environment T2-T2S Schedules

The following schedules are applicable for EUR. Events and timings specific for non-EUR currencies will be included in a future version of the ToR once implemented.



	CLM Standard & Synchronised Day	RTGS Standard & Synchronised Day	T2S Schedule
Start of RTGS RTS II and Settlement Window for Interbank and Customer Payments	-	06:30	-
DVP / Cash Settlement Restrictions cut-off			14:30
Collateral reimbursement (EUR)			15:00
Bilaterally Agreed Treasury Management (BATM) / CBO cut-off (EUR)			15:10
Cut-off for customer payments in T2			
Inbound LTO cut-off for T2S / Optional Cash sweep (EUR) in T2S	-	15:15	15:15
Cut-off for CLM RTS			
Cut-off for RTGS RTS II and Settlement window for Interbank and Customer Payments. Execution of Standing Orders after last settlement attempt	15:30	15:30	15:30
General cut-off for standing facilities	15:45	-	-
CB cut-off for standing facilities	16:10	-	-
Change of business day			
Start of day	16:15	16:15	16:15
Start of CLM RTS Feeds from CMS to T2S	16:30	-	16:30
Execution of standing orders in CLM			
Start of RTGS RTS I and Execution of Standing Orders in RTGS	17:00	17:00	-
Start of NTS / cash injection	-	-	17:15
End of Testing	19:00	19:00	19:00

	CLM Release Day	RTGS Release Day	T2S Release day
Start of RTGS RTS II and Settlement Window for Interbank and Customer Payments	-	06:30	-
DVP / Cash SR cut-off			13:00
Collateral reimbursement (EUR)			13:30
BATM / CBO cut-off (EUR)			13:40
Cut-off for customer payments in T2			
Inbound LTO cut-off for T2S / Optional Cash sweep (EUR) in T2S	-	13:45	13:45
Cut-off for CLM RTS			
Cut-off for RTGS RTS II and Execution of Standing Orders after last settlement attempt	14:00	14:00	-
General cut-off for standing facilities	14:15	-	-
CB cut-off for standing facilities	14:40	-	-
Change of business day			
Start of day	14:45	14:45	14:45
Start of CLM RTS Feeds from CMS to T2S	15:00	-	15:00
Execution of standing orders in CLM			
Start of RTGS RTS I and Execution of Standing Orders in RTGS	15:30	15:30	-
Start of NTS / cash injection	-	-	15:45
End of Testing	17:30	17:30	17:30

	CLM Live Timing Schedule	RTGS Live Timing Schedule	T2S Live Timing Schedule
Start of RTGS RTS II and Settlement Window for Interbank and Customer Payments	-	02:30	-
DVP / Cash SR cut-off			16:00
Collateral reimbursement (EUR)			16:30
BATM / CBO cut-off (EUR)			17:40
Cut-off for customer payments in T2	-	17:00	17:45
Inbound LTO cut-off for T2S / Optional Cash sweep (EUR) in T2S			
Cut-off for CLM RTS			
Cut-off for RTGS RTS II and Execution of Standing Orders after last settlement attempt	18:00	18:00	-
General cut-off for standing facilities	18:15	-	-
CB cut-off for standing facilities	18:40	-	-
Change of business day			
Start of day	18:45	18:45	18:45
Start of CLM RTS Feeds from CMS to T2S	19:00	-	19:00
Execution of standing orders in CLM			
Start of RTGS RTS I and Execution of Standing Orders in RTGS	19:30	19:30	-
Start of NTS / cash injection	-	-	20:00
End of Testing	20:00	20:00	20:00

End of Testing from Monday to Thursday pertains to the end of 4CB support unless an optional Maintenance Window was agreed (e.g. for agreed deployments which are not on a Friday).

End of Testing on Friday pertains to start of Maintenance Window.