

## T2-T2S Consolidation

### User Testing Terms of Reference (UT TOR)

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**Table 1:** Document log

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

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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 User Testing phase including the items relevant for the T2 Participants. 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 – User Testing Reporting and Monitoring which defines the responsibilities of the entities participating in the User Testing Stage and the regular monitoring aspects during the User Testing phase following the principles defined in T2 Testing Reporting Framework ;

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

Section 5 – Specific Tests – In parallel to User Testing phases, explains the additional testing activities to be carried out in parallel to the UT community and Business day testing phases

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

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

Section 8 – Incident and defect 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 User Testing of the 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

Within the timeframe defined for the User Testing, the Central Banks along with their community have the option to organise their testing activities with the User Testing phases provided that they support and respect the multilateral testing with other Central Banks (e.g. Migration testing, volume testing, contingency scenario, etc.) as agreed with their Central Banks. The scheduling of testing activities by a Central Bank and/or their participants must not impose a constraint on the testing of other system entity in the same Test Environment unless it has been agreed in advance within the all the involved testing entities.

### 2.2 UTEST Operational day scheduling

- This section specifies the terms of reference for T2 operational day scheduling scenarios in UTEST as agreed and required for testing activities mentioned in the Testing Calendar.
- Four (4) operational day schedules shall apply during the execution phase of User Testing with the exception of migration testing which follow the migration schedule/playbook.

Operational day schedule	Description
T2 standard day	Operational day schedule that T2 uses when a synchronisation of the scheduling between T2S and T2 is not required i.e. before the T2S services are connected to T2 in UTEST environment.
T2-T2S synchronised standard day	Operational day schedule that T2 uses when a synchronisation of the scheduling between T2S and T2 is required i.e. after the T2S services are connected to T2 in UTEST environment.
T2-T2S synchronised release day	Operational day schedule that T2 uses in UTEST environment for a day in which the deployment of a bug fix release.
T2 Live Timing Schedule	Operational day schedule that operates on the same timings as the production environment during the Business day testing stage in UTEST environment.

- Once the TARGET Services T2S, TIPS<sup>1</sup> and T2 are inter-connected, the scheduling of these TARGET services will be aligned.
- The UTEST test environment will be available during the standard opening hours (07:00 and 19:00 CET) from Monday to Friday except
  - for 1 January, Catholic/Protestant Good Friday, Easter Monday, 1 May (Labour Day), 24 December, 25 December (Christmas Day), 26 December, 31 December
  - when any maintenance activities are scheduled and
  - when a deployment of software release has been agreed
- The T2 Standard Day will apply as default to the UTEST test environment from Monday to Thursday until the TARGET services are connected and the T2-T2S synchronised schedule shall apply when all the TARGET services are connected during the User Testing phase.
- 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 community approach (refer section 4.3.2) for reference data set-up, and Migration Weekend Playbook when Migration Weekend Rehearsal testing takes place. The specific requirements and scope of the migration testing will determine the processes and procedures of the Migration Weekend Playbook.
- No UTEST operational day scheduling scenario will require extended operational and technical support outside the support hours (for further details on Service Hours – see Section 7). If a problem occurs during the night, the TARGET Operator will address the disturbance at the beginning of the next business day (i.e. 7.00 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 will communicate the details of the issue and when in position, also provides the way forward to handle the issue under analysis. The Target Service Desk provides/communicates such information only to the Central Banks and the Central Banks convey the relevant information to the T2 Participants.
- The detailed schedule for each Operational day schedule shall be provided 3 months before the start of User Testing execution phase and will be added as an annex to this deliverable.

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<sup>1</sup> TIPS do not have separate schedule, it follows T2 schedule

## 2.3 Deployment management

Deployment management organises the rollout of software releases and/or configurable parameter changes to UTEST. During the 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 (incl. bug-fixing changes) are clearly documented and provided by the 4CB in a release note before deployment. The contents will include the defect 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 only 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. The Release Note will provide an assessment of the required deployment effort and a proposal for its scheduling. Each Central Bank testing in UTEST where the bug fix release is to be deployed shall assess the impact of the bug fix release to its internal systems, to its 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 Eurosystem Central Banks. 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 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.

## 3. User Testing Reporting and Monitoring

The execution and the regular monitoring during the User Testing phase follow the T2 Testing Reporting Framework. The framework consists of a set of reports and supporting documents which will be created during the User Testing in order to monitor the progress and status of testing. The monitoring of the test progress is done using the monthly status reports. For User Testing it is User Testing Status Updated (UTSU). Each Central Bank will collect the relevant information from their community in order to provide their User Testing Status Update (UTSU). The Central

banks will provide a summary of the colour codes for their CMPs and will consolidate the colour codes from their RMPs to reflect one global code for their RMP community.

### **3.1 Testing Calendar**

The Testing Calendar provides information on which and when testing-related activities are planned to take place in the UTEST 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 the User Testing Phase and communicated by the ECB UT-MIG team. The calendar will be available from the start of User Testing and will provide the outlook of the known test activities until the end of User Testing. The calendar is treated as a dynamic document that will be updated on a weekly basis throughout UT with the coordination of all parties (i.e. Central Banks for their own testing and Central Banks on behalf of their T2 Participants) that are testing in the UTEST environment. The Test Calendar is distributed to the Central Banks. 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.



## **4. Organisation of User Testing phases**

### **4.1 Participating actors and UT phases**

The participating actors during the User Testing Stage are

- The ECB User Testing and Migration (UT-MIG) team;
- The TARGET Service Desk at the T2 Operator;
- The Central Banks;
- The National Service Desk (NSD) at the Central Bank;
- The T2 Participants.

The testing period of the User Testing Stage is split into different phases.

- UT Connectivity
- UT Community
- UT Business Day
- Migration testing, contingency procedure testing and operational testing during the User Testing stage will happen in parallel to the different User Testing phases following the respective deliverables i.e. Migration Weekend Playbook, Pre-migration schedule to follow the tasks during reference data set up, Contingency scenarios, Information guide for TARGET participants.

### **4.2 General Terms and assumptions**

- User testing stage is divided into three different test phases (i.e. UT Connectivity, UT Community and UT Business day). The first phase is focused on connectivity and the second phase focuses on initial data set up, pre-migration activities/testing and the start of functional testing. In the further phases, the Central Banks focuses to test the system end-to-end along with their participants.
- The T2 Participants and the Central Banks are recommended to use the Real BICs and real party data for their testing purpose in User Testing phases. Test and training BICs (with 0 at the 8<sup>th</sup> position) shall not be used as these will become obsolete in ISO20022.

- The T2 participants carry out the functional testing across all the UT Community and UT Business day test phases as per the software availability and as per their test planning with their respective Central Bank. In cases where a T2 Participant 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 other testing participants;
  - In case a T2 Participants and/or 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), then this request to be communicated, discussed and agreed upon by all the system entities in UTEST environment. The agreed plan will be implemented in the Testing Calendar; For such multilateral testing activities (e.g. Ancillary system, cross-NCBs testing, 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 Banks along with their 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 part of a Service Request. The service request must be submitted 5 business days in advance and for testing which foresee any multilateral impact, a prior agreement with other system/testing entities is also needed (please refer to second bullet point).

User Testing Phase	Timeline
<b>UT – Connectivity Testing</b>	3 months (13 weeks)
<b>UT – Community Testing</b>	Appx. 7.5 months (31 weeks)

<b>UT – Business day testing (Includes the Live timing testing for 1 week)</b>	3.5 months (15 weeks)
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### 4.3 UT phases and timeline

Test Phase\Timeline	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22
											First half	Second half			
UT Connectivity															
Deployment			SWP 1,2.3, 2.4, 3.1 and 3.2 and Migration tools deployed (end of Nov).												
Reference data set-up and UT Community Testing phase															
Migration testing – UT community phase							MWR with the participant 28/03								
UT Business Day Testing phase															
UT Mandatory Testing															
Operational Testing															
Contingency scenarios/ procedure Testing															
Migration Testing - MWDR Business day testing phase															

## 4.4 UT – Connectivity Testing

### 4.4.1 Scope of the phase

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

The UTEST will be accessible via A2A and U2A. This connectivity is provided by a network service provider (NSP) chosen by each Central Bank and its T2 Participant. The dedicated connectivity guide will assist the Central Banks and their T2 Participants in their connectivity to UTEST. 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 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. Every A2A message sent which reaches the platform will receive a response:

- in case of schema validation error, the user will receive an admi.007 message (RTGS UDFS chapter 9.2.1);
- business validation errors will trigger the relevant business response message (eg. Pacs.002, camt.025, reda.xxx, etc, according to the component)

. For U2A, the user will not be able to progress beyond the so-called “landing page” on the GUI. Reaching this landing page and the error message is sufficient to prove connectivity on the relevant channels. The objective of the UT connectivity set-up and testing is to ensure full end-to-end connectivity to the UTEST via ESMIG.

### 4.4.2 Planning principles and timeline

The “[Connectivity guide](#)” document to assist the Central Banks and Participants in their connectivity to UTEST should be made available by the TARGET Services provider 4CB at least four (2) months prior to the start of the UT Connectivity.

The connectivity testing phase starts 3 months before the start of reference data set-up activities in UTEST environment and aim to establish the connectivity between the systems within this 3months period.

## **4.5 Reference data setup for the UT**

### **4.5.1 Registration Form submission**

. The Participants shall submit the registration form to their respective Central Banks/National Service Desk as per the planning between the Central Bank and the T2 Participants.

### **4.5.2 Subsequent reference data set-up - Community Approach**

The Central Banks will then create Participants reference data from the registration forms they receive from their participants.

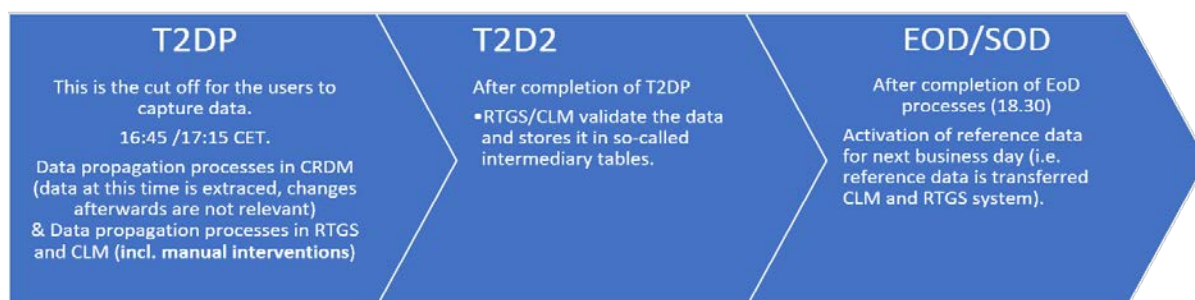
The reference set up activity by Central Banks for their respective T2 participants shall follow community approach. In this community approach, the T2 participants need not wait for the completion of reference data set up by all the Central Banks and communities, rather T2 participants (i.e. each community) can commence their CLM/RTGS testing as soon they receive a confirmation on the reference data set-up completion from their Central Banks. This will allow an early start of testing for some of the T2 participants. After this, any additional data can also be set up as per their individual testing needs.

## **4.6 Reference Data Propagation**

In the User Testing Community phase, the data propagation from CRDM to CLM and RTGS system 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 on a daily basis.
- The Central Banks and the T2 participants shall follow the recommendation document for reference data, in order for the successful propagation of data from and/loading in CRDM to CLM and RTGS systems.

- TARGET Service Desk team can perform a set of manual checks and correct/delete certain data in case users did not follow recommendation document. In this case, CBs and the T2 participants have to keep the CRDM in line either in the same Calendar day or the next calendar day depending on when the inconsistency is detected.
- TARGET Service Desk team can decide to either automatically run data propagation flows or start them manually and 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 will be 16:45 or 17:15<sup>2</sup> CET.
- Closing of channels (both U2A and A2A) will happen as part of standard change of business day and this will not an impact on the testing activity.



## 4.7 User Testing Community Testing phase

### 4.7.1 Scope of the phase

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

The testing during this phase commences with T2 connected to T2S simulators in the UTEST test environment. This testing phase starts after the reference data set up is completed.

The objective of the community testing phase is, for the Central Banks and their Participants to test together the systems with the software packages deployment. The objective is also to enable the whole TARGET-Services community to test every component available.

The main focus in UTEST test environment is also to verify the operational readiness of the T2 participants.

<sup>2</sup> From the start of UT in UTEST environment, 16:45 CET will be applied as cut-off. The change in cut-off to 17:15 depends on the delivery of CR74 and CR-75.

#### 4.7.2 Planning principles and assumptions

The UT Community testing phase runs for approximately 7.5 months (based on when the Central Banks provide Greenlight for their participants to start testing) and the aim of both the Central Banks and their participants is to perform end-to-end testing with T2 (with the T2S simulators connected) in the UTEST test environment.

### 4.8 User Testing Business day

#### 4.8.1 Scope of the phase

The objective of the Business day testing phase is that the Central Banks and their 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 (participants)
- the scenarios which includes the regular business day testing as well as the Business day in abnormal situations and under contingency situations

#### 4.8.2 Planning principles and assumptions

- The Business Day testing phase shall run for 3.5 months.
- During the last month of Business Day testing phase, the UTEST environment will apply T2 Live Timing schedule (i.e. the schedule that is applied in production) for one (1) week.
- Additionally, a back-up week will also be included in the Testing Calendar.
- In case any major problems identified in the week while applying the T2 Live Timing Schedule and if the MTRSG and the T2S/TIPS governance bodies agrees, the back-up week will be used to test the T2 Live Timing Schedule.
- The back-up week shall be scheduled only in case of an issue related to Live time schedule is identified in the initial testing week. Any functional issues identified during this period will not automatically lead to a back-up week of Live time scheduling.



- In principle the back-up week shall not be scheduled immediately after originally planned week for applying the T2 Live timing schedule. The planning of back-up week shall also be agreed upon with the T2S/TIPS governance bodies.

#### **4.9 UT Mandatory Testing – T2 Mandatory test cases**

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 Stage. The Central Bank participants' can start to run these T2 Mandatory test cases as soon as User Testing Stage commences. Further details can be found in the separate document for T2 Mandatory test cases.

The full list of T2 Mandatory test cases for the Central Banks participants shall be available at the latest (2) months before the start of User Testing Connectivity phase.

The T2 Mandatory test cases shall be executed during the User Testing Stage in parallel to the UT testing phases (i.e. UT Community and UT Business day testing phase. The process of submitting the test results and validating the results is described in the deliverable "[T2 Mandatory test cases](#)".

### **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 Business-day testing phases.

#### **5.1 UT Operational Testing**

- The operational related tests shall be performed following the procedure defined in the Information guide for TARGET participants.
- 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 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 between the ECB, TARGET Service Desk, Central Banks and performed as per the testing needs of the Central Banks and their participants

The planning aspects shall be discussed and agreed in advance within the different testing entities in UTEST environment

- The agreed plan 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. The MTRSG has identified and retained 4 contingency scenarios which should be tested. These include

- CS.PM.01 – Reference data set up period - NCBs failure to timely capture reference data
- CS.PM.02 - Reference data set up period - T2 participants failure to capture reference data
- CS.MIG.04 – Migration Rehearsal - NCBs fail to perform business as usual
- CS.MIG.05 – Migration Rehearsal - T2 Participants fail to perform business as usual

The Central Banks will communicate with the T2 Participants on when these scenarios shall be tested and also the detailed procedure for testing the contingency scenarios. .

## 5.3 Migration Testing

### 5.3.1 UT Migration weekend (dress) rehearsal

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

The objective of the UT Migration weekend (dress) rehearsal is to rehearse the initialisation of balances on T2 and their reconciliation at the Central Banks' and Participants' level. Participation in the Migration Weekend (Dress) Rehearsals is mandatory for both the T2 Participants and Central Banks.

The execution of the phase will follow the Migration weekend playbook defined by the ECB UT-MIG team.

As mentioned in the timeline graph (section 4.3), the following Migration Testing has been planned in UTEST environment

- Migration Weekend Rehearsal on 28/3/2022,
- Migration Weekend Dress Rehearsal on 08/7/2022,
- Migration Weekend Dress Rehearsal on 23/9/2022,
- Optional Migration Weekend Rehearsal in October 2022

## 6. UT Entry/EXIT Criteria

### 6.1 Connectivity testing phase

#### 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 infrastructure to perform the connectivity is available and ready to start the connectivity testing as per the timeline.

#### Exit Criteria:

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

## 6.2 User Testing Execution (UT Community and UT Business day phases)

### Entry Criteria:

- Participants have been registered with their responsible Central Bank for testing, and at least one T2 participant per Central Bank has successfully concluded the connectivity test. It will also be necessary that connectivity tests have been successfully concluded by the participants with all their chosen NSPs, to make sure that there are no global problem and the connectivity is possible
- 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
- Initial software packages needed for the start of User Testing are deployed
- National Service Desk is set up at the CB side
- MIB decides on the start of the UT testing stage

### Exit Criteria:

- T2 participants complete their User Testing T2 Mandatory test cases
- Central Banks and their participants complete, Migration Weekend Rehearsal and Migration Weekend Dress Rehearsals.
- 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
- All Central Banks confirm the readiness of themselves and their communities to exit User Test Stage as part of their reporting to the ECB
- MIB decides on the closure of the UT testing Stage.

## 7. Service Support during User Testing

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

### 7.1 TARGET Service Desk

The TARGET Service Desk at the T2 operator, 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 between 07:00 and 19:00 CET on all T2 business days.

#### 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 UT-MIG team and Central Bank Test Managers about any issue impacting the overall standard processing which could lead to Eurosystem internal 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 regards 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, Migration of Balances Tool, testing simulators) during the testing period.

### 7.2 ECB UT-MIG team

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

### 7.2.1 Responsibility

The ECB UT-MIG team will support any co-ordination activities required during the UT testing phase, especially related to the Migration rehearsal. The ECB UT-MIG team is the interlocutor for the Central Bank Test Managers for test coordination, planning and overall testing aspects. The ECB UT-MIG 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 UT-MIG will monitor the upcoming testing activities and in turn ensures that the Central Bank and their participants' testing are progressing as planned.

The ECB UT-MIG 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-UT-MIG 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 calendar<sup>3</sup>, etc.).

### 7.3.2 Service Hours

The National Service Desks will be available from 07:00 – 19:00 CET, 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.

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<sup>3</sup> The Test Calendar is distributed to the MTRSG. 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 Central Banks, National Service Desk and Participants.

### 8.1 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 via E-Mail and/or via telephone to the relevant National Service Desk. 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).

### 8.2 Defects

Incidents discovered must be reported to the TARGET Service Desk as soon as possible and supported by evidence documentation such as GUI screen prints. 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 Problem 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 which will be communicated to the T2 participants and the progress

of the incidents/defects shall be communicated by the Central Banks, through the respective National Service Desk..

### **8.3 Consolidated List of open incidents and defects**

All UTEST open incidents and defects appear on the consolidated list of open incidents and defects. 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 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 UT-MIG team 2 days in advance of the weekly conference call. The ECB UT-MIG team then communicates the list accordingly to the Central Banks as soon as possible upon receipt. The Central Bank members shall nominate the incidents and defects/problems that need to be discussed at least 1 day in advance of the weekly call. The progress of incident/defect resolution and the consequent release allocation shall be communicated by the Central Banks to their relevant T2 Participants.



## 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.

The validation of messages through the portal ensures that the Central Banks will be ready to send valid messages to T2 immediately on the commencement of UT.

### 9.2 Testing simulators

In order to enable end-to-end testing for the different testing stages, tools will be provided to simulate specific functions required when the connection between CLM and another service is not supported in a testing stage. This requires the definition of TIPS DCA balances and T2S DCA balances as test data and will also include an attribute to specify whether the respective service should provide a negative or positive response to enable the execution of their end-to-end testing scenarios which will aim to simulate the end-to-end testing scenarios.

These end to end testing utilities are:

- Liquidity monitoring in CLM
- Inter-service liquidity transfer simulator
- General ledger file processing (CBs Only)

#### 9.2.1 General Terms and Workflow

- The Testing institutions will receive a standardised spreadsheet and loading will be an operational procedure that the TARGET Service Desk must manually execute.

Therefore, the number of times that testing institutions provide updated lists should be

limited, as the purpose is to simulate the three abovementioned scenarios and not the testing of the testing tool itself.

- Furthermore, the loading of DCA balances should not take place on an ad hoc basis, but at pre-defined times on pre-defined days (e.g. twice or thrice depending on the testing phase) this scheduling of the balance upload is subject to agreement in the MTRSG.
- The agreed timeline for the scheduling of the balance upload will be implemented in the Testing Calendar.
- Depending to a prior agreement and/or confirmation in the MTRSG considering also the impact on the testing activities planned in the environment
  - the service request along with the completed standardised spreadsheet must be submitted at the latest 5 business days prior to the planned upload date and
  - the service request for the simulator will be executed within one business day

The detailed specification and workflow for using this simulator service can be found in the separate document “T2-T2S consolidation – detailed description testing tools v1.0”.

### **9.3 Migration Testing tools**

#### **9.3.1 Migration of Balances Tool (MBT)**

With the implementation of Common Reference Data Management (CRDM) through the T2-T2S Consolidation project, RTGS and CLM will use a new party and cash account reference data model as well as a new transactional data model, requiring the migration of data. A tool for the automated migration of balances to Central Liquidity Management (CLM) will be provided to the Central Banks for migration testing activities. This Migration of Balances (MBT) tool can be used during the migration testing and in order for this to be used before any MWR/MWDRs in the test environment a dedicated Tool for deleting dynamic data (i.e. all data in CLM/RTGS except error codes and parameters) in CLM and RTGS will be run before the tool usage. This dynamic data cleaning activity will be carried out by the TARGET Service Desk team. The detailed specification and functionality of this tool is mentioned in “T2 Service Migration of Balances Tool” document.

#### **9.3.2 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.

## 9.4 Facilitating Rehearsal

Each rehearsal 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.

### 9.4.1 Summary document

For the purpose of rehearsal co-ordination and execution, the participants shall follow the Migration Weekend Playbook adapted as per the testing plan, i.e. whether it is rehearsal executed during the week or a dress rehearsal executed over the week or weekend. The participants shall follow this adapted playbook and perform their responsible activities. For below aspects during the rehearsal execution, the participants shall contact their respective National Service Desk:

- General rehearsal aspects, focus of the rehearsal/testing, organisation, pre-conditions, start/end date, involved actors, contacts at the National Service Desk, limitations/constraints;
- Execution details, UTEST 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.

### 9.4.2 Migration calls

In order to ensure the timely execution of each rehearsal, dedicated Eurosystem internal calls are organised and chaired by the ECB UT-MIG team. These calls can be planned to take place prior, or during the rehearsal execution. The Central Banks as an actor and/or as an representative for their participants 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. For this status call, the Central Banks shall gather the testing progress from their participants as well.

### 9.4.3 Reporting

For migration, after each rehearsal, the ECB UT-MIG 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.

## 10. Glossary

Name	Description
<b>4CB</b>	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 single shared platform, in accordance with the relevant contractual arrangements and with decisions of the ECB's Governing Council.
<b>UT</b>	User Testing – Test stage where CBs and T2 Participants connect to T2 and ensures the interaction with TARGET services and their common components
<b>Contingency scenarios</b>	Procedures applied in the event of abnormal situations during the reference data set-up period or during the migration weekend.
<b>DMT</b>	Data Migration Tool – used to upload the reference data to the T2 system in a batch manner.
<b>ECB</b>	European Central Bank
<b>ECB UT-MIG</b>	The ECB UT-MIG team is the interlocutor for the Central Bank test managers for coordination, planning and overall testing aspects.
<b>EAC</b>	Eurosystem Acceptance test environment
<b>UTEST</b>	User Testing test environment to be used by the Central Banks and T2 participants for their testing during User Testing Stage.
<b>ESMIG</b>	<b>Eurosystem Single Market Infrastructure Gateway:</b> The common entry point for all interaction with the Eurosystem Market Infrastructures (T2, T2S, TIPS and potential future services). 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.
<b>MTRSG</b>	Migration Testing Readiness Sub Group – A subgroup of TSWG with test managers planning and organising the testing stages

<b>MBT</b>	Migration of Balances Tool – used to upload the balances from TARGET2 DCAs to the new T2 DCAs
<b>MIB</b>	Market Infrastructure Board
<b>NSP</b>	Network Service Provider – who provides the technical channel for the CBs and the T2 participants to connect to ESMIG
<b>NSD</b>	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.
<b>Release Note</b>	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.
<b>RTGS</b>	Real-Time Gross Settlement
<b>Simulators</b>	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
<b>T2</b>	refers specifically to CLM and RTGS
<b>T2S</b>	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
<b>TARGET2</b>	Trans-European Automated Real-time Gross settlement Express Transfer system
<b>TARGET Services</b>	T2, T2S and TIPS are all categorised as TARGET services for cash, Securities and Instant Payments respectively.
<b>TARGET Service Desk</b>	Single point of contact for the CBs for handling all incidents, queries and requests related to T2 operational, functional or technical issues.
<b>TIPS</b>	TARGET Instant Payment Settlement: Eurosystem Real-time settlement system for retail payments settled in Central Bank Money.

<b>TMS</b>	Trouble Management System - A software application used by the TARGET Service Desk to manage the life cycle of incidents, problems and service requests
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