

DG-MIP/MIS

ECMS User Testing Terms of Reference for Pre-Production environment

ECMS-UTMSG

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0.2	10/03/2022	All chapters	DG-UT	UTMSG
0.3	17/03/2022	Incorporating UTMSG review comments on v0.2 and changes done in ECMS User Testing Terms of Reference for Pre-Production environment v0.4 (internal version)	UTMSG	ECMS-WG
0.4	05/04/2022	Incorporating ECMS-WG review comments on v0.3	UTMSG	ECMS-WG
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Reference documents

Document Name	Date
TARGET Services Connectivity Guide v1.0	August 2021
Strategy for ECMS Migration and Testing v1.0	February 2022

1. Introduction

The ECMS User Testing Terms of Reference for Pre-Prod environment (ECMS UT ToR Pre-Prod) focuses on Connectivity testing, Migration testing, Community testing phase 2 (CTP2), Business Day testing and Operational testing, as part of the User Testing stage¹ that will take place in the ECMS Pre-Prod environment.

CTP2 allows NCBs, CSDs, TPAs and CPTYs² to test ECMS functionalities and processes in the Pre-Prod environment. This phase also allows NCBs to perform multilateral testing and aims to test the end-to-end interaction, including the content of the messages, between the CSDs', TPAs' and CPTYs' systems, the ECMS, CLM, T2S, the Common Components and the ESCB Services. A Connectivity testing phase will involve all actors before the starting of CTP2. Migration testing will ensure that both the system settings and all necessary data can be migrated into the ECMS, including data from the local systems. The Business Day testing phase will allow the ECMS actors to test the ECMS processes with a specific focus on Daytime and Night-time processes. It will also include the testing of the ECMS Service Desk tools.

The Operational testing phase will include the validation of operational procedures and specific tests.

This document addresses:

- The general principles regarding the connectivity and the usage of the test environment, as well as the available operational day schedules;
- The organisation, roles and responsibilities of participating actors involved in CTP2, Migration testing, Business Day testing and Operational testing activities;
- Detailed scope and timeline of CTP2, Migration tests, Business Day testing and Operational testing;
- Incident and defect management;
- Deployment management;

¹ ECMS user testing will take place both in ECMS EAC and the ECMS Pre-Prod environment. Community testing phases 1a and 1b (involving NCBs, CSDs and TPAs) and the Central Bank Testing phase will take place in ECMS EAC. Community testing phases 2a and 2b (involving NCBs, CSDs, TPAs and CPTYs), Business day testing and Operational testing will take place in ECMS Pre-Prod.

² UT will only involve counterparties that will directly connect to ECMS via U2A and/or A2A. Counterparties that plan to mobilise a pool via another ESMIG party and will therefore not connect to the ECMS platform will not directly/actively take part in UT unless that ESMIG party wishes to involve them.

- The usage of tools supporting the execution of testing in the Pre-Prod environment;

This document is only applicable until the ECMS go-live. It does not cover release testing after the ECMS go-live.

2. ECMS-UTMSG and organisation

This chapter aims describes the roles and responsibilities of the members of the UTMSG in the activities performed during User Testing in the Pre-Production environment.

2.1 Roles and responsibilities

The ECMS Working Group (ECMS-WG) has established a dedicated User Testing Migration Subgroup (UTMSG) which deals with, among other activities, User Testing. According to its mandate, the ECMS-UTMSG shall actively contribute to the execution of user testing, including migration testing, shall prepare user testing reports for transition from one user testing phase to another, and finally for the exit of the user testing stage.

In this respect:

- The ECB testing coordinator schedules and conducts the weekly test manager calls. The ECB testing coordinator also coordinates and monitors the progress of testing activities, collects the reports completed by the NCBs, shares the status with the ECMS-UTMSG and escalates to the ECMS-WG any issues detected by UTMSG members. Finally, the ECB reports to the ECMS-WG and MIB on the status and progress of testing.
- The 4CB provides support to ECMS testers during the availability of the Pre-Prod environment. The 4CB is responsible for the management of the technical tools used for conducting testing activities (e.g. simulators, snapshot, clean up, reload tools). The 4CB is also in charge of processing any Service Requests received from NCBs, and of registering and following-up on incidents or defects identified.
- The NCBs shall nominate a test manager, who will be responsible for the smooth running of the testing and migration testing activities and represent their NCB during the weekly test manager calls. The test manager reports to the ECB testing coordinator on the progress of the testing activities of their NCB and their NCB community and raises any issue identified during testing phases. The test manager is responsible, inter alia, for user testing and migration testing activities. The NCB shall also provide support to its community during testing phases.

2.2 Testing Calendar

The Testing Calendar provides more detailed information on the testing activities to be conducted during each testing phases in the Pre-Prod environment. In addition to the user testing plan, the Testing Calendar also provides information on the planned snapshot, clean up, availability and schedule of the Pre-Prod environment.

2.3 Reporting

The progress of the testing activities conducted by NCBs, CSDs, TPAs and CPTYs will be subject to regular reporting. The aim of this is to monitor progress and ensure that testing activities are performed in accordance with the timeline and to put in place the necessary action plans. The NCBs will collect the input from CSDs, TPAs and CPTYs and provide consolidated input to the ECB testing coordinator.

3. Test environments

In Pre-Prod, User Testing will be executed by CSDs, TPAs and CPTYs with NCBs. The testing phases will be preceded by a Connectivity testing phase for all ECMS Actors.

3.1 Connectivity to Pre-Prod

The ECMS Pre-Prod environment will be accessible via A2A and U2A for NCBs and CPTYs and via A2A for CSDs and TPAs. The connectivity is provided by the certified NSP selected by the ECMS actor. The connectivity principles to Pre-Prod are defined in the TARGET Services Connectivity Guide.

3.2 System Integration

In order to carry out the functionalities supported by the ECMS, the ECMS needs to be interconnected with other systems. The figure below provides an overview of the ECMS and the interaction with the various TARGET services and Common Components, ECB and ESCB services, ECMS Actors and NCBs local applications.

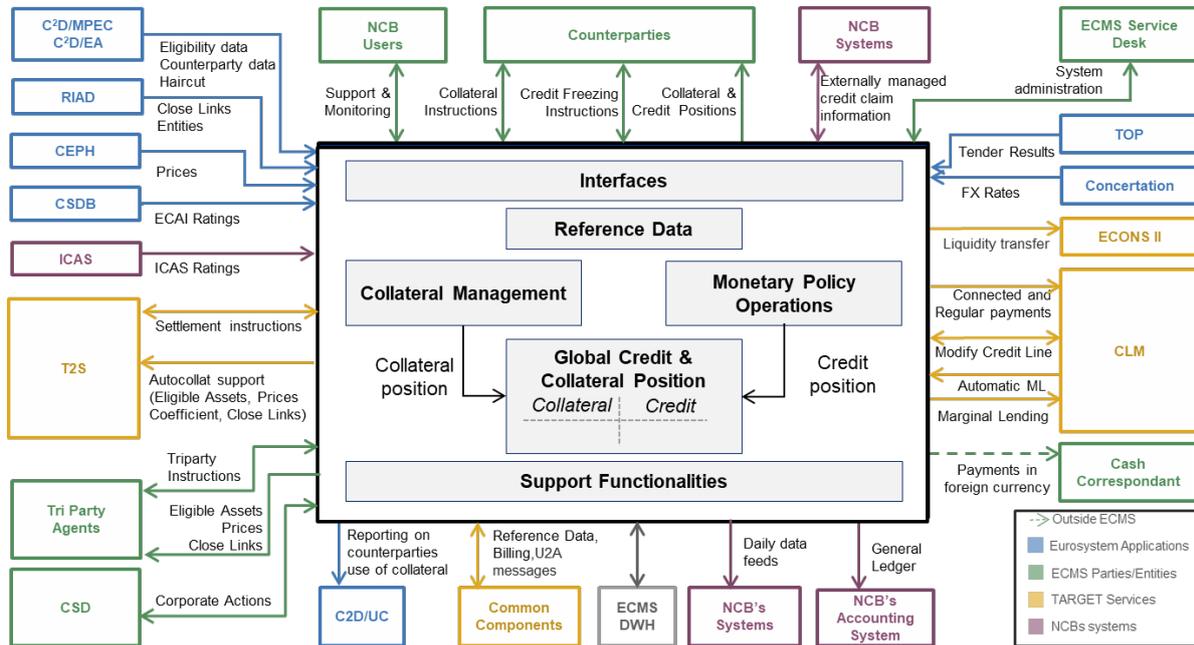


Figure 1 ECMS interactions with other systems/applications

Therefore, during User testing, the Pre-Prod environment will be connected to the testing environments of these systems. To this end, the UTMSG has defined an ECMS test environment topology. The table below lists the date for interconnection of systems/applications with the ECMS Pre-Prod environment:

Service	ECMS UT in Pre-Prod	Remark
T2S	From end June 2023 onwards ³	
CLM	From 17 April 2023 onwards	For following two slots the CLM interconnection is under discussion: <ul style="list-style-type: none"> Slot 1 - From 17 April until 16 June 2023 – still under discussion Slot 2 - From 19 June 2023 onwards without any interruption

Table 1. Interconnection with TARGET Services

In case of blocking defect in CLM identified during ECMS UT, the 4CB (T2-T2S Consolidation) will discontinue T2 PROD maintenance support on a temporary basis, in agreement with T2 governance,

³ To be endorsed by T2S governance

and provide maintenance support for ECMS. After deployment of CLM June 2023 release in Production there is no need to have a specific bug-fix windows as any bugs identified can immediately be fixed without a need to switch versions of CLM.

The figure below provides a high-level functional scope showing the interaction between the various TARGET services and ESCB services, ECMS actors and NCBs local applications during User Testing in Pre-Prod. Counterparties will be involved in those phases. As the interconnection with T2S will not be available for a sub-period of the CTP2 during which time CSDs/TPAs might not take part in User Testing, CTP2 has been split into two sub-phases⁴.

- Community testing phase 2a (CTP2a): The yellow line indicates the high-level functional scope of the CTP2a. During this phase T2S will not yet be connected with the ECMS. Community testing phase 2b (CTP2b), Business day testing and Operational testing: The red line indicates the high-level functional scope of CTP2b, Business day testing and Operational day testing. During these phases T2S will be connected with the ECMS, together with CLM and all other systems and services needed for the proper working of the ECMS functionalities.

⁴ See 4.2

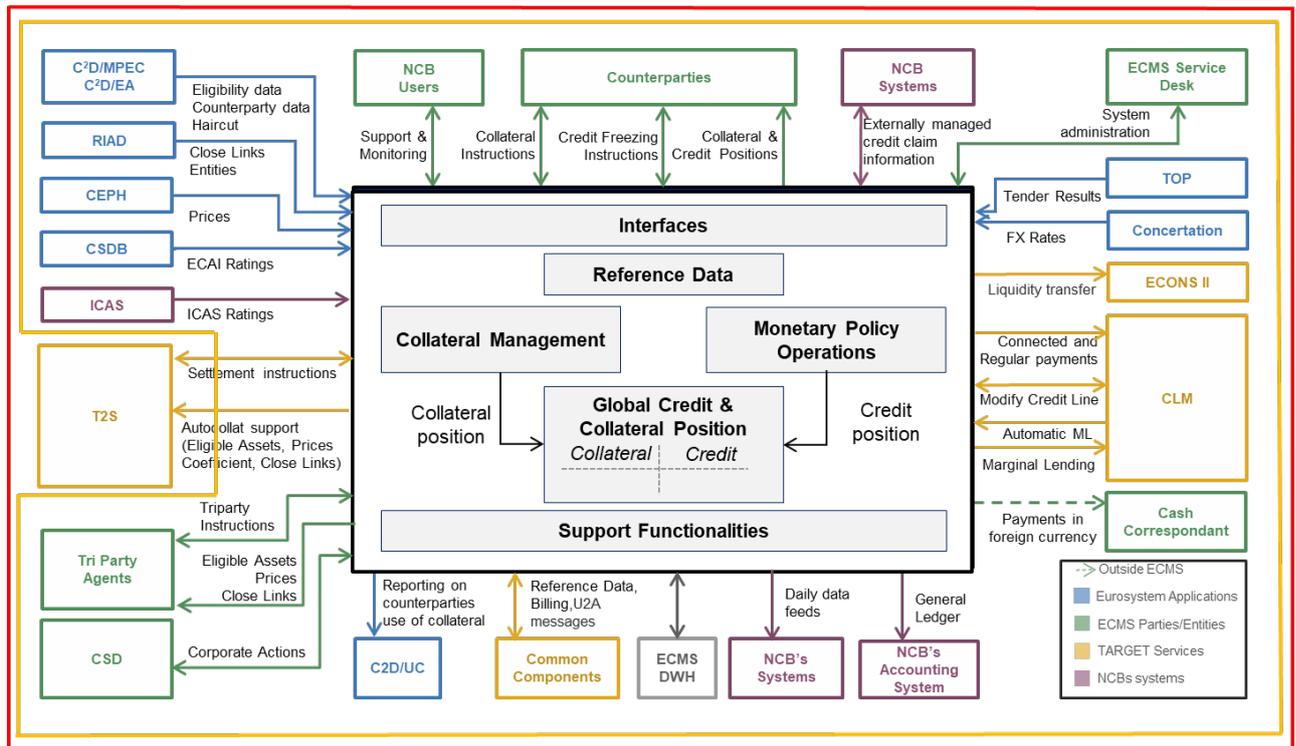


Figure 2 ECMS interactions with other systems/applications for UT in Pre-Prod

3.3 Pre-Prod opening hours

The standard opening hours of the Pre-Prod environment are Monday to Friday, from 09:00 to 17:30 CET. Pre-Prod will be closed on 1 January (New Year's Day), Good Friday, Easter Monday, 1 May (Labour Day), 24 December, 25 December (Christmas Day) and 26 December. During Business day testing, live Timing with a production-like schedule and production-like support will be followed for a 3 weeks period⁵.

3.4 Pre-Prod reference data set-up and maintenance

Pre-defined Registration Forms will be made available to ECMS actors 3 months in advance of the start of connectivity testing in Pre-Prod. For the set-up of the reference data of CSDs and TPAs, the NCBs shall submit the completed Registration Forms (data needed for connectivity testing and other data) to

⁵ Period is to be confirmed.

the ECMS operator two months before the start of connectivity testing. NCBs will liaise with their CSDs and TPAs to complete the Registration Form and launch the procedure for the set up of the relevant reference data in the test environment.

For the set-up of the reference data of CPTYs, NCBs will liaise with CPTYs to complete the Registration Form and will then set up those reference data in the test environment.

Connectivity testing will be followed by CTP2. CTP2 will start with a Pre-Migration test. The data for the connectivity testing (tab “Data for connectivity” of the Registration Forms) will be set up at the start of Connectivity testing (see Section 4.1). The setup of the other data (tab “Other data” of the Registration Forms) is part of the Pre-Migration test.

3.5 Pre-Prod operational day schedules

As the expectation is that the schedules on Target Services connected environments will be synchronised as of the connection date (e.g. connection between T2 UTEST and T2S UTEST environments, connection between ECMS Pre-Prod environment and T2 UTEST and T2S UTEST environments), four different Pre-Prod operational day schedules will be proposed in Pre-Prod, for the different situations described below:

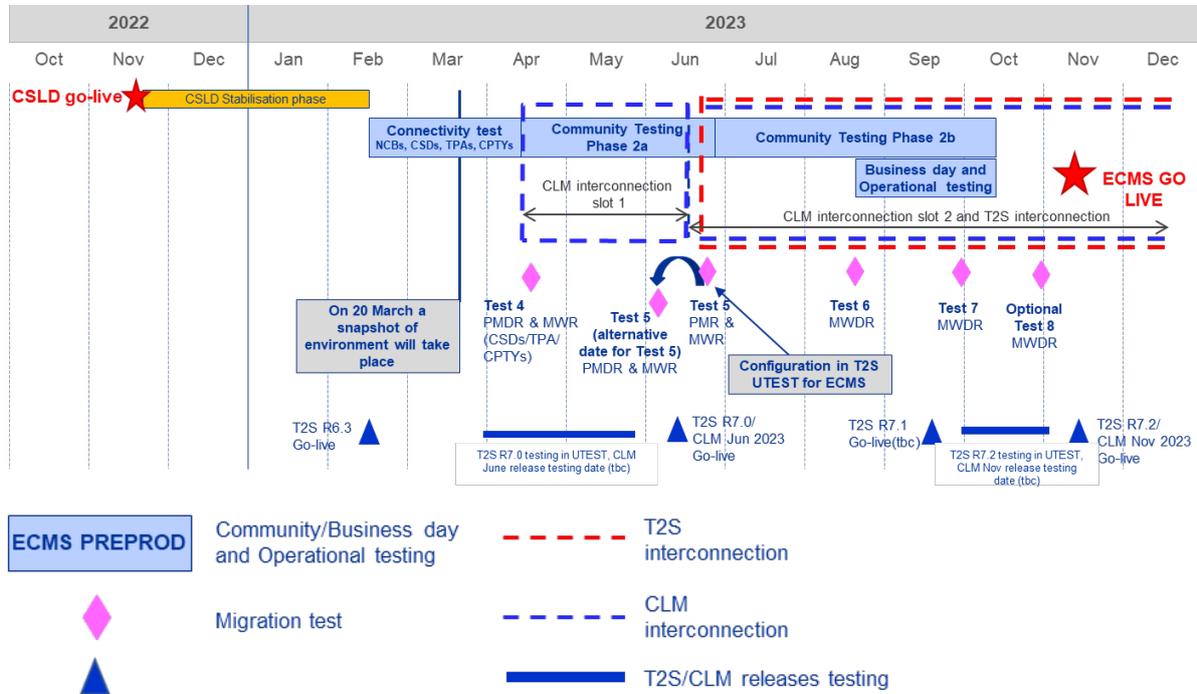
Operational day schedule	Description
ECMS Live Timing	PROD-like scheduler
Cleansing ECMS operational day	Operational day schedule to be applied when a request to clean-up the database is to be executed by the ECMS Operator. End of day activities shall be rearranged and performed several hours earlier.
T2-T2S-ECMS synchronized standard day	Operational day schedule with inter-connected ECMS T2 and T2S
T2-T2S-ECMS synchronized release day	Operational day schedule for the use of the new software release deployment in Pre-Prod for the ECMS Service. This T2-TS-ECMS synchronized release day is foreseen to be applied each Friday during the User Testing in Pre-Prod, when T2S and T2 services are connected to ECMS in Pre-Prod environment but also during the phases when ECMS is not synchronized with T2 and T2S. ECMS End of day activities shall be rearranged and performed several hours earlier in accordance to T2 and T2S synchronized release days.

Table 2. Operational day schedules

The detailed schedule of each of the above operational day schedules is provided in the Annex.

The agreed planning of the operational day schedules will be part of the Testing Calendar.

4. Phases for User Testing

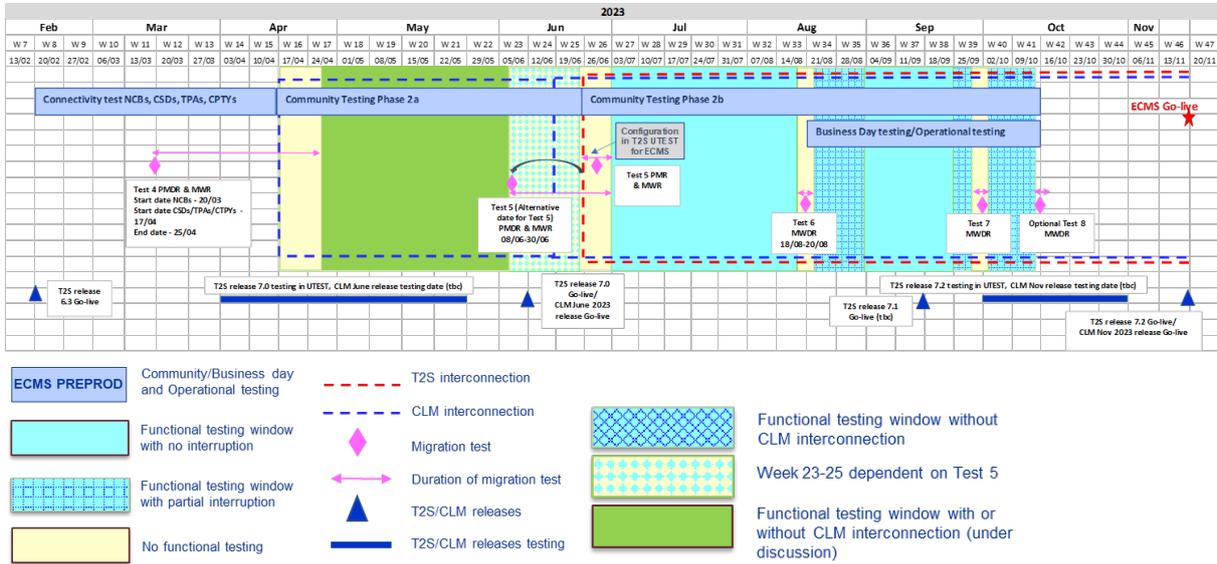


- The duration of User Testing phases (Community testing phase 2, Business day and Operational testing) includes time needed to execute migration testing.
- The CSDs/TPAs/CPTYs are expected to finish connectivity testing by 31 March 2023; the two weeks from 03-14 April 2023 is a buffer period.

Figure 3 ECMS UT planning v1.9

The User Testing stage is the testing stage where ECMS actors can assess the services against their business needs. In the Pre-Prod environment, all ECMS Actors will be involved in Connectivity testing, Community testing phases 2a and 2b, Business day testing and Operational testing.

The following detailed diagram shows interconnection with T2S and CLM along with other testing activities.



The week 23 -25 could either be a period of Functional testing window with or without CLM interconnection (under discussion) if Test 5 PMR & MWR takes place or a period of no functional testing if Test 5 starts on alternative date.

Figure 4 ECMS UT planning – detailed diagram

4.1 Connectivity Testing

4.1.1 Scope of the phase

This phase includes the connectivity testing for all ECMS actors (NCBs, CSDs, TPAs and also CPTYs) in the Pre-Production environment. The objective is to ensure full end-to-end connectivity to the ECMS via ESMIG i.e. to ensure that all communication between ECMS actors and the ECMS is working properly for A2A (correct inbound and outbound messages transmission) and U2A (access to the ECMS GUI).

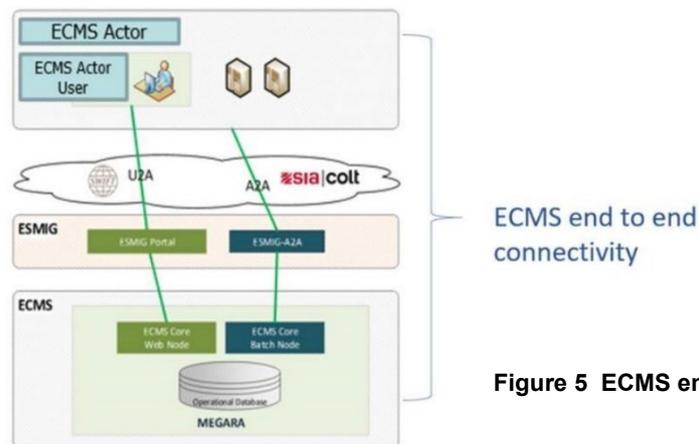


Figure 5 ECMS end to end connectivity

The U2A and A2A connectivity tests consist of the following:

- Only NCBs and CPTYs should perform a U2A connectivity test, as CSDs/TPAs will not be U2A Users. U2A connectivity test aims to check that U2A users can access the ECMS GUI landing page.
- NCBs, CSDs, TPAs and all counterparties intending to connect to ECMS via A2A should perform a A2A connectivity test. A2A connectivity test aims to check that A2A users receive an acknowledgement message (admi.007) from the ECMS after sending one A2A message. The processing of ISO20022 incoming / outgoing messages will be tested. Each ECMS actor will be able to send any message within the scope of their ECMS business activity. ECMS actors who do not intend to send any ISO 20022 messages in Production, but would still like to check their ability to receive files/reports via A2A, can validate the connectivity by sending an “admi.005” message (report request). The A2A connectivity test will be considered a success once the ECMS actor receives an admi.007 message from the ECMS.

In order to perform connectivity testing some reference data need to be set up.

As a pre-requisite to the set-up of those reference data, actors will need to fill in the Registration Form⁶ (tab “Data for Connectivity”⁷):

- For CSDs and TPAs, the NCBs should send the Registration Form collected from the CSDs and TPAs to the ECMS operator two months before the start of Connectivity testing.
- For the CPTYs, the NCBs should collect the Registration Form from the CPTYs.

The steps for the set-up of reference data needed for connectivity testing (“pre-migration part 1”) and the steps for the connectivity testing itself will follow the sequence described below:

⁶ The Registration Forms template is designed from a production point of view. It will be the same for production and testing, the goal being to test the Registration Forms before their use for pre-migration in production. The content/data of the registration Forms used for testing in Pre-Prod will be very close to the form used for production.

⁷ At this stage, only this tab “Data for Connectivity” will be used but the full Registration Form should be submitted.

Activity	Actor	Connectivity testing/ Pre-migration part 1
1. Creation of NCB/CSD/TPA party	ECMS Operator	Pre-migration part 1
2a. Creation of NCB user(s) with the role 'NCB Admin' 2b. Creation of CSD/TPA A2A user <u>without any role attached</u> (roles not needed for connectivity testing)	ECMS Operator	Pre-migration part 1
As from 2b. CSD/TPA A2A connectivity testing can be done	CSD/TPA A2A user	Connectivity testing
3. Connection to the ECMS GUI landing page (and the user can access menu corresponding to his role)	NCB Admin	Connectivity testing
4a. Creation of NCB A2A user <u>without any role attached</u> (roles not needed for connectivity testing) 4b. Creation of NCB User(s) with the role 'NCB – U2A General Reference Data Execution' (as from that moment the NCB user can access the menu corresponding to his role)	NCB Admin	Pre-migration part 1
As from 4a. NCB A2A connectivity testing can be done	NCB A2A user	Connectivity testing
5. Creation of the CPTY <u>party</u>	NCB User	Pre-migration part 1
6. Creation of the CPTY user(s) with the role 'CPTY Admin'	NCB Admin	Pre-migration part 1
7. Connection to the ECMS GUI landing page (and the user can access menu corresponding to his role)	CPTY Admin	Connectivity testing
8. Creation of CPTY A2A user <u>without any role attached</u> (roles not needed for connectivity testing)	CPTY Admin	Pre-migration part 1
As from 8. CPTY A2A connectivity testing can be done	CPTY A2A user	Connectivity testing

Table 3. Steps involved in Connectivity testing

No other creation or modification of data apart for those described before should take place in the ECMS during the Connectivity Testing period.

4.1.2 Timeline

The connectivity testing phase in Pre-Prod environment shall last from 20 February 2023 to 14 April 2023, i.e. for two months, including a two week buffer. NCBs should complete their connectivity testing and set-up of their CPTYs admin users at the latest by 10 March 2023 so that CPTYs can start their connectivity testing.

4.2 Community Testing Phase 2 (CTP2)

4.2.1 Scope of the phase

The CTP2 allows all ECMS actors who will interact with the ECMS after go-live to test all ECMS functionalities and processes in the Pre-Production environment. This includes all counterparties who have successfully completed their connectivity tests and can thus take part in testing activities.

The connection of the ECMS to T2S will only be available from 26 June 2023 onwards. Until then, and thereafter whenever CLM and/or T2S interconnection are unavailable, testing activities will be performed with the aid of testing tools, such as the CLM/T2S simulator.

The CTP2 is further split into 2 phases:

-during the Community testing phase 2a (CTP2a), NCBs and their counterparties will participate in testing, without any interconnection with T2S; CSDs/TPAs may also participate based on bi-lateral agreement with their NCB

-during the Community Testing Phase 2b (CTP2b), all ECMS actors will participate in testing, with a full interconnection with CLM and T2S

The flexibility of CSDs/TPAs to start CTP2b before the end of June 2023 will need to be agreed bi-laterally between NCBs and CSDs/TPAs.

4.2.2 Timeline

CTP2 starts after the successful completion of the Connectivity phase. CTP2a starts on 17 April 2023 and ends on 23 June 2023 (unless the optional pre-migration dress rehearsal (PMDR) needs to be executed in migration test no. 5, in which case CTP2a will end on 19 May 2023). CTP2b starts on 26 June 2023 and ends on 13 October 2023. As from 21 August 2023, it will run in parallel with the Business day and Operational testing phases.

4.2.3 UT Fundamental Test Cases

The ECMS UT Fundamental Test Cases are a set of test cases to be executed by ECMS Actors. NCBs may define additional mandatory test cases which they require their community to execute in addition to UT Fundamental Test Cases.

The NCBs will be asked to confirm to the ECB testing coordinator, for each UT Fundamental test case, that NCBs and all actors of their Community for whom the test case is relevant have successfully executed it.

All relevant UT Fundamental Test Cases must be successfully executed by the ECMS Actors before the start of the Business day and Operational testing phases.

Further details are provided in the deliverable "ECMS UT Fundamental Test Cases".

4.3 Business day Testing

4.3.1 Scope of the phase

Business Day testing will allow ECMS Actors to test the ECMS processes with a specific focus on Day time and Night-time processes to ensure that their systems can adhere to the production schedule. will take the form of end-to-end testing, with both T2S and CLM connected to ECMS.

The Business Day testing phase will run for 3 weeks⁸ (refer to 4.3.2 Timeline) following the ECMS Live Timing schedule and concurrently with all of the other TARGET services. During this period the NCB National Service Desks will provide support to their community according to the ECMS Live Timing schedule.

4.3.2 Timeline

Business Day testing starts on 21 August 2023 and ends on 13 October 2023. It will run in parallel with the Operational testing phase, and in parallel with CTP2b which continues until 13 October 2023. The Business Day testing will run with the ECMS Live Timing schedule from 04 September 2023 to 22 September 2023⁹.

4.4 Operational Testing

4.4.1 Scope of the phase

Operational testing will include specific tests related to the validation of operational procedures. The Operational Related Test (ORT) scenarios and assessment criteria for operational procedures will be defined by the Eurosystem along with NCBs Operational manager and will be presented to the ECMS-UTMSG and ultimately to the ECMS-WG for endorsement prior to the start of testing. These test cases must be carried out by the ECMS Actors. The days (non-consecutive) which will be required to execute operational tests of a disruptive nature (Fully fledged ORTs) will be specified in the Test Calendar. Apart from these, there may be other scenarios which can be executed in parallel with CTP2 during the Operational testing phase (Limited scope ORTs).

⁸ Period is to be confirmed.

⁹ Period is to be confirmed.

The exact date of each ORT will be included in the Testing Calendar. The Operational testing phase will be performed in parallel with the Business Day testing phase.

4.4.2 Timeline

Operational testing starts on 21 August 2023 and ends on 13 October 2023. It will run in parallel with Business day testing, and in parallel with CTP2b which continues until 13 October 2023.

5. Migration testing in Pre-Production

This section provided details on five migration tests which are planned to be executed in the Pre-Prod environment. In the Pre-prod environment, migration testing will consist of Pre-Migration Rehearsals (PMRs), Pre-Migration Dress-Rehearsals (PMDRs), Migration Weekend Rehearsals (MWRs) and Migration Weekend Dress Rehearsals (MWDRs).

Activities related to migration tests will be included in the Testing Calendar. During the execution of these migration tests, it will not be possible to perform any functional test¹⁰.

5.1 Migration test no. 4

Migration test no.4 will consist of a PMDR followed by an MWR. The objective of Migration test no. 4 is to rehearse the pre-migration activities and migration weekend activities. In this test pre-migration activities will follow the sequence and timing as planned in production. The migration weekend activities will follow the sequence planned in production but timing of the activities will be customised to reflect the test environment.

Migration test no. 4 - PMDR:

- Start date – 20 March 2023 for NCBs, 17 April 2023 for CSDs/TPAs/CPTYs
- End date – 21 April 2023
- Pre-requisite – NCBs have successfully connected to Pre-Prod by 17 March 2023 and CSDS/TPAs/CPTYs have successfully connected to Pre-Prod by 14 April 2023. NCBs should be ready with DTT files based on the Registration forms. A snapshot of the complete Pre-Prod

¹⁰ Exact duration of migration test to be confirmed after detailed migration deliverables are finalized

environment (including all reference data created up to that date to execute connectivity testing) will take place upon completion of NCBs connectivity testing on 17 March. The correct ECMS software must be available to execute the PMDR.

- Execution – The NCBs will involve the CSDs,TPAs and CPTYs based on the activities required for the pre-migration dress rehearsal.
- Post-rehearsal activities – Once the pre-migration is complete the results of the test will be evaluated. The NCBs and counterparties will start the execution of the MWR upon completion of the PMDR.

Migration test no. 4 – MWR

- Start date – 24 April 2023
- End date – 25 April 2023
- Pre-requisite – The PMDR must be completed to start the MWR.
- Execution – The NCBs will involve the CPTYs based on the activities required for the migration weekend rehearsal.
- Post-rehearsal activities – Once the migration is complete the results of the test will be evaluated. The NCBs and counterparties will start the execution of the CTP2a phase upon completion of the migration weekend test.

5.2 Migration test no. 5 with mandatory PMR

If test no. 4 PMDR is successful, Migration test no. 5 will consist of a PMR followed by an MWR . The objective of Migration test no. 5 is to rehearse the pre-migration activities and migration weekend activities. In this test the pre-migration activities and migration weekend activities will follow the sequence planned in production, but the timing of the activities will be customised to reflect the test environment.

Migration test no. 5 - PMR

- Start date – 26 June 2023
- End date –28 June 2023
- Pre-requisite – A clean up of the transactional data has been performed. T2S interconnection is established before ECMS reference data is set-up in T2S as part of the PMR.
- Execution – The NCBs will involve the CSDs, TPAs and CPTYs based on the activities required for the pre-migration rehearsal. Additional reference data will be created on top of the data created in the PMDR part of test no. 4.

- Post-rehearsal activities – Once the pre-migration is complete the results of the test will be evaluated. The NCBs, CSD, TPA and CPTYs will start the execution of the MWR upon completion of the PMR.

Migration test no. 5 – MWR:

- Start date – 29 June 2023
- End date – 30 June 2023
- Pre-requisite – The PMR, including all reference data set up in T2S, must be completed to start the MWR. CSDs/TPAs are ready to participate in MWR in Pre-Prod.
- Execution – The NCBs will involve the CSDs, TPAs and CPTYs based on the activities required for the migration weekend rehearsal.
- Post-rehearsal activities – Once the migration is complete the results of the test will be evaluated. The NCBs, CSD, TPA and CPTYs will start the execution of the CTP2b phase upon completion of the MWR.

5.3 Migration test no. 5 with optional PMDR

If the PMDR of Migration test no. 4 was not successful, Migration test no. 5 will consist of a new PMDR followed by an MWR. The objective of Migration test no. 5 is to rehearse the pre-migration activities and migration weekend activities. In this test the pre-migration activities will follow the sequence and timing as planned in production. The migration weekend activities will follow the sequence planned in production but the timing of the activities will be customised to reflect the test environment.

Migration test no. 5 - PMDR

- Start date – 08 June 2023
- End date – 28 June 2023
- Pre-requisite – A complete clean up of the Pre-Prod environment and a reload of the snapshot of the reference data for connectivity taken on 17 March. Data needed for connectivity which have been created after 17 March need to be set up again and related connectivity testing needs to be re-executed. T2S interconnection is established before ECMS reference data is set-up in T2S at the end of PMDR, as of 26 June 2023
- Execution – The NCBs will involve the CSDs, TPAs and CPTYs based on the activities required for the pre-migration dress rehearsal.
- Post-rehearsal activities – Once the pre-migration is complete the results of the test will be evaluated. The NCBs, CSD, TPA and CPTYs will start the execution of the MWR upon completion of the PMDR.

Migration test no. 5 – MWR:

- Start date – 29 June 2023
- End date – 30 June 2023
- Pre-requisite – The PMDR, including all reference data set up in T2S, must be completed to start the MWR. CSDs/TPAs are ready to participate in MWR in Pre-Prod.
- Execution – The NCBs will involve the CSDs, TPAs and CPTYs based on the activities required for the migration weekend rehearsal.
- Post-rehearsal activities – Once the migration is complete the results of the test will be evaluated. The NCBs, CSD, TPA and CPTYs will start the execution of the CTP2b phase upon completion of the MWR.

5.4 Migration test no. 6

Migration test no. 6 will consist of a MWDR. The objective of Migration test no. 6 is to rehearse the migration weekend activities during a weekend. In this test the migration weekend activities will follow the sequence and timing planned in production.

Migration test no. 6 - MWDR

- Start date – 18 August 2023
- End date – 20 August 2023
- Pre-requisite – A clean up of the transactional data.
- Execution – The NCBs will involve the CSDs, TPAs and CPTYs based on the activities required for the migration weekend dress rehearsal.
- Post-rehearsal activities – Once the migration is complete the results of the test will be evaluated. The Business Day and Operational Testing phases will start. The CTP2b test phase will continue.

5.5 Migration test no. 7

Migration test no. 7 will consist of a MWDR. The objective of Migration test no. 7 is to rehearse the migration weekend activities during a weekend. In this test the migration weekend activities will follow the sequence and timing planned in production.

Migration test no. 7 - MWDR:

- Start date – 29 September 2023
- End date – 1 October 2023
- Pre-requisite – A clean up of the transactional data
- Execution – The NCBs will involve the CSDs, TPAs and CPTYs based on the activities required for the migration weekend dress rehearsal.
- Post-rehearsal activities – Once the migration is complete the results of the test will be evaluated. The Business Day, Operational Testing and CTP2b test phases will continue.

5.6 Migration test no. 8

A MWDR could be executed as a part of Migration test no. 8 if the Migration test no. 7 is unsuccessful. The objective of Migration test no. 8 is to rehearse the migration weekend activities. In this test the migration weekend activities will follow the sequence and timing planned in production.

Migration test no. 8 – MWDR (optional):

- Start date – 13 October 2023
- End date – 15 October 2023
- Pre-requisite – A clean up of the transactional data
- Execution – The NCBs will involve the CSDs, TPAs and CPTYs based on the activities required for the migration weekend dress rehearsal.
- Post-rehearsal activities – Once the migration is complete the results of the test will be evaluated.

5.7 Migration testing communication

Each rehearsal usually includes several participating actors. It is therefore necessary that all the rehearsal activities are executed in a co-ordinated way and that all actors share the same understanding of the rehearsal objective, organisation, etc. NCBs' Test Managers will coordinate with their community, i.e CSDs, TPAs and CPTYs.

6. Retest of bug-fix releases

During the ECMS UT phases bug-fix release will be deployed to fix any defects identified during User Testing. Such bug-fix releases will follow the deployment path as described in Chapter 8 Deployment management . The raiser of the defect will be responsible for retesting the bug fix. This retesting can take place either in EAC or in the Pre-Prod environment. Both the content and deployment plan of a

release will be discussed in the weekly Test Managers call. The Test Manager may also discuss and request a sequential deployment approach i.e. on different dates in EAC and the Pre-Prod environment to avoid any impact on the community. Such a sequential deployment approach will allow NCBs to retest the bug fix in EAC before deployment in the Pre-Prod environment. The EAC environment continues to remain active even after the end of CTP1b.

7. Entry and Exit criteria

The entry criteria for Community Testing Phases 2a and 2b (respectively CTP2a and CTP2b), Business day Testing and Operational Testing phases define certain pre-requisites that must be fulfilled before the start of each given testing phase. The exit criteria for the above mentioned UT phases define the criteria based on which the outcome of a given test phase can be considered successful and allowing ECMS Actors to move to the next testing phase. The entry and exit criteria will be validated for each phase. For decision to start a given phase an assessment of entry criteria laid out below will be carried out. Similarly, the exit of a given phase will be based on the assessment of the exit criteria laid out below.

7.1 Connectivity Testing

Entry Criteria

Connectivity Testing in Pre-Prod environment will be performed by all ECMS Actors (NCBs, CSDs/TPAs, CPTYs¹¹). Connectivity Testing also has to be performed in Pre-Prod for those who have already done it in the EAC environment.

- Completed the e-ordering process with the chosen Network Service Provider;
- Successful subscription to the NSP's Services for ECMS (U2A and/or A2A); this means that the involved ECMS Actor has completed the subscription to all necessary NSP services (i.e. category of ongoing/incoming messages, number of user certificates needed with the proper access rights and in general all NSP facilities needed for interaction with the platform) that allow full interaction with ECMS and its functionalities;
- Request for the NSP digital certificates is complete;
- Completion of connectivity set-up with NSP;

¹¹ As stated in Chapter 1 the counterparties involved will be all those that have U2A and/or A2A access to the ECMS.

- Registration to the Closed Group of Users (CGU) is complete;
- All NCBs, CSDs/TPAs and CPTYs are configured in ESMIG;
- The NCB has sent their Registration Form “data for connectivity” to the ECMS operator and the ECMS operator has completed the set up of the static data needed in ECMS for NCB connectivity testing;
- Involved CSD/TPAs have sent the Registration Form “data for connectivity” to their NCB, the NCB has forwarded the form to the ECMS operator and the ECMS operator has completed the set up of the static data needed in ECMS for CSD/TPA connectivity testing;
- Involved CPTYs have sent their Registration Form “data for connectivity” to their NCB and the NCB has completed the set up of the static data needed in ECMS for CPTY connectivity testing.
- Availability of the Pre-Prod environment.

Exit Criteria

- All NCBs, CSDs/TPAs and CPTYs have completed the connectivity test. An ECMS Actor who successfully finishes earlier, will not be able to start CTP2a and following phases any earlier;

7.2 Community Testing Phase 2a (CTP2a)

Entry Criteria

- Connectivity established - A connectivity test has been successfully concluded by all ECMS Actors involved (NCBs, CPTYs, CSDs/TPAs);
- Availability of the Pre-Prod environment;
- All ECMS Actors (NCBs, CPTYs, and those CSDs/TPAs participating in CTP2a) confirm that they are ready to assume their role as expected in production;
- NCBs, CPTYs (and those CSDs/TPAs participating in CTP2a) have configured the Users involved in CTP2a with the relevant roles and authorisation both in ESMIG and in the ECMS;
- The quality of the system is sufficient to progress to CTP2a, i.e. all discovered defects (including those discovered during the Testing Phases in EAC environment) with high severity have been resolved;
- Readiness of the Eurosystem systems (CLM, ESCB Services, Common Components etc.) to interact with ECMS and completion of the relevant tests;
- The MIB has given the green light to start the CTP2a testing phase.

Exit Criteria

- All NCBs and CPTYs (and those CSDs/TPAs participating in CTP2a) have completed the test cases NCBs defined as mandatory to be performed during CTP2a;
- Completion at least once of a successful Pre-migration Dress Rehearsal and Migration Weekend Rehearsal following the defined playbooks;
- All discovered defects with high severity related to the functionality have been resolved or a suitable workaround has been identified;
- A resolution timeline for all discovered defects with medium or low severity related to the functionality has been agreed by the ECMS-UTMSG;
- All NCBs confirm their readiness and that of their community of counterparties (and those CSDs/TPAs participating in CTP2a) to exit CTP2a phase;

7.3 Community Testing Phase 2b (CTP2b)**Entry Criteria**

- All ECMS Actors confirm that they are ready to assume their role as expected in production;
- All ECMS Actors have configured the Users involved in CTP2a with the relevant roles and authorisation both in ESMIG and in the ECMS;
- The quality of the system is sufficient to progress to CTP2b, i.e. all discovered defects (including those discovered during CTP2a) with high severity have been resolved;
- Readiness of Eurosystem systems (T2S) to interact with ECMS and completion of relevant test;
- The MIB has given the green light to start the CTP2b testing phase.

Exit Criteria

- All NCBs, CPTYs, CSDs and TPAs have completed the test cases NCBs defined as mandatory to be performed during CTP2b;
- Completion at least once of a successful Pre-migration and Migration Weekend Rehearsal following the defined playbooks;
- All discovered defects with high severity related to the functionality have been resolved or a suitable workaround has been identified;
- A resolution timeline for all discovered defects with medium or low severity related to the functionality has been agreed by the ECMS-UTMSG ;
- All NCBs confirm their readiness and that of their community of counterparties and CSDs/TPAs to exit the CTP2b phase;

- The MIB decides to close the CTP2b, Business Day Testing and Operational Testing phases and at the same time to close the whole ECMS User Testing;
- ECB Testing Coordinator communicates the closure of the ECMS User Testing.

7.4 Business day Testing

Business day Testing and Operational Testing will run in parallel. Part of Phase 2b will also run in parallel.

Entry Criteria

- Sufficient progress on Community testing phase 2b;
- Successful completion of the ECMS UT Fundamental test Cases
- The quality of the system is sufficient to progress to Business Day Testing i.e. all discovered defects (including those already discovered during CTP2b) with high severity have been resolved;
- Interconnection with CLM, T2S, ESCB Services and Common Component remains established;
- MIB has given the green light to start the Business Day Testing phase.

Exit Criteria

- All CPTYs, CSDs and TPAs have completed the test cases NCBs defined as mandatory to be performed during Business Day Testing phase;
- All discovered defects with high severity related to the functionality have been resolved or a suitable workaround is identified;
- A resolution timeline for all discovered defects with medium or low severity related to the functionality has been agreed by the ECMS-UTMSG;
- All NCBs confirm their readiness and that of their community of counterparties and CSDs/TPAs to exit the Business Day Testing phase;
- MIB decides to close the CTP2b, Business Day Testing and Operational Testing phases and at the same time to close the whole ECMS User Testing;
- ECB Testing Coordinator communicates the closure of the ECMS User Testing.

7.5 Operational Testing

Business day Testing and Operational Testing will run in parallel. Part of Phase 2b will also run in parallel. As stated in section 4.4.1 there may be scenarios which can be executed in parallel with CTP2 during the Operational testing phase (Limited scope ORTs).

Entry Criteria

- Sufficient progress on Community testing phase 2b;
- Successful completion of the ECMS UT Fundamental test Cases and the tests of functionalities needed for operational testing.
- The ECMS Operator and NCBs National Service Desk are ready to provide standard support according to the requirement of Operational test cases foreseen;
- The quality of the system is sufficient to progress to Operational Testing, i.e. all discovered defects (including those already discovered during CTP2b) with high severity have been resolved;
- Interconnection with CLM, T2S, ESCB Services and Common Component remains established;
- MIB has given the green light to start the Operational Testing phase.

Exit Criteria

- All CPTYs, CSDs and TPAs have completed the test cases NCBs defined as mandatory to be performed during Operational Testing phase;
- All discovered defects with high severity related to the functionality have been resolved or a suitable workaround is identified;
- A resolution timeline for all discovered defects with medium or low severity related to the functionality has been agreed by the ECMS-UTMSG;
- All NCBs confirm their readiness and that of their community of counterparties and CSDs/TPAs to exit the Operational Testing phase;
- MIB decides to close the CTP2b, Business day Testing and Operational Testing phases and at the same time to close the whole ECMS User Testing;
- ECB Testing Coordinator communicates the closure of the ECMS User Testing.

8. Deployment management

Deployment management organises the rollout of software releases and/or configurable parameter changes to ECMS software.

Deployment cycles for the implementation of bug fix releases are independent from the software deployment for the different ECMS UT phases.

In principle a bi-weekly bug fix release should be planned in order to allow sufficient progress during the different ECMS UT phases. In case no bugs are identified or need to be fixed, then a bug fix release will not take place.

8.1 Standard deployment

During CTP2, Pre-Prod will fall under the regular T2-T2S-ECMS synchronized release day. The deployment activity that happens on a regular day with a release day schedule in Pre-Prod is the standard deployment method/plan. This standard deployment will be used for the deployment of bug fixes/software packages, etc. which are planned and scheduled in advance. The deployment of such fixes/software shall happen after the testing activities are completed for the day. The content and schedule of each new software version is determined by 4CB in compliance with the Testing Calendar agreed with the NCBs for the delivery. This standard deployment path entails that the bug-fix release is deployed at the same time in both EAC and the Pre-Prod environment.

8.2 Non-standard deployment

In urgent cases (for instance in case of blocking issues requiring a hotfix), an exceptional deployment can be requested, assessed, and, if deemed feasible on 4CB side, performed in agreement with the 4CB and NCBs outside the regular period.

In such case, the 4CB delivers the deployment outside the regular T2-T2S-ECMS synchronized release day with the agreement of the Test Managers and the ECMS-UTMSG if the deployment impacts their testing activities. This non-standard deployment path entails that the bug-fix release is deployed at the same time in both EAC and Pre-Prod environment.

9. Support in Pre-Production

9.1 National Service Desk

The National Service Desk will be the single point of contact for CSDs, TPAs and CPTYs for any questions related to User Testing organisation in terms of testing, reporting of incidents, problems and all other processes being part of User Testing. In case of any connectivity issues for CSDs, TPAs or CPTYs and when the Network Service Provider (NSP) informs the National Service Desk, then this shall be communicated to the ECMS Service Desk by the National Service Desk.

Furthermore, the National Service Desk is the single point of contact for the distribution of any information related to ECMS User Testing to the CSDs, TPAs and CPTYs (e.g. Test calendar, etc.). Each NCB will provide more detailed information on support provided to CSDs, TPAs and CPTYs during testing.

10. Incident and Defect Management

During User Testing, each NCB can report incidents to the ECMS Service Desk.

If an incident is detected by a CSD, a TPA or a CPTY, they should raise the issue with the National Service Desk. As a second step, if necessary, the National Service Desk will raise it with the ECMS Service Desk.

Defects are defined as events showing a discrepancy between the expected outcome of a test case according to the pertinent scope defining documents and the actual results. The 4CB will be in charge of declaring an incident as a defect based on the evidence provided and their expert judgement.

The ECMS Service Desk collects, logs and analyses defects and proposes workarounds.

The ECMS Service Desk provides to the NCBs the report of possible defects reported by all NCBs and their communities as well as those known defects detected by the Eurosystem.

The NCBs shall communicate the progress of incident/defect resolution to CSDs, TPAs and CPTYs through the respective National Service Desk.

11. Tools Facilitating testing in Pre-Production

11.1 Pre-validation of messages

NCBs, CSDs, TPAs and CPTYs can verify/test the compliance of message versions in the Readiness Portal with specifications provided in MyStandards. The portal is a web application built on top of MyStandards. Tests with the MyStandards Readiness Portal neither require nor verify the connectivity via ESMIG. MyStandards Readiness Portal neither allows to reach nor test the ECMS.

The Readiness Portal provides direct links to relevant documentation in MyStandards. Portal users need a web browser and internet access and must be registered with SWIFT. The email addresses of the portal users are stored by SWIFT and the ECMS Service Desk. Users have to be authorised to test messages using the MyStandards Readiness Portal. Progress and results of the tests can only be monitored by the individual user.

The validation of messages through the portal ensures that the NCBs, CSDs, TPAs and CPTYs will be ready to send valid messages to the ECMS immediately after CTP2 has started.

11.2 Testing simulators

T2S and CLM simulators can be used in case a connection between the ECMS and T2S and/or CLM is not available.

It will simulate answers from T2S and CLM following an ECMS outgoing message..

11.3 Clean up tool

The clean up tool will be used for migration testing. The objective of the clean-up tool is to allow the ECMS Operator to delete specific information from the ECMS database. The tool can be used at any time providing that the usage complies with the restrictions imposed by dependencies. The tool will be made available directly to the ECMS Operator and indirectly to the NCB users and the ECB, who shall send a request to the ECMS Operator in order to delete data objects.

The request has to be sent at least 1 week before the requested cleansing date. In case the data affects all NCBs, the agreement of multiple/all NCBs could be required. The ECB will coordinate to get confirmation from all NCBs and thereafter the ECB will send the official request form to the ECMS Operator. Upon approval of the request, the scripts are executed. The ECMS Operator informs the relevant NCB/s that the data has been correctly deleted.

11.4 Snapshot & Reload tool

The objective of the tool is to take snapshots of the database in a given test environment with the aim of reloading the captured data at a later point in time into the same environment. The snapshot and reload tool can be used either during UT phases or during migration testing but is mainly intended for use in migration testing. A request is sent to the ECMS Operator by the ECB at least 2 weeks in advance of the snapshot/reload date after the agreement of all NCBs, specifying whether it is a snapshot or a reload, the execution date and the environment involved. The ECMS Operator will inform the NCBs of the unavailability of the testing environment due to the execution of the snapshot or reload processes and communicate by when the environment shall be available again.

12. List of Acronyms

ACRONYM	STANDS FOR
A2A	Application-to-Application
BPMN	Business Process Model and Notation
CAS	Credit Assessment Source
CMS	Collateral Management System.
CP	Connected Payment
CPTY	Counterparty
CRDM	Common Reference Data Management
CSD	Central Securities Depository
DCA	Dedicated Cash Account
DMD	Detailed Migration Document
DN	Distinguished Name
EAC	Interoperability test environment
EAT	Eurosystem Acceptance Testing
ECMS	Eurosystem Collateral Management System
EoD	End of day
ESMIG	Eurosystem Single Market Infrastructure Gateway
EXDI	ESCB XML Data Integration
GUI	Graphical User Interface
IAC	Internal Acceptance Environment
ICAS&CSDB	Internal Credit Assessment System and Centralised Securities Database
ISIN	International Securities Identification Number
ISD	Intended Settlement Date

ACRONYM	STANDS FOR
MCP	Migration Check Point
MFI	Monetary Financial Institution
MLOR	Marginal Lending On Request
MOP	Manual of Operational Procedures
MPO	Monetary Policy Operations
MRO	Main Refinancing Operations
MWP	Migration Weekend Playbook
NCB	National Central Bank
NSP	Network Service Provider
PMCP	Pre-Migration Check Point
PMS	Pre-Migration Schedule
SD	Settlement Date
T2S	Target2-Securities
T2S DCA	T2S Dedicated Cash Account
TOP	Tender Operations Platform
TPA	Triparty Agent
UT	User Testing
U2A	User-to-Application
XML	eXtensible Markup Language

13. Glossary

Item	Description
Application-to-Application	A technical mode of communication that permits the exchange of information between different software applications without a graphical user interface.
Business day	The business day in the ECMS starts at 18.45 (d-1) with the Start-of-day processing and ends at 18.45 (d) with the completion of the end-of-day processing.
Central Securities Depository	An entity that: 1) enables securities transactions to be processed and settled by book entry; 2) provides custodial services (e.g. the administration of corporate actions and redemptions); and 3) plays an active role in ensuring the integrity of securities issues. Securities can be held in a physical (but immobilised) form or in a dematerialised form (whereby they exist only as electronic records).
Common Reference Data Management	The Common Reference Data Management (CRDM) handles in a single point the data that is shared by different Eurosystem Common Components.
Counterparty	Institution with which a Eurosystem CB has a business/contractual relationship for purposes of monetary policy operations and intraday credit or other collateral management activities in the scope of the ECMS.
Distinguished Name	A name that uniquely identifies an entry in a directory or network. Usually it is a sequence of attribute-value assertions (e.g. "cn=smith") separated by commas, e.g. <cn=smith,ou=t2s-ops,o=bnkacctt,o=nsp-1>.
ECMS Actor	Any legal entity or organisation interacting with the ECMS for the purpose of collateral management. ECMS Actors are: Counterparties or authorised agent, Central Security Depositories (CSD), Triparty Agents (TPA), NCBs, non-euro Central Banks, Cash Correspondent
ECMS Operator	The Operator is the entity that operates the ECMS

Item	Description
Eurosystem Single Market Infrastructure Gateway	The ESMIG provides the single access point for the external communication to all market infrastructure services (ECMS, T2S, TIPS, etc.). The ESMIG ensures a network agnostic communication with the users, where network agnostic means multiple network providers are allowed.
Graphical User Interface	The interface that allows a user to interact with a software application through the use of graphical elements (e.g. windows, menus, buttons and icons) on a computer screen, using the keyboard and mouse.
National Central Bank	A Central Bank that provides collateral services to Participants.
NCB User	Human user who has interactive access to the ECMS online functions or an application that requests services from the ECMS. They interact with the ECMS, belong to one NCB and act on behalf of this NCB or its community.
Triparty Agent	The triparty service provider (referred to as “triparty agent” or “TPA”) responsible for the processing of instructions on behalf of both collateral giver and the collateral taker.
User-to-Application	A mode of technical communication that permits the exchange of information between software applications of the ECMS and a ECMS system user through a Web graphical user interface.
Value Added – Network Service Provider	The ECMS Actors can choose their preferred NSP, which fulfils the ECMS Connectivity Requirements and passes the relevant compliance checks. The NSP provides the ECMS Actors the means to access the ECMS, in addition to providing network connectivity, messaging services (U2A and A2A), security services, and operational services.

14. Annex

The table below provides the details of the ECMS operational day schedules.

	ECMS synchronized standard day with target Services	ECMS synchronized release day with Target Services	ECMS Live Timing	ECMS cleansing day
Day time process	07:00	07:00	07:00	07:00
Send price eligible assets to T2S	15:00	14:15	15:00	14:15
End of processing of Mob/demob mobilization	17:30	14:15	17:30	14:15
End of day process	17:45	14:30	18:00	14:30
Send prices to T2S				
Sending of support data for T2S auto-collateralisation				
Reception of camt019				
Change of business date	18:30	15:15	18:45	15:15
Night time process	18:45	15:30	19:00	15:30
Send updated CLM credit line				