TIPS
Pilot Testing Terms of Reference

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Document Change Log

Version	Date	Author	Description
0.1	28/02/2018	Eurosystem	First draft
0.2	23/03/2018	Eurosystem	Second draft after TSWG comments

Table of Content

0.   INTRODUCTION

The TIPS Pilot Testing Terms of Reference (ToR) outlines the principles for the preparation, organisation and execution of Pilot Testing before the Go-live of TIPS, with a focus on detailing the testing activities which will be carried out in the TIPS Pre-production test environment.

The TIPS Pre-production test environment is dedicated to the testing activities of Pilot Testers, i.e. Eurosystem Central Banks and entities acting as Participants or Reachable Parties. This testing environment is owned by the Eurosystem who is responsible for all testing activities taking place on this environment.

All Eurosystem Central Banks, Participants and Reachable Parties will have access to this environment during the pilot testing period.

Participating Actors are composed of the following:

- The ECB User Testing and Migration team

- The TIPS Service Desk

- The Eurosystem Central Banks

- Participants

- Reachable Parties

This is an overview for the indicative Pilot Testing plan, which may be subject to changes:
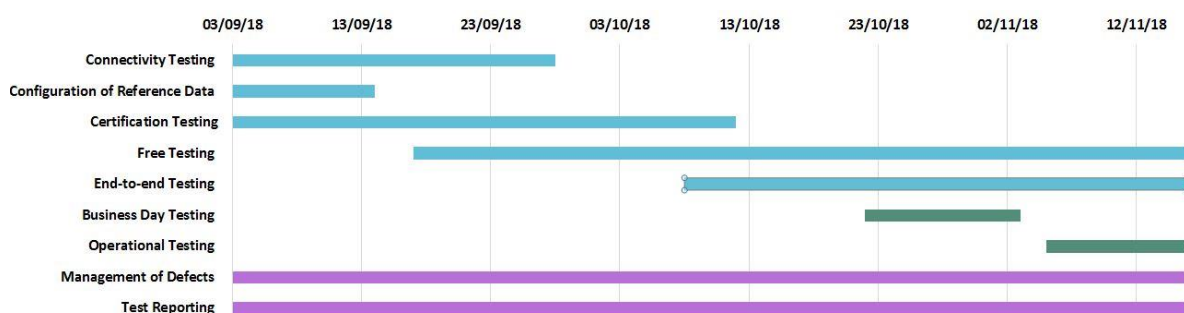
Graph 1 – Pilot Testing Plan timeline

This document addresses:

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

ii. The different types of Pilot Testing;

iii. The facilitation of Pilot Testing;

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

Following the end of the TIPS project phase and the start of operations, an updated version of this document will address the post go-live testing landscape.

1. PRINCIPLES OF THE PILOT TESTING TERMS OF REFERENCE

1.1. TEST ENVIRONMENTS

The Eurosystem will provide the TIPS Pre-production test environment for use during Pilot Testing. This environment is permanently connected to the TARGET2 CUST environment allowing liquidity to be provided during the TARGET2 CUST opening hours.

Only Pilot Testing activities performed by Pilot Testers can take place on this test environment. Testing activities related to Eurosystem Acceptance Testing (EAT) will be performed on another test environment.

The TIPS Pre-production test environment will be accessible via A2A and U2A during Pilot Testing.

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

Pilot Testers have the option to choose when to conduct additional testing activities such as end-to-end testing and operational testing (including operational testing organised by the Central Banks). Testing activities, including operational testing and end-to-end tests with significant volumes, will be reflected in the dedicated Pilot Testing Calendar which will also indicate when deployments to the environment will take place.

Billing can be tested during the Pilot Testing period.

The overall processing capacity of the test environment will be the same as the intended production capacity until the Go-Live. There will be no additional volume restrictions than the agreed Service Level.

1.2. CONNECTIVITY TO THE TIPS TEST ENVIRONMENT

TIPS Pilot Testers shall refer to the relevant documentation:

- TIPS Connectivity Guide[1],

- Connectivity – Technical requirements[2].

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[1] URL to ECB website for this document to be added

[2] URL to ECB website for this document to be added

1.3.   BEST PRACTICES FOR MAINTAINING THE TEST ENVIRONMENT

Participants are responsible for maintaining their reference data on the 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. Participants who wish to perform high volume testing must inform the respective National Service Desk in advance who will inform the TIPS Service Desk.

1.4.   SCHEDULING IN TIPS TEST ENVIRONMENT

The TIPS test environment will be available from Monday to Friday. The environment will follow the TARGET2 CUST schedule and be 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 Pilot Testing calendar. The key events in the TARGET2 CUST Schedule 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 TIPS will have to be reflected in TARGET2 CUST and UTEST e.g. live timing.

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

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

1.5.   DEPLOYMENT

The service provider will deploy fix packages to the system at regular intervals. During the Pilot Testing phase the deployment could take place interrupting the service. (The "continuous operation deployment", like the other non-functional characteristics of the system, will be tested in a dedicated environment, before and during the Pilot Testing phase.)

2. TYPES OF PILOT TESTING

The following sections detail the different types of Pilot Testing. Before the start of Pilot Testing the test environment will be configured with the relevant system parameters as per TIPS UDFS 1.7.1, Table 18 "System Parameters". These parameters may be configurable if deemed necessary in the context of the testing activities.

Parameter name	Default value
Retention Period	5 days
SCTInst Timestamp Timeout	20,000 ms
Originator Side Offset	-1,000 ms
Beneficiary Side Offset	1,000 ms
Sweeping Timeout	30 s
Maximum Amount	*Unlimited*
Acceptable Future Time Window	100 ms
Investigation Offset	5,000 ms
RTGS Alert	15 m

2.1. CONNECTIVITY SET-UP AND TESTING

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

Connectivity activities shall start two weeks prior to the execution of pilot test case execution.

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

The value-added network service provider (NSP) provides the public-key infrastructure (PKI) for Pilot Testers connecting to TIPS through a NSP connection.

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

2.2. CERTIFICATION TESTING

2.2.1. Objective and scope

The objective of certification testing is to provide evidence that a Central Bank or an entity acting as a Participant or a Reachable Party can interact with TIPS.

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.

2.2.2. Organisation and planning

Pilot Testers must execute their certification test cases during Pilot Testing. They should complete these tests in the first six weeks of Pilot Testing.

After completing the testing for certification the Pilot Testers shall submit a final report providing evidence of the successful completion of the relevant test cases to the Eurosystem for validation.

The full list of test cases will be defined by the Eurosystem and made available to the Pilot Testers.

2.3. USER TESTING

2.3.1. Free testing

In parallel to certification testing and throughout the Pilot Testing period the Pilot 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 go live. The Pilot Testers will define these test cases themselves, having consulted the TIPS UDFS and UHB.

2.3.2. End-to-end testing

Pilot Testers will be able to collaborate and to send and receive payments from each other during Pilot Testing. This will allow the parties to simulate the interaction that will occur in TIPS production. Participants who wish to perform end-to-end testing may indicate their interest two weeks prior to the commencement of Pilot Testing.

2.3.3. Operational testing

There will be a period of operational testing where operational procedures relating to events e.g. unavailability of TARGET2 CUST, 24/7 opening, delay of change of business date will be tested.

2.3.4. Business day testing

There will be a period of Business day testing where production timing will be followed and the system will be available 24/7. TARGET2 CUST and UTEST will also follow the production schedule during this period and all systems will be aligned.

2.3.5. Testing of Billing

Billable items related to payments booked during TIPS Pilot Testing shall appear on the invoices of the related TARGET2 CUST PM account during the testing period. The billing periods can be shortened during the testing period to aid testing of billing pending agreement with the TARGET2 community.

2.3.6. Concurrent tests not related to Pilot Testing

In parallel to Pilot Testing activities, the TIPS Service desk will run non-functional tests (especially volume tests) in the Pre-production test environment. These tests will be scheduled and communicated in advance.

3.   FACILITATING PILOT TESTING

3.1.   PREPARATION

In preparation for Pilot Testing the Eurosystem will define the Pilot Testing calendar and the reporting templates which will be distributed to all Pilot Testers. The Operational tests to be performed will also be defined by the Eurosystem.

3.2.   CONFIGURATION

3.2.1.   Entity set-up

Central Banks will create the required entity set-up for the entities acting as Participant or Reachable party.

3.2.2.   Configuration for Participants and Reachable Parties

Participants and Reachable Parties will provide to their responsible Central Bank the reference data to be entered in Common Reference Data Management (CRDM) module to allow them to start operating in the Pre-Production environment. Detailed information will be provided in the Registration Forms and Guide.

3.3.   TEST DATA MANAGEMENT SUPPORT

The CRDM module for TIPS will be available to the Pilot Testers during the testing period. Common reference data updates processed by CRDM will be replicated in TIPS once a day. Immediate reference data changes processed directly by TIPS are limited to the cases foreseen by the UDFS.

3.4.   LIQUIDITY PROVISION

TIPS Pre-production test environment will be continuously connected to the TARGET2 Test environment CUST. Liquidity can be transferred from a TARGET2 CUST PM account to a linked TIPS DCA (Dedicated Cash Account). It cannot be transferred outside of the TARGET2 CUST opening hours.

3.5.   DEFECT MANAGEMENT

Incidents discovered by Pilot Testers must be reported to the relevant Eurosystem Central Bank. The Eurosystem Central Bank 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.

The priority assigned to the ticket will reflect the Service Level Annex definitions reported below:

Incident/Problem Priority	Severity	Impact
Priority 1	Critical	Complete unavailability of the TIPS payment settlement service
Priority 2	Urgent	Partial failure, causing operational difficulties that can be worked around
Priority 3	Medium	All services are available, but some are experiencing performance problems
Priority 4	Low	Query or service request

4. PILOT TESTING ORGANISATION, ROLES AND RESPONSIBILITIES

4.1. PILOT TESTING SUPPORT AND COORDINATION

In order to address fully the Pilot 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 Eurosystem Central Banks.

4.1.1. ECB User Testing and Migration team

The ECB UT-MIG team is the interlocutor for the Central Bank test managers for coordination, planning and overall Pilot Testing aspects and can be reached for TIPS related matters under Support.UT-MIG@ecb.int.

4.1.2. TIPS Service Desk

The TIPS Service Desk is the interlocutor for Central Bank test managers on any matter related to the execution of Pilot Testing e.g. reporting of incidents and clarification of failed test cases.

The entities acting as Participants or Reachable Parties 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 Eurosystem 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 network service providers), provides the agreement for any change of the Pilot Testing Calendar and announces planned service changes or system downtimes.

4.1.3. Eurosystem Central Banks

Eurosystem Central Banks will be the main point of contact for the entities acting as Participants or Reachable Parties in terms of reporting of incidents and to accept the results of certification testing. Following successful certification testing, confirmed by the TIPS Service Desk, the certificate will be issued to the TIPS Participant or Reachable Party by the relevant Eurosystem Central Bank.

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

The Eurosystem Central Bank will appoint a test manager as the main interlocutor towards the ECB UT-MIG team and the TIPS Service Desk. This manager will attend the Pilot Testing conference call.

4.2. SERVICE SUPPORT DURING PILOT TESTING

The TIPS Service Desk provides service support on the TIPS Pre-production test environment between 08:30 and 17:30 CET on all the TARGET business days during the Pilot Testing period.

4.3. PILOT TESTING REPORTING

The ECB UT-MIG team will provide a reporting template to the Central Banks to be returned to the ECB UT-MIG team at regular intervals during the Pilot Testing period. The report shall cover the testing status of the Central Bank as well as of its community. The ECB UT-MIG team will also propose a reporting template that shall facilitate the Central Banks in collecting the required information from their communities.

The Eurosystem will compile the Central Banks' reports into an overall Pilot Testing status report. This report will be shared with the TARGET Services Working Group (TSWG) which is mandated to monitor the progress of the testing activities and the readiness for the TIPS Go-live and also distributed to the Eurosystem Central Bank test managers.

4.3.1. Content of the Reporting

Pilot Testers should report on a regular basis on:

- Status of Connectivity testing;
- Status of Certification testing;
- General progress of free testing: e.g. number of test cases, number of passed test cases, number of failed test cases and number of open test cases;
- Status on end-to-end testing;
- Readiness to go-live (including general status and risk assessment).

5.   ANNEXES

To be added:

- Testing Schedules

- Reporting Template

- TARGET2 CUST Schedule