



**GUIDE TO  
TARGET2 USER TESTING**

**Version 4.1 / September 2018**

**ECB-Unrestricted**

**Guide to TARGET2 User Testing**

## Foreword

*Testing activities are an important part of the change management procedures for TARGET2. In this context test requirements and test procedures shall be made clear to TARGET2 participants in case changes are occurring on either the participants', on the Central Banks', on the Single Shared Platform (SSP) side, on the TARGET2-Securities (T2S) side<sup>1</sup>, or on TIPS side. That is why the Eurosystem developed a harmonised testing framework, which national central banks are responsible for implementing with their national banking communities.*

*This “Guide to TARGET2 User Testing” aims at providing current and future PM Account holders, ancillary systems, T2S and TIPS Dedicated Cash Account (DCA) holders with details of all the technical, functional and procedural aspects while scheduling, organising and performing TARGET2 related testing activities. While it presents procedures applicable to all connected countries, information specific to individual national banking communities can be found on the TARGET2 websites of the respective national central banks. From the version 4.0, this document covers the TARGET2 interface testing with TIPS but the testing activities taking place on the TIPS platform itself are not covered in this document (they are provided by the TIPS contact group<sup>2</sup>).*

*This guide exclusively deals with activities on the test & training environment and does not touch upon the preparatory activities on the production environment. In the case of newly connecting participants or banking communities, please refer to the relevant Eurosystem documentation (Preparation to the Go Live for connecting Central Bank or for connecting new participants).*

*This guide refers to the following annexes:*

---

<sup>1</sup> Limited to the legal perimeter of TARGET2, i.e. to the aspects related with the euro denominated Dedicated Cash Account holders.

<sup>2</sup> Managing their own [Web site](#)

Annex 1: [Connectivity test scenario](#) for SSP access

Annex 2: [Interoperability](#) test cases for TARGET2 release 12.0, including test scenarios related to the TARGET2/T2S interface and test scenarios related to TARGET2/TIPS interfaces

Annex 3: Authorisation test scenario defined on the T2S platform (updated for T2S release 1.2, no change applied afterward this T2S release)

It refers also to the [Certification test cases](#) document published on the T2S web site.

<i>Version</i>	<i>Date of publication</i>	<i>Changes</i>
1.0	2007	Initial version
2.0	June 2011	Elaboration of the missing chapter “Changes on Participant side”
3.0	March 2015	Adaptation to the extension of TARGET2 testing to the T2S platform in TARGET2 perimeter (authorisation testing)
3.1	October 2015	Changed dates related to Wave 2 testing in T2S and adjustments (highlighted)-Integration of the annexes in the document
3.2	August 2016	Changes reflecting the creation of the Final wave and scenario changes. Test cases adapted to TARGET2 release 10.0 and T2S release 1.2
3.3	No publication	Changes in Annex2 dedicated to Interoperability testing, published; no change in the main document (this document)
4.0	August 2018	Changes reflecting the end of the T2S migration; Enhancement of timing references; Introduction of TIPS for interface testing with TARGET2 (TIPS testing on TIPS platform not covered in this document (provided by the TIPS contact group)).
4.1	September 2018	Corrections applied to Internet-based participants and other enhancements

# GUIDE FOR TARGET2 USER TESTING

## Table of Contents

### Contents

<b>1. INTRODUCTION.....</b>	<b>7</b>
1.1. SCOPE OF TARGET2 USER TESTING.....	7
1.1.1. Types of changes taken on board.....	7
1.1.2. Parties involved.....	7
1.1.3. Roles and responsibilities in TARGET2 user testing.....	8
1.2. USER TESTING ENVIRONMENTS .....	9
1.2.1. SSP testing environment (CUST).....	9
1.2.2. T2S testing environments.....	14
1.2.3. TIPS testing environment.....	17
1.3. GENERAL ORGANISATION OF TESTING ACTIVITIES .....	17
1.3.1. Phases of TARGET2/T2S/TIPS User Testing.....	17
1.3.2. Possible simplification of test requirements.....	19
1.3.3. Set-up of the test environment on the user's side .....	19
1.3.4. Central Bank support .....	19
1.3.5. Incident Management.....	20
1.3.6. Reporting on test result.....	20
<b>2. TESTING ON THE SSP.....</b>	<b>21</b>
2.1. PARTICIPANTS TESTING ON THE SSP .....	21
2.2. FREE TESTING.....	21
2.2.1. Scope and aim .....	21
2.2.2. Rules to adhere to .....	21
2.2.3. Preconditions for using free testing opportunities.....	22
2.3. CONNECTION OF NEW PARTICIPANTS ON THE SSP.....	22
2.3.1. General preconditions.....	22
2.3.2. Interoperability testing.....	25
2.3.3. Business day testing.....	26

2.3.4.	<i>Timing elements</i> .....	27
2.3.5.	<i>T2S Connectivity testing</i> .....	28
2.3.6.	<i>TIPS Connectivity testing</i> .....	29
2.4.	CONNECTION OF A NEW BANKING COMMUNITY.....	30
2.4.1.	<i>General preconditions</i> .....	30
2.4.2.	<i>Connectivity testing</i> .....	31
2.4.3.	<i>Interoperability testing</i> .....	33
2.4.4.	<i>Business day testing</i> .....	34
2.4.5.	<i>Timing elements</i> .....	35
2.4.6.	<i>T2S Connectivity testing</i> .....	37
2.4.7.	<i>TIPS Connectivity testing</i> .....	37
2.5.	CHANGES ON PARTICIPANT'S SIDE .....	38
2.5.1.	<i>Scope of testing related to change on participant' side</i> .....	38
2.5.2.	<i>General pre-conditions</i> .....	38
2.5.3.	<i>Types of changes and testing process associated</i> .....	39
2.5.4.	<i>Connectivity testing</i> .....	40
2.5.5.	<i>Interoperability testing</i> .....	41
2.5.6.	<i>Business day testing</i> .....	41
2.5.7.	<i>Timing elements</i> .....	42
2.5.8.	<i>T2S Connectivity testing</i> .....	42
2.5.9.	<i>TIPS Connectivity testing</i> .....	42
2.6.	CHANGES ON THE SSP SIDE.....	43
2.6.1.	<i>General preconditions</i> .....	43
2.6.2.	<i>Interoperability testing</i> .....	44
2.6.3.	<i>Business day testing</i> .....	45
2.6.4.	<i>Timing elements</i> .....	47
<b>3.</b>	<b>TESTING ON THE T2S PLATFORM.....</b>	<b>48</b>
3.1.	PARTIES TESTING ON THE T2S PLATFORM .....	48
3.2.	REGISTRATION .....	48
3.2.1.	<i>Registration towards the Central Banks</i> .....	48
3.2.2.	<i>Registration towards a VAN provider for directly connected T2S DCA holders</i> .....	48
3.3.	T2S TEST ENVIRONMENTS .....	49
3.4.	CONNECTIVITY SET-UP AND STATIC DATA SET-UP .....	49
3.5.	TESTING STAGES/ TESTING ACTIVITIES APPLIED TO T2S DCA HOLDERS .....	49
3.5.1.	<i>Connectivity testing</i> .....	49
3.5.2.	<i>Certification testing</i> .....	50
3.5.3.	<i>Authorisation testing</i> .....	51
3.5.4.	<i>Business day testing</i> .....	52
<b>4.</b>	<b>TESTING ON THE TIPS PLATFORM .....</b>	<b>53</b>
4.1.	PARTIES TESTING ON THE TIPS PLATFORM.....	53
4.2.	REGISTRATION .....	53

4.2.1.	<i>Registration towards the Central Banks</i> .....	53
4.2.2.	<i>Registration towards a Network Service provider (NSP) for TIPS DCA holders</i> .....	53
4.3.	TIPS TEST ENVIRONMENTS .....	54

## 1. INTRODUCTION

*This section provides general background information on the user testing, organisational responsibilities and set-up.*

### 1.1. Scope of TARGET2 User Testing

TARGET2 User testing aims at verifying the readiness of new or existing TARGET2 users in the event of any change, which may impact on their interaction with the SSP and/or the T2S platform and/or the TIPS platform.

#### 1.1.1. Types of changes taken on board

The following changes may fall under the scope of TARGET2 User Testing. The definition of testing requirements would depend on the detailed changes, which are envisaged. A further description of each category is provided in the forthcoming parts of this document:

- **Connection of a new participant**, e.g. a credit institution becoming PM account holder, a credit institution becoming T2S DCA holder directly and/or indirectly connected (i.e. using the TARGET2 value-added services for T2S (VAS)), a credit institution becoming TIPS DCA holder, an ancillary system, a new Central Bank customer (CB customer) or a new HAM participant. For further information please refer to chapters 2.3 and 3.
- **Connection of a new banking community** e.g. in connection with the adoption of the Euro. For further information please refer to chapter 2.3.5.
- **Changes on the participant's side** e.g. change of account structure or change on the participant's technical interface. For further information please refer to chapter 2.5.
- **Changes to the SSP/T2S<sup>3</sup> platform** e.g. yearly release triggered by a SWIFT change delivery of a corrective patch or new feature. For further information please refer to chapter 2.6.

#### 1.1.2. Parties involved

Besides the Central Banks of the Eurosystem and the providers of the platform (3CB/4CB), TARGET2 User Testing foresees the involvement of the direct PM participants, the T2S DCA holders directly or indirectly connected<sup>4</sup>, TIPS DCA holders (having a link with own PM account), the

---

<sup>3</sup> Related to cash aspects

<sup>4</sup> Directly connected participants in T2S have direct access to the GUI and/or A2A access to T2S. Indirectly connected participants in T2S have a DCA but do not have direct access to the T2S platform via the GUI or via A2A. The access to their account is made via the TARGET2 VAS for T2S.

ancillary systems, the Central Bank customers, the HAM account holders and the HAM co-managers. Some restrictions / exemptions may apply to specific actors:

- Considering the limited functionalities offered to **multi-addressee access**, addressees only fall under the scope of TARGET2 User Testing for connectivity and interoperability test cases, which are applicable for this type of connection.
- The testing between PM account holders and their **indirect participants** and **addressable BICs** via PM account holders is a matter for the PM account holders and is not part of the TARGET2 User Testing as such.
- Tests with the **Proprietary Home Accounting** system (PHA) are only envisaged to the extent the PHA is used to provide liquidity to the RTGS account. For further details on other PHA testing requirements, please refer to your Central Bank.

### 1.1.3. Roles and responsibilities in TARGET2 user testing

**Whenever applicable the participant is responsible for:**

- informing the Central Bank in good time about its wish to connect to TARGET2;
- informing the Central Bank in good time about any change made to its TARGET2 and/or T2S interface and/or TIPS interface, which may impact on its interaction with the SSP and/or T2S and/or TIPS;
- updating the Network service provider (NSP) registration for the respective closed user groups (e-ordering in the case of SWIFT connection with TARGET2);
- initiate the exchange of RMA (for SWIFT-based users) for SSP access (see 3.2);
- filling out the registration forms for SSP, T2S and TIPS access and submitting them to its Central Bank (see 2.2);
- updating the definition of RBAC roles assigned to users (TARGET2 SWIFT-based participants) or assignation of T2S and TIPS role and privileges;
- T2S static data set-up (users, DNs, message subscription rules, routing, reports etc.) at T2S DCA holder level;
- Fill out the registration forms related to the set-up of static data related to TIPS, in particular LM link and RM/SF links, and CRDM data
- planning, preparing and performing testing activities in a timely manner;
- reporting to its Central Bank any abnormal behaviour of the system(s) experienced during testing;
- reporting of the (re)certification test results to the Central Bank;
- ensuring the readiness of its associated indirect participants and addressable BICs.

**Whenever applicable the Central Bank is responsible for:**



- defining the test requirements applicable to TARGET2 participants directly or indirectly connected making a change to their interface with the SSP, T2S or TIPS;
- defining the test planning at country level;
- the set-up and maintenance of static and dynamic data for their participants at SSP, T2S and TIPS level;
- providing a direct contact point for all user-testing-related questions and support (national service desk);
- providing information and support to their participants on a best effort basis;
- monitoring of business activities, payment activities, liquidity streams, profiles;
- monitoring the readiness of their users;
- testing the contingency processing arrangements;
- communicating to their users information on incidents in the SSP, proprietary systems, T2S and TIPS which may impact on the testing progress;
- the evaluation and consolidation of test reports from their users;
- Liaising with the SSP, T2S and TIPS service desks as well as with the TARGET2 Test Coordination function and the Test Support and Coordination (TSC) team at the ECB (e.g. for the organisation of tests involving participants in more than one country).

## 1.2. User testing environments

---

### 1.2.1. SSP testing environment (CUST)

#### **Purpose**

The Eurosystem provides participants with a specific single user testing environment on the SSP for test and training purposes (CUST).

SSP CUST may run with a release version different from the one running on the production environment (PROD). Differences may come from the delivery of SSP yearly releases or the implementation of corrective patches.

SSP CUST environment is used:

- by the Central Banks to test the releases / patches delivered by the SSP provider (3CB);
- by participants to perform their certification tests against the new SSP releases;
- by already connected participants to recertify after a change on their internal applications;
- by new participants or new banking communities for their certification before the connection;
- by Central Banks and participants for regular trialling and training activities.

#### **Availability**

## Introduction

CUST is, in principle, available on all TARGET working days. From Monday to Friday the system is available from 7:00<sup>5</sup> until 19:00 (see schedule below).

### Standard timing (or “CUST” timing):

Phases of the business day in the test environment (standard TARGET2 timing)		
<i>Name</i>	<b>MON – FRI</b>	<i>Comments</i>
Prepare daylight operations	07:00-07:15	Activation of standing orders for “highly urgent” and “urgent” reservations
Day-trade phase	07:15-15:30	Payment business and AS settlement procedures 1 – 6
Customer cut-off time	14:00	
CRDM data propagation	14:00	
T2S Business cut-off time	15:15	Automated cash sweep
Interbank cut-off time	15:30	
End TIPS liquidity transfers with TARGET2	15:30	
Start of End-of-day processing	15:30	Last till 16:15; takes 15 minutes longer on the last day of the minimum reserve period
Overnight deposit cut-off time	15:45	
Message Input cut-off	16:00	
Standing facilities cut-off	16:10	
Start-of-day phase	16:15(-16:30)	Starts 15 minutes later on the last day of the minimum reserve period
Liquidity-provisioning	16:30-17:00	Starts 15 minutes later on the last day of the minimum reserve period, but nevertheless ending at 17:00
Start TIPS liquidity transfers with TARGET2	17:00	
Start of setting aside liquidity;	17:00	Night-time processing (AS settlement procedure 6 only)
Night-time settlement (NTS)	17:00-19:00	
SSP closed	19:00	
Technical maintenance	19:00 <sup>6</sup> -06:30	No user testing activities
Night time settlement	06:30-07:00	Continuing of Night-time processing (AS settlement procedure 6 only)

<sup>5</sup> All times are given in CET

<sup>6</sup> Friday's starting at 17:00.

## Introduction

Occasionally, on an exceptional basis, operating hours as well as the timing of the different business phases may be extended to cater for specific testing requirements allowing e.g. for testing according to live operating hours or reduced live-timing (Live 20). T2S testing might require also an extension of the normal operating hours of the SSP. Similarly, TIPS might request to have a change of the end of day/start of day according to their Live timing, on which CUST should synchronise (communities will be informed via their Central Banks) The closing times of the SSP, the T2S platform and TIPS are aligned to avoid side-effects on the transit accounts and rejection of payments. Hence any unexpected delay on T2S real-time settlement (RTS) closure and/or TIPS should have an impact on the SSP real-time settlement closure. On the other hand, from time to time the test environment may be closed for maintenance and internal testing purposes. Such exceptions are announced well in advance.

### Live timing:

Phases of the business day in the test environment (live timing)		
<i>Name</i>	<b>MON – FRI</b>	<i>Comments</i>
Prepare daylight operations	06:45-07:00	Activation of standing orders for “highly urgent” and “urgent” reservations
Day-trade phase	07:00-18:00	Payment business and AS settlement procedures 1 – 6
Customer cut-off time	17:00	
CRDM data propagation	17:00	
T2S Business cut-off time	17:45	Automated cash sweep
Interbank cut-off time	18:00	
End TIPS liquidity transfers with TARGET2	18:00	
Start End-of-day processing	18:00-18:45	Takes 15 minutes longer on the last day of the minimum reserve period
Overnight deposit cut-off time	18:15	
Message Input cut-off	18:30	
Standing facilities cut-off	18:40	
Start-of-day	18:45(-19:30)	Starts 15 minutes later on the last day of the minimum reserve period
Liquidity-provisioning	19:00-19:30	Starts 15 minutes later on the last day of the minimum reserve period, but nevertheless ending at 19:30
Start TIPS liquidity transfers with TARGET2	19:30	
Start of setting aside liquidity	19:30	
Night-time settlement	19:30-22.00	Night-time processing (AS settlement procedure 6 only)
SSP closed	22:00	

## Introduction

Technical maintenance	22:00-06:00	No user testing activities
Night time settlement	06:00-06:45	Continuing of Night-time processing (AS settlement procedure 6 only)

### Live20 Timing (similar as live timing but shorter night-time settlement (NTS))

Phases of the business day in the test environment (live20 timing)		
<i>Name</i>	<b>MON – THU<sup>7</sup></b>	<i>Comments</i>
Prepare daylight operations	06:45-07:00	Activation of standing orders for “highly urgent” and “urgent” reservations
Day-trade phase	07:00-18:00	Payment business and AS settlement procedures 1 – 6
Customer cut-off time	17:00	
CRDM data propagation	17:00	
T2S Business cut-off time	17:45	Automated cash sweep
Interbank cut-off time	18:00	
End TIPS liquidity transfers with TARGET2	18:00	
Start End-of-day processing	18:00-18:45	Takes 15 minutes longer on the last day of the minimum reserve period
Overnight deposit cut-off time	18:15	
Message Input cut-off	18:30	
Standing facilities cut-off	18:40	
Start-of-day	18:45(-19:30)	Starts 15 minutes later on the last day of the minimum reserve period
Start of Liquidity-provisioning	19:00(-19:30)	Starts 15 minutes later on the last day of the minimum reserve period, but nevertheless ending at 19:30
Start TIPS liquidity transfers with TARGET2	19:30	
Start of setting aside liquidity	19:30	
Night-time settlement	19:30-20:00	Night-time processing (AS settlement procedure 6 only)
SSP closed	20:00	
Technical maintenance	20:00-06:45	No user testing activities
Night time settlement	06:45-07:00	Continuing of Night-time processing (AS settlement procedure 6 only)

<sup>7</sup> on Fridays standard CUST timing applies

Limited ad-hoc delays may be exceptionally granted if this is considered to be in the overall interest of the users. Possible triggering events may be the completion of some urgent testing activities of a major ancillary system or a national user community (Business day testing).

By default, proprietary systems like a PHA, if available for testing, should align their availability with the timing applicable for the SSP on the same date. For details, please check with the national central bank for more detailed information.

### **Volume limitations on the SSP**

Any user testing activity<sup>8</sup> requiring hourly volumes that exceed the following limits need central coordination and prior approval, owing to volume restrictions imposed by SWIFT and/or the SSP user test environment. These limits apply per PM account holder or per ancillary system.

The volumes requiring approval from the Central Bank (per user and hour), are:

- more than 60 FIN messages to be sent and/or;
- more than 30 XML messages (SWIFTNet InterAct in A2A mode) to be sent by the user.

Users intending to exceed any of these limits (e.g. for volume testing) must send a request to the national service desk of their Central Bank at least one week in advance. The request should contain the expected volumes to be tested (hourly volumes for each of the categories mentioned above) and the expected duration of the test. The national service desk will verify with the SSP service desk whether the requested volumes can be processed. Consecutively the national service desk will inform the user via e-mail whether the testing can be performed as scheduled or whether any modifications in terms of date, time and/or volumes are required. High volume tests of 20.000 FIN messages and more need also to be addressed to SWIFT four weeks in advance (SWIFT TIP 2008531).

### **Management of BICs**

#### *Available BICs in CUST*

SWIFT does not provide a BIC Directory in T&T. Therefore a specific BIC directory had to be created and loaded in CUST for the purpose of user testing. This directory includes all published live BICs as well as all equivalent T&T BIC8s will be loaded in the system. For instance, provided the live BIC BANKCCLLXXX is published in live, it is available on CUST together with its equivalent T&T BIC BANKCCLOXXX. However, while the published BIC BANKCCLL123 would be available, the associated T&T BANKCCL0123 would not.

---

<sup>8</sup> This explicitly includes the Free Testing phase

If a user wants to use a T&T BIC with a branch code (e.g. BANKCCL0123) or a special T&T BIC (e.g. ZYAACCL0XXX or ZYAACCL0123), it needs to ask its Central Bank to load this specific BIC in the system.

Upon request, Central Banks will provide their users with a list of T&T BICs to be used for addressing messages to during interoperability or free tests.

- **Usage of test & training and live BICs in the test messages**

While only T&T BICs are allowed in the message header, users may use both T&T and live BICs in the body of the message, according to the following table:

		HEADER			BODY			
		Sender	Receiver	52	53	56	57	58
HAM (V- Shape)	MT202	BIC T&T	BIC T&T	BIC T&T* Live BIC	BIC T&T	n.a.	BIC T&T	BIC T&T
	MT103	BIC T&T	BIC T&T	BIC T&T Live BIC	BIC T&T	BIC T&T	BIC T&T** Live BIC	n.a.
	MT202	BIC T&T	BIC T&T	BIC T&T Live BIC	BIC T&T Live BIC	BIC T&T Live BIC	BIC T&T Live BIC	BIC T&T Live BIC
PM (Y-Copy)	MT204	BIC T&T	BIC T&T	n.a.	BIC T&T	n.a.	BIC T&T Live BIC	BIC T&T Live BIC
	MT103	BIC T&T	BIC T&T	BIC T&T Live BIC	BIC T&T Live BIC	BIC T&T Live BIC	BIC T&T Live BIC	n.a.

\* Field 52a is not allowed in incoming messages

\*\* If 56 is present, otherwise only BIC T&T

### *TARGET2 Directory for CUST*

Like the live environment, the TARGET2 Directory in CUST will be based on the SSP static data. Fields “participant”, “Addressee” and “Account holder” must be filled out with T&T BICs.

If a user wants to have its live BIC8 published in the TARGET2 Directory used in CUST, it must request the creation of a wildcard rule for registering its live BIC as addressable BIC “behind” its T&T BIC. The wildcard rule for the inclusion of live BICs should have the branch option flag set to “NO” and the field “BIC Addressee” should not be used for Live BICs.

## 1.2.2. T2S testing environments

### **Purpose**

The Eurosystem provides participants with different user testing environments for test & training purposes:

- The Interoperability test environment, reserved for Central Banks and CSDs testing. Testing new releases and patches occur in this Interoperability test environment.
- The Pre-production test environment (called UTEST). This environment should be from software point of view a copy of the current production environment. SSP CUST is by default connected to this environment. Any request for certification or authorisation for new T2S DCA holders (and new CSD participants) occur in the pre-production environment.

### **Availability**

Different timings are defined for the T2S testing environments. T2S aligns its timing (till at least to the start of the Night-time settlement) with the standard timing of the SSP CUST (T2S Synchronised Standard Day). The T2S Release Day will apply when a patch has been installed, always on a Friday afternoon, after the end of the Night-time settlement.

# Introduction

## T2S Timing:

	T2S Standard Day		T2S Synchronised Standard Day <sup>9</sup>		T2S Release Day		T2S Live Timing		T2S Operating day for Purging Activities	
Start of Testing	07:00		07:00		07:00		07:00		07:00	
<b>Real time Settlement</b>										
Timings of massive recycling	06:55		06:55		06:55		06:55.00		06:55	
	08:55		08:55		08:55		08:55.00		08:55	
	10:55		10:55		10:55		10:10:00		10:55	
	12:10		12:10		12:10		10:55.00		11:10	
	14:55						12:10:00		11:40	
							13:55.00			
						14:55.00				
						15:55.00				
Partial settlement 1	08:00 – 08:15		08:00 – 08:15		08:00 – 08:15		08:00 – 08:15		08:00 – 08:15	
Partial settlement 2	10:00 – 10:15		10:00 – 10:15		10:00 – 10:15		10:00 – 10:15		10:00 – 10:15	
Partial settlement 3	12:00 – 12:15		12:00 – 12:15		12:00 – 12:15		12:00 – 12:15		11:00 – 11:15	
Partial settlement 4	14:00 – 14:15		12:30 – 12:45		12:30 – 12:45		14:00 – 14:15		11:20 – 11:30	
Partial settlement 5	15:45 – 16:00		14:15 – 14:30		14:15 – 14:30		15:45 – 16:00		11:50 – 12:00	
DVP / Cash SR <sup>1</sup> cut-off	16:00		14:30		14:30		16:00		12:00	
	EUR	DKK	EUR	DKK	EUR	DKK	EUR	DKK	EUR	DKK
Collateral reimbursement	16:30	16:10	15:00	14:40	15:00	14:40	16:30	16:10	12:30	12:10
BATM / CBO cut-off	16:40	16:15	15:10	14:45	15:10	14:45	17:40	16:15	12:40	12:15
Inbound LTO cut-off / Automatic cash sweep	16:45	16:20	15:15	14:50	15:15	14:50	17:45	16:20	12:45	12:20
Securities SR / FOP cut-off	17:00		15:30		15:30		18:00		13:00	
<b>End-of-day / Start-of-day</b>										
Change of business date	17:45		16:15		16:15		18:45		13:45	
Purge activities	-		-		-		-		2-3 hours	
Feeds from CMS	18:00		16:30		16:30		19:00		30 min	
Cash injection	18:30		17:00		17:00		19:30		approx. 45 min	
Start of Night-time settlement	18:30		17:00		17:00		20:00		17:15 <sup>3</sup>	
<b>Night-time settlement</b>										
End of Testing <sup>2</sup>	19:00		19:00		17:30		~ 22:30			

<sup>9</sup> Correspond to CUST timing in TARGET2



## **Volume limitations**

Any volume test should be communicated six months in advance to the Central Bank.

## **Management of BICs on the T2S testing environments**

The convention to create all T2S participants with production BICs has been adopted in all T2S testing environments during multilateral testing.

### **1.2.3. TIPS testing environment**

#### **Purpose**

The Eurosystem provides participants with a specific single user testing environment for test and training purposes (Pilot testing environment). All information about the TIPS test environment is provided by the TIPS Contact group<sup>10</sup>.

#### **Availability**

Pilot testing environment of TIPS is, in principle, available on all TARGET working days. From Monday to Friday the system is available from 7:00 until 19:00. TIPS Pilot testing environment is always synchronised with TARGET2 CUST when in relation to the end of day/start of day trade phase. For the rest the timings of the 2 systems are independent and the opening hours of TIPS might differ when needed. TIPS Pilot testing might be open during the week-end or any TARGET closing day when test are organised these days. Additional information provided by the TIPS Contact group, can be found on the [TIPS Web site](#), in particular the [TIPS Pilot testing Terms of reference](#).

## **1.3. General organisation of testing activities**

---

### **1.3.1. Phases of TARGET2/T2S/TIPS User Testing**

Each user must undergo a number of testing activities, which will depend:

- i) On the type of change/connection envisaged (U2A, A2A);
- ii) on the profile of the participant (PM account holder, HAM account holder, Group of Account Manager, PHA holder, T2S DCA holder directly connected, DCA holder indirectly connected, TIPS account holder), and;

---

<sup>10</sup> [Web site](#) link

iii) on the profile of Central Bank / banking community.

Further factors impacting the type and number of tests to be performed are, e.g. the participation in different Ancillary Systems.

After a careful analysis of these factors, testing requirements will be defined by the respective Central Bank and will be organised in different phases/stages, from the simplest to the more elaborated ones. Testing will start at the level of individual participants (connectivity and interoperability testing) and may be complemented with test requirements involving a group of participants (country and TARGET2 and/or T2S-wide testing).

The terminology used to designate testing phases is different depending if it refers to the SSP, the T2S Platform or the TIPS platform.

**On the SSP**, the following terminology is used:

- Connectivity testing: describes the mandatory (MAND) or conditional usage (COUS) testing scenarios in relation with the connection to SSP,
- Certification testing: consists of test cases that a PM account holder must perform on the SSP independently from any other participant. The test cases are defined in the “TARGET User testing, Interoperability testing” document.

**On the T2S and TIPS platform**, the following terminology is used:

- Connectivity setup and testing: includes all T2S/TIPS specific preparatory activities needed to start testing (including definition of T2S specific configuration, security environments, etc). Connectivity testing is limited to the first layer of the business application, but includes the testing of Business Application Header.
- Certification testing: consists of mandatory/conditional test cases to prove that the T2S/TIPS DCA holder directly connected is able to communicate in an appropriate way with T2S without harming it. These tests consist of U2A and A2A tests, whereof only those test cases applicable to the type of connection used by the T2S/TIPS DCA holder have to be conducted. The certification testing should be performed before the authorisation testing (described below).
- Authorisation testing requested by the Central Bank (only applicable to T2S): consists of mandatory/conditional test cases that any T2S DCA holder has to perform on the T2S platform at a Central Bank’s request, independently from any other T2S actor.
- Business day testing: testing involving communities, with use of live timing.

## 1.3.2. Possible simplification of test requirements

In principle test requirements apply the same way to all users under the scope of TARGET2 User Testing (see 1.1.2). Nevertheless some exceptions are foreseen in very specific circumstances in order to avoid the unnecessary repetition of tests.

The main exceptions are as follows (non-exhaustive list):

- Multi-country banks managing several PM/T2S DCA/TIPS DCA account holders from the same technical hub may not need to repeat the whole range of certification/authorisation tests with all the Central Banks to which they are connected. Some exemptions and simplifications in interoperability (on SSP)/ certification and authorisation (on the T2S platform) tests may be granted if justified.
- In some cases users may open so-called PM accounts for specific purpose, for which the BICs are not published in the TARGET2 Directory. Such accounts may be opened e.g. for Reserve Management purposes, for the settlement of Monetary Policy transactions or for the management of cash operations. If due to the nature of such an account not all test cases apply, Central Banks can - based on a concrete request from the user describing the intended usage of the account - reduce the test requirements accordingly.

In the cases listed above, the user needs to contact its respective Central Bank in good time and to provide all relevant information supporting the request. It is the responsibility of the Central Bank to assess the validity of the request and to grant the simplification.

## 1.3.3. Set-up of the test environment on the user's side

The test environment on the user's side should be as similar as possible to the future live environment. Furthermore, before starting any testing phase, it is expected that the user carries out extensive internal tests, to reduce the risk of failure during the certification steps.

The respective Central Bank must be informed in writing about any changes in the test environment of the user during or after the certification testing. That includes specifically the use of optional functions, which were not used in the past and therefore not part of a previous certification process. Besides clearly describing the nature and scope of the change and the associated risks, this information should contain a proposal with regard to the test cases to be re-run due to the change (non-regression testing). The Central Bank will assess the proposal made.

## 1.3.4. Central Bank support

Upon request, each Central Bank will offer the necessary training for the preparation of its users before the start of testing activities. This may cover inter alia the organisational aspects of the user testing, as well as ICM and/or GUI training. For details, please refer to the specific information accessible via the TARGET2, T2S or TIPS website of your Central Bank.

### **1.3.5. Incident Management**

The participant should report any incident experienced while testing, which may be related to a malfunction of the SSP, T2S, TIPS or a proprietary system to the respective national service desk. Depending on the nature of the problem the national service desk will investigate and solve the problem or will transfer the matter internally to the SSP, T2S or TIPS service desk.

The national service desk will keep the users informed via adequate means about any incidents in the SSP, T2S, TIPS or proprietary systems, which may affect its testing activities.

### **1.3.6. Reporting on test result**

With the exception of free testing, users must report on the outcome of all their certification tests directly to their respective Central Banks via the national service desks. Also test cases which cannot be performed or continuously fail should be reported. For further information on the forms and communication means to be used please refer to the specific information accessible via the TARGET2, T2S or TIPS website of your Central Bank. Upon reception of the test report, the Central Bank will verify the outcome of the reported test and will notify the user accordingly.

## 2. TESTING ON THE SSP

### 2.1. Participants testing on the SSP

Participants involved in SSP testing are the ones defined on the SSP, such as PM account holders, HAM account holder, indirectly connected T2S account holder, T2S actor in TARGET2, TIPS account holder connected to own RTGS account, PHA account holder.

### 2.2. Free testing

#### 2.2.1. Scope and aim

Free testing provides participants with an opportunity to run testing activities, which strictly speaking are not mandatory for its certification.

While there is no obligation to carry out free testing, (future) participants are encouraged to make use of it in order to become familiar with TARGET2. The following tests can be carried out:

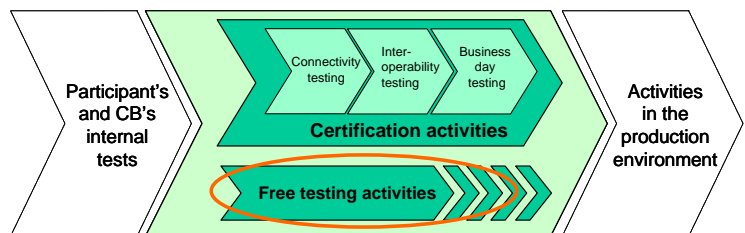
- Interoperability test (elaborated from chapter 2) in non-certification mode.
- Additional test scenarios required by the user for their own verifications and staff training.
- Volume testing (see limitations as mentioned in 1.2.3).
- Bilateral/multilateral tests to be agreed between voluntary participants (e.g. multinational credit institutions willing to organise liquidity management tests with its branches in other countries, ancillary systems willing to perform ad-hoc end-to-end tests with its participants before Business day testing, credit institutions willing to organise tests with its indirect participants etc.).
- Negative testing (e.g. rejections of payment instructions).

#### 2.2.2. Rules to adhere to

In order to avoid unwanted side effects on test activities performed by other users, each user must adhere to following rules:

- Ensure not to exceed the volume limitations defined in 1.2.3 without prior authorisation from the Central Bank.
- No use of test BICs of other users (including Central Bank and AS) without prior bilateral agreement.
- Inform the Central Bank at least one week in advance about specific test support requirements.
- No interference with other phases of the user testing (e.g. Business day testing).

Free testing phase should be run as smoothly and flexibly as possible, users are advised to run their free testing activities by using multiple test BICs related to their own accounts, whenever possible.

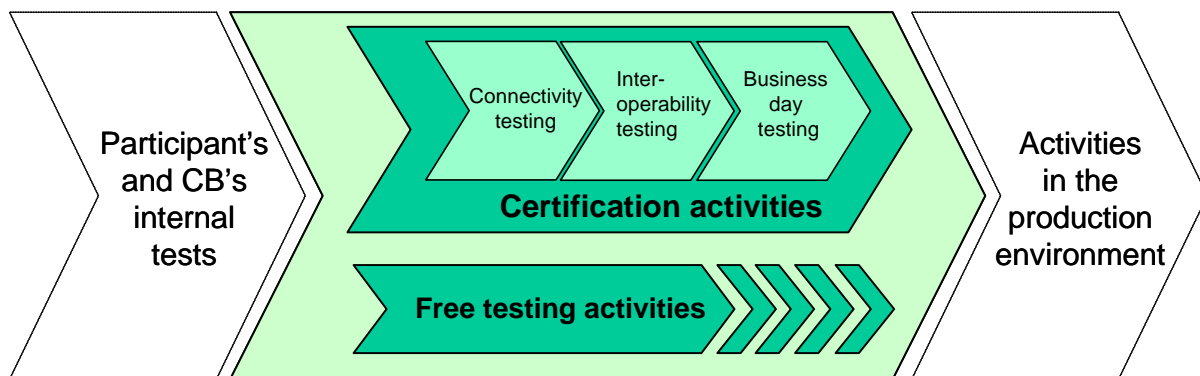


### 2.2.3. Preconditions for using free testing opportunities

The registration and technical preparation as explained in this document must be fulfilled before starting testing.

## 2.3. Connection of new participants on the SSP

*Credit institutions or ancillary systems, which want to connect to TARGET2 as new participants, are subject to the test requirements described in this chapter. Beside some general preconditions, which must be fulfilled, future participants are expected to run the relevant connectivity and interoperability scenarios adapted to their future usage of the SSP. Some complementary tests are foreseen in the particular context of national specific arrangements.*



**TARGET2 User testing for new participants**

### 2.3.1. General preconditions

#### Communication

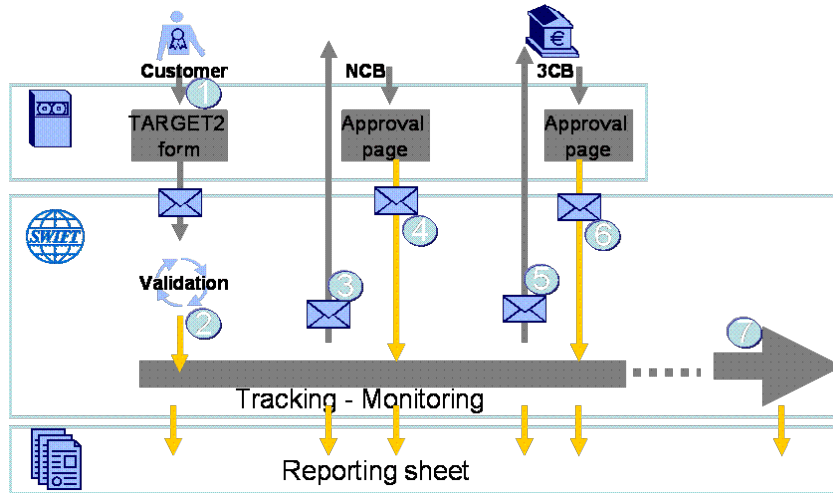
When the connecting participant is an ancillary system, it shall provide its future settlement banks with a tentative plan and a description of the type of connection envisaged (i.e. PM vs. ASI, settlement model and associated options in case the ASI is chosen). This will take the form of an Ancillary System Profile (ASP), which will be published on the [TARGET2 website](#) and possibly on the website of the respective Central Bank. The publication shall be done early enough to allow settlement banks to get ready on time for the start of the user tests.

#### Registration on the SSP

Users must undergo the following registration processes before they can participate in User Testing taking place on the SSP:

## Connection of new participants on the SSP

- **SWIFT e-ordering for testing (SWIFT-based users only)**



**Workflow for SWIFT e-ordering**

Click here on [E-Ordering](#) for further information on the e-ordering process for testing.

- **SSP registration for testing**

The future PM account holder as well as the indirectly connected T2S DCA holder using Value-added service on TARGET2 and the PM users having TIPS DCA connected must provide its Central Bank with all static data information required. Contact with own Central Bank to complete the respective forms should therefore be initiated.

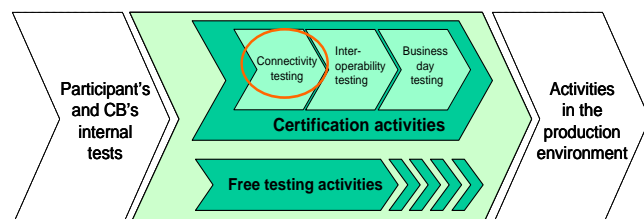
The registration forms for testing should cover the same functional profile as the one to be filled out for live operations. Meaning any functionality that a user intends to request for live operations should also be requested for testing and the required certification tests should be performed accordingly.

There are a priori no limits on the number of BICs to be registered for testing.

### SSP Connectivity testing

#### *Scope and aim*

Connectivity testing verifies the ability of the future TARGET2 users to connect to the different SSP modules that the respective Central Bank has opted for, and if applicable, to the Central Bank's respective proprietary systems. All SWIFTNet connectivity features



## Connection of new participants on the SSP

necessary to communicate with the SSP need to be checked for the correct setting-up of parameters and security features.

By performing this type of activity as early as possible, users can reserve time to solve any potential problem related to the underlying services occurring at a later stage, which otherwise could delay the start of the following user test phases. That cases are defined in a way that:

- all possible communication interfaces between a TARGET2 user and the SSP and (if applicable), a TARGET2 user and a proprietary system should be covered;
- all layers below the application level are covered. This means the network and security features like encryption and authorisation should be verifiable. For instance that includes for SWIFT-based users the correct setting-up of the TARGET2 Closed User Group (CUG), and the connectivity required to use the ICM and the exchange RMA with the SSP. For internet-based users, it includes the certificate creation via the Central Bank and the correct setup of the PC used for TARGET2 and the internet connection (see [Token user Guide](#) and [SSP V12 Qualified configurations for Credit institutions and Ancillary systems](#)).

It should be noted that no separate connectivity test cases for SWIFTNet InterAct and FileAct in application-to-application mode are envisaged.

### *Preconditions for starting the connectivity testing*

Before the start of connectivity testing, the following entry criteria have to be met in addition to those mentioned under chapter 2.3.1:

SWIFT-based users:

- Each SWIFT-based user should have the required software for accessing SWIFTNet FIN, SWIFTNet FileAct, SWIFTNet InterAct and SWIFTNet Browse.
- RMA must be exchanged between participant and the SSP as central institution: with TRGTXEP0 (for backup payments), with TRGTXEH0 (for HAM V-shape) and with TRGTXEC0 (for CB customers).

Internet-based users:

- Each internet-based user should have the required hardware and software for the connection in place. This included a token device and an Internet browser (Internet Explorer or Firefox).
- The process of acquiring tokens with the local Central Bank should be completed (see [Token user Guide](#)).

### *List of connectivity test cases*

The detailed test case descriptions can be found in Annex 1 (see foreword).

Whenever PHA systems are used, participants are invited to refer to the respective national testing documentation for details on how the connectivity tests with the PHA can be performed.



### 2.3.2. Interoperability testing

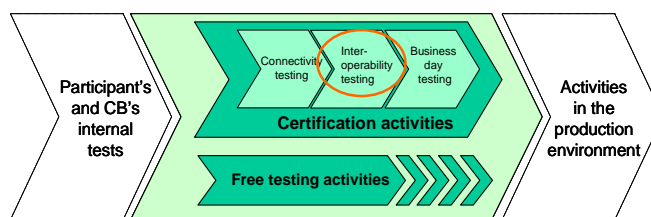
#### Scope and aim

Interoperability testing ensures that the future user can participate in TARGET2 by using all relevant functionalities of the SSP modules and, if applicable, in the Central Bank's respective proprietary systems. It covers also the interface testing with T2S and TIPS (includes liquidity monitoring and liquidity transfer), but not the testing activities taking place on T2S platform (these are called authorisation testing when related to T2S DCAs, developed below) and on TIPS platform (they are called certification testing and are provided by the TIPS Contact ). All future TARGET2 users should be able to send and receive correctly formatted information. A different set of test cases is assigned to the user depending on its user profile (PM account holder, CB customer, HAM account holder, Ancillary system, T2S actor in TARGET2, TIPS actor in TARGET2). The optional SSP modules chosen by the respective Central Bank and the optional functionalities chosen by the participant affect the overall number of test cases to be performed.

Test cases for interoperability testing are developed according to the following principles:

- The TARGET2 users should be able to verify all functions implemented, in terms of hardware/software, which are part of the user's interfaces with T2. Testing of proprietary systems should be included in addition to the SSP modules.
- For critical functions applicable to all TARGET2 users (e.g. payment processing, cancellation of payments), mandatory test cases are defined, which each participant has to complete and report to the national service desk as part of the certification process.
- For critical functions, which are applicable only to a subset of TARGET2 users, conditional test cases are defined. Typically conditional test cases cover features provided by an optional module (e.g. HAM) or additional services offered to participants (e.g. liquidity pooling). If applicable to the participant, a conditional test case becomes mandatory and the test results must be reported as part of its certification process.

Users connecting to the ICM server in application-to-application (A2A) mode should test the respective functionality both in user-to-application (U2A) and A2A mode. The test cases are usually described according to the U2A approach (using ICM), but contain a reference to the respective XML structures to be used in A2A mode. Based on this information and the individual implementation of the A2A interface it is the responsibility of the user to 'translate' the (U2A mode) test case description in a way that it can be tested in A2A mode.



#### Preconditions for starting the interoperability testing

## Connection of new participants on the SSP

The future TARGET2 user must receive confirmation from its respective Central Bank that connectivity testing has been completed successfully before commencing the interoperability testing.

When a participant subscribes to the TARGET2 “Value-added Services” for T2S to access its T2S DCA account(s), the participant should fill out the corresponding form.

Similarly when a participant intends to access one or more TIPS DCA account(s) from a TARGET2 PM account for monitoring and/or liquidity transfers with TIPS DCA, the participant should fill out the corresponding forms 1000/1500.

### List of interoperability test cases

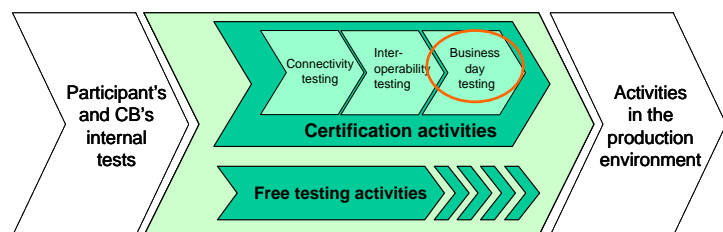
The list of all mandatory and conditional interoperability test cases including T2S interface and TIPS interface to TARGET2 test scenario can be found in [Annex 2](#) (see foreword).

Whenever PHA systems are used, participants are invited to refer to the respective national testing documentation for details on how the interoperability tests with the PHA can be performed.

### 2.3.3. Business day testing

#### Scope and aim

While Connectivity and Interoperability testing checks the technical ability of the user to interact with the system, Business day testing focuses more on the organisational and operational aspects of TARGET2. Beyond a few common functionalities, it mainly touches upon the use of proprietary systems, the local contingency arrangements and the domestic settlement of ancillary systems.



#### Preconditions for starting Business day testing

The future TARGET2 user must receive confirmation from its respective Central Bank that interoperability testing has been completed successfully before commencing the Business day testing.

#### List of Business day scenarios

This phase focuses on Business day test scenarios, which are prepared and carried out under the responsibility of the respective Central Bank, and cover at least the following test items:

- Domestic part of the settlement procedure of ancillary systems in normal and contingency (Central Bank acting on behalf of the AS) mode.

- PHA/HAM testing (if applicable), including the simulation of a failure of the PHA/HAM.
- Billing, including the generation of invoices and the application of charges to the relevant accounts.
- Domestic contingency procedures (failure, back-up payments of a PM account holder or domestic ancillary system, delivery of critical payments between the Central Bank and PM account holder via agreed contingency channels, Central Bank acting on behalf of an AS using ASI).

If need be, the participation of already connected participants may be foreseen, for instance in case the newly connecting participant is an ancillary system or in case a high number of new participants are connecting to TARGET2.

### 2.3.4. Timing elements

#### **Timeline for the certification of a new participant**

The workload for certifying a new participant will depend on a number of factors such as the type of participation (e.g. ancillary system, HAM, PM account holder), the profile of the Central Bank (e.g. with or without PHA, with or without optional modules), as well as the access type, SWIFT or Internet-based. For SWIFT-based users, their experience with the SWIFT services used by the SSP (e.g. participant already using FileAct and InterAct, participant not yet connected to SWIFT) will also influence the time for his certification. Nevertheless some general indications can be given:

- The completion of all required SSP and SWIFT registrations takes around five weeks for SWIFT-based and Internet-based users
- Provided the participant has extensively tested its new interface in free testing mode, connectivity tests can be completed within a day and interoperability tests can be completed within three weeks.
- Although the Business day tests may differ from country to country, it is expected that their completion would not take more than two weeks.

The following tables provide an overview of the different registration and testing steps and an indication of their duration:

## Connection of new participants on the SSP

### 1. Registration of SWIFT-based user to TARGET2:

User registration sent to SSP-OT	Treatment by Central Bank and SSP-OT	E-Mssf registration sent	Treatment by Central Bank, SWIFT and SSP-OT	SWIFT queues configuration request	Activation queue and local configuration
	Week 1-2		Week 3-5		Week 6

### 2. Registration of Internet-based user to TARGET2:

Internet registration sent to Central Bank	Treatment by SSP-OT and Central Bank				
	Week 1	Week 2	Week 3	Week 4	Week 5

### 3. Testing phases by the participants (SWIFT and Internet-based)

Connectivity testing (1 day + buffer)	Interoperability testing	Business day
Week 6/7	Week 7-8/8-9	Week 9-10/10-11

#### Windows for new connections

In principle, certified users will be given the possibility to connect to TARGET2 once a month, more precisely on each Monday following the activation of the monthly BIC Directory (please refer to [www.swift.com](http://www.swift.com) for the timetable of BIC directory updates). This rule avoids introducing undue discrepancies between the BIC Directory and the TARGET2 Directory. Nevertheless the Central Banks may grant exceptions whenever strongly justified.

### 2.3.5. T2S Connectivity testing

#### Scope and aim

Connectivity testing verifies the ability of the future TARGET2 users to connect to T2S. All connectivity features necessary to communicate with the T2S need to be checked for the correct setting-up of parameters and security features.

### 2.3.6. TIPS Connectivity testing

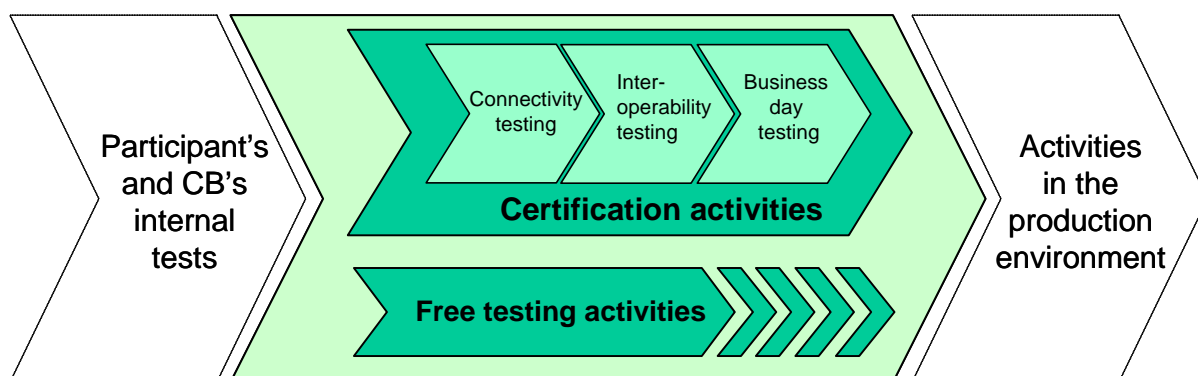
#### Scope and aim

Connectivity testing verifies the ability of the future TIPS actor in PM to connect to TIPS. All connectivity features necessary to communicate with the T2S need to be checked for the correct setting-up of parameters and security features.

Additional information provided by the TIPS Contact Group.

### 2.4. Connection of a new banking community

A new national banking community, which wants to connect to TARGET2, is subject to the test requirements summarised in this chapter. The most likely business case for such a connection is when the country joins the EMU. All participants from this banking community need to undergo the connectivity and interoperability scenarios adapted to their future usage of the SSP, before multilateral tests are organised at country level or even TARGET2 wide.



TARGET2 User testing for new a banking community

#### 2.4.1. General preconditions

##### Communication

The connecting Central Bank shall publicly announce its plan for the connection as well as the envisaged profile (i.e. adoption of optional modules, existence of proprietary systems). This will take the form of a National Migration Profile (NMP), which will be published on the [TARGET2 website](#) and possibly on the website of the connecting Central Bank. The announcement shall be done early enough to allow future participants to get ready on time for the start of the user tests.

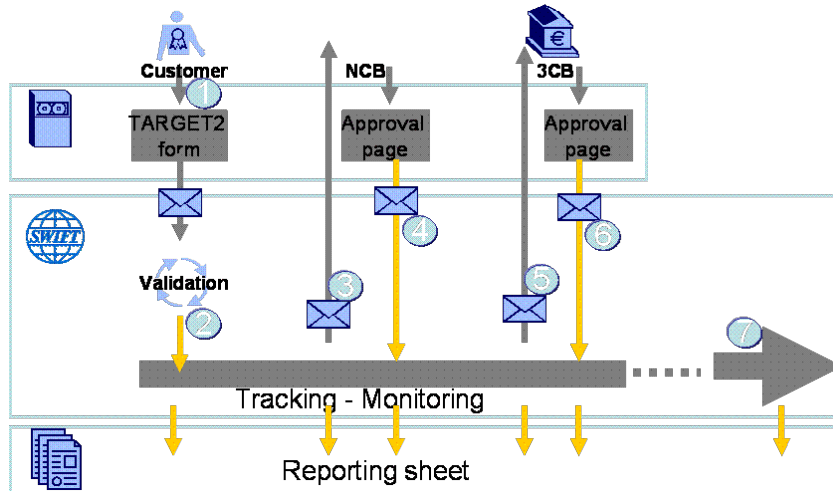
Additionally, for each ancillary system connecting to TARGET2, a description of the type of connection will be made available to settlement banks (i.e. PM vs. ASI, settlement model and associated options in case the ASI is chosen). This will take the form of an Ancillary System Profile (ASP), which will be published on the [TARGET2 website](#) and possibly on the website of the connecting Central Bank. The publication shall be done early enough to allow settlement banks to get ready on time for the start of the user tests.

##### Registration on the SSP

## Connection of a new banking community

The connecting Central Bank as well as the future users of the National Banking Community must undergo the following registration processes before User Testing can start:

- **SWIFT e-ordering for testing (SWIFT-based participants only)**



**Workflow for SWIFT e-ordering**

Click here on [E-Ordering](#) link for further information on the e-ordering process for testing.

- **SSP registration for testing**

The future PM account holder as well as the indirectly connected T2S DCA holder using Value-added service on TARGET2 must provide its Central Bank with all static data information required. Contact with own Central Bank to complete the respective forms should therefore be initiated.

The registration forms for testing should cover the same functional profile as the one to be filled out for live operations. Meaning any functionality that a user intends to request for live operations should also be requested for testing and the required certification tests should be performed accordingly.

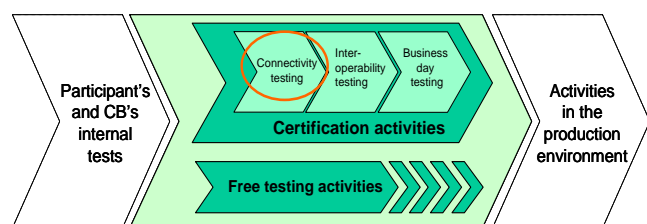
There are a priori no limits on the number of BICs to be registered for testing.

There are a priori no limits on the number of BICs to be registered for testing.

### 2.4.2. Connectivity testing

#### Scope and aim

Connectivity testing verifies the new Central Bank and the ability of each of its TARGET2 users to connect to the different SSP modules that the connecting Central Bank has opted for,



## Connection of a new banking community

and if applicable, to the Central Bank's proprietary systems. All SWIFTNet connectivity features necessary to communicate with the SSP need to be checked for the correct set-up of parameters and security features.

By performing this type of activity as early as possible, users can reserve time to solve any potential problems related to the underlying services occurring at a later stage, which otherwise could delay the start of the following user test phases. That cases are defined in a way that:

- all possible communication interfaces between a TARGET2 user and the SSP and (if applicable) between a TARGET2 user and a proprietary system should be covered;
- all layers below the application level are covered. This means the network and security features like encryption and authorisation should be verifiable. For instance that includes for SWIFT-based users the correct setting-up of the TARGET2 Closed User Group (CUG), and the connectivity required to use the ICM and the exchange of keys for RMA with the SSP. For internet-based users, it includes the certification creation with the Central Bank and the correct setup of the PCs used for TARGET2 and the internet connection completed (see [SSP V12 Qualified configurations for Credit institutions and Ancillary systems](#)).
- 

It should be noted that no separate connectivity test cases for SWIFTNet InterAct and FileAct in application-to-application mode are envisaged.

### **Preconditions for starting the connectivity testing**

Before the start of connectivity testing, the following entry criteria have to be met in addition to those mentioned under chapter 2.4.1:

SWIFT-based users:

- Each SWIFT-based user should have the required software for accessing SWIFTNet FIN, SWIFTNet FileAct, SWIFTNet InterAct and SWIFTNet Browse
- RMA must be exchanged between the SWIFT-based user (according to its profile) and the SSP as central institution: with TRGTXEPO for PM (backup payments), with TRGTXEHO, for HAM (V-shape) and/or with TRGTXECO (for CB customers).

Internet-based users:

- Each internet-based user should have the required hardware and software for the connection with a token and an Internet browser (Internet Explorer or FireFox)
- The process of acquiring tokens with the local Central Bank should be completed (see Token [user Guide](#))

### **List of connectivity test cases**

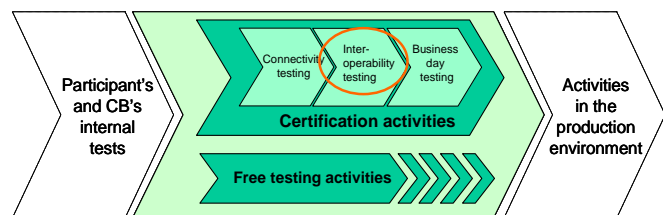


The detailed test case descriptions can be found in Annex 1 (see foreword). Whenever PHA systems are used, participants are invited to refer to the respective national testing documentation for details on how the connectivity tests with the PHA can be performed.

### 2.4.3. Interoperability testing

#### Scope and aim

Interoperability testing ensures that the Central Bank and each of its users can participate in TARGET2 by using all relevant functionalities of the SSP modules and, if applicable, in the Central Bank's respective proprietary systems. It covers also the interface testing with T2S and TIPS (includes liquidity monitoring and liquidity transfer), but not the testing activities taking place on T2S platform (these are called authorisation testing when related to T2S DCAs) and on TIPS platform. All future TARGET2 users should be able to send and receive correctly formatted information. A different set of test cases is assigned to the user depending on its user profile (PM account holder, CB customer, HAM account holder, AS, T2S actor in TARGET2, TIPS actor in TARGET2). The optional SSP modules chosen by the connecting Central Bank and the optional functionalities chosen by the participant affect the overall number of test cases to be performed.



Test cases for interoperability testing are developed according to the following principles:

- The TARGET2 users should be able to verify all functions implemented, in terms of hardware/software, which are part of the user's interfaces with T2. Testing of proprietary systems should be included in addition to the SSP modules.
- For critical functions applicable to all TARGET2 users (e.g. payment processing, cancellation of payments), mandatory test cases are defined, which each participant has to complete and report on to the national service desk as part of the certification process.
- For critical functions, which are applicable only to a subset of TARGET2 users, conditional test cases are defined. Typically conditional test cases cover features provided by an optional module (e.g. HAM) or additional services offered to participants (e.g. liquidity pooling). If applicable to the participant, a conditional test case becomes mandatory and the test results must be reported as part of its certification process. Otherwise the participant does not have to run it.

Users connecting to the ICM server in application-to-application (A2A) mode should test the respective functionality both in user-to-application (U2A) and A2A mode. The test cases are always described according to the U2A approach (using ICM), but contain a reference to the respective XML structures to be used in A2A mode. Based on this information and the individual implementation of

## Connection of a new banking community

the A2A interface it is the responsibility of the user to 'translate' the (U2A mode) test case description in a way that it can be tested in A2A mode.

### Preconditions for starting the interoperability testing

The future TARGET2 user must receive confirmation from the connecting Central Bank that connectivity testing has been completed successfully before commencing the interoperability testing.

### List of interoperability test cases

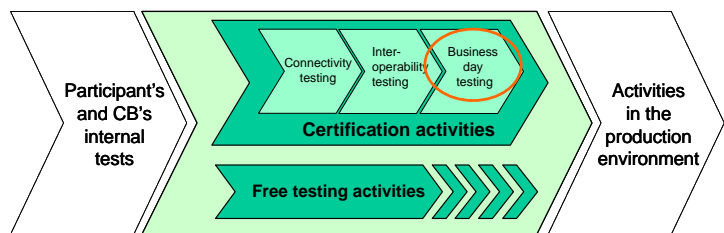
The list of all mandatory and conditional interoperability test cases including T2S interface and TIPS interface to TARGET2 test scenario can be found in [Annex 2](#) (see foreword).

Whenever PHA systems are used, participants are invited to refer to the respective national testing documentation for details on how the interoperability tests with the PHA can be performed.

## 2.4.4. Business day testing

### Scope and aim

While connectivity and interoperability testing checks the technical ability of the user to interact with the system, Business day testing focuses more on the organisational and operational aspects of TARGET2. Beyond a few common



functionalities, it mainly touches upon the use of proprietary systems, the local contingency arrangements and the domestic settlement of ancillary systems. In some circumstances, the participation of already connected participants from banking communities may be required.

### Preconditions for starting Business day testing

All users belonging to the national user community together with the connecting Central Bank must successfully complete the required interoperability certification tests before the start of the Business day testing.

### List of Business day testing scenarios

Business day test scenarios are prepared and carried out under the responsibility of the connecting Central Bank, and shall cover at least the following test items:

- Domestic part of the settlement procedure of ancillary systems in normal and contingency mode (i.e. Central Bank acting on behalf of the AS).
- PHA/HAM testing (if applicable), including the simulation of a failure of the PHA/HAM.

## Connection of a new banking community

- Billing, including the generation of invoices and the application of charges to the relevant accounts.
- Domestic contingency procedures (failure, back-up payments of a PM account holder or domestic ancillary system, delivery of critical payments between the Central Bank and PM account holder via agreed contingency channels, Central Bank acting on behalf of an AS).
- Changeover activities (if and when applicable).

The participation of users which are already connected in other banking communities may be envisaged in specific scenarios. This is in particular the case when:

- These participants are settlement banks in an ancillary system(s) which is connecting to TARGET2
- These participants have entered into a specific arrangement with banks from the connecting community e.g. multi-addressee access, HAM co-management, virtual account, consolidated information.
- The participation of users which are already connected will only be required when fully justified by the necessity to verify the technical and operational readiness of all parties involved.

### 2.4.5. Timing elements

#### **Timeline for the connection of a new banking community**

The workload for the connection of a new banking community will depend on a number of factors such as the number and types of participants (e.g. ancillary system, HAM or PM account holder), the profile of the Central Bank (e.g. with or without PHA, with or without optional modules) as well as the experience of the participants with the SWIFT services used by the SSP (e.g. majority of actors already using FileAct and InterAct or majority of actors not yet connected to SWIFT). Nevertheless some general indications can be given:

- The completion of all SWIFT and SSP registration for all users and the Central Bank may take up to four weeks. The Central Bank should register before the registration process of its banking community takes place.
- Users shall be given at least two months for completing their connectivity and interoperability tests.
- It is not expected that Business day tests take more than two months.
- A freezing period of one month before the connection to TARGET2 is recommended.

The following graphs provide an overview of the different registration and testing steps and an indication of their maximum duration:

# Connection of a new banking community

## 1. Central Bank registration phase and technical readiness

Central Bank registration sent to SSP-OT	Treatment by SWIFT and SSP-OT	E-Mssf registration to SWIFT sent	Treatment E-Mssf by SWIFT and SSP-OT	SWIFT queues configuration request	Activation queues and local configuration
	Week 1-2		Week 3-5		Week 6

## 2.1 SWIFT-based user registration phase and technical readiness

User registration sent to SSP-OT	Treatment by Central Bank, SWIFT and SSP-OT	E-Mssf registration to SWIFT sent	Treatment E-Mssf by SWIFT and SSP-OT	SWIFT queues configuration request	Activation queues and local configuration
	Week 7-8		Week 9-11		Week 12

## 2.2 Internet-based user registration phase and technical readiness

User registration sent to the Central Bank	Treatment by Central Bank, and SSP-OT	Technical readiness
	Week 7-11	Week 12

## 3. Testing phases by the Central Bank and its users

Connectivity testing	Interoperability testing	Business day testing	Frozen period before go-live
Week 13-14	Week 15-20	Week 21 to 28	Week 29 to 32

### Windows for new connections

Technically speaking the connection of a new banking community may take place at the start of each month, more precisely on each Monday following the activation of the monthly BIC Directory. This rule avoids introducing undue discrepancies between the BIC Directory and the TARGET2 Directory. Empirically it is expected that the connection of a new banking community will coincide with its adoption of the Euro and takes place on the first business day of the year.

Regardless of the calendar adopted for the new connection, all TARGET participants will be informed in due time via the TARGET2 or the via ECB website.

### 2.4.6. T2S Connectivity testing

#### Scope and aim

Connectivity testing verifies the ability of the future TARGET2 users to connect to T2S. All connectivity features necessary to communicate with the T2S need to be checked for the correct setting-up of parameters and security features.

### 2.4.7. TIPS Connectivity testing

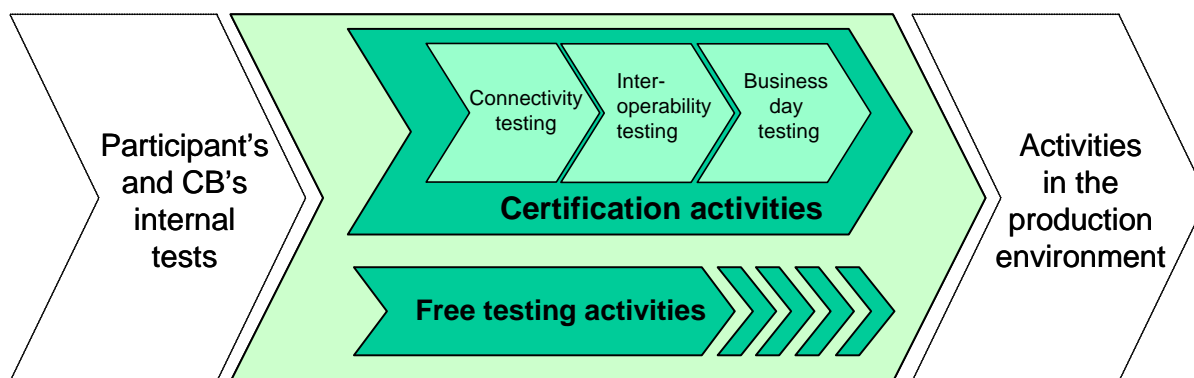
#### Scope and aim

Connectivity testing verifies the ability of the future TIPS actor in PM to connect to TIPS. All connectivity features necessary to communicate with the T2S need to be checked for the correct setting-up of parameters and security features.

Additional information provided by the TIPS Contact Group.

### 2.5. Changes on participant's side

Credit institutions or ancillary systems already connected to TARGET2, which want to proceed with a change, either in a component of their infrastructure, or in their use of TARGET2 services, or with a change with the T2S DCA and/or TIPS DCA link are subject to test requirements. Beside some general pre-conditions applicable to specific cases (see below), participants that want to implement changes are expected to run relevant connectivity and interoperability scenarios pertinent to their change.



TARGET2 User Testing for participants with change

#### 2.5.1. Scope of testing related to change on participant' side

This chapter refers to changes on the participant' side that may impact on its interaction with the SSP.

This document does not refer to the following type of changes:

- connection of indirect participants
- change in the composition for a multi-addressee participant
- change in the composition of a virtual account or consolidated information
- change in the definition of the wildcard rules

#### 2.5.2. General pre-conditions

##### Communication

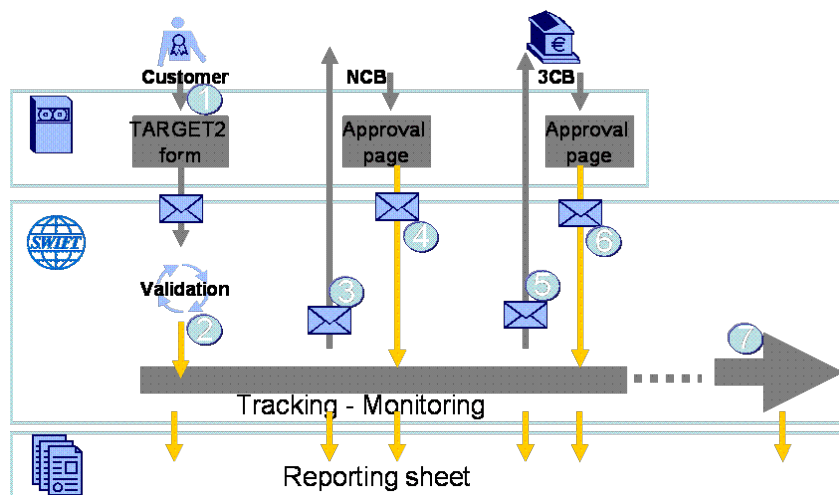
When the connecting participant is an ancillary system and the change is related to the settlement process (i.e. change in the procedure), the AS shall provide its settlement banks as well as the respective central bank with a test plan and a description of the change. A change to the ancillary system profile (ASP) could be needed, which will be updated on the TARGET2 website [TARGET2 website](#) and possibly on the website of the respective Central Bank. The publication shall be done early enough to allow settlement banks to be ready on time for the start of the user tests.

## Changes on SSP side

Any other changes within the scope of this document should be communicated to the national service desk of the Central Bank.

### Registration on the SSP

- **SWIFT e-ordering for testing (E-Mssf)**



In the following cases, the user must perform registration updates as explained in the chapter 3.1.2:

- Addition or change in the BIC definition
- Addition or change of the type of participation
- Usage of Application to application (A2A)
- Change in the definition of SWIFT queues
- Change in the definition of the routing of files or Interact messages
- Change in the SWIFTNet closed user group information
- Change in the SWIFTNet browse information (SNL definition)

- **TARGET2 registration**

When the change requires an update of the TARGET2 static data, including links with T2S DCA and TIPS DCA, the user must provide its national service desk with the relevant updated TARGET2 registration forms.

### 2.5.3. Types of changes and testing process associated

The re-certification requirements will be defined by the Central Bank depending on the impact of the envisaged change. They will consist in a partial or full repetition of the connectivity/interoperability tests, possibly complemented by business day testing. For Ancillary systems, tests with settlement banks might also be organized.

### 2.5.4. Connectivity testing

#### Scope and aim

Connectivity testing after a change verifies the ability of the existing TARGET2 user to still connect to the different SSP modules that the respective Central Bank has opted for, and if applicable, to the Central Bank's respective proprietary systems. All SWIFTNet connectivity features necessary to communicate with the SSP need to be re-checked for the correct set-up of parameters and security features.

#### Pre-conditions for starting the connectivity testing

The change must be completed in the test environment in the same way it will be implemented in the Live environment before starting the interoperability testing certification.

#### List of connectivity test cases

All connectivity testing mentioned in [Annex 1](#) should be performed by the participant.

#### Changes subject to re-testing of connectivity test cases

The following changes, triggering new or modification of the E-Mssf process, are subject to connectivity testing:

SWIFT-based user:

- Addition or change in the BIC definition for TARGET
- Addition or change of the type of participation
- Usage of Application to application (A2A)
- Change in the definition of SWIFT queues
- Change in the definition of the routing for Store and Forward services
- Change in the definition of the routing for real time services
- Change in the SWIFTNet closed user group information
- Change in the SWIFTNet browse information (SNL definition)
- Changes in the SWIFT infrastructure (including new message standards, new version of the CBT and/or new version of the SWIFTNet browser, SWIFT Alliance Gateway or Web platform) for SWIFT-based users.

Internet-based user:

- Addition or change in the BIC definition for TARGET



- Addition or change of the type of participation
- Changes in the infrastructure used to connect as Internet-based users (local security policy, network changes, changes in the hardware/software used for authentication).

### 2.5.5. Interoperability testing

#### Scope and aim

Interoperability testing after a change on the user infrastructure should ensure that the existing participant can still interact with TARGET2, by using all relevant functionalities of the SSP modules, and if applicable, in the Central Bank's respective proprietary system.

#### Pre-conditions for starting the Interoperability testing

Connectivity testing, when mandatory, should be completed before starting the Interoperability testing re-testing.

#### List of Interoperability test cases

All relevant mandatory and conditional interoperability testing impacted by the change and mentioned in the [Annex 2](#) (see foreword) should be performed.

#### Changes triggering the re-certification of the Interoperability testing

The following changes that users want to apply are subject to Interoperability testing:

- User adopting new TARGET functions, corresponding to new Interoperability test cases. Any test case mentioned as conditional usage (COUS) might become mandatory.
- Any software or hardware change in the SWIFT infrastructure/Internet-based infrastructure.
- Any software or hardware change in the application connected to TARGET using A2A triggers the re-testing of the test cases declared as mandatory and conditional usage (COUS).
- PM account holders subscribing the TARGET2 VAS for T2S.
- For Ancillary systems, change in the procedure used.
- Any change in the participation type of the user.

### 2.5.6. Business day testing

#### Scope and aim

Business day testing after a change should ensure that the existing user can still participate in TARGET2, focusing on the organizational and operational aspects of TARGET2.

### **Pre-conditions for starting the Business day testing**

Business testing can start if connectivity and Interoperability testing phase is completed (when required).

### **Changes triggering the re-certification of the Business day testing**

The following changes brought by a participant should trigger new organisation of Business day testing:

- Change of procedure for the Ancillary system (re-testing by the Ancillary system and its settlement banks)
- Change in the Ancillary system application
- Change in the Domestic contingency procedures
- Use of new functionalities in TARGET2.

### **2.5.7. Timing elements**

The workload for re-certifying a participant will depend on the nature of the change. It will be up to the Central Bank to evaluate the timeline necessary for the testing window.

### **2.5.8. T2S Connectivity testing**

#### **Scope and aim**

Connectivity testing verifies the ability of the future TARGET2 users to connect to T2S. All connectivity features necessary to communicate with the T2S need to be checked for the correct setting-up of parameters and security features.

### **2.5.9. TIPS Connectivity testing**

#### **Scope and aim**

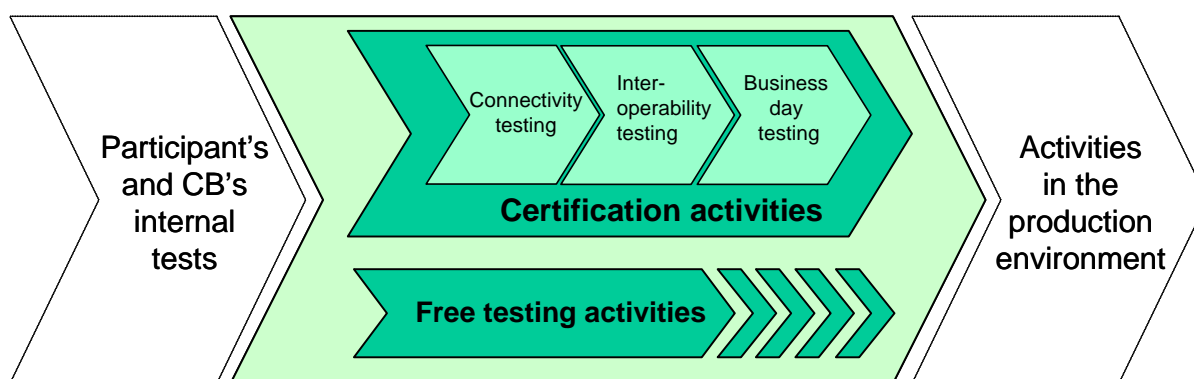
Connectivity testing verifies the ability of the future TIPS actor in PM to connect to TIPS. All connectivity features necessary to communicate with the T2S need to be checked for the correct setting-up of parameters and security features.

Additional information provided by the TIPS Contact Group.

### 2.6. Changes on the SSP side

*In the event that changes are made on the SSP side, participants may be required to test to check that these changes did not affect their interface with the platform. Such changes may either be scheduled a long time in advance (e.g. SSP new and intermediary releases) or at short notice (e.g. for hot fixes). While the test procedures in case of a hot fix will follow an ad-hoc certification procedure, the present chapter mainly focuses on the general case of “fully fledged” yearly SSP releases. Depending on the content of the release, participants will be asked to carry out connectivity and/or interoperability and/or business day tests.*

*The present chapter does not cover the changes that a new SSP release may trigger on Central Banks’ proprietary applications (e.g. PHA).*



**TARGET2 User Testing for changes on the SSP side**

#### 2.6.1. General preconditions

##### Communication

The Eurosystem will publicly announce the content of the new SSP release early enough to allow participants to assess the changes and to prepare their own applications.

Once the specification of the changes are known and reflected in the UDFS, the Eurosystem will communicate the test requirements applying to participants and a timetable for the testing activities. Test requirements will touch upon new features introduced by the release, features modified by the release as well as non-regression tests. This information will be widely communicated via the [TARGET2 website](#) and possibly by the TARGET2 websites of the NCBs.

In case the SSP release coincides with the yearly SWIFT FIN standard release, it is expected that participants will have to connect to the SWIFT FIN Test&Training network in “future mode”.

##### Registration

## Changes on SSP side

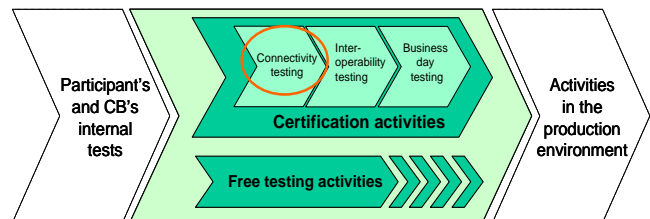
It is expected that new SSP releases will not require a modification of the existing **SWIFT registration** for already connected participants. In the unlikely case that a modification of the SWIFT registration is required, specification instructions would be given.

A new SSP release may lead to changes to the **SSP registration** of already connected participants. For instance when new static data has to be handled or when a new optional service is offered. In such cases Central Banks would issue a new set of SSP forms and would provide further instruction on how and when these forms should be completed by participants.

Connectivity testing

### Scope and aim

Connectivity testing would aim at verifying that the ability of TARGET2 users to connect to the SSP has not been affected by the new SSP release. It is expected that this step could be superfluous unless the SSP release introduces changes to the technical communication layer.



### Preconditions for starting the connectivity testing

In the event that the SWIFT or SSP registration had to be modified, participants must receive confirmation that the required modifications were implemented before commencing the connectivity testing.

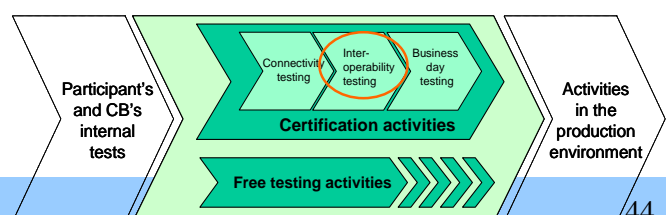
### List of connectivity test cases

If it is confirmed that connectivity testing is required for an SSP release, the list of connectivity test cases in Annex 1 (see foreword) may have to be reviewed (modification or deletion of existing test cases and/or addition of new ones). Users will then be informed early April and via the [TARGET2 website](#) about the test cases they will have to run (i.e. mandatory and conditional test cases). These test cases will correspond either to newly introduced items, to modified items or to existing items to be covered as non-regression tests.

## 2.6.2. Interoperability testing

### Scope and aim

Interoperability testing would aim at ensuring that the ability of each user to participate in TARGET2 and to use all relevant functionalities of the SSP modules has not



been affected by the SSP release. It would also verify that the new features have been properly integrated by the participants. The definition of the test requirements will take on board the changes introduced by the release content, the optional SSP modules used by the community and the optional functionalities chosen by the participants.

Test cases for interoperability testing will be developed according to the following principles:

- For critical functions, which are available to all TARGET2 users, mandatory test cases will be defined. Each participant will have to complete them and report results to the national service desk as part of the certification process.
- For critical functions, which are available only to a subset of TARGET2 users, conditional test cases will be defined. Typically conditional test cases cover features provided by an optional module or additional services offered to participants. If applicable to the participant, a conditional test case becomes mandatory and the test results must be reported as part of its certification process.
- Users connecting to the ICM server in application-to-application (A2A) mode should test the respective functionality both in user-to-application (U2A) and A2A mode. The test cases are always described according to the U2A approach (using ICM), but contain a reference to the respective XML structures to be used in A2A mode. Based on this information and the individual implementation of the A2A interface it is the responsibility of the user to 'translate' the (U2A mode) test case description in a way that it can be tested in A2A mode.

### **Preconditions for starting the interoperability testing**

In the event that connectivity tests are required, the future TARGET2 user must receive confirmation from its Central Bank that connectivity testing was successfully completed before commencing the interoperability testing.

### **List of interoperability test cases**

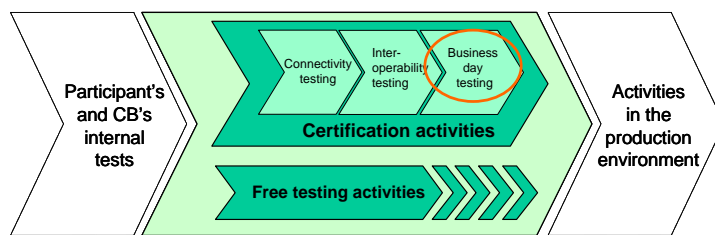
If it is confirmed that interoperability testing is required for a given SSP release, the list of interoperability test cases in [Annex 2](#) (see foreword) may have to be reviewed (modification or deletion of existing test cases and/or addition of new ones). Users will then be informed via the [TARGET2 website](#) about the test cases they will have to run (i.e. mandatory and conditional test cases). These test cases will correspond either to newly introduced items, to modified items or to existing items to be covered as non-regression tests.

## **2.6.3. Business day testing**

### **Scope and aim**

## Changes on SSP side

Business day testing would aim at verifying that the TARGET2 organisational and operational procedures have not been affected by the new SSP release and that the changes have been appropriately



integrated. Beyond TARGET wide procedures, business day testing may also include interaction with proprietary systems, the local contingency arrangements and the settlement of ancillary systems.

### Preconditions for starting Business day testing

In the event that connectivity tests and/or interoperability tests are required, users must receive confirmation from their Central Bank that all participants from their banking community passed them successfully before commencing the business day tests.

### List of Business day testing scenarios

Business day test scenarios are based on a common list of scenarios prepared at Eurosystem level and completed by specific scenarios prepared by the National Central Banks. These specific scenarios should cover at least the following test items:

- Payment messages MT103, 202, 202COV and MT204.
- Ancillary system interface.

The scenarios might also cover the following:

- Domestic contingency procedures (back-up payments from a PM account holder or ancillary system, delivery of critical payments between the Central Bank and PM account holders via agreed contingency channels, Central Bank acting on behalf of an Ancillary System).
- PHA/HAM testing, including the simulation of a failure of the PHA/HAM.
- SF and RM testing
- Billing, including the generation of invoices and the application of charges to the relevant accounts.
- Etc.

For each banking community, the Central Bank will communicate the list of common and specific scenarios as well as the testing calendar for business day tests. Common scenarios defined at Eurosystem level will be run on the same days for all communities connected to TARGET2. For some scenarios, the Test & Training environment may be operated in live timing (i.e. operating times similar to those of the production environment).

The participation of users in the business day testing of its banking community is in principle mandatory. Moreover a user from a given banking community may be required to take part in specific scenarios organised in another community in the following cases:

## Changes on SSP side

- The participant is a settlement bank in an ancillary system in this community.
- The participant has entered into a specific arrangement with banks from the connecting community e.g. multi-addressee access, HAM co-management, virtual account, consolidated information.

### 2.6.4. Timing elements

The workload for the testing in the event of changes on the SSP side will largely depend on the release content. Nevertheless some general indications can be given for a normal yearly release:

- Test scenarios shall be communicated early April on the [TARGET2 website](#).
- In the event that connectivity and/or interoperability tests are required, users shall be given at least four weeks for completing them.
- For business day testing scenarios, different days should be foreseen in a window from two to four weeks. The test scenarios shall be communicated at least one month before the start of the testing phase.
- Weeks foreseen to run in future mode should be included in the test planning in order to ensure user testing with the new SWIFT release (same implementation date like SSP standard release).
- A freezing period of at least two weeks before the go-live of the new SSP release is recommended.

*A testing schedule for all testing weeks is always established well in advance before the installation of the SSP release in CUST environment.*

Yearly release (schema for testing schedule):

New certified release available	Connectivity and Interoperability <sup>11</sup> testing				Business day testing		Frozen period		Go live new release
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	

---

<sup>11</sup> Overlapping might be proposed for more flexibility

### 3. TESTING ON THE T2S PLATFORM

---

*Credit institutions which want to connect to the T2S platform as a directly or indirectly connected DCA Holder are subject to the test requirements described in this chapter. Beside some general preconditions, which must be fulfilled, future participants are expected to run the relevant connectivity, certification and authorisation test scenarios pertinent to their future usage of the T2S platform. Some complementary tests are foreseen in the particular context of national specific arrangements.*

#### 3.1. Parties testing on the T2S platform

---

Parties involved in testing on the T2S platform are the DCA holders directly connected (also denominated as DCP - directly connected parties) in U2A and/or A2A mode.

#### 3.2. Registration

---

##### 3.2.1. Registration towards the Central Banks

New directly and indirectly connected T2S DCA holders must be authorized by their Central Bank(s). Therefore the Central Banks elaborated a set of forms for their registration. The user must provide the National Central Bank where the T2S DCA is to be managed with all static data information required.

As mentioned for the TARGET2 registration process, the registration forms for testing should cover the same functional profile as the one to be filled in for live operations, meaning that a functionality that a user intends to request for live operations should also be requested for testing and the required certification tests should be performed accordingly. The forms and user guide, valid for the production as well as for the pre-production environment, are made available by the Central.

##### 3.2.2. Registration towards a VAN provider for directly connected T2S DCA holders

The registration of directly connected T2S DCA holders must be complemented with a registration process with a VAN provider. All information requested by the VAN provider should be provided on a bilateral basis. The document “[T2S Connectivity Guide](#)”, published on the T2S web site, describes the VAN connectivity and aims at guiding the T2S actors in the different steps to achieve connectivity. The new directly connected T2S DCA holders should complete an (electronic) form that will be delivered from the VAN-provider.



### 3.3. T2S test environments<sup>12</sup>

---

The users will use the pre-production environment.

### 3.4. Connectivity set-up and static data set-up

---

Connectivity set-up refers to all internal actions that DCP will have to perform to have the technical connexion with its service provider working and be able to perform the connectivity testing stage. The static data set-up refers to the static data that DCPs have to define to involve their customers in T2S.

### 3.5. Testing stages/ testing activities applied to T2S DCA holders

---

T2S DCA holders will have to perform the following testing activities, elaborated hereunder:

- Certification testing (includes connectivity testing; only to directly connected T2S DCA holders);
- Authorization testing (to directly and indirectly connected T2S DCA holders);
- Business day testing stage (to directly and indirectly connected T2S DCA holders).

#### 3.5.1. Connectivity testing<sup>13</sup>

##### Scope and aim

Connectivity testing applies to directly connected T2S DCA holders. Connectivity testing makes a distinction between U2A and A2A access. U2A connectivity is mandatory for all participants while A2A connectivity is mandatory only if the user intends to make use of it (COUS=conditional usage testing). A [connectivity guide](#) is available on the T2S Web site.

Connectivity testing aims at proving that a directly connected T2S DCA holder is able to communicate with the T2S platform in U2A and A2A mode (the latter if used). In U2A the participants should login to T2S via GUI. In A2A the connectivity testing includes the sending of an XML message directly to T2S and receiving a response from the system.

##### Preconditions to start connectivity testing

---

<sup>12</sup> The different T2S platforms and their usage are described in chapter 1.2.2.

<sup>13</sup> Connectivity testing is not a testing stage defined as such in the T2S testing definition. As connectivity is however a pre-condition to perform them, it is mentioned as a pre-condition to start certification testing.

The directly connected T2S DCA holder should have established a contract with a T2S VAN provider and fill out the registration form provided by the Central Bank. The VAN provider should have delivered the tokens to the participants. T2S tokens should be configured by the home Central Bank security administrator to include the DN of the security administrators.

### **Connectivity testing**

The directly connected T2S DCA holders are to start connectivity testing at the latest one month before the start of the Business day testing stage.

## **3.5.2. Certification testing**

### **Scope and aim**

The objective of the Certification testing is to provide evidence that a directly connected T2S DCA holder cannot harm T2S. Depending on the T2S usage, Certification testing may include the demonstration of one or more of the following capabilities:

- ▶ ability to perform some elementary functions using the T2S GUI (U2A mode)
- ▶ ability to send and receive real-time and store and forward messages/files to/from T2S through A2A communication mode;

### **Preconditions for starting the certification testing**

To start the certification testing, the T2S DCA holder should have:

- Selected the T2S VAN provider;
- Been registered with the T2S VAN provider and the Central Bank;
- Been approved to the Closed Group of Users (CGU);
- Defined the technical requirements for the access to T2S (e.g. definition of technical addresses) and communicated to the VAN provider;
- Been defined as T2S participant by its Central Bank
- Received from the VAN provider the tokens allowing accessing the GUI;
- Filled out the registration forms for implementation by the Central Banks;
- Defined users with granted roles/privileges that will allow them to execute the certification test cases;
- Implemented locally the access to the T2S platform and the necessary security settings;

- Performed successfully connectivity with T2S.

### **List of certification test cases**

The list of certification test cases has been published on the T2S Web site<sup>14</sup>. The list relevant to directly connected T2S DCA holders is limited to three mandatory test cases and two optional test cases. The optional test cases are mandatory for directly connected T2S DCA holders offering client auto-collateralization to their clients. Test cases related to A2A messages have to be performed only when the directly connected T2S DCA holder has the intention to use the A2A mode.

### **Organization of the certification testing**

Directly connected T2S DCA holders have to plan their certification testing before Business testing. After completion of the certification testing, a directly connected T2S DCA holder shall submit the test results in a final report to the Eurosystem, through its respective Central Bank, and shall provide evidence of the successful completion of the relevant certification test cases (for validation purposes).. It should be noted that when a user connects both as a CSD participant and a Payment bank, the Eurosystem will certify the user only once, when all the T2S functionalities on both securities and cash side have been successfully tested. If the participant is only defined on the cash side, the certificate will be provided by the respective Central Bank, after confirmation by the Eurosystem.

### **3.5.3. Authorisation testing**

#### *Scope and aim*

The objective of the authorization testing defined by the Central Banks<sup>15</sup> for cash aspects is to provide evidence that a directly and indirectly connected T2S DCA holder can execute the functions that are in relation with its (future) business on the T2S platform. The authorization tests defined on T2S platform are the equivalent of the Interoperability tests defined on the SSP.

#### **Preconditions for starting the authorisation testing**

Certification testing has to be completed before the start of the authorization testing (valid for T2S DCA holders directly connected).

#### **List of authorisation test cases**

---

<sup>14</sup> [https://www.ecb.europa.eu/paym/t2s/progress/pdf/2013-11-07-eurosystem-certification-test-cases-v1\\_0.pdf](https://www.ecb.europa.eu/paym/t2s/progress/pdf/2013-11-07-eurosystem-certification-test-cases-v1_0.pdf)

<sup>15</sup> They are other authorisation tests defined by CSDs applicable to their CSD participants.

The authorization test cases established by the Central Banks can be found in Annex 3 (see foreword) of the Guide to TARGET2 User testing, and are published on the TARGET2 web site. They apply either to T2S DCA directly connected and/or indirectly connected and some are mandatory, while others are conditional on the usage.

### **3.5.4. Business day testing**

#### **Scope and aim**

The aim of the Business day testing stage is to run normal business for two to four weeks with the T2S Live Timing schedule. The weeks where this timing will apply will be mentioned in the T2S testing calendar.

#### **Preconditions for starting the Business day testing stage**

Certification testing, authorization testing should have been performed successfully by the participants.

#### **List of Business day test scenarios**

The test scenarios to be performed during the business day testing stage have to be delivered by the Central Banks and/or the CSD when the participant is also defined as CSD.

## 4. TESTING ON THE TIPS PLATFORM

TIPS is part of TARGET2 and testing on TIPS platform falls under TARGET2 testing framework. The TIPS Contact Group is in charge of providing the necessary related documentation<sup>16</sup>.

Some information about registration and interface testing between TARGET2 CUST and TIPS are provided in this chapter.

### 4.1. Parties testing on the TIPS platform

Parties involved in testing on the TIPS platform are the TIPS DCA holders or Instructing parties acting on behalf of TIPS DCA holders or Reachable parties. Parties involved in testing the interface between TARGET2 and TIPS are as PM account holders having LM and/or RM/SF links with TIPS as well.

### 4.2. Registration

#### 4.2.1. Registration towards the Central Banks

New TIPS DCA holders must be authorized by their Central Bank(s). Therefore the Central Banks elaborated a set of forms for their registration. The user must provide the National Central Bank where the TIPS DCA is to be managed with all static data information required.

As mentioned for the TARGET2 registration process, the registration forms for testing should cover the same functional profile as the one to be filled in for live operations, meaning that a functionality that a user intends to request for live operations should also be requested for testing and the required certification tests should be performed accordingly. The forms and user guide, valid for the production as well as for the pre-production environment, are made available by the Central.

#### 4.2.2. Registration towards a Network Service provider (NSP) for TIPS DCA holders

The registration TIPS DCA holders must be complemented with a registration process with a VAN provider. All information requested by the Network Service Provider should be provided on a bilateral basis. The TIPS Contact group provides all information related to the TIPS connectivity requirements.

---

<sup>16</sup> [Web site](#)

### 4.3. TIPS test environments<sup>17</sup>

---

Pilot testing will occur on the called Pilot testing environment that will be renamed later in “pre-production TIPS environment.

Although TIPS might have different running hours, the end of day is always synchronised (details on chapter 1.2.1”SSP testing environment”). Liquidity transfer to/from TARGET2 may be executed anytime when TIPS and TARGET2 CUST are open for settlement, but not from the moment of the cut-off liquidity transfers from TARGET2 to TIPS is initiated (18:00 in live timing, 15:30 in CUST timing) till the start of liquidity transfer from TARGET2 to TIPS (19:30 in live timing, 17:00 in CUST timing).

---

<sup>17</sup> The different T2S platforms and their usage are described in chapter 1.2.2.