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Pontes Initial Launch (Pilot)
Testing Terms of Reference (ToR)

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1 Introduction

The Pontes project, initiated by the Eurosystem, addresses market demand for Distributed Ledger Technology (DLT) in wholesale central bank money (CeBM) solutions. It aims to overcome the lack of CeBM availability for settling DLT-based transactions, which has hindered the scalability of DLT-based market solutions. Pontes represents a short-term solution and will be followed by a long-term innovation-focused solution called Appia.

The short-term solution includes an Initial Launch Phase, aiming to accelerate time-to-market, to meet market expectations and to lay the groundwork for a comprehensive Eurosystem DLT-based offering. It is operated outside the technical, legal and operational perimeters of the TARGET Services, whereas the subsequent Pontes solution will be a new TARGET Service.

This Testing Terms of Reference (Testing ToR) document, valid for all three different testing stages, Eurosystem Acceptance Testing (EAT), Central Bank Testing (CBT), and User Testing (UT), outlines the specifications and principles for use of the Pontes Test environment (Pontes Pilot UTEST) and the way the three testing stages will be executed. It details the testing activities which will be carried out, the entry and exit criteria, and the roles and responsibilities of the different testing actors. It thus aims to ensure a smooth start of the Pontes Initial Launch and allows for a smooth onboarding afterwards. The testing activities described in this document are monitored and coordinated by the Eurosystem.

This document complements the Pontes Initial Launch Testing and Onboarding Strategy but refers also to the Pontes Initial Launch Business Description Document (BDD), Pontes Initial Launch Service Description Document (SDD) and Pontes Initial Launch Operational Terms of Reference (Operational ToR), all of them in their latest available version at the time of drafting.

Updates, if necessary, will be reflected in a new version shared with and reviewed by the Pontes WG.

1.1 Actors

The following table gives an overview on the actors in the Pontes Initial Launch testing.

Actor	Description
Pontes WG	The Pontes WG is the technical group responsible for Pontes Pilot UTEST. It maintains the testing calendar and approves all the changes requested by Central Banks and TARGET Service Desk to the testing calendar. The group decides on the Operational Related Tests to be performed in Pontes Pilot UTEST and monitors the environment's performance based on the data provided by the TARGET Service Desk as part of the performance reporting.
National Central Banks (NCB)	NCBs shall use the Pontes Pilot UTEST in a diligent way according to its defined capacity and inform the TARGET Service Desk and the TARGET

	Coordinator about any activity to be performed that can have an impact on the community operating in the Pontes Pilot UTEST environment. The Pontes Pilot UTEST is accessible to all NCBs of the Eurosystem that are onboarded by the SPs as operators of the platform. NCBs must own a node hosted in the infrastructure provided by the SPs. Owning a node does not come with any technical obligations; those are all covered by the SPs. NCBs are in charge of: • Onboarding Market Participants of the NCB's jurisdiction; • Onboarding Market DLT Operators of the NCB's jurisdiction or instructing on behalf of at least one Market Participant under their jurisdiction; • Creating, monitoring, amending and closing Dedicated Cash Wallets of their Market Participants and themselves; • Monitoring all activity of their Market Participants; • Initiating transactions on behalf of their Market Participants in case of contingency; • Blocking/unblocking of their Market Participant; • Setting up the "Instruction on Behalf" functionality for their Market Participants.
TARGET Service Desk	The TARGET Service Desk is responsible for both the daily monitoring activities of the Pontes Pilot UTEST environment's settlement day and for reporting to the TARGET Coordinator and Test Managers any issue impacting the standard processing without undue delay. The TARGET Service Desk provides support on the Pontes Pilot UTEST's Opening days during the Standard Support Hours and is the single point of contact for EAT team and NCB testing teams to report on Pontes Pilot UTEST's incidents and Service Requests.
TARGET Coordinator	The TARGET Coordinator provides support on the opening days and opening hours on Pontes Pilot UTEST. Additionally, the TARGET Coordinator plans and manages the operational related tests.
Market DLT operators	Market DLT operators are the entities that offer DLT-based services on one or more market DLT platforms. Upon configuration, market DLT operators can instruct transactions on behalf of one or more participants.
Market Participants	Participants are the entities that hold dedicated cash wallets (DCWs) in Pontes. They manage their own tokenised liquidity and are responsible for all transactions sent or received on their wallets. Upon configuration, participants can instruct transactions on behalf of one or more participants (for wallet-to-wallet payments only and payments via direct RTGS settlement only).
European Central Bank (ECB)	The ECB owns the issuer node in the ESY DLT that is performing the execution of issuance and redemption operations related to funding and defunding requests. The ECB is the owner of the Technical Interim Account (used for any processes involving settlement in T2 RTGS) and the Token Issuance Account in RTGS as well as the Token Issuance Wallet in the ESY DLT, all involved for funding and defunding processes.

Service Providers	Service Provides (SPs) are the technical providers and operators of the Pilot solution (Banque de France, Banca d'Italia, Deutsche Bundesbank and Banco de España). They are in charge of: • Managing the solution configuration and the operational Business Day • Operating the Technical Interim Account owned by the ECB • Operating the Token Issuance Account and its related Token Issuance Wallet owned by the ECB • Hosting and operating the nodes on behalf of the NCBs
Test manager	The test managers are responsible for planning, coordinating, and overseeing all testing activities to ensure the quality and functionality of the deliverables. They develop test strategies, create test plans, manage resources, and ensure that testing aligns with project timelines and objectives. The test managers also monitor and report on testing progress, identify risks, and aim at resolving issues to contribute to a smooth testing process.

Table 1: Actors in the Pontes Initial Launch Testing

2 Test Environment

There will be one single test environment for Pontes Initial Launch, called Pontes Pilot UTEST, hosting EAT, CBT and UT, partly in parallel execution. The purpose of Pontes Pilot UTEST is to enable functional and connectivity testing that is as close to production as possible in all three test stages so that, at the end of each stage, it is possible to assess whether quality and functionality are as requested. This Pontes Pilot UTEST will be connected to the T2 UTEST environment.

The Pontes Initial Launch will be available on the Pontes UTEST until the release for the Pontes Initial Enhancements will be deployed. The schedule for the next release is currently being planned.

2.1 Connectivity

The test environment will be accessible via A2A (REST-API) and the U2A/GUI channel. The connectivity is provided via the public internet. A dedicated connectivity guide included in the Service Description will assist Central Banks, Market DLT Operators, Market Participants and their users in their connectivity to Pontes Initial Launch.

The single access point is the "Extended Interoperability Interface" (EII), routing requests to the correct node, allowing interactions in U2A and A2A/API mode via a secure internet connection.

The objective is to ensure full end-to-end connectivity to the Pontes Pilot UTEST. Connectivity in the context of this document is to be understood as having a successfully established connectivity according to the Connectivity Guide of the SDD. Establishing a successful connectivity is a pre-requisite for starting the applicable functional testing phase. Once connectivity has been achieved, functional testing can be started.

2.2 Pontes Pilot UTEST Environment Capacity

The Pontes Pilot UTEST environment's capacity is set to 20 % of the Pontes Pilot production environment. The operator may increase the capacity of the environment to cover specific testing needs (e.g. high-volume tests) upon a request from and in agreement with the CBs. In such case, the Service request management timeline applies.

3 Organisation

Testing will be discussed regularly in the remit of the Pontes Working Group (PWG) until otherwise decided by the Pontes WG. In addition, a Jour fixe will be installed to monitor testing progress and discuss testing execution in the different stages. A dedicated distribution list will be created.

Pontes Initial Launch will follow a hierarchical line of communication. Market participants and Market DLT operators should contact their respective National Central Bank. National Central Banks will liaise with the TARGET Service Desk and report regularly to the ECB Testing Quality and Readiness (TQR) Team.

The different testing phases, special testing activities, as well as deviations from the normal business schedule will be reflected in a dedicates testing calendar. This calendar will be maintained and shared with the NCB Test Managers by the ECB TQR team. The testing calendar provides an overview on the testing activities of the different testing stages executed on Pontes Pilot UTEST. Content and management will be discussed in the remit of the Pontes WG. The planning of the operational day schedules will be included in the Testing Calendar, also in conjunction with the T2 UTEST schedule.

3.1 Opening Hours

The Pontes Pilot UTEST environment opening hours will remain the same throughout all testing stages. Any incident directly affecting the testing availability during the opening hours will be notified by the Operator to the ECB TQR Team and participating CBs’ Test Managers without undue delay by specifying when the incident occurred and providing updates with the latest information. It is the responsibility of the participating CBs’ Test Managers to propagate relevant communication to its communities (see also below under operational aspects, sub-chapter 3.4 Incident and Release Management). Planned downtime needs to be agreed in advance with the ECB and the respective testing community.

3.2 Dependencies with T2 Calendar

As a consequence of the connection between the Pontes Pilot UTEST and T2 UTEST environment, T2 events may affect the Pontes Pilot UTEST environment and need to be considered. The full schedules can be found in Figure 1.

Three different event types need to be considered:

- **Planned events:**
  - Release Day Schedule on Fridays: every Friday, there is a shorter testing time on T2 UTEST with interbank cut-off at 14:00 and a change of business date in T2 UTEST at 14:45; Release Days can also be scheduled on other weekdays than Fridays;
  - Closing Days: The T2 UTEST calendar reproduces the T2 PROD closing dates, with the addition of 24 and 31 December (i.e. January 1, Good Friday, Easter Monday, May 1, December 24, December 25, December 26, December 31);
  - Live Timing: The T2 UTEST environment can be scheduled with a PROD-like Business Day, which implies more testing time available for customers;
- **Deviations from the planned timestamps or in the system closure/unavailability:**
  - ORTs affecting the T2 UTEST Business Day (e.g. insolvency, delays, etc.);
  - User requests affecting the T2 UTEST Business Day: there are different possibilities for which the users may request a change in the standard Business Day, e.g. unplanned ad hoc Live timing/release day/closing days requests, requests related to specific Testing purposes, data propagation skipping;
  - Issues on T2 may block the business day and may have an impact on the Pontes Pilot UTEST environment;
  - Issues on other TARGET Services impacting T2 may have an impact on Pontes Pilot UTEST environment.

NSDs will share the calendar for the T2 UTEST environment with their participants.

3.3 Business Day Management

An “Operational Business Day” defines days where on-chain settlement is allowed as well as the hours of a day where other activities can take place. It is divided by a set of events with underlying technical processes that trigger business functions and allow or disallow inputting transactions. This notion differs from the traditional “Calendar Day”.

The Operational Business Day is split in different business windows and is managed by the SPs as operators of the solution. Each business window has a start and end time and includes specific actions and processes as detailed below.

Changes need to be requested via the responsible NSD with the ECB TQR Team, who will coordinate the TARGET Service Desk and all relevant CBs’ test managers in advance. The schedule of the Pontes Pilot UTEST will be aligned to the schedule of the T2 UTEST environment.

Start of Day (SoD)

The SoD period starts after the successful completion of the previous End of Day (EoD) period. It includes the change of the business date, which is followed by the processing of funding requests and cash token transfers. All NCBs, Market Participants and Market DLT Operators as well as SPs have access to the Pontes Pilot UTEST solution. SPs and NCBs are allowed to create or update any reference data.

Open for all

In the Open for all window, in addition to the funding requests and cash tokens transfers, all transactions can be processed including payments, DvPs, PvPs, PFoDs and on-demand defunding requests. SPs and NCBs are allowed to create or update any reference data. All NCBs, Market Participants and Market DLT Operators as well as SPs have access to the Pontes Pilot UTEST solution.

End of Day (EoD)

The EoD window starts with a 10 to 15 minute cool-down period, allowing the processing of the last transactions until they reach a final status. All instructions pending 4-eyes validation are cancelled (Transaction cleanup process). After transaction cleanup processed, the automated EoD cash token sweep starts to empty all DCWs balances.

In case of technical issues or balances not being redeemed:

1. EoD cash token sweep can be manually processed again by SPs,
2. On-demand defunding requests can be instructed by NCBs.

In the event of issues with the defunding process, Market Participants are not required to contact their respective NCB individually. The Operational Team will contact the relevant NCBs to inform them of the issue. NCBs also have access to the relevant wallets and instructions and may therefore identify any issues directly, where needed.

Where necessary, NCBs can autonomously defund all wallets within their community and may inform the affected Market Participants that an error has occurred with their wallet and that a manual defunding operation will be performed. In such contingency scenarios, the NCB will instruct the defunding directly via the system. The Market DLT Operator will only act on behalf of the NCB where the NCB’s users are unable to instruct, while the NCB node remains operational.

All NCBs, Market Participants and Market DLT Operators as well as SPs have access to the Pontes Pilot UTEST solution but are not allowed to instruct any transaction nor create/update any reference data. [1]They can access queries and reporting functionalities.

Exceptionally in case of a major issue in the Initial Launch solution or in T2,Overnight Balances may be accepted, with the option to force the completion of EoD business window.

Closed

The Pontes Pilot UTEST solution is only accessible to the SPs as Operators of the platform.

The following figure gives an overview on the schedule of the standard day, release day and live timing:

[1] During EoD, NCBs can, in case of contingency, instruct defunding requests on behalf of their Market Participants.

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		Time Release day		Time Standard day		Time Live timing		
Start of Day								
Phase	**Start of Day (SoD)**	**BD 07:30**		**BD 07:30**		**BD 08:00**		1
		From	*To*	*From*	*To*	*From*	*To*	
Key operations & actors	1. Automated Change of Business Date	7:30		7:30		8:00		2
	2.Start instant setttlement of NCBs & Market participants instruct funding & defunding on demand & W2W transfer operations, consult and query DCWs	7:30	8:30	7:30	8:30	8:00	9:00	
	2bis. Start reference data creation & modifications by authorised NCBs	7:30	8:30	7:30	8:30	8:00	9:00	3
	End Start of Day (ESoD)	**8:30**		**8:30**		**9:00**		
Open for All								
Phase	**Start Open for All (SoA)**	**8:30**		**8:30**		**9:00**		
		From	*To*	*From*	*To*	*From*	*To*	
Key operations & actors	1. NCBs & Market participants & Market DLT operators instruct all type of transactions (incl. Funding / on-demand defunding)	8:30	13:00	8:30	15:30	9:00	16:00	
	2.DCWs/transactions consultation and query are allowed	8:30	13:00	8:30	15:30	9:00	16:00	
	3.Reference data creation and modifications by NCBs	8:30	13:00	8:30	15:30	9:00	16:00	4
	4.Cut-off for DLT and RTGS settlement	13:00		15:30		16:00		5
	End Open for All (EoA)	**13:00**		**15:30**		**16:00**		6
End of Day								
Phase	**Start End of Day (EoD)**	**13:00**		**15:30**		**16:00**		
		From	*To*	*From*	*To*	*From*	*To*	
Key operations & actors	1. Automated cooldown phase - finalisation of on-going transactions in the DLT	13:00	~13:15	15:30	~15:45	16:00	~16:15	7
	2. Automated cancellation of pending instructions (e.g. Tx pending 4eyes validation)	~13:15	~13:20	~15:45	~15:50	~16:15	~16:20	8
	3. Automated defunding "Full Redemption"	~13:20	~13:30	~15:50	~16:00	~16:20	~16:30	9
	4. Possibility for NCBs L2 to instruct on-demand contingency defunding operations	~13:30	14:00	~16:00	16:30	~16:30	18:00	10
	5. NCBs & Operator can consult and query DCWs' data and transactions	13:00	14:00	15:30	16:30	16:00	18:00	
	End End of Day (EEoD)	**14:00**		**16:30**		**18:00**		11
Closed								
Phase	**Closed**	**14:00**		**16:30**		**18:00**		
		From	*To*	*From*	*To*	*From*	*To*	12
			BD+1		***BD+1***		***BD+1***	
Key operations & actors	1.Only Operator can consult and query DCWs' data and transactions	14:00	7:30	16:30	7:30	18:00	8:00	
	2. "Maintenance Window"? (version upgrade, hotfix, new participants requiring a node, etc.)	14:00	7:30	16:30	7:30	18:00	8:00	

Possible that 1h processing would be too small

We need to wait for the official tests to confirm in May

4CB Comments

#	Comment
1	(Automated & configurable) No integration with BDM for pilot phase
2	This is configurable in the ESY DLT
3	Market Particitpants cannot create ref. data directly, only done by NCBs.
4	Market Particitpants cannot create ref. data directly, only done by NCBs
5	Cut-off time at the hand of operator. In case of overlap, awaiting Tx are cancelled
6	2 hours before Cut-off RTGS RTS II for EUR (as in PROD, since it is a Live Timing)
7	Starts at cut-off; Internal DLT operations can still be processed during cooldown
8	Start & end time are based on previous step completion
9	Start & end time are based on previous step completion - when completed "process achieved" status is displayed to participants
10	1h30 contingency window to finalise all pending operations in case of incidents, once the automated defunding process is completed ("process achieved")
11	conditionned to EoD completed (all balances = 0)
12	Only operator access are functionning

Figure 1: Business Day Management Pontes Pilot UTEST for Release Day, Standard Day, and Live Timing

3.4 Incident and Release Management

The Incident Management process manages the lifecycle of all incidents, i.e. it identifies and resolves the incidents while providing updated information of the status of the relevant incident(s) to all Initial Launch CBs involved in day-to-day operations. This process coordinates all tasks to restore the services as quickly as possible and minimises the adverse impact of the incident on testing operations.

Service Requests will be differentiated from incidents and handled in the 3.5 Service Request Management.

By default, e-mail communication is used for incident communication. Incidents are reported via email to the National Service Desk / to the CBs' test managers, using the template in 6.1 Incident reporting template for the Pontes Pilot UTEST environment when reporting an issue who will then forward the information to the TARGET Service desk. For each valid incident, the relevant testing team will receive a ticket number corresponding to the opened ticket via email, indicating the criticality of the issue.

Tickets are handled on 4CB side within a Ticket Management System (TMS). A list of all incidents categorized by components will be distributed to the NSDs on a weekly basis. A resolution plan should be provided in due course. If testing is heavily impacted, a workaround should be agreed.

Support

Who	Contact
TARGET Service Desk	Email: pontes-TEST@target-ssp.eu Monday-Friday 07:30 to 16:30 (for Standard Day Schedule)
ECB TQR Team	Email: wCBDC-Testing@ecb.europa.eu

Table 2: Support contact

Reporting and tracking of defects

Once a defect has been acknowledged, the provided INC-ID (Incident-ID) is replaced by a PBI-ID (Product Backlog Item-ID), i.e. the INC is closed and a follow-up takes place via a PBI, for which a business description (using the “Business Oriented Description template cf. Annex 2) will be provided by 4CB, followed by a resolution plan in due course.

Jour fixe

A regular, weekly Jour Fixe will be installed with testing teams attending depending on the current testing stage:

1. Prior to start of EAT phase: 4CB + ECB EAT Team
2. Prior to start of CBT phase: 4CB + ECB TQR Team + CBs
3. Prior to start of UT phase: 4CB + ECB TQR Team + CBs

Within this Jour fixe, open issues (open INCs and PBIs) will be shared and discussed to follow-up. 4CB is to provide the consolidated list of INCs and PBIs two business days ahead of the meeting. A dedicated distribution list will be created to inform the NCB test managers accordingly.

3.4.1 Incident Logging and Information Recording

The below table shows a checklist for incident logging which shall be updated during the incident lifecycle. This checklist shall not only be applied by the TARGET Service Desk, but as well by the Initial Launch CBs and the TARGET Coordination Desk. It is very helpful to comply with a similar standard of documentation in quality and scope, when working together in a common complex environment and with multiple common interfaces. It is essential to record and update the following information:

No.	Items
1	Unique reference number (incident ID)
2	Date + time of recording
3	Date + time of first occurring (if known)
4	The expected duration (if known)
5	Name/ ID of person or group, recording the incident
6	Identification method used (call, Event Management system, e-mail, …)
7	Identity of requestor
8	Nature of the incident/ description of symptoms/ affected entities (natural language)

No.	Items
9	Incident categorisation (incl. sub- category)
10	Business impact
11	Criticality
12	Status (e.g. active, waiting, closed) Related Problem/ known error
13	Activities undertaken to resolve
14	Possible handling measures (e.g. work-around)
15	Support groups/ person to which the incident is dispatched/ allocated to
16	Incident closure categorisation (incl. sub-category) (may have changed during handling)
17	Date and time of resolution/ recovery/ closure

Table 3: Checklist for Incident Logging and Information Recording

The following descriptions provide a guideline on the criticality of an incident.

Level	Criticality	Description
1	Critical	Unavailability of one or more components for which no workaround is available.
2	Urgent	Unavailability of a component, but a workaround is available.
3	Medium	All components are available, but some are experiencing performance problems.
4	Low	Query or service request.

Table 4: Defect Criticality

3.4.2 Bug Fixing Schedule During Testing

For fixing of bugs, packages will be deployed on the Pontes Pilot UTEST environment (see also chapter 3.4.3 Release Management). The NCBs together with the ECB decide in the Jour Fixe when deployments shall be done, and which bug fixes are to be deployed, by determining a criticality. Based on the criticality, the 4CB conducts a feasibility assessment and provides the earliest date in which the fix could be deployed. This approach ensures that fixes will be deployed based on the current need of testing. For very urgent bugs, hot fixes can be deployed outside the delivery of the packages.

3.4.3 Release Management

For the Pontes Initial Launch, there are six release packages planned. The first release package will contain all functionalities, the subsequent releases will contain bug fixes that are not critical and therefore don’t require a hotfix. A Release Note will be provided by 4CB two days before any change to the software installed in Pontes Pilot UTEST, detailing the changes being made.

Package No.	Date
1	10/04/2026
2	01/06/2026
2.1	15/06/2026
3	26/06/2026
4	24/07/2026
5	28/08/2026
6	tbd

Table 5: Pontes Initial Launch Package Delivery Dates

3.5 Service Request Management

For specific test activities, Central Banks must submit a service request to the Service Desk. This service request must be sent at least two weeks in advance of such specific tests if planned during a weekday. The Service Desk provides a feasibility assessment and, if positive, the Service Request goes for approval to the Pontes Working Group and, once approved by the Pontes WG, the Service Request will be included in the Pontes Pilot UTEST calendar. If such test activities are planned during a weekend the service request needs to be submitted well in advance.

4 Test Execution

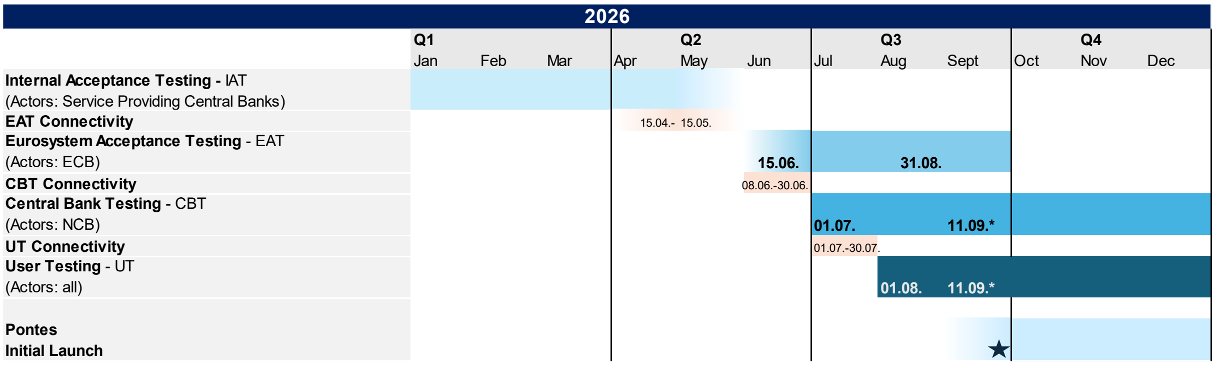

Figure 2: Pontes Initial Launch Test Timeline

4.1 Eurosystem Acceptance Testing (EAT)

The ECB EAT team will define and execute test cases based upon the specifications (Business Description Document - BDD and Service Description Document - SDD) and cover all defined roles and actors as defined in the Business Description Document and the Service Description Document to the extent possible. The EAT test cases must be successfully passed after completion of EAT to provide the MIB via the Pontes WG with a recommendation for the Initial Launch's entry into Production. Further information can be found in the Pontes Pilot Testing and Onboarding Strategy.

The approach followed for the EAT campaign is based on close cooperation between 4CB and ECB and is detailed in the Eurosystem Acceptance Testing Approach (EATA).

Before the EAT will start, a meeting between ECB EAT team and 4CB will confirm the readiness to start testing. Further meetings, e.g. before the start of CBT and UT, might be planned between the ECB EAT Team and 4CB to discuss the status of incidents and defects that will remain at the time deciding to enter CBT.

For further details on the EAT please refer to the EATA.

<u>EAT test cases</u>

The EAT test cases for all stages will be executed to the maximum extent possible. The ECB EAT Team will inform regularly on the current status.

<u>Entry criteria for functional testing phase</u>

The entry criteria for the EAT are described in the Eurosystem Acceptance Testing Approach.

Exit criteria for acceptance declaration

The exit criteria for the EAT are described in the Eurosystem Acceptance Testing Approach.

Once the exit criteria for the EAT phase are fulfilled, the ECB EAT team will prepare a detailed report to provide to the MIB the elements required for the decision to start Pontes Initial Launch in production.

4.2 Central Bank Testing (CBT)

The test cases defined for EAT will be submitted to the Pontes WG to review and approve a subset as (mandatory) certification test cases to be executed successfully by the National Central Banks before being admitted to the production environment. Furthermore, each participating CB can define test cases based upon the user requirements and meeting the individual business needs. The CBT is mandatory for those CBs owning a node in the Initial Launch and admitting market participants to their node. It is recommended for participating CBs to complete the CBT to the extent possible before commencing with the UT phase for their participants. Successful completion of the Central Banks testing will be self-assessed by the respective NCB.

Reference data

Similar to the established practice for T2 UTEST, Central Banks are recommended to use production reference data for their testing purpose, i.e. in particular use production BICs. If needed, Central Banks may use mock BICs (not registered with SWIFT), in which case support from 4CB may be required for inclusion in the CRDM BIC directory. Any reference data set-up in CRDM for T2 RTGS is subject to data propagation as described in the T2 User Detailed Functional Specifications (UDFS). For a given participant, NCBs are also advised to use the same BIC in CRDM and Pontes Pilot UTEST local data. This BIC must correspond to the Account BIC that the Market Participant intends to use for its operations in the Pilot.

Test Managers are responsible for maintaining their reference data. As a principle, CBs should actively monitor the data required for the testing activities and ensure that only the relevant data is kept in the system. Consequently, regular check-up and cleansing exercises (removing unnecessary or old test data) are recommended to be initiated by the users themselves in order to maintain a clean environment.

CBT functional testing phase establishes the end-to-end interaction between the Central Banks' systems and the Pontes Initial Launch.

CBs will notify the testing community of restrictions encountered during testing, especially if not yet solved at the beginning of their participants' UT phase. Participants of the different stages will notify the ECB Testing, Quality and Readiness (TQR) Team coordinating the activities accordingly.

CBT mandatory test cases

All CBs' mandatory test cases should be successfully executed at the latest until the cut-off date for the Go-live of Pontes Initial Launch into production. A close collaboration with the UT phase, running in parallel, needs to be envisaged.

CBs can start to run these tests as soon as the connectivity has been established.

Coordinated/specific testing

In case of need please contact the ECB TQR Team to assess and plan the activity. Operational testing and contingency scenario testing are covered in the Initial Launch Operational ToR.

Entry criteria for functional testing phase

- Information to the MIB via the Pontes WG on the start of the CBT phase after successful conclusion of a first EAT phase;
- Connectivity to test environment established
- Registration completed (cf. Registration Guide)
- Reference data set-up completed
- Process for possible bug fixing and resulting regression testing is defined

Exit criteria for completing the test phase

- CBs wishing to transfer to Production with the Pontes Initial Launch Go-live, need to have completed the mandatory test cases.
- All critical defects discovered have either been resolved or a suitable workaround has been identified.
- A resolution timeline for medium and low criticality defects related to the functionality has been approved by the Pontes WG.
- The responsible National Central Banks declare their readiness to exit CBT stage as part of their reporting and in a dedicated Pontes WG Go/No-go meeting.

4.3 User Testing (UT)

The UT phase is dedicated to Pontes Initial Launch Market Participants and Market DLT operators. A subset of test cases defined for EAT will be submitted to the Pontes WG to review and approve the subset as the “certification (mandatory) test cases” to be executed successfully by Market Participants and Market DLT Operators before being admitted to production environment. To assess market readiness, the ECB will collect information on the successful completion of the UT test cases through the NCBs, but it is up to each Central Bank to verify the execution of test cases by its participants.

Besides certification test cases, it is highly recommended that each participating entity defines test cases based upon user requirements and meeting the individual business needs, covering also end-to-end test cases and ensuring that internal systems can properly interact with the Pontes Initial Launch.

<u>Support during preparation phase</u>

ECB TQR Team will inform CBs on overall restrictions still applicable at the beginning of the UT phase. Issues faced by participants while preparing the UT phase are to be reported to the dedicated National Service Desk who will contact the TARGET Service Desk in case of need.

Market participants verify that the software complies with the defined BDD and Service Description and check the compatibility with their local applications, processes and procedures.

Joining Pontes Initial Launch in Production after the Go-live will be possible at any time prior to the launch of the next product phase and is subject to the responsible National Central Bank’s participation in Pontes Initial Launch.

<u>UT mandatory test cases</u>

All UT’s mandatory test cases should be successfully executed at the latest until the go-live into production. The process of submitting the test results and validating the results is in the remit of the responsible National Central Bank.

<u>Coordinated/specific testing</u>

A need for specific testing should be coordinated through the responsible National Central Bank and notified to ECB TQR team for further coordination within the Pontes WG.

Operational testing and contingency scenario testing are covered in the Initial Launch Operational ToR.

Entry criteria for functional testing phase

- Responsible National Central Bank's connectivity and node availability have been confirmed and the minimum set of mandatory test cases successfully executed
- Registration with the responsible National Central Bank has been completed
- Connectivity tests for the test environment have been successfully executed
- Reference data set-up is completed
- Go/No-Go recommendation from the Pontes WG via WP to start UT
- MIB to approve the start of the UT phase
- Confirmation by the relevant Central Bank of its readiness to support the individual participant's UT

Exit criteria for completing the test phase

- Successful execution of mandatory testcases for the market participant resp. market DLT operator, conveyed
- Defects with high criticality related to the functionality have been resolved
- The responsible National Central Banks declare their own and their participant's readiness to exit UT stage as part of their reporting and in a dedicated Pontes WG Go/No-go meeting

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5 Reporting

For CBT and UT, a reporting to the Pontes WG will be established. If required, a dedicated subgroup will be established to cater for coordinating and monitoring the testing activities in the two phases. A dedicated distribution list will be created to inform test managers accordingly.

For the first testing stage, the EAT stage, a dedicated reporting will be implemented and Pontes WG, will be informed on a regular basis. T2 WG will receive status updates, too.

Performance reporting - relating to the capacity of the system - for the test environment is not applicable during the Initial Launch phase.

6 Annex

6.1 Incident reporting template for the Pontes Pilot UTEST environment

Dear colleagues,

Please find below a new request/incident report from entity XXX.

Thank you,

Field Name	M/O (for Incident)	Incident details
Incident/Request	M	INCIDENT/REQUEST
Detected by	M	
Date of detection	M	
Release Version	M	
User name	M	
Related ref data (e.g. DCW account number, trade ref number etc)	O	
Environment	M	Pontes UTEST
High-level summary	M	Same as email subject (MUST BE SHORT BUT INFORMATIVE)
Detailed description (incl. Screenshots)	M	In the following circumstances: The observed behaviour was: While the expected behaviour was: Could you please check and let us know what caused the observed behaviour?
Criticality (Critical, High, Medium, Low)	M	
Additional information	O	
CSD/CB internal incident reference ID	O	
Reference from Pontes Initial Launch documentation	O	
Broadcasting	O	YES/NO

Table 6: Incident reporting template for test environment

6.2 Content business oriented description (BOD)

1. Business Scenario Description
2. Issue Description
3. Workaround

4. Module(s) affected
5. Effects and restrictions concerned module(s)
6. Required software change

6.3 List of Abbreviations

4CB .... Four Servive Providing Central Banks

A2A .... Application-to-Application

BDD .... Business Description Document

CB .... Central Bank

CBT .... Central Bank Testing

CeBM .... Central Bank Money

DLT .... Distributed Ledger Technology

EAT .... Eurosystem Acceptance Testing

EATA .... Eurosystem Acceptance Testing Approach

ECB .... European Central Bank

EII .... Extended Interoperability Interface

EoD .... End of Day

GUI .... Graphical User Interface

INC .... Incident

JWT .... JSON Web Token

MIB .... Market Infrastructure Board

MTLS .... Mutual Transport Layer Security

NCB .... National Central Bank

NSD .... National Service Desk

PBI .... Problem Investigation

REST-API .... Representational State Transfer Application Programming Interface

SDD .... Service Description Document

SoD .... Start of Day

SP .... Service Provider

TMS .... Ticket Management System

ToR .... Terms of Reference

TQR .... Testing Quality and Readiness

U2A .... User-to-Application

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UT .... User Testing

WG .... Working Group