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T2-T2S Consolidation Member Simulation Guide

European Commodity Clearing
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List of Abbreviations

Term	Meaning
A2A	Application to Application
AS	Ancillary System
BIC	Bank Identifier Code
CET	Central European Time
CEST	Central European Summer Time
CRDM	Central Reference Data Management
DCA	Dedicated Cash Account
ECAG	Eurex Clearing AG
ECB	European Central Bank
ECC	European Commodity Clearing AG
ESMIG	Eurosystem Single Market Infrastructure Gateway
GUI	Graphical User Interface
ISV	Independent Software Vendor
MX Payment	XML based replacement for MT messages
NCB	National Central Bank
RTGS	Real Time Gross Settlement
SWIFT	Society for Worldwide Interbank Financial Telecommunication
T2	TARGET2
T2-ESMIG	TARGET2-Eurosystem Single Market Infrastructure gateway (T2 common interface layer to T2 and T2S modules after T2-T2S Consolidation)
T2-RTGS	TARGET2 Real Time Gross Settlement (T2 interbank payments module after T2-T2S Consolidation)
T2S	TARGET2-Securities
UTEST	User Test
U2A	User to Application
XML	Extensible Markup Language

1. Introduction

1.1 Overview

The T2-T2S consolidation project is a European infrastructure project driven by the European Central Bank (ECB) with a planned go-live in November 2022. The aim of the T2-T2S Consolidation project is to consolidate and optimise the provision of the TARGET2 (T2) and TARGET2-Securities (T2S) services and to address the increasing demand for having an effective facility for the provision of liquidity to existing and future Eurosystem payment and settlement services.

New features, changes, and improvements:

- Functional convergence and optimisation of the T2 and T2S services
- Technical consolidation of the Eurosystem market infrastructure
- Consolidated and harmonised connectivity solutions (namely European Single Market Infrastructure Gateway (ESMIG))
- Introduction of a Central Liquidity Management system (CLM) for optimising liquidity holding and management
- Segregation of the traditional (commercial) individual payments as well as the Ancillary System payments from the central bank payment operations
- Change from SWIFT based message standard to ISO 20022

European Commodity Clearing Member Simulation start: 13 June 2022

Production start: 21 November 2022

The roll-out of those new features, changes and improvements follows a Big Bang approach meaning that the Central Banks as well as their participants migrate simultaneously to the new T2 platform. For mitigating migration risks the Eurosystem provides a dedicated testing environment, the so-called User Test environment (UTEST).

ECC plans the UTEST and Member Simulation based on the time schedule defined by European Central Bank (ECB) and by Bundesbank and according to ECB milestones. Dedicated test campaigns (especially Ancillary System (AS) test campaign) will be supported in line with ECB timeline and requirements.

This Simulation Guide will provide guidelines for ECC members¹, who have access to the C7 PS Simulation environment, and contact information. Except for specific penny tests and initiated by ECC, members with C7 PS Simulation access can define and perform their own simulation scenarios to an extent that the state of implementation allows. This guide provides advice on preparatory tasks; however, all simulation tests are under the responsibility of the individual member.

Please note that Eurex Clearing AG (ECAG) will distribute a separate ECAG Member Simulation Guide. Any questions regarding the T2-T2S migration at ECAG can be addressed to the dedicated project team by sending an e-mail to ckamtaskforce@eurex.com.

2. Simulation Framework

2.1 Prerequisites for Testing

For the testing activities members need to have access to the C7 Payment System (C7 PS) Simulation, managed by the ECAG, as well as to the UTEST environment which is available for ECC members that are T2 participants. For members which are no T2 participants and use the settlement service of a third-party bank are recommended to align testing activities with their respective bank. The members need to have successfully tested one or both possibilities of connecting to T2: 1) User-to-Application (U2A) or 2) Application-to-Application (A2A). The A2A communication between new T2 components and its actors will be based on ISO20022 financial message standard only, so this new standard must be implemented on each participant side.

In addition, members need to register as an AS settlement bank including ECC as a so-called Settlement Bank Account Group (SBAG) in its Registration Form provided by the respective National Bank (see ECC Clearing Circular no. 23).

2.2 Governance

The Member Simulation testing activities are based on the testing timeline provided by the ECB and/or Deutsche Bundesbank.

New and/or changed information related to the T2-T2S migration will be provided to the members via Circular.

¹ ECC members in the context of this document are meant to be Clearing Members, auctioneers and their Settlement Banks.

The test ownership belongs to individual National Central Banks (NCB) or a member. ECC is offering the following support:

- a) Pre-Simulation support by the dedicated task force team available via target2.consolidation@ecc.de.
 - Documentation and sample messages will be available on a timely basis.
 - The necessary member activities are described in this document.

- b) Extended support during onboarding of new members by dedicated Member Readiness team.
 - Initial Simulation setup requires first steps in Simulation. In addition, individual conference calls can be offered on request during active Simulation periods to quickly address issues and track testing progress.
 - Troubleshooting of uncleared trades in simulation.

ECC does not require members to install any additional software.

3. C7 Payment System (PS) Simulation Environment

3.1 Application Connectivity for C7 PS Simulation

The T2-T2S Consolidation project does not directly affect the communication channels between ECC and its members. Members can use their standard ways to connect to C7 PS Simulation environment and to execute their tests there.

3.2 Participants

C7 PS Simulation will mirror the production approach to the extent possible. Participation in the Simulation is recommended to become familiar with the new introduced functionalities and the process flow. In particular, the following participants may be involved in simulation:

- Clearing Members;
- Auctioneers;
- Banks that provide a T2 account for Clearing Members or auctioneers;
- Independent Software Vendors (ISV, front, middle and back office).

The participating actors during the UTEST are:

- The ECB User Testing;
- The TARGET Service Desk at the T2 Operator (ECB);
- The Central Banks;
- The National Service Desk (NSD) at the Central Bank;
- The T2 participants and members (ECC).

The ECB and the Central Banks are recommended to use the real BICs and real party data for the testing purpose in the Simulation environment. Test and training BICs (with 0 at the 8th position) shall not be used as these will become obsolete in ISO20022. Due to this guideline, real production BIC will be maintained in all ECC downstream applications.

3.3 Related Documents

The supporting documents (Release Notes, Member Communication Calendar, Introduction Document) can be found under the following path:

<https://www.ecc.de/en/operations/target2-t2s-consolidation-project>

3.4 Simulation Support

Helpdesks	Role of helpdesk
T2-T2S Consolidation Project team target2.consolidation@ecc.de	Readiness support, Simulation setup and Support

4. C7 PS Simulation Timeline

4.1 C7 PS Simulation Calendar

The detailed plan for UTEST from ECB can be found below. The Eurex Simulation Calendar will be used for the application of C7 PS availability and the Simulation plan / batch days. In general, three batch days are planned in a standard week, with these occurring Tuesday, Wednesday and Thursday. However, exceptions are made for holidays, software deployments and other requirements. The batch days will also follow the ECAG Simulation Calendar.

The ECAG Simulation Batch execution calendar can be found under the following link:

<https://www.eurex.com/ec-en/support/initiatives/simulation-calendar>

Links to related ECB documents can be found below:

- **ECB Terms Of Reference For User Testing:**
[Terms of reference for user testing \(europa.eu\)](#)

- **User Testing Calendar:**
<https://www.bundesbank.de/en/tasks/payment-systems/target2-t2s-consolidation/testing-and-migration/testing-and-migration-842798>

4.2 Daily Schedule

C7 PS in the Simulation environment will be available according to Batch Simulation Calendar and is dependent on scheduled batch days. On batch day, C7 PS is usually available for users from 10:00 am till 04:00 PM CET / CEST. On non-batch days, applications are usually online, available for users. Details on the availability can be found in the Simulation Calendar.

4.3 Batch Days

The difference between a batch day and a non-batch day is that on non-batch days there will be:

- no X-margining;
- no direct debit;
- no collateral update;
- different report availability for members;

- no messages / information sent to other DBAG systems.

4.4 Maintenance Days

Maintenance Days of ECAG Systems are shown in Simulation Calendar. ECAG usually maintains and deploys new releases in Simulation on Fridays.

5. Test Phases in the Simulation Environment

The below table illustrates the different phases planned for the Simulation environment:

	May	Jun	Jul	Jul 11-29	Aug	Sep	Oct	Nov	
Central Bank Timeline	Community Testing			Business Day Testing					Go-live
			MWDR	AS Testing Campaign					
						MWDR		MWDR ²	
ECC Timeline	Member Data Collection	Member Testing					Member Readiness Statements		

Figure 1 ECB and ECC testing timeline in context of the T2-T2S-Consolidation project

ECC plans the test phases following the T2-T2S Consolidation schedule provided by ECB and Bundesbank. Several Migration Weekend Dress Rehearsal (MWDR) are planned by the central banks to simulate the actual migration in November 2022.

Before the Migration Weekend Dress Rehearsal testing a roll-back of C7 PS needs to be executed in order to prepare the C7 PS Simulation environment for Migration Weekend tests (roll-out). The main task of the Migration Weekend tests (roll-out) constitutes the interface configuration to support MX payment messages to / from T2. As part of the roll-back, interfaces will change back in order to return to current production-like configuration, to be able to test migration steps. Approximately two weeks are required for the roll-back test. During this period, MX payments to/from T2 will be limited or not possible.

5.1 T2 Connectivity Test

Connectivity tests to UTEST were required by the T2 Operator/ ECB and were mandatory for all T2 participants. They took place from September 2021 to November 2021 and served as initial

² MWDR in October is optional – it will be decided at later stage.

verification of successful communication between the users (U2A) and applications (A2A) of T2 participants and the UTEST environment.

Application-to-Application: Communication between software applications via Extensible Markup Language (XML) messages or files using ISO 20022 messages or compliant with the ISO 20022 format.

User-to-Application: Communication between ESMIG and users via Graphical User Interface (GUI).

Successful connectivity tests of ECC members and auctioneers are a prerequisite for Clearing Member participation in UTEST and subsequently for participation in ECC’s Member testing phase.

Further information on connectivity tests for T2 UTEST can be found on the ECB website:

<https://www.ecb.europa.eu/paym/target/consolidation/profuse/html/index.en.html>

5.2 Migration Rehearsals

Three mandatory and one optional Migration Weekend Dress Rehearsals are executed by the ECB and NCBs during User Testing. These rehearsals serve as preparation for the T2-T2S Consolidation go-live in November 2022 and require the participation of all UTEST participants. Prior to the first Migration Weekend Rehearsal in March 2022, all participant static data was set up in UTEST by the NCBs and participants during a Registration and Pre-Migration Rehearsal phase.

Successful participation of ECC members in the mandatory Migration Rehearsals, particularly in the Registration and Pre-Migration phases of the first Rehearsal, ensures that the member’s static data is correctly set-up in UTEST. It is therefore a prerequisite for participation in UTEST and subsequently for participation in ECC’s member testing phase. Most importantly, members should add their RTGS Dedicated Cash Accounts (RTGS DCA) used for Ancillary System settlement within ECC’s Ancillary System to ECC’s Settlement Bank Account Group “DESEEXCDE8LASI-ECC-AG” during registration. Approximately two weeks are required for the preparation of the next Migration Weekend Dress Rehearsal. During this period, MX payments to / from T2 will be limited or not possible. ECC will execute the Migration Dress Rehearsal tests according to ECB schedule:

Migration weekend dress rehearsal I		15/07/2022		17/07/2022
Migration weekend dress rehearsal II		23/09/2022		24/09/2022
Migration weekend dress rehearsal optional		15/10/2022		16/10/2022

5.3 Community Test

The Community Testing phase defined by the ECB takes place in the UTEST environment between December 2021 and July 2022 with production-like static data and a T2S simulator. During this phase, UTEST follows a different Business Day Schedule than the T2 Production environment – the “T2 Standard Day” schedule is defined by the ECB. In this phase, all UTEST participants should test the mandatory test cases specified by the ECB/NCBs as well as their own specific tests.

Additionally, members are encouraged to freely test Ancillary System settlement with ECC by making use of ECAG's simulation environment (C7 PS) in accordance with the ECAG Simulation Calendar. Please note that such free tests initiated by members will not result in automatically generated invoices or fees charged in simulation.

ECC will start testing the Ancillary System together with its members during this phase. This includes the collection of member's cash account data (referring to RTGS DCAs used in ECC's Ancillary System) until May 2022 and the execution of penny tests (at minimum one credit and one debit Ancillary System transfer per Clearing Member and auctioneer). The Community testing activities will be concluded until September 30. The members should ensure that sufficient funding is available on each RTGS DCA participating in ECC's Settlement Bank Account Group.

C7 PS Simulation environment will follow a business day schedule with five batch days per week during the Ancillary System Testing Campaign, in line with the T2-T2S Synchronised Standard Day schedule in UTEST, in order to allow members to test their processes and ensure that ECC's Ancillary System internal systems can follow the production schedule.

C7 PS's simulation will run on a limited business day schedule during Community Testing. The exact schedule can be found in ECAG's Simulation Calendar, available online: [Simulation calendar \(eurex.com\)](https://www.eurex.com). A volume test campaign is being evaluated and may be communicated at a later stage.

5.4 Business Day Test

The Business Day Testing period defined by the ECB takes place in the UTEST environment between July 2022 and October 2022 with production-like static data and T2S fully available in UTEST. It follows a non-production-like Business Day Schedule, the T2-T2S Synchronised Standard Day schedule defined by the ECB, except for one week in October 2022, when UTEST will run on the production-like Live Timing Schedule. In this phase, all UTEST participants should test the mandatory test cases specified by the ECB / NCBs as well as their own specific tests. This phase

also includes an Ancillary System Testing Campaign organised by the ECB. A dedicated runbook for this campaign will be provided by Bundesbank.

ECC members are encouraged to interact with C7 PS's Simulation environment in a production-like manner during the Ancillary System Testing Campaign. After the campaign has ended, between August 2022 and September 2022, participants can continue testing with ECC's Ancillary System, however, only within a limited simulation business day schedule.

5.5 Mandatory Simulation Scenarios

Mandatory test cases for ECC members in UTEST required by ECC are, at minimum, one debit and one credit Ancillary System transaction per member via ECC's Ancillary System. These tests will be coordinated and executed by ECC.

ECC will initiate these penny tests manually for immediate settlement. Other Ancillary System transactions with the members will be generated automatically, usually during end-of-day batches, as a result of member and/or ECC activities in C7 PS Simulation environment. For example, a debit cash instruction may be generated automatically during the end-of-day batch based on a margin call due to trades entered by a member in C7 PS Simulation and the corresponding debit payment will be sent to the member's RTGS DCA early in the morning of the next day.

Member testing entry criteria:

- Successful connection to UTEST;
- Successful registration and set up of static data in UTEST, including successful registration to ECC's Settlement Bank Account Group "DESEEXCDE8LASI-ECC-AG";
- Successful provision of requested Clearing Member and auctioneer RTGS DCA data to ECC;
- Sufficient funding on Clearing Member and auctioneer RTGS DCAs participating in ECC's Settlement Bank Account Group.

Member testing exit criteria:

- Successful settlement of the debit and credit AS transfers instructed by ECC on the Clearing Member and auctioneer RTGS DCAs to be verified by the participants either A2A via camt.054 message or camt.053 statement of account, or U2A via T2 RTGS GUI;
- Successful verification of the test results in payment reports (CD710/712) provided by ECC;
- Provision of Member Readiness Statement to ECC by the Clearing Member.

6. External Communication

ECC maintains information about its members' T2 accounts as reference data used for automated payments processing. ECC must collect information about the new T2 account numbers from all members.

Production-like information will be used in the C7 PS Simulation environment. Upon successful testing, similar information will be used in the Production environment.

In order to have the timely readiness of the participants, members will be asked to revise their current EUR account setup at ECC and provide the account numbers of RTGS DCA(s) which have been provided to NCB for the inclusion to the ECC's Settlement Bank Account Group. Dedicated information for each member will be provided via an individual reach-out from ECC. Each member is required to provide account information in time as part of the readiness activities. If you have any further questions or comments, please send an e-mail to target2.consolidation@ecc.de.