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
0.3	03/05/2018	Eurosystem	Third draft after TIPS CG comments

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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 Participants. 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 will have access to this environment during the pilot testing period.

Participating Actors are composed of the following:-

- The ECB UT-MIG 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:
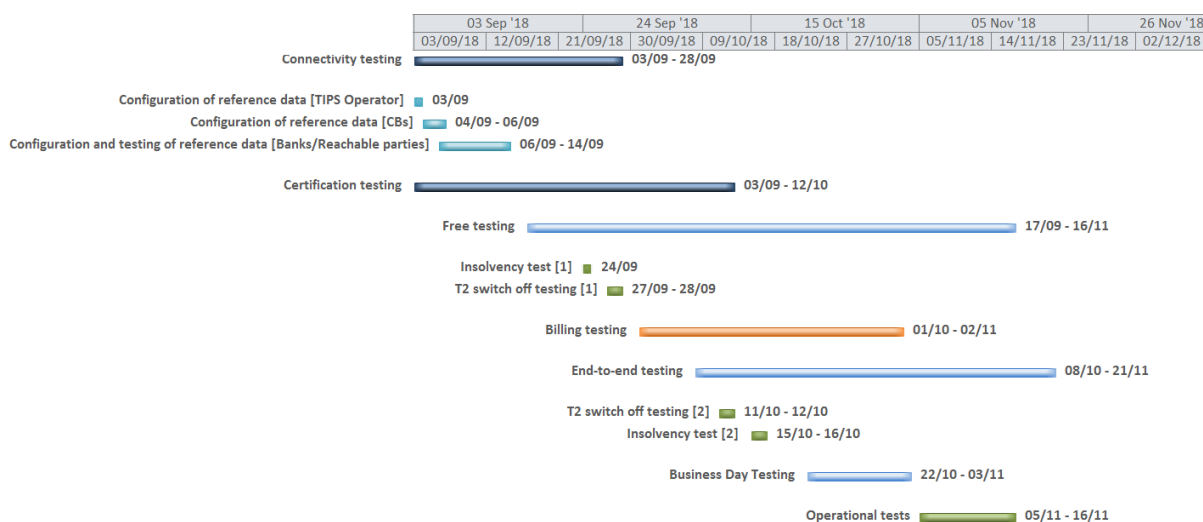
Graph 1 – Pilot Testing Plan timeline

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);

An updated version of this document to address the post go-live testing landscape will be made available in June 2019.

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 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, this 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 related tests (including operational related tests organised by the Central Banks) . Testing activities, including operational related tests and end-to-end tests with significant volumes , will be included in the dedicated Pilot Testing Calendar which will also indicate when deployments to this environment will take place.

Billing can be tested during the Pilot Testing period.

The overall processing capacity of the TIPS Pre-production test environment will be the same as the intended production capacity until the commencement of the Black Period two weeks before Go-live. There will be no additional volume restrictions than the agreed Service Level.

1.2. CONNECTIVITY TO THE TIPS PRE-PRODUCTION TEST ENVIRONMENT

TIPS Pilot Testers shall refer to the relevant documentation:

- TIPS Connectivity Guide[1],

- Connectivity – Technical requirements and Message Exchange processing[2].

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[1] Add link to ECB website for this document

[2] Add link to ECB website for this document

1.3.   BEST PRACTICES FOR MAINTAINING THE TEST ENVIRONMENT

Participants are responsible for maintaining their reference data on the Tips Pre-production 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 TIPS Service Desk, via the respective National Service Desk, one week in advance of their intended test date.

1.4.   SCHEDULING IN THE TIPS PRE-PRODUCTION TEST ENVIRONMENT

The TIPS Pre-production 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.

Data propagation from CRDM to TIPS will occur daily at 15.10.

If the TIPS Pre-production 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. Deployment activities during pilot phase will all be included in the Pilot testing calendar.

2. TYPES OF PILOT TESTING

The following sections detail the different types of Pilot Testing. Before the start of Pilot Testing the TIPS Pre-production test environment will be configured with the relevant system parameters as per 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 on 3 September 2018.

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 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. It is recommended to 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 to their National Service Desk 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 (see T2 switch-off tests), insolvency of bank and connected parties, missing GL file, delayed GL file, delay of change of business date and emergency replication of reference data in TIPS will be tested. The specific tests are to be confirmed and the description of the planned tests will be based on the MOP and included in an annex of the ToR.

2.3.4.   Business day testing

There will be a period of Business day testing where the TARGET2 CUST timing will be followed and the system will be available 24/7.

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 will be shortened during the testing period to aid testing of billing pending agreement with the Target 2 Community.

The planned billing tests cover three periods of respectively 1 week, two weeks and 1 month starting all from 1/10/2018. CBs shall verify the billing process by using the daily General Ledger file from T2 which contains the TIPS-related information.

2.3.1.   Testing with T2

The pilot testing will be run in parallel to T2 release testing. The capacity of T2 to be switched off from TIPS will be tested on a couple of occasions. To mitigate the impact on TIPS testing the participants are asked to load enough cash to TIPS prior to the switch off tests.

The schedules between TIPS and T2 are planned to be aligned during the whole testing period to the CUST timing. The schedule used and the respective testing periods will be tracked in a joint testing calendar (see Facilitating Pilot testing).

2.3.2.   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.

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 participants).

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 Participants or Reachable party at the beginning of the pilot testing phase, following the initial load of reference data.

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 CRDM to allow them to start operating in the Pre-Production environment. Detailed information will be provided in the Registration Forms and Guide.

3.2.1.   CRDM testing by CBs

In parallel to the setup of the Configuration for Participants and Reachable Parties, CBs will be able to test the CRDM functionality, based on U2A access and via DMT. Such tests shall be based on fake data so as not to interfere with participants testing in general.

3.2.2.   Counterparty simulator

A counterparty simulator is available for the whole pilot testing phase and can be used as beneficiary of instant payments, to which it will reply according to a predefined setup. It cannot be used as originator of payments.

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.

The initial setup of CRDM will be loaded to TIPS by the TIPS operator at the start of the Pilot testing phase; the data will be based on the previously submitted registration forms.

3.4.   LIQUIDITY PROVISION

TIPS Pre-production test environment will be continuously connected to the TARGET2 CUST Test 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.

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 T2, message flow to/from the network service providers), provides the agreement for any change of the Pilot Testing Calendar and informs the National Service Desks of any 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.).

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. Specific arrangements for testing support outside opening hours foreseen by this document, e.g. on call support, could be agreed on demand.

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 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;
- Status of Certification;
- 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 test;
- Readiness to go-live (including general status and risk assessment).

5.   ANNEXES

To be added:

- Testing Schedules

- Reporting template

- TARGET2 CUST SCHEDULE