# TIPS
# User Testing Terms of Reference

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| 0.6 | 29/04/2021 | Eurosystem | Clean version for MIB review |
| 1.0 | 10/05/2021 | Eurosystem | Version 1.0 after MIB review |

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# 0.     INTRODUCTION

The TIPS User Testing Terms of Reference (ToR) outlines the principles for the preparation, organisation and execution of User Testing for current and prospective TIPS Participants, with a focus on detailing the testing activities which will be carried out in the TIPS Certification test environment.

The TIPS certification test environment is dedicated to the testing activities of User Testers, i.e. the testers at the National Central Banks and TIPS Participants. This testing environment is owned by the Eurosystem who is coordinating all testing activities taking place on this environment.

All National Central Banks and Participants settling instant payments in Euro will have access to this environment.

Participating Actors are composed of the following:

- The ECB

- The TIPS Service Desk

- The National Central Banks

- Participants (Including Ancillary Systems)

- Reachable Parties

This document addresses:

i.    The general principles detailing the usage, connectivity and maintenance of the test environment, as well as the available Operational Day Scheduling Scenarios;

ii.   The different types of User Testing;

iii.  The facilitation of User Testing;

iv.   The Organisation, Roles and Responsibilities of participating Actors involved in User Testing activities (including reporting);

# 1. PRINCIPLES OF THE USER TESTING TERMS OF REFERENCE

## 1.1. TEST ENVIRONMENTS

The Eurosystem will provide the TIPS certification test environment (CERT) for use of current and prospective TIPS Participants. This environment is connected to the TARGET2 CUST environment[1] allowing liquidity to be transferred during the TARGET2 CUST opening hours. The CRDM[2] pre-production test environment (UTEST) propagates static data daily into TIPS CERT (and is also linked to the T2S pre-production environment (UTEST)).

Note: UTC is the time zone that applies to TIPS.

The TIPS certification test environment will be accessible via A2A and U2A.

During a testing day, this test environment will follow the operating day schedule of TARGET2 CUST.

User Testers have the option to choose when to conduct testing activities in addition to the certification tests such as end to end testing and operational related tests (including operational related tests organised by the Eurosystem). Testing activities, including operational related tests and end-to-end tests with significant volumes, will be included in the dedicated User Testing Calendar which will also indicate when deployments to this environment will take place.

The overall processing capacity of the TIPS certification test environment will be 10% of production capacity.

## 1.2. CONNECTIVITY TO ESMIG AND THE TIPS CERTIFICATION TEST ENVIRONMENT

TIPS User Testers shall refer to the relevant documentation:

- TIPS Connectivity Guide[3],

- Connectivity – Technical requirements and Message Exchange processing[4].

Participants who wish to use the services of an Instructing Party are advised to clarify at the start of testing[5] as to whether they or the Instructing party will connect on the U2A channel to

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[1] At a future date it will be connected to the test environment of the new T2 System

[2] Common Reference Data Management system

[3] Please refer to the TIPS for professional use webpage

[4] Please refer to the TIPS for professional use webpage

[5] This is between the Participant and the Instructing Party only (no form has to be sent to the National Central Banks or to the ECB)

TIPS and the CRDM. There must be a U2A connection in order to configure the reference data in CRDM. If the Instructing Party does not offer U2A connection, and the Participant does not intend to set one on its own, the Participant is invited to contact the National Service Desk.

Remark: Participants are still connecting directly to TIPS when this version of the ToR has been drafted. At the time of TIPS Release 4.0, they will connect to TIPS via ESMIG. This change involves no activity on the part of the TIPS Participant.

### 1.3.          BEST PRACTICES FOR MAINTAINING THE TEST ENVIRONMENT

Participants are responsible for maintaining their reference data on the TIPS certification test environment as well as their report subscriptions. This will involve a regular check-up by the service provider and, if needed, a participant cleaning exercise in cooperation with the National Central Bank. High volume testing: please refer to section 2.3.7. Concurrent tests not related to User Testing.

### 1.4.          SCHEDULING IN THE TIPS CERTIFICATION TEST ENVIRONMENT

The TIPS certification test environment is 24/7. The environment is connected to TARGET2 CUST which is available from Monday to Friday and is open during normal business hours from 07:15 to 19:00 Monday to Thursday and from 07:15 to 17:30 on Fridays, except for special periods which will be defined in the User Testing Calendar. The key events in the TARGET2 CUST timing for TIPS Participants are the cut off for bank to bank payments (15:30) and the change of business date (16:15). The change of business date for UTEST, the T2S pre-production test environment, which is connected to TARGET2 CUST also takes place at 16:15. A change of scheduling in TARGET2 CUST is automatically reflected in TIPS but needs to be adjusted in UTEST (e.g. live timing).

Data propagation from CRDM to TIPS will occur daily at 15:10. The static data objects become valid after their activation date is reached (usually at 16:15 after the change of business day). For the propagation to take place, all static data changes that need to be active in the next business day should be performed until 13:05.

When the TIPS CERT environment is open outside of the TARGET2 CUST hours, then no liquidity can be transferred to or from TARGET2 CUST.

The User Testing Calendar will define the dates where 24/7 TIPS testing availability will be provided as well as any other special schedule.

## 1.5. TEST APPROACH

The TIPS Participants themselves shall define the approach and methodology in order to achieve the best test coverage of the UDFS and of their own requirements. The National Central Bank can assist, if needed.

As a best practice it is recommended to follow the prescribed stages from connectivity testing to certification, free testing, end-to-end testing and also participation in the prescribed operational related tests, if offered. The content of the testing stages and the test cases, except for the certification tests, are left at the discretion of the TIPS Participants.

## 1.6. DEPLOYMENT

The service provider will deploy fix packages to the system at regular intervals. During User Testing deployment could take place interrupting the service. Deployment activities will always be included in the User Testing Calendar.

## 2.          TYPES OF USER TESTING

The following sections detail the different types of User Testing.

Release testing is dealt with in section 4.

### 2.1.          CONNECTIVITY SET-UP AND TESTING

Connectivity testing is the initial verification that the User Testers can communicate at the technical and application level with TIPS.

The connectivity set-up includes all TIPS specific preparatory activities which are needed to start the connectivity testing.

The Network Service Provider (NSP) provides the public-key infrastructure (PKI) for User Testers connecting to TIPS through an NSP connection.

TIPS Participants, including Ancillary Systems, and Instructing Parties acting on their behalf may contact the TIPS Service Desk with connectivity related queries. Reachable Parties must contact their TIPS participant.

Users of U2A shall test the ability to reach the ESMIG U2A interface.

### 2.2.          CERTIFICATION TESTING

### 2.2.1.          Objective and scope

The objective of certification testing is to provide evidence that a TIPS Participant and its Reachable Parties[6] can interact with TIPS by themselves or through their instructing party. Certification testing aims to demonstrate one or more of the following capabilities:

- to send to and receive specific messages through A2A communication mode;

- to log successfully into the U2A interface; and

- to subscribe to and receive specific reports.

   Ancillary systems are asked to inform the Eurosystem when a PSP signals its intention to enter into a business relationship with the AS so that the relevant certification test can be performed by the PSP prior to go-live.

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[6] The National Central Banks certify only the cash account owners, who in turn are responsible for their Reachable Parties

### 2.2.2.         Organisation and planning

Current and prospective TIPS Participants, including Ancillary Systems, must complete their certification test cases and have them validated by the National Central Banks before they can use the related functionalities in Production.

After completing the testing for certification, the Participants shall submit a final report providing evidence of the successful completion of the relevant test cases to the respective National Service Desk for validation. The Participant will ensure in the report the readiness of its Reachable Parties[7].

The full list of test cases has been defined by the Eurosystem and is available on the ECB website.

### 2.3.         USER TESTING

With the exception of the certification testing there are no mandatory tests to be performed. The TIPS Participants shall use at their own discretion the below testing opportunities when creating their internal testing plan to ensure that they are ready to go live or ready for the next version of TIPS. The National Central Bank is ready to assist, if needed.

### 2.3.1.         Free Testing

In parallel to certification testing the User Testers will be free to carry out their own test cases. These test cases shall ensure that their application is ready to interact with TIPS once they or the respective functionality go live. The User Testers will define these test cases themselves, having consulted the TIPS UDFS, TIPS CRDM UDFS and UHB.

### 2.3.2.         End-to-end testing

User Testers will be able to collaborate and to send and receive payments from each other during User Testing. This will allow the parties to simulate the interaction that occurs in TIPS production. Participants who wish to perform end-to-end testing may indicate their interest to their National Service Desk.

### 2.3.3.         Operational testing

Operational   testing is defined as where operational procedures related to events e.g. unavailability of TARGET2 CUST (see TARGET2 switch-off tests), insolvency of bank and connected parties, missing GL file, delayed GL file, delay of change of business date and

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[7] Evidence of successful certification of the Reachable Parties are not required. The Eurosystem only validates the respective TIPS DCA holders, who in turn are responsible for their Reachable Parties.

emergency replication of reference data in TIPS will be tested. The tests will take place regularly and TIPS Participants may elect to take part. Participants may also request an operational test. All tests will be included in the User Testing Calendar.

### 2.3.4. Business day testing

If requested by User Testers there may be a TIPS period of Business day testing where the TARGET2 timing will be followed for TARGET2 CUST and the TIPS system also follow a production-like schedule.

### 2.3.5. Testing of Billing

Instant payments booked (both pacs.008 and pacs.004) during TIPS User Testing shall appear on the invoice generated by the BILL module. The fee applicable to these payments shall be debited from the relevant TARGET2 CUST PM account (until the implementation of the T2 system).

The following combinations should be tested:

| Message Type | Status | Participation |
|---|---|---|
| Pacs.004 | Settled | Ancillary System |
| Pacs.008 | Unsettled | Owner of a TIPS DCA |

All 8 combinations of billable items must be tested e.g. pacs.008 settled by an Ancillary system, unsettled pacs.004 etc.

Liquidity Transfers also appear on the invoice but are regarded as TARGET2 related items.

### 2.3.6. Testing with TARGET2

The TIPS Certification Test Environment is connected to the TARGET2 CUST environment for system integrated testing. At a future date it will be connected to the test environment of the new T2 System.

### 2.3.7. Concurrent tests not related to User Testing

Volume testing shall be notified with a one-week advance period. The test duration is to be evaluated on a case-by-case basis (especially in terms of impact on other TIPS Participants). The request should be made to the National Service Desk who in turn will inform the TIPS Service Desk.

## 3.       FACILITATING USER TESTING

### 3.1.       PREPARATION

The certification evidence templates will be distributed to the concerned TIPS Participants. Operational tests may also be defined by the Eurosystem.

### 3.2.       CONFIGURATION

#### 3.2.1.       Configuration of the TIPS test environment

The TIPS certification test environment is configured with the relevant system parameters as per UDFS (latest version 3.1.1, Table 39) "System parameters". These parameters may be configurable if deemed necessary in the context of the testing activities.

#### 3.2.2.       Configuration for Participants and Reachable Parties

TIPS Participants will provide to their responsible National Central Bank the reference data to be entered in CRDM to allow them to start operating in the test environment. Reachable parties will provide the reference data to their linked TIPS Participant who will further provide it to the National Central Bank. Detailed information will be provided in the Registration Forms and Guide (available on the ECB Website). National Central Banks will create the required entity set-up for the entities acting as prospective Participants or Reachable parties in advance of the commencement of their User Testing[8].

### 3.3.       TEST DATA MANAGEMENT SUPPORT

The CRDM pre-production test environment (UTEST) will be available to the User Testers during User Testing. Reference data updates processed by CRDM will be replicated in TIPS once a day (at 15:10). Immediate reference data changes processed directly by TIPS are limited to the cases foreseen by the UDFS.

The initial setup of a TIPS Participant (including Ancillary Systems) or reachable party in CRDM will be loaded to TIPS by the National Central Bank, the data will be based on the previously submitted registration forms.

The TIPS Participants will then have to create additional reference data to complete their initial set-up e.g. create a A2A User and grant roles to the A2A user, create a report configuration for the account statement.

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[8] Participants already in Production might be concerned as well, for example when a PSP intend to use an AS Technical Account

### 3.4. COUNTERPARTY SIMULATOR

A counterparty simulator is available and can be used as beneficiary of instant payments, which will reply with an acceptance or a rejection according to a predefined setup. It cannot be used as originator of payments. The details of these counterparties are as follows:

The following BICs should be used as beneficiaries (the IBAN is irrelevant).

ACCPITRRXXX: always accepts

REJEITRRXXX: always rejects

### 3.5. LIQUIDITY PROVISION

The TIPS certification test environment will be continuously connected to the TARGET2 CUST environment. Liquidity can be transferred from a TARGET2 CUST PM account to a TIPS DCA (Dedicated Cash Account) and vice versa. It cannot be transferred outside of the TARGET2 CUST opening hours.

Ancillary Systems cannot transfer liquidity to their AS Technical Account from TARGET2 CUST. AS Technical Accounts can only receive liquidity from TIPS DCAs.

### 3.6. DEFECT MANAGEMENT

Incidents discovered by User Testers must be reported to the relevant National Service Desk. The National Service Desk will log the incident with the TIPS Service Desk and receive an incident number. Incidents which require a software fix will be declared as a Problem and receive a problem number. All open Problems and Incidents will appear on the defect list.

## 4.        RELEASE TESTING

There are two software releases per year in TIPS, the X.0 release in November and the X.1 release the following June. The National Central Banks will coordinate the testing of the change requests within the release by requesting volunteers from the TIPS Participants to test these changes and to report the results of the tests to their respective National Central Bank.

# 5.        USER TESTING ORGANISATION, ROLES AND RESPONSIBILITIES

## 5.1.1.        User Testing support and coordination

In order to address fully the User Testing related aspects, the Eurosystem provides support via three interlocutors – the ECB User Testing and Migration Team (ECB UT-MIG), the TIPS Service Desk and the National Central Banks.

## 5.1.2.        ECB User Testing and Migration team

The ECB UT-MIG team is the interlocutor for the National Central Bank test managers for coordination, planning and overall User Testing aspects and does not provide support to the TIPS Participants directly.

## 5.1.3.        TIPS Service Desk

TIPS Participants (including Ancillary Systems) and Instructing Parties acting on their behalf can contact the TIPS Service Desk for pure technical connectivity issues, i.e. issues preventing them from reaching the TIPS platform and/or receiving any response from TIPS. Negative responses, e.g. due to a misconfiguration, are considered successful from the connectivity point of view and therefore should not be addressed to the TIPS Service Desk directly. For questions on functionality, data configuration, test execution and identified incidents, these entities shall turn to the service desk of their National Central Bank.

The TIPS Service Desk conducts the operational monitoring of testing infrastructure (e.g. test environments for TIPS and TARGET2, message flow to/from the NSPs), provides the agreement for any change of the User Testing Calendar and informs the National Service Desks of any planned service changes or system downtimes. In addition, the TIPS Service Desk is the interlocutor for National Central Bank test managers on any matter related to the execution of User Testing e.g. reporting of incidents and clarification of failed test cases.

## 5.1.4.        National Central Banks

National Central Banks will be the main point of contact for the entities acting as Participants in terms of reporting of incidents and to accept the results of certification testing. Following successful certification testing, confirmed by the National Service Desk (in consultation with the TIPS Service Desk, if necessary), the certificate will be issued to the TIPS Participant (including Ancillary Systems) by the relevant National Central Bank. It is compulsory to pass the certification tests in order to access TIPS in Production.

Furthermore, a National Central Bank is the main point of contact for their community on any questions on TIPS functionality and User Testing organisation. A National Central Bank is also responsible for distribution of any information with regards to TIPS User Testing to their community (e.g. release notes, calendar, etc.).

## 5.2. SERVICE SUPPORT DURING USER TESTING

The TIPS Service Desk provides service support on the TIPS certification test environment between 08:30 and 17:30 CET on all the TARGET2 business days during User Testing. Specific arrangements for testing support outside opening hours foreseen by this document, e.g. on call support, could be agreed on demand.

## 5.3. USER TESTING REPORTING

The ECB compiles the reports from each National Central Bank on the status of release testing for each release and reports this to the TIPS governance bodies to inform their decision on the deployment of the release.

# 6.      ANNEXES                                                                          17

The **Guide to TARGET2 User testing** as well as the **Registration forms and Guide** can be retrieved on the TARGET2 for professional use page of the ECB website.