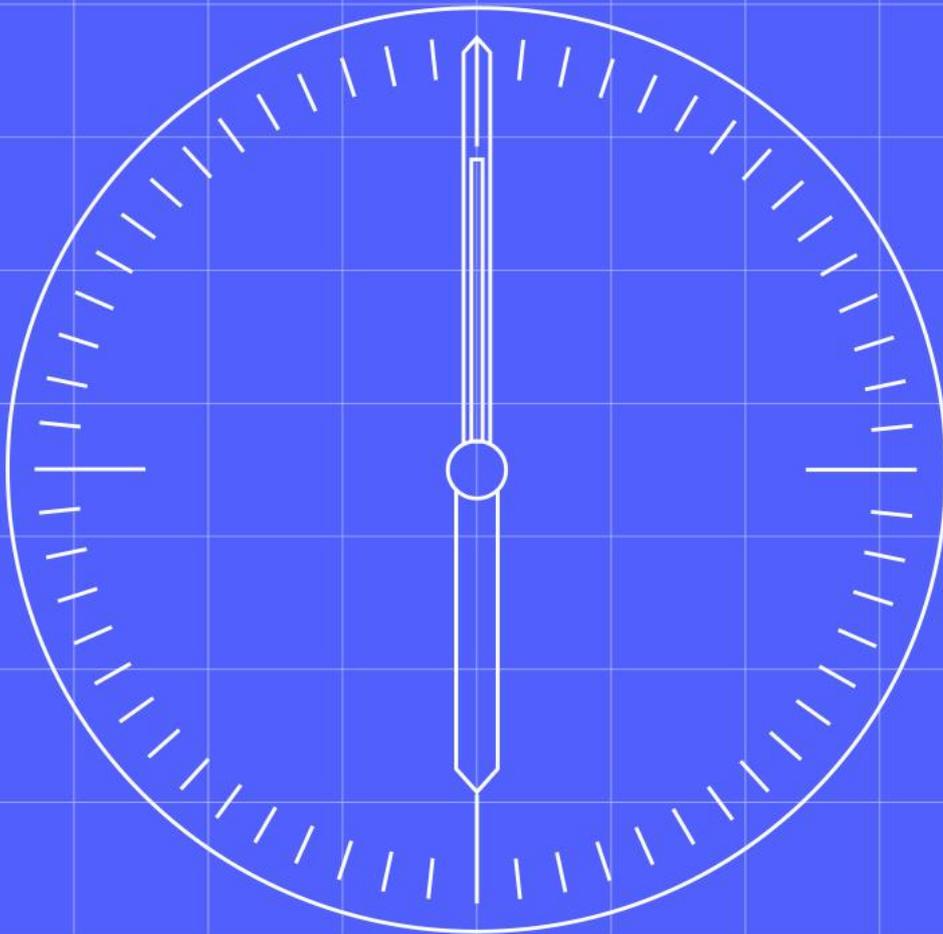




Qualification Approach & Plan



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BSC and REC Code Bodies

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2 House Keeping

2.1 Change Record

Date	Author	Version	Change Detail
27/03/2023	Elexon and REC Performance Assurance	0.1	First draft version – this document has not been through the BSC and REC PAB governance process yet. The information provided may change, subject to review.

2.2 Linked Documents

Name	Link
Pre-Integration Testing Guidance	MHHS-DEL852 Pre-Integration Testing Guidance v1.0
Environment Approach and Plan	MHHS-DEL618 Environment Approach and Plan v2.2
MHHS Placing Reliance Policy	MHHS-DEL1064 Placing Reliance Policy v0.4
End-to-End Solution Architecture	MHHS-E2E001 MHHS TOM – End-to-End Solution Architecture v3.0

3 Executive Summary

The Qualification Approach and Plan (QA&P) sets out the purpose of Qualification during the Market-wide Half Hourly Settlement Programme (MHHS) and the high-level plan and requirements for Programme Participants to undertake in relation to the BSC and REC.

Qualification will be approved by the Balancing and Settlement Code (BSC) Performance Assurance Board (PAB) and Retail Energy Code (REC) Code Manager. The purpose of MHHS Qualification is to confirm that participants are ready to operate in the MHHS market, and to protect both electricity settlement and retail markets from participants who are not able to deliver the required industry processes and standards.

Code Bodies are preparing and managing the Qualification process for MHHS to assess whether Programme Participants have sufficient evidence to demonstrate they have the appropriate systems, processes and controls in place to meet the MHHS requirements. It is the responsibility of Programme Participants to demonstrate the required evidence in the timescales set out in the MHHS plan. It is the MHHS's responsibility to monitor Programme Participants' progress against the required MHHS milestones and take any necessary escalation steps or other action if a Programme Participant is at risk of not meeting the MHHS timescales.

Programme Participants are expected to have completed Pre-Integration Testing (PIT) to a satisfactory level prior to entering QT.

Qualification will require testing of the key requirements set out in the MHHS TOM (Target Operating Model) for each Programme Participant's role, including the business processes and systems, as well as the Programme Participant's security and organisational controls they will be operating with.

Testing will be completed by Programme Participants either during System Integration Testing (SIT) for those Programme Participants that have volunteered for it or during Qualification Testing (QT). QT will consist of tests adapted from those prepared for SIT. Therefore, the Code Bodies encourage all Programme Participants to engage with the MHHS Programme SIT Working Group (SITWG). To join the SITWG and subscribe to the artefacts developed, please contact pmo@mhhsprogramme.co.uk.

Qualification will also require documented evidence on governance, resourcing, organisational and system controls on areas considered as higher risk by Code Bodies for each role. Qualification evidence will be provided by Programme Participants in the Qualification Assessment Document (QAD) and a template of this document will be prepared by the Code Bodies.

Qualification will be organised into tranches which allow the Qualification to be completed efficiently. Each tranche will provide Programme Participants with a six-month window to complete the process. The allocation to tranches will, wherever possible, be based on Programme Participant readiness.

To become MHHSP-Qualified in an MHHS Role, a Programme Participant must complete all elements of the QAD relevant to that role; the QAD must be approved by all Code Bodies that have governance over that role, specifically the BSC PAB and REC Code Manager where relevant.

4 Introduction

The purpose of this document is to set out the approach that will be taken to MHHSP-Qualification and the high-level plan of activities and requirements in relation to the BSC and REC. As Code Bodies responsible for MHHSP-Qualification, Elexon and the REC Code Manager have worked together on a joint approach and plan and will continue to work closely for the duration of the MHHS Programme. Qualification for other energy codes, such as the Smart Energy Code (SEC), is not within the scope of this document.

The Qualification phase within the MHHSP is in place to assess that Programme Participants operating within the current arrangements, that plan to operate in MHHS (and any new participants that wish to start operating at the start of MHHS), have the appropriate systems, processes and controls in place to undertake the new MHHS requirements.

This Qualification process is not set out in Section J or BSCP537 "Qualification Process for SVA Parties, SVA Party Agents and CVA MOAs". Instead, BSC Section C 12.12.7 requires BSC Parties and Party Agents to complete MHHSP-Qualification and comply with the MHHSP-Qualification Plan. Therefore, the QA&P sets out the Qualification requirements required under the BSC for all relevant roles to move to the MHHS arrangements.

Similarly, the 'Systems or Process Change Disclosure' noted in Schedule 9 Section 11.6d of the REC will not apply to MHHSP-Qualification. Meter Equipment Managers must comply with code changes in line with REC Schedule 15 Section 4.1 to maintain accreditation. The REC Code Manager will gain this assurance through the requirements set out in the QA&P. The Code Manager will also obtain assurance that Suppliers and Licensed Distribution System Operators (LDSOs i.e. DNOs) meet the REC associated MHHS obligations through this route.

Whilst the QA&P sets out the high-level scope and Qualification requirements, the detailed evidence required will be defined in the QAD and completed by Programme Participants. Code Bodies will use this to assess whether Programme Participants have met the Qualification requirements and are therefore able to be registered or appointed to MHHS migrated metering points.

Elexon, as the Balancing and Settlement Code Company (BSCCo), and the REC Code Manager will prepare and own the QA&P and the QAD jointly. The PABs for both Codes will be required to approve these documents. In addition to these approvals, the Testing and Migration Advisory Group (TMAG) under MHHSP governance will also be required to approve the QA&P.

MHHSP – Qualification Obligations



5 Purpose and Principles

- To adapt the current arrangements for Qualification in BAU, which had been appropriate for a mature set of trading arrangements, to reflect the increased risk from new industry wide MHHS interfaces and business processes.
- To, where possible, efficiently and appropriately, avoid requiring evidence for areas that are entirely unchanged based on the legacy role being undertaken.
- To avoid the need for repetition of steps that have already been completed to the required standards through MHHSP testing.
- Elexon and the REC Board are accountable for the implementation and management of a robust and well-governed Qualification process through the MHHSP-Qualification to the enduring MHHS arrangements.
- All Programme Participants must complete PIT Design Build Test (DBT) 1 prior to the start of QT. For Programme Participants undertaking SIT there is an MHHSP requirement that PIT DBT 1 will be completed prior to SIT. Code Bodies will expect a Requirement Test Traceability Matrix (RTTM) to be produced as part of the PIT process and signed off at a senior level within the organisation prior to the start of Qualification.
- The majority of testing requirements are expected through SIT for SIT participants or through QT in the Qualification phase for participants that have not completed SIT.
- Elexon and the REC Code Manager will develop Qualification scope and materials from the MHHSP SIT scope and materials produced by the MHHSP. The aim is for an aligned approach to Qualification for both routes, providing that the scope and coverage for SIT meets the requirements for Qualification; Qualification artefacts will be developed in parallel or after the associated SIT products. Therefore, the Code Bodies recommend it is beneficial for all Programme Participants to subscribe to the proceedings of the SITWG.
- The MHHSP will execute SIT on an End-to-End (E2E) basis to prove the MHHS design. Qualification, however, will be defined on a role-by-role basis and executed on an individual organisation level to prove the robust operation of Programme Participants before they are allowed to start operating in the live MHHS arrangements and migrating MPANs.

- QT and SIT should execute similar coverage of the design baseline as the level of confidence required is similar. The number of tests for QT are expected to be fewer as SIT is likely to need to repeat some functional testing where the same functions are used in different E2E test scripts.
- Further discussions are required before expectations and timings for PIT DBT2 can be set out. DBT2 has the potential to impact some REC requirements. If this is the case, it is possible that there will be some additional testing required against consequential change that affects any Code obligations. Code Bodies will not undertake assurance for areas of consequential change that are not related to Code requirements.
- Code Bodies are responsible for undertaking Qualification for REC Parties, BSC Parties and BSC Supplier Agents. Code Bodies are not responsible for undertaking Qualification or set up activities for any third-party organisations.
- Only Programme Participants that complete the entire Qualification process and have their QAD approved by the relevant Code Bodies will become MHHSP-Qualified and be able to operate under the new MHHSP arrangements; SIT and QT are just one part of the MHHSP-Qualification process.

6 Qualification Routes

Programme Participants must follow either the SIT or non-SIT route become MHHSP-Qualified, including the following requirements:

Route	Entry Requirements ¹	MHHSP-Qualification		
SIT Participants	PIT DBT1 completion (reviewed by MHHSP)	SIT (reviewed by MHHSP)	Security and Organisational Controls Evidence (Developed by Code Bodies)	DBT 2 PIT as required to meet Code requirements (Code Bodies)
Non-SIT Participants	PIT DBT 1 completion (reviewed by Code Bodies)	QT (accountability of Code Bodies but dependent on SIT development)	Security and Organisational Controls Evidence (Developed by Code Bodies)	DBT 2 PIT as required to meet Code requirements (Code Bodies)

¹ Programme Participants will also need to connect to the test environments as noted in the Environment Approach and Plan; details will be provided in further iterations of the QA&P.

7 Scope of MHHSP-Qualification

7.1 Market Roles included in MHHSP-Qualification

The following roles are required to complete MHHSP-Qualification:

MHHS Roles	Nearest Equivalent Legacy Roles	Code Body	Programme Milestones to be supported by Qualification activity	DTN Role Code
Smart Data Service (SDS)	New role but nearest comparator: Non-Half Hourly Data Collector (NHHDC) for traditional and smart metering systems and Half Hourly Data Collector (HHDC) for elective smart metering systems.	BSC	05/10/2026 - M15 Migration Completion	N

MHHS Roles	Nearest Equivalent Legacy Roles	Code Body	Programme Milestones to be supported by Qualification activity	DTN Role Code
Metered Data Retriever (MDR) ¹	None	SEC Current assumption- not BSC	05/10/2026 - M15 Migration Completion	N/A
Advanced Data Service (ADS)	Half Hourly Data Collector (HHDC)	BSC	05/10/2026 - M15 Migration Completion	O
Unmetered Supply Data Service (UMSDS)	Meter Administrator (MA)	BSC	05/10/2026 - M15 Migration Completion	Q
Unmetered Supplies Operator (UMSO)	Unmetered Supplies Operator	BSC	07/03/2025 - M10 Central Systems ready for migration	3
Licensed Distribution System Operator (LDSO)	Licensed Distribution System Operator (i.e. Distribution Network Operator; DNO)	BSC REC	07/03/2025 - M10 Central Systems ready for migration	R
Supplier Meter Registration Agent (SMRA) / Electricity Retail Data Agent (ERDA)	SMRA / ERDA	BSC REC	07/03/2025 - M10 Central Systems ready for migration	P
Supplier	Supplier	BSC REC	16/03/2026 - M14 All Suppliers able to accept MPANs under the new TOM	X
Metering Equipment Manager (Advanced)	Metering Equipment Manager (MEM)	REC	05/10/2026 - M15 Migration Completion	T
Metering Equipment Manager (Smart)	Metering Equipment Manager (MEM)	REC	05/10/2026 - M15 Migration Completion	S

¹ MDRs are a new role and Qualification will be governed under the SEC; MP162 considers the MDR User Entry Process. For the avoidance of doubt, MDRs do not need to complete the QAD. Suppliers have a responsibility to ensure that they appoint Qualified MDRs.

7.2 The importance of completing MHSP-Qualification

Participants will be required to complete MHSP-Qualification in order to operate within the MHHS arrangements.

Suppliers can start to accept MPANs within the MHHS arrangements from the start of the migration window, Milestone M11/M12, when Qualified. They must be ready to operate in the new arrangements by Milestone M14 which is the requirement for Suppliers to have systems and services in place to accept MPANs under the new TOM. If Suppliers are not MHSP-Qualified by M14, they will be prevented from registering new customers using existing functionality within the Central Switching Service (CSS).

Agents can start to be appointed to MPANs within the MHHS arrangements from the start of the migration window, M11/M12, when Qualified. As all MPANs are due to have moved to the new arrangements by the end of the migration period M15, agents will be unable to continue to operate within the Supplier Volume Allocation (SVA) arrangements if they have not completed Qualification by this time.

MHSP-Qualification tranches are staggered, with the final QT tranche scheduled to end 19/01/2026. Programme Participants that do not complete MHSP-Qualification but who wish to operate under SVA arrangements will need to complete any updated MHHS Qualification arrangements which are being developed by Code Bodies for enduring operations.

7.3 Requirements included in Scope

The Scope of MHHSP-Qualification set out in the QA&P is aligned with the BSC and REC requirements for the entirety of the MHHS design. As noted above, other Code requirements such as the SEC are out of the scope of this document.

To complete Qualification successfully, a Programme Participant will be required to demonstrate that it can sufficiently complete all the responsibilities and functions required for the relevant role, as described within the MHHS design artefacts and the Code documentation that will align to that role.

Different phases of the Qualification process can be completed concurrently, however prior to entering QT participants should be confident that they are able to meet these requirements and have tested them sufficiently within their organisations. Specific QT entry requirements are outlined in *Section 11.3 QT Approach*.

The MHHSP is developing SIT requirements to ensure that the MHHS TOM can operate successfully on an E2E basis. The scope and artefacts for this testing will link to requirements in the design artefacts which will then link to Code requirements.

As set out in *Section 5 Purpose and Principles*, Code Bodies will accept SIT completion as evidence towards a Programme Participant's Qualification requirements; SIT participants are expected to complete the other requirements in 'Tranche 0' as noted in *Section 11.3.2. Test Schedule*. Code Bodies will also be developing QT based on SIT artefacts for those participants that do not complete SIT. The QT artefacts will be developed from SIT artefacts and adjusted to remove any unnecessary duplication of tests and to ensure that they work on an individual organisation and role basis.

Consequently, the development of QT plans and artefacts are dependent on the development of SIT artefacts. There will therefore be several iterations of this QA&P document to take account of each of the SIT deliverables as set out in the table below.

Additionally, the process for some elements of Qualification, such as Data Intergration Platform (DIP) Onboarding and Service Activation, are still being defined by Code Bodies, in consultation with the Programme and Industry through QWG; the QA&P will be updated as required to reflect decisions taken in these areas.

QA&P development alongside SIT artefacts development

Iteration	Dependency on following SIT artefacts	Expected QA&P Issue Date
Initial version	SIT Component Integration Testing and Functional Testing	26/05/2023
Second version	SIT Migration	28/07/2023
Third version	SIT Non-Functional	01/12/2023
Final version	SIT Operational	22/12/2023

It is expected that SIT and QT will cover the majority of testing related requirements. However, Code Bodies will review the SIT scope and artefacts to confirm that:

- SIT scope is sufficient to cover the key areas of risk for MHHS;
- Areas of duplication in SIT, required to ensure full coverage of the E2E solution but not required for QT, are removed; and
- Areas that do not relate to the BSC or REC requirements for Programme Participants are removed.

Evidence related to governance, operational controls, change management and security will also be required for Qualification for participants that have completed either SIT or QT.

7.4 Interaction with Programme Readiness Assessments

The MHHSP Readiness Assessment is a standalone process which has no direct interaction with the Qualification process.

Participants can re-use any evidence already provided in readiness assessments to support the operational controls and governance requirements. However, there will be no automatic expectation that specific Qualification requirements have been met from the readiness assessments. This is because the purpose of the MHHSP Readiness Assessments is to judge overall industry readiness rather than specific participants and the scope of these assessments is not set out now but will be assessed ahead of each assessment phase.

Code Bodies are preparing and managing the Qualification process and will support participants through this. However, Code Bodies are not responsible for ensuring that all participants have completed Qualification and will not take steps to escalate and address a lack of progress through Qualification as this will be the role of the MHHSP. To enable the MHHSP to do this, Code Bodies will share regular reporting of the progress of participants through the MHHSP-Qualification process.

7.5 Interaction with Current Audits and Considerations

During the MHHSP-Qualification process, some participants may undergo periodic audits under the BSC or REC in order to maintain their Qualification and accreditation status. For the avoidance of doubt, during MHHSP-Qualification these periodic audits will remain entirely separate from the MHHSP-Qualification process. MHHSP-Qualification will be focused on the changes that Programme Participants are making to deliver the revised business processes as a result of MHHSP.

However, there is an opportunity for Code Bodies to use the scheduled periodic audits to build the evidence base to confirm a participant's readiness for MHHSP-Qualification or to complement evidence required within the QAD.

The decision as to whether to take advantage of periodic audits in this manner will be made by the respective Code Bodies for the Roles within their remit.

Some considerations include:

- Ensuring that the periodic audit is a meaningful exercise that complements the MHHSP Readiness Assessments and the development of the QAD evidence base
- Ensuring that it does not disproportionately increase the time or cost of the periodic audits
- Ensuring that participants are neither advantaged nor disadvantaged by the timing of their periodic audits with respect to both:
 - Maintenance of their current Qualification and accreditation status
 - MHHSP-Qualification

8 Roles and Responsibilities

During the Qualification process, the aim of the MHHS Programme is to test the E2E MHHS Design and ensure that the new MHHS arrangements function correctly and have been implemented in accordance with the MHHS E2E description. Each Code Body is responsible for qualifying individual Programme Participants against the MHHS design requirements that will be set out in its specific Code.

The following RASCI matrix shows respectively which party is Responsible, Accountable, Supporting, Consulted or Informed for various elements of the Qualification process, as well as where the governance sits. Where the BSC and REC are delivering jointly, the table has been merged. In the case of dual governance between TMAG and the BSC/REC PABs, the body with final approval is noted with ✓^F.

Activity	RASCI							Governance
Activity	Participant	BSC	REC	MHHS Programme	DIP Manager	QWG	TMAG	BSC & REC PAB
QA&P	I	R, A		C		C	✓	✓ ^F

Activity	Participant	BSC	REC	MHHS Program	DIP Manager	QWG	TMAG	BSC & REC PAB
QAD	I	R, A		C		C		✓
Placing Reliance Policy	C	C		R, A		I	✓	✓ ⁵
Environment Approach and Plan ³	I	C		R, A			✓	
Intention to Qualify	R, A	I		I				
PIT – Scenarios	R, A	I		C				
PIT – Data	R, A	I		I				
PIT – Environment	R, A	I		I				
PIT – Execution	R, A	I		I				
PIT – Issue Resolution	R, A	I		I				
PIT – Assurance (SIT Participants)	S	I		R, A			✓	
PIT – Governance (Non-SIT Participants) ⁶	S	R, A		I		I		
SIT – Scenarios ¹	I	C		R,A				
SIT – Data Allocation ¹	S	I		R,A				
SIT – Environment Coordination ^{1,3}	I	C		R, A				
SIT – Environment Connection ^{1,3}	R, A	I		C				
SIT – Execution ¹	R	I		A				
SIT – Issue Resolution ¹	S	I		R, A				
SIT – Assurance ¹	S	I		R, A				
QT – Scenarios	S	R, A		C		I		
QT – Data Allocation		TBC						
QT – Environment Coordination ³	I	C		R, A		I		
QT – Environment Connection ³	R, A	I		I		C		
QT – Execution	R, A	S		S				
QT – Issue Resolution	R, A	I		S		I		

Activity	Participant	BSC	REC	MHHS Programme	DIP Manager	QWG	TMAG	BSC & REC PAB
QT – Assurance	S	R, A		I		I		
DIP Onboarding	S	TBC	C	TBC	TBC	I		
QAD Completion	R, A	C		-				
QAD Review	S	R, A		I				
QAD Management Assertion	R, A	I		I			✓	✓ ^F
Qualification Approval	I	R, A	R, A					✓ ⁴
Service Activation	TBC	TBC	C	TBC			✓	✓ ^F

¹These items will be a part of the SITWG agenda. Code Bodies will work closely with the Programme to ensure the principle of equivalence is appropriately applied to non-SIT Participant. However, non-SIT Participants are encouraged to join the discussion at SITWG and feed into the consultation processes for SIT.

²The role of the DIP Manager in MHHS-Qualification has not been confirmed.

³See Environment Approach & Plan for further details on roles and responsibilities for test environment provisioning

⁴The decision to approve REC Parties will be made by the REC Code Manager not the REC PAB.

⁵The Placing Reliance will need to be approved by the BSC and REC PABs in order to be applied to Qualification.

⁶Code Bodies will review PIT Completion as part of the entry requirements to QT as noted in Section 11.3.3 QT Entry & Exit Criteria.

9 Qualification Approach

9.1 High-level Qualification Requirements

Code Bodies will expect participants to provide evidence that they have met the following requirements during the MHHS-Qualification process:

- To have robust systems in place which meet the MHHS requirements;
- To be capable of receiving, processing, sending and publishing data as required by the MHHS requirements;
- To be capable of undertaking the business processes required by the MHHS requirements;
- To be capable of undertaking successful migration for MHHS; and
- To have the right resourcing, security and organisational controls in place to manage expected operation under MHHS.

9.2 High level Qualification Process

All Programme Participants will be required to complete the QAD that will be jointly developed by the Code Bodies. The QAD will include all the requirements that participants need to complete to qualify, including (but not be limited to) the evidence of successful completion of various testing phases and whilst ensuring sufficient coverage of Code requirements.

The QAD will be split into organisation-specific sections and role-specific sections; a participant's QAD will need to be approved by all Code Bodies relevant to their role(s). The QAD will be jointly administered by the Code Bodies during

MHHSP-Qualification. Code Bodies are currently planning for a single location for participants to submit evidence and receive updates on their QAD, with the details of this to be released in future iterations of this document. The QAD will note which requirements are relevant to which Code Bodies. If participants have questions on a specific section of the QAD they will be able to raise it through the relevant Code Body mailbox (i.e. risk@elexon.co.uk and performanceassurance@recmanager.co.uk)

To test the E2E operation of the MHHSP-scoped systems, the MHHSP Programme requires a Minimum Viable Cohort (MVC) to participate in SIT. SIT will be performed by the service providers of the central systems and some other parties, and will involve the SIT participants sending and receiving flows from each other.

The purpose of QT is to gain assurance that each participant is able to meet the relevant requirements of their role in the business processes revised as a result of MHHSP; part of this assurance will come from the participant's ability to send and receive simulated flows. Participants who completed SIT will be able to use evidence from SIT to demonstrate their ability to send and receive flows.

SIT is scheduled to run from October 2023 to April 2025, and the Programme is expected to agree the list of SIT participants in April 2023. It is expected that SIT participants will complete the QAD between April 2024 and April 2025, and a governance-only tranche for SIT participants will facilitate this as per *Section 11.3.2 Test Schedule*. However, SIT participants will be able to complete MHHSP-Qualification up until the deadline noted in *Section 7.1 Market Roles included in MHHSP-Qualification*.

The first tranche of QT is due to run from January 2025 to August 2025, and Code Bodies will provide a draft list of Tranche 1 participants in August 2024. The seventh and final tranche of QT is due to run from July 2025 to January 2026, and Code Bodies will provide a draft list of Tranche 7 participants in January 2025.

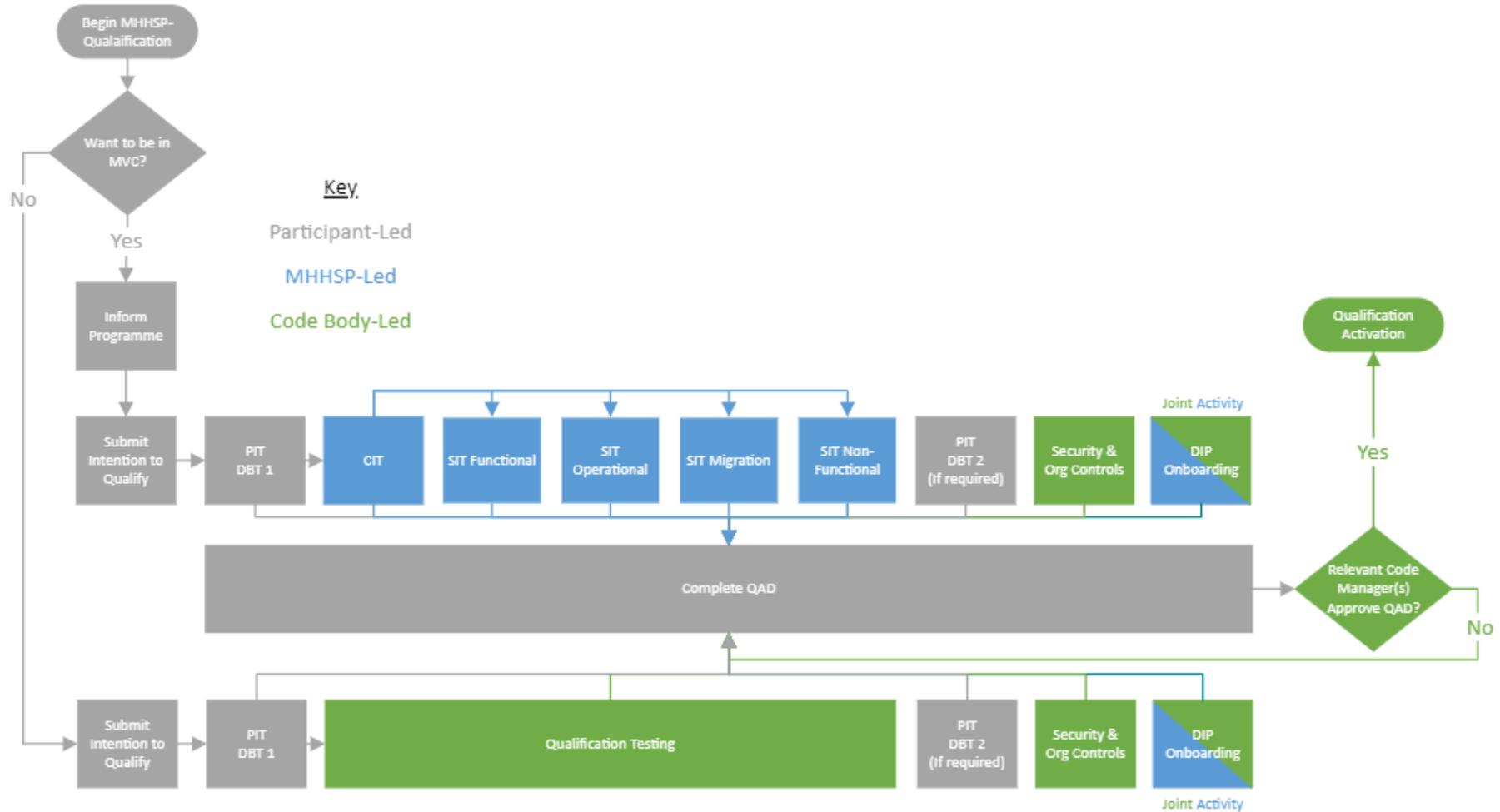
In an 'Intention to Qualify' submission, the process for which is outlined in *Section 11.3.2 QT Schedule*, Programme Participants will note their tranche preference(s). Code Bodies will then allocate on a first-come, first-served basis limited by a quota for the different roles. The Programme Participant's readiness to begin QT then will be monitored through the MHHSP Readiness Assessments and their PIT progress.

For QT participants, the submission date for their PIT completion report will be confirmed in future iterations of the QA&P; it will be aligned to qualification tranches and is expected to be similar to the deadlines for SIT participants, with the draft report submitted two months prior to the start of testing execution and finalised one month prior.

QT Tranche 7 will be the final testing tranche under MHHSP; the final day of testing is therefore expected to be 19/01/2026.

9.2.1 High level Qualification Process Flowchart

High-level flowchart of the Qualification process for all Programme Participants.



10 Qualification Planning

10.1 High Level Qualification Plan

This high-level QA&P is dependent on the update to the MHHS Programme replan. This section will be updated prior to the approval of the first iteration of the QA&P.

10.2 Deliverables and Dependencies

- Placing Reliance Policy scheduled to be submitted to BSC and REC PABs for approval in April 2023.
- The QA&P's first iteration is due to be submitted to BSC and REC PABs for approval in May 2023. Further iterations will be published in-line with Programme updates to the SIT scope, Environment Approach and Plan, and DIP Onboarding design updates.
- The target is to release a draft outline of the QAD for consultation four weeks after the Programme finalises the SIT Test Traceability and Coverage (expected 30 June 2023). The QAD will then be discussed and iterated through the QWG, with a final draft expected to be ready in late 2023 and taken to the BSC and REC PABs for approval in early 2024.

10.3 Risks

- Changes to the MHHS Design or SIT approach could lead to Code Bodies not being able to deliver the QA&P within the currently planned dates.
- MHHS Programme are not able to coordinate the provisioning of central system test environments not being able to deliver the QA&P within the currently planned dates.
- Programme risk that Programme Participants do not engage with or complete the required steps to complete Qualification. This is a potential impact on the M10, M14, M15, and M16 milestones.

10.4 Assumptions

- MHHSP will undertake the Qualification required for DIP Connection Providers (see *MHHS-E2E001 End to End Solution Architecture 3.3.2*) and ensure these are set up with the DIP as required.
- QT is expected to mirror SIT but on an individual role/participant basis, testing up to and including the interactions with the DIP and does not require E2E testing with other market participants.
- MHHSP and Code Bodies will work closely together on the development of SIT and QT artefacts.
- Any changes to the Code baseline post M6 will be subject to a CR and impact assessment. Code Bodies will highlight any impacts on Qualification and the Qualification timeline as part of this CR process, which may lead to additional regression testing or other assurance for Qualification.
- Code Bodies will review any issues found in SIT execution and update the QT artefacts or the approach to Qualification as necessary.
- MHHSP will provide individual SIT PP reports from each stage of SIT which will be used as Qualification evidence.

10.5 Dependencies

- QT products have a dependency on associated SIT products and therefore there will be an iterative approach between SIT development and Qualification. Non-SIT participants are encouraged to join the discussion at SITWG and feed into the consultation processes for SIT. Other Working Groups under the TMAG will also

have an impact on Qualification, so Programme Participants should stay apprised of developments in these Working Groups.

- Code Bodies have a dependency on the MHHSP to produce a clear mapping from SIT scope and testing artefacts to the design artefacts and Code obligations to enable Code Bodies to assess the coverage of the testing.
- There is a dependency on M8 (Code Changes delivered) to be achieved for the BSC and REC PABs to Qualify SIT and LDSO Programme Participants against the live Codes which is required for M10, M11, and M12 (start of migration) to take place.

11 Qualification Evidence

This section describes the overall process for the validation and approval of Qualification evidence through PIT, SIT and QT phases. Completion of this section is dependent on a number of future MHHSP documents (which are referenced below as applicable). This QA&P will therefore be updated when the dependent source documents are published by the Programme.

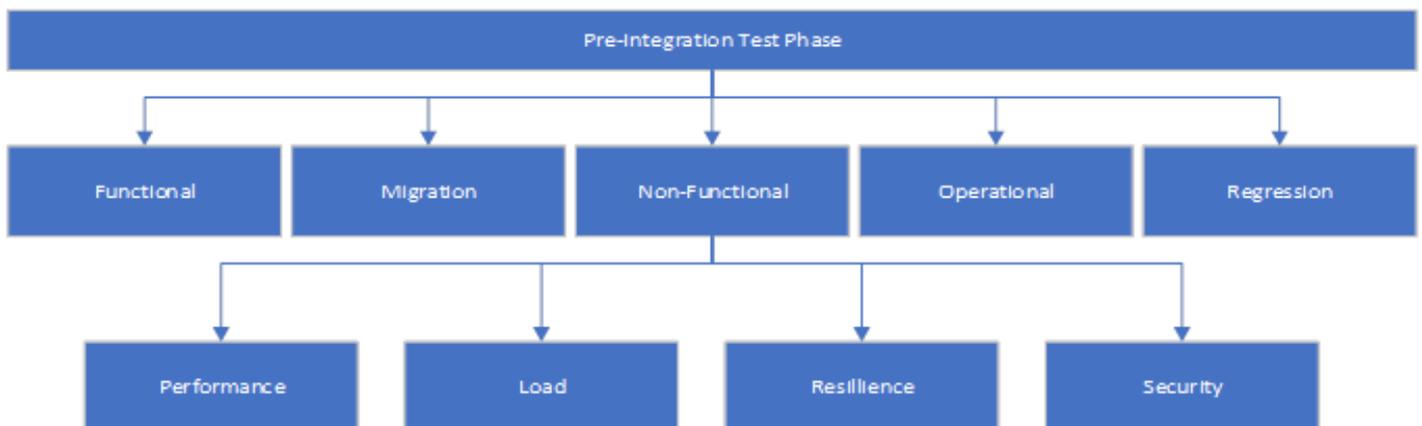
In summary, the high-level Qualification evidence requirements will include:

- **PIT DBT1:** Evidence PIT DBT1 completion (*Section 11.1 PIT Overview*) in the QAD to enter QT which will prove specific functional, non-functional and migration-related characteristics of systems and processes.
- **PIT DBT2:** Evidence of DBT2 testing in order to exit Qualification where applicable.
- **SIT/QT:** Participants are expected to complete either SIT or QT, and document evidence in the QAD in line with *Section 11.2 SIT Overview* and *Section 11.3 QT Approach* respectively.
- **Placing Reliance:** A policy for placing reliance is being consulted upon to reduce unnecessary duplication of effort for Programming Participants when completing and evidencing testing as set out in *Section 11.4 Placing Reliance Policy*.
- **Procedural & Governance:** All participants are expected to adhere to the processes and procedures of the Code Bodies governing Qualification; evidence for this will be documented in the QAD as set out in *Section 11.5 Operational Controls and Governance*.

11.1 PIT Overview

The PIT phase is focused on the new settlement arrangements and aims to validate that every system or service required to be developed by Programme Participants is in place and can meet the E2E MHHS design (and its interfaces/publications).

The PIT phase is expected to comprise of different types of testing as detailed in Figure 1 below:



11.1.1 PIT Deliverables

Programme Participants are responsible for managing their own testing process and will be required to demonstrate completion of their own PIT.

Each Programme Participant undertaking PIT will be expected to provide the following test artefacts (as referred to in the PIT Guidance) to be validated by MHHSP & Code Bodies for Qualification Governance.

- MHHS-DEL1049 PIT Approach and Plan
 - MHHS-DEL1050 PIT Requirements to Test Traceability Matrix
 - MHHS-DEL1052 PIT Test Completion Report
-

11.1.2 PIT Exit Criteria

All participants must successfully complete PIT testing as defined in [MHHS-DEL852 Pre-Integration Testing Guidance v1.2](#) and produce evidence of testing for review and approval; MHHSP will provide assurance over the PIT exit of SIT Participants, and Code Bodies will provide governance over the PIT exit of non-SIT participants.

- All planned tests must be run to completion, or any exceptions documented and agreed with the MHHSP Test Team and/or Code Bodies;
 - There are no outstanding severity 1 or 2 defects, or any exceptions are documented and agreed with the MHHSP SI Test Team and/or Code Bodies;
 - Mitigation plans for any outstanding defects have been produced and agreed with the MHHSP SI Test Team and/or Code Bodies;
 - A PIT Test Execution Completion Report has been submitted and assurance completed by MHHSP Test Team and/or Code Bodies. The Code Bodies will be taking a risk-based approach to assuring the various stages of PIT, with the methodology to be outlined in future versions of the QA&P.
 - Participants have proven interfaces as a minimum based on market role. This includes evidence generated by the DIP Simulator test tool to show that all relevant IFs and PUBs have been successfully exercised (dependent on industry test plan from MHHS) and evidence that changes to existing DTN messages have been tested.
-

11.2 SIT Overview

The tests to be covered in SIT to verify the correct functioning of each Service (according to its role) are described in the [MHHS-DEL872 - SIT Scope for Voluntary Participants' Planning v0.6](#). A summary of the SIT requirements from this document is set out below for information only and participants should review the source document to understand the requirements.

On completion of SIT, MHHS Programme is expected to share the below artefacts with Code Bodies.

- SIT Completion Report
- SIT RTTM

Code Bodies will review the artefacts and on approval Programme participants will be Qualified.

Further details on the different phases of SIT for which the Code Bodies will require confirmation of completion are noted in the *Appendix C Section 17.1 SIT Testing Details*.

11.3 QT Approach

This section outlines the high-level QT approach for Programme Participants. The detailed QT plan is outlined later in *Section 11.3.3 QT Entry & Exit Criteria*. Technical details for QT are also noted in the *Appendix D Section 18.1 QT Technical Details*.

Scenarios for QT

Code Bodies expect the testing scenarios for Programme Participants will be as follows:

Scenario 1 - Participants completing SIT

- All participants completing SIT will, subject to a review of artefacts by the relevant Code Body, not be required to go through the QT phase, but will still need to complete all other Qualification requirements.

Scenario 2 - Non-SIT participants joining direct to QT

- All participants joining direct to QT (i.e., not having first started SIT) will first have to produce evidence of PIT-DBT 1 completion (QT Entry Criteria) and then successfully complete QT (QT Exit Criteria) as defined by Code Bodies governing Qualification.
- Participants will be allocated to a tranche as per the process set out in *Section 11.3.2 QT Schedule*.
- In the event, a Programme Participant intends to join QT after the Tranches have been allocated (*Late entry*), dependent on the QT window and cut-off time defined for tranches, Code Body will respond with the slot availability. However, a confirmation cannot be assured, and the participant should be prepared to accept Scenario 5 for enduring solution post MHSP Qualification Completion.

Scenario 3 - Participants requesting QT inflight from SIT.

- Process to be defined for participants intending to join QT in middle of qualification tranche.
- Participant A was in SIT but couldn't complete testing and dropped out of SIT
- Code Bodies will require the participant to follow all entry criteria for QT, however QT scope will be defined based on below additional considerations:
 - SIT report outlining the Execution status and coverage achieved
 - Defect status report with outstanding issues/ impacts and timeline for resolution in readiness for QT
- Based on above, Code Bodies will recommend a Full/Subset of Testing scope and/or regression testing for Qualification.
- Allocation to a tranche will be based on the current capacity.

Scenario 4: Participants requesting QT inflight from QT Tranches

- Participant B was in tranche 1 for QT but couldn't complete testing within the tranche and needs a re-entry to complete testing.
- Code Bodies will require the participant to follow all entry criteria for re-entry to QT, however QT scope will be defined based on below additional considerations:
 - Qualification report outlining the Execution status and coverage achieved in current Tranche
 - Defect status report with outstanding issues/ impacts and Timeline for resolution in readiness for re-entry to QT

Based on above, Code Bodies will recommend a full/subset of Testing scope and/or regression testing for Qualification.

PS: Allocation to a tranche will be based on the current capacity.

Scenario 5 - Enduring solution post MHHS completion

- The process for participants wishing to Qualify after the completion of MHHS migration in October 2026 will be managed by the Code Bodies and defined in the future.

Scenario 6: New participant who intends to Qualify with MHHS.

- New entrants are likely to be required to qualify through the QT route as the draft list of SIT participants is due to be published in April 2023.
- Applications by new entrants will be managed on a case-by-case basis by Code Bodies.

- If a Programme Participant wishes to enter the market before the start of MHHS migration (M11/M12), it would be required to:
 - Align and follow all Entry and Exit Requirements defined by the Code Bodies and confirm readiness to join one of the Qualification tranches as per availability.
 - Demonstrate its ability to operate in accordance with any required existing (Legacy) systems and Code Requirements, as well to ensure business continuity during the transition/migration phase and smooth transition thereafter to MHHS programme post migration.
- It is expected that a new entrant will be able to enter the Market after M11/M12 (start of migration) without having to enact legacy processes. They will however need to be able to demonstrate both forward migration processes and reverse migration processes (as a losing supplier); the process for this case of Qualification will be defined in future versions of the QA&P.

11.3.1 QT Scope

The QT scope will be fully defined once the final SIT Scope (MHHS-DEL872) has been published by MHHS. To date, 108 test scenarios for SIT Functional have been identified by MHHS. Test scenarios will be grouped against each role and participants required to run the specific test suite based on their respective roles

QT scope will be derived from the SIT scope based on a 'Risk Based Testing' approach. The scope of QT is not expected to be additional to that of SIT, subject to review by the Code Bodies.

Iteration	SIT related artefacts	Scenarios
Initial version	SIT Component Integration Testing and Functional Testing.	108 Approx
Second version	SIT Migration	TBC
Third version	SIT Non-Functional	TBC
Final version	SIT Operational	TBC

11.3.2 QT Schedule

All participants expecting to qualify through the QT route should align with one of the Qualification Tranches as per the process described below.

Participant Readiness for QT

The proposed process to validate participants readiness for QT is set out below. This process will apply to all non-SIT participants, any participants wishing to use the 'Placing Reliance' policy (see Section 11.4 Placing Reliance) must also align with below process and are expected to provide information on the agreement with the '3rd Party provider' whom they are placing reliance on.

Request For QT Readiness

Code Bodies will contact participants who have provided prior notification of their intention to become MHHS- Qualified, requesting a date by when the participant expects to complete all Qualification Entry Criteria and be ready for to commence QT.

Code Bodies anticipate sending the Request for QT Readiness to participants in first week of February 2024 (firm dates to be defined in a later iteration of the QA&P).

Participants will have four weeks to respond to this request i.e., by first week of March 2024.

The QT Schedule will then be shared with participants.

Initial allocation of participants to Qualification Tranches

After collating readiness responses from all participants, Code Bodies aim to provide participants with the following details in April 2024 (firm dates to be defined):

- Soft allocation for the Programme Participant onto a Tranche for QT (done based on First Come First Serve basis with respect to the capacity for each Tranche).
- The cut-off date for each participant to provide evidence of its QT readiness to keep the current tranche allocation.

Each participant will have a two-week window (i.e., by first week May 2024) following notification by Code Bodies to acknowledge the proposed tranche allocation and request a change to that allocation (availability permitting).

In the event that a participant fails to produce the required evidence of readiness (refer to *Section 11.1.1 PIT Deliverables*) by the cut-off date, Code Bodies will reassign the participant to a subsequent tranche (based on availability).

Review and final allocation

Code Bodies will review the artefacts produced by participants in readiness for qualification, confirm if the Qualification Entry Criteria have been met, and confirm the participants tranche slot.

Participants are expected to progress with Environment preparation/ planning by liaising with the Code Body.

Tranche timelines

The high level the Tranche Schedule published by MHHS Programme is set out below:

Environment	Qualification Phase	Start Date	End Date
TBC	Testing for Non-SIT LDSOs – Entry Documentation	To be confirmed in future iterations	
	Testing for Non-SIT LDSOs – Env Prep	To be confirmed in future iterations	
	Testing for Non-SIT LDSOs - Execution	02/07/2024	24/01/2025
N/A	Tranche 0 - Governance Only for SIT Participants	To be confirmed in future iterations	
UIT	Tranche 1 - Entry Documentation	To be confirmed in future iterations	
	Tranche 1 - Env Prep	06/08/2024	04/11/2024
	Tranche 1 - Execution	20/01/2025	04/08/2025
	Tranche 2 - Entry Documentation	To be confirmed in future iterations	
	Tranche 2 - Env Prep	03/09/2024	02/12/2024
	Tranche 2 - Execution	17/02/2024	01/09/2024
	Tranche 3 - Entry Documentation	To be confirmed in future iterations	
	Tranche 3 - Env Prep	01/10/2024	30/12/2024
	Tranche 3 - Execution	17/03/2024	29/09/2025
	Tranche 4 - Entry Documentation	To be confirmed in future iterations	
	Tranche 4 - Env Prep	29/10/2024	27/01/2025
	Tranche 4 - Execution	14/04/2025	27/10/2025
	Tranche 5 - Entry Documentation	To be confirmed in future iterations	
	Tranche 5 - Env Prep	26/11/2024	24/02/2025
	Tranche 5 - Execution	12/05/2025	24/11/2025
	Tranche 6 - Entry Documentation	To be confirmed in future iterations	
	Tranche 6 - Env Prep	24/12/2024	24/03/2025
	Tranche 6 - Execution	09/06/2025	22/12/2025
	Tranche 7 - Entry Documentation	To be confirmed in future iterations	
	Tranche 7 - Env Prep	21/01/2025	21/04/2025
	Tranche 7 - Execution	07/07/2025	19/01/2026

Code Bodies expect participants to complete testing and qualification with all their MPIDs (associated with a particular role) in SIT or a single Qualification tranche as this is the most efficient approach, will avoid unnecessary confusion and is aligned with the REC Qualification approach of approving Qualification on a legal entity basis.

However, in some exceptional situations, having the flexibility to allow MPIDs for each organisation's specified role to undertake testing at different times would provide better outcomes and support participants in working through the Qualification requirements more quickly; in these cases, participants will still complete a single QAD but may set out Qualification evidence for each role and associated MPID separately.

Where organisations have completed the required Qualification steps for some MPIDs and not others, the Qualified MPIDs will be able to proceed into the migration phase. However, as REC Qualification is at an organisational level, it will require a Management Assertion to confirm that the remaining MPIDs will complete Qualification at a later stage.

Qualification is undertaken on a role basis and therefore organisations can undertake Qualification for a given role separately from its others if required.

11.3.3 QT Entry & Exit Criteria

This section sets out the QT entry and exit criteria.

Entry Criteria:

- PIT (DBT1): All Participants MUST complete their PIT (DBT1) testing and submit below artefacts to the Code Body governance team [*submission routes for the artefacts to be confirmed*]
 - Must Have Documents:
 - MHHS-DEL1049 PIT Approach and Plan
 - MHHS-DEL1050 PIT Requirements to Test Traceability Matrix
 - MHHS-DEL1052 PIT Test Completion Report
 - Good To have Documents:
 - MHHS-DEL1054 PIT Test Execution Progress Report
 - MHHS-DEL1051 PIT Scenarios
 - MHHS-DEL1053 PIT Test Readiness Report
- Environment Connectivity: All participants must be able to connect to UIT Environment [*LDSO Environment to be decided at a later stage*]
- Test Data: All Participants must confirm all test data requirements have been completed and validated
- Access: Required access is provided to all users to perform execution [*details for access will be defined with Environment and Release management team later*]
- Scenarios: Test cases are approved and loaded onto test management tool – ADO.
 - Test Scenarios will be defined by the Code Bodies from the SIT scope produced by MHHS by following 'Risk Based Testing' Approach for each of the Programme Participants with respect to their role(s).

Exit Criteria:

- Successful completion of testing with:
 - No outstanding Sev1/Sev2 Defects.
 - Sev3 and Sev4 Defects are documented with impacts assessment and reviewed with Code Body and a mitigation plan for any outstanding defect agreed with MHHS and Code Body governance.
 - Sev5 defects – mostly cosmetic in nature hence not considered as exit criteria
 - 100% test execution, with approval from Code Body for any de-scoped/ failed test cases.
- QT Completion Report submitted to Code Bodies to feed into wider Qualification approval decision

11.3.4 QT Assurance

Code Bodies will be performing test assurance during QT by verifying and validating the test execution of participants as per the Entry and Exit Criteria defined above (*Section 11.3.3 QT Entry & Exit Criteria*).

The approach to the assurance will be refined in future iterations of the QA&P with further clarification on Migration, Non-Functional and the Operational Testing approach for QT, and is expected to consider the following:

- Assurance of planning
- Assurance of coverage
- Assurance of readiness
- Assurance of execution

11.4 Placing Reliance

The MHHS Placing Reliance Policy has been published for consultation by the MHHS Programme and will be taken to TMAG and the BSC and REC PABs for approval. The purpose of the policy is to ensure there is no unnecessary duplication of effort for participants whilst also ensuring that the Code Bodies have sufficient assurance that participants are able to meet their Code requirements.

The criteria for placing reliance will be outlined in future versions of the QA&P and will be focused on operational processes as well as the technology stack. As with other elements of the Qualification approach, where a participant's role is covered by BSC and REC then both Code Bodies will need to approve the extent to which reliance is placed (and in the case of SIT participants, the Programme will also need to approve),

11.5 Operational Controls and Governance

The Operational Controls and Governance Section of the QAD is expected to be split into Organisation-Specific and Role-Specific sections as follows:

Organisation-specific sections:	Role-specific sections:
Company Information	Operational Solution
Programme Governance	Technical Solution
Change Management	Processes and Controls
Information Security Arrangements	Testing Requirements and Evidence

The QAD requirements relating to operational controls and governance are being developed and updates will be provided through the QWG. It is expected that Programme Participants will provide an explanation and supporting evidence of the operational controls and governance that they have in place over key risk areas identified by the Code Bodies. Code Bodies relevant to the Programme Participant's Roles may raise observations or findings and request further submission. All Code Bodies with governance responsibility for the Role must approve the operational controls and governance submission for the Organisation and Role. The list of areas below is not intended to be exhaustive compilation of what will be included on the QAD, but to provide an example of some current key considerations:

Business Solution

- People
 - o Organisation structure, including reporting and lines of communication
 - o Previous experience in the industry
- Internal Resources
 - o Expected change in resource requirements and technical capacity
 - o Monitoring of the ongoing delivery of your revised service
- External Resources
 - o Revised Supplier Agent contracts
 - o Subcontractors, third parties, and service providers relationship management

Technical Solution

- Systems
 - o In-scope system architecture
 - o Elements bespoke or common to other Participants
 - o Fault, replay, and jeopardy management
- Code Obligations
 - o Embedding Code obligations in processes and applications
 - o Monitoring for compliance with Code obligations
- Change Risk
 - o Risk assessment of changes
 - o Change management procedures
 - o Business continuity and disaster recovery arrangements
- Testing Policies (where not covered by SIT/PIT/QT)
 - o Test Strategy
 - o Defect identification and resolution
 - o Reporting and oversight of testing
- Information Security and Data Protection
 - o Risk assessment of information security and data protection
 - o Information security accreditation (e.g. ISO27001 or equivalent)
 - o Human resource security. screening and training
 - o Incident management

12 DIP Onboarding

Elexon have been appointed as the 'DIP Manager' and will be responsible for DIP Onboarding during the MHHS Programme; this will be entirely separate from Elexon's MHHS Programme role and BSC role to allow future portability if a new DIP Manager is appointed.

Programme Participants are responsible for connecting their systems to the DIP Testing Environment; the Programme's Test Environment Manager is responsible for coordinating the DIP Test Environment, and the Programme will additionally be facilitating the onboarding process to the DIP Test Environment.

Programme Participants will need to be onboarded to the Production DIP Environment to operate; Programme Participants will only be onboarded and receive their Production DIP security certificates after the relevant Code Bodies approve their MHHSP-Qualification, and this process is also expected to be facilitated by the Programme.

Further details on the DIP Onboarding process for both the Test and Production environment will be released in future iterations of the QA&P. Additionally, further technical information on the connection and security details for DIP will be provided in the MHHS DIP 094 Interface Code of Connection Guide.

13 MHHSP-Qualification Approval

To become MHHSP-Qualified, participants must complete all requirements in the QAD. All Code Bodies relevant to the participant's role(s) as per *7.1 Market Roles included in MHHSP-Qualification* above will need to approve the participant's QAD; for the avoidance of doubt, where a participant's role is governed by both BSC and REC, both will need to individually approve the MHHSP-Qualification. Both BSC and REC MHHSP-Qualification is delineated on a role basis, therefore where a participant has multiple roles, each role will be approved separately; there is no requirement for approval of these roles to be concurrent as long as the role is qualified by the timelines set out in '7.1 Market Roles included in MHHSP-Qualification'.

It is acknowledged that there is a Programme risk that individual organisations failing to qualify could impact the timing of M10 (central bodies being ready for migrating MPANs), especially in the case of MVC and LSDO participants. Readiness Assessments will be performed by the Programme throughout the MHHSP-Qualification process to help monitor this risk. Additionally, these MHHSP Readiness Assessments will be used to monitor the risk that Suppliers and LSDOs fail to meet their licence obligations to complete MHHSP-Qualification, or that BSC Parties and Party Agents fail to complete MHHSP-Qualification in line with their BSC Section C.12.12.6 requirements.

MHHSP-Qualification Approval will be solely within Code Body governance. For BSC, the MHHSP-Qualification Approval for individual participants will be a PAB Decision. It is expected that participants will be able to appeal BSC PAB decisions on MHHSP-Qualification to either the BSC PAB or BSC Panel, with the appeal mechanism to be

included in future iterations of the QA&P. For REC, the MHHSP-Qualification Approval for individual participants will be a Code Body decision. It is expected that participants will be able to appeal REC Code Manager decisions on MHHSP-Qualification to the REC PAB, with the appeal mechanism to be included in future iterations of the QA&P.

For the avoidance of doubt, participants will not be able to appeal Code Body decisions on MHHSP-Qualification to the MHHS Programme.

To be 'MHHSP-Qualified' (i.e., able to be registered or appointed to MHHS migrated metering points) for a role, the Participant must meet the following criteria:

- Be an acceded and Qualified Party in that role for all relevant Codes as per *Section 7.1 Market Roles included in MHHSP-Qualification*
- Have completed all the requirements in the QAD, with the QAD approved by all Code Bodies relevant to that role
 - All outstanding findings and observations must either be cleared, or an action plan to resolve them agreed between the Code Body who raised it and the participant

In the case that the participant has elected to Qualify MPIDs at different times, a Management Assertion to confirm that the remaining MPIDs will complete MHHSP-Qualification prior to the required date as per *Section 7.1 Market Roles included in MHHSP-Qualification*.

14 Qualification and Service Activation

A participant's MPIDs and DIP ID will be recorded in the Industry Standing Data (ISD), however, it must be clear which organisations and which of their roles are MHHSP-Qualified. This is necessary to ensure, for example, that Supplier Agents that are not MHHSP-Qualified are not appointed to MHHS migrated metering points.

One proposed solution by the BSC and REC Code Bodies is for there to be a flag in ISD to distinguish which parties are MHHSP-Qualified; when the design is confirmed this document will be updated to reflect the Service Activation process for SIT and non-SIT participants.

Service Activation for the DIP will be managed through the process outlined in *Section 12 DIP Onboarding*.

15 Appendix A

15.1 Glossary

A glossary of acronyms and terms with their definition.

Term	Definition
ADS	Advanced Data Service; governed by BSC and similar to HHDC
BAU	Business as usual; refers to before and after MHHSP Transition
BSC	Balancing and Settlement Code
BSCCo	Balancing and Settlement Code Company
Code Bodies	BSC and REC Code Bodies collectively
Code Requirements	Where not specified, both BSC and REC Code Requirements collectively
CSS	Central Switching Service
CVA	Central Volume Allocation
DBT	Design Build Test
DBT1	DBT activities required to enter either SIT or QT
DBT2	Changes that will not be tested in SIT or QT but are needed for MHHS
DIP	Data Integration Platform
DNO	Distribution Network Operator
DTN	Data Transfer Network
E2E	End-to-End; in reference to entire scope of MHHS Design
ERDA	Electricity Retail Data Agent; governed by REC

ISD	Industry Standing Data; will include some data in MDD with new standing data
LDSO	Licensed Distribution System Operators; known as DNO in REC
MDR	Metered Data Retriever; new MHHS Role governed by BSC
MHHS	Market-wide Half Hourly Settlement
MHHSP	Market-wide Half Hourly Settlement Programme
MHHSP-Qualification	Qualification completed during the MHHS Programme and governed by Code Bodies
MHHS-Qualified	A Programme Participant that has been approved by the Code Bodies to operate the new MHHS arrangements
MPID	Market Participant Identifier e.g. ABCD
MPID/Role	Market Participant Identified with Role e.g. ABCD-X
MSA	Metering Services Advanced; known as Metering Equipment Manager (Advanced) under REC
MSS	Metering Services Smart; known as Metering Equipment Manager (Smart) under REC
MVC	Minimum Viable Cohort; needed by MHHSP to sufficiently test SIT
Non-SIT participants	Programme Participants not qualifying via the SIT route; i.e. qualifying via the QT route
PABs	BSC and REC Performance Assurance Boards collectively
PIT	Pre-Integration Testing; can be split into DBT1 and DBT2
Programme	Market-wide Half Hourly Settlement Programme
QA&P	Qualification Approach and Plan; this document
QAD	Qualification Assessment Document
QT	Qualification Testing
QWG	Qualification Working Group
REC	Retail Energy Code
RECCo	Retail Energy Code Company
RTTM	Requirements to Test Traceability Matrix; a PIT document to be produced by participants
SDS	Smart Data Service; new MHHS Role governed by BSC
SEC	Smart Energy Code
SIT	Systems Integration Testing
SMRA	Supplier Meter Registration Agent; governed by BSC
SVA	Supplier Volume Allocation
TMAG	Testing and Migration Advisory Group
TOM	Target Operating Model, as augmented by MHHS-DEL622
UMSDS	Unmetered Supply Data Service; governed by BSC and similar to MA
UMSO	Unmetered Supplies Operator; governed by BSC

16 Appendix B

16.1 Intention to Qualify

Elexon and the REC Code Manager require Programme Participants to submit a signed declaration from the senior management of the of their organisation, responsible for ensuring compliance to Code requirements, confirming their intention to complete MHHSP-Qualification.

This information will be used for MHHS-Qualification planning and must include:

- A list of MPIDs by role that the organisation has acceded to the BSC and/or REC.
- A list of MPIDs by role that the organisation intends to Qualify under the MHHSP-Qualification arrangements.

- Where an organisation opts to not Qualify all MPIDs, it should provide a rationale and confirm its plans for the remaining MPIDs.
- Whether it intends to complete SIT with the MHHS Programme or will undertake QT via the non-SIT route.
- Whether it intends to delegate a third party to 'test on behalf of' or 'place reliance' on testing conducted by a third party in compliance with the MHHS Programme Placing Reliance Policy. Where an organisation opts for such arrangements, it must accept the associated risks and remain accountable for meeting Code requirements.

17 Appendix C

17.1 SIT Testing Details

For Programme Participants taking the SIT route, Code Bodies will require confirmation by receipt of SIT completion reports that the participant has completed SIT Functional, SIT Non-Functional, SIT Migration, and SIT Operational testing. This will be aligned with tranche 0 of QT schedule to Qualify SIT participants.

17.1.1 SIT Functional

Each SIT participant will be required to support other SIT participants' testing.

The identified roles required for SIT are set out in *Section 7.1 Market Roles included in MHHS-Qualification*. Please refer to MHHS-DEL872 for detailed Business Processes.

17.1.2 SIT Non-Functional

All MHHS Non-Functional Requirements (NFRs) for SIT parties will be verified by one or both of:

- Design assurance – assurance of the participant's design by the SI Design team.
- Testing – PIT testing conducted by the participant and assured by the SI Test team and/or SIT testing conducted by the participant under the guidance of the SI or directly by the SI.

Some (but not all) non-functional characteristics of MHHS will be tested in SIT. Those tested in SIT can be broadly grouped as tests relating to:

- DIP interface – How the interface to the DIP functions, such as how duplicate messages are to be handled.
- Transaction volumes – The volume of transactions be supported by certain components of the eco-system when acting together.

17.1.3 SIT Migration and Operational

This section will be updated in future iterations of the QA&P.

18 Appendix D

18.1 QT Technical Details

This section contains further technical details for QT.

18.1.1 QT Roles & Responsibilities

This section will be updated prior to the approval of the first iteration of the QA&P to expand on the QT responsibilities noted in *Section 8 Roles and Responsibilities*.

18.1.2 QT Management & Organisation

This section will be updated prior to the approval of the first iteration of the QA&P to expand on the QT management responsibilities noted in *Section 8 Roles and Responsibilities*.

The Code Bodies will be utilizing ADO tool for Test management, Test evidence and Defect management process which will be aligning to MHHS Programme.

All programme participants are expected to upload test cases/test evidence and log defects in ADO to facilitate test assurance and governance during QT

18.1.3 QT Governance & Reporting

This section will be updated prior to approval of the first iteration of the QA&P to expand on the QT governance responsibilities noted in *Section 8 Roles and Responsibilities*.

18.1.4 QT Stubs & Harnesses

Use of Stubs and Harness in Qualification will follow the process defined in MHHS plan which is due to be issued by MHHS for industry Impact Assessment on 5 April 2023; this section will therefore be updated in future iterations of the QA&P.

18.1.5 QT Defect & Issue Management

The MHHS Issue & Defect Management Plan will be used for QT. In these phases, the testing issues will be managed by the Code Bodies using ADO.

Any defect which requires central triage or which impacts another participant or the test stage as a whole, this defect will be recorded in the central system and tracked through to closure centrally by MHHS.

This section will be updated in future iterations of the QA&P.

18.1.6 QT Defect Severity Definition

Below mentioned severity definitions are in alignment with MHHS Programme. Code Bodies will follow the same approach for use in QT Exit Criteria defined in *Section 11.3.3 QT Entry & Exit Criteria*

Severity	Description
1	<p>Issue would:</p> <ul style="list-style-type: none">prevent user from using their systemshave a critical adverse impact on business activities for themselves or other participantscause significant financial lossresult in any material loss or corruption of data for themselves or other participants <p>Non-exhaustive examples are when an issue causes:</p> <ul style="list-style-type: none">non-availability of systemsall test progress to be blocked
2	<p>Issue would:</p> <ul style="list-style-type: none">have a major (but not critical) adverse impact on use of systemscause limited financial loss <p>Non-exhaustive examples are when an issue causes:</p> <ul style="list-style-type: none">non-availability or loss of resilience of a material part of their systems

	<ul style="list-style-type: none"> • large areas of functionality to be unable to be tested • testing to be significantly impacted but not completely blocked
3	<p>Issue would:</p> <ul style="list-style-type: none"> • have a major adverse impact on business activities but which can be reduced to a moderate adverse impact through a work-around • have a moderate adverse impact on the business activities <p>Non-exhaustive examples are when an issue has:</p> <ul style="list-style-type: none"> • A work-around that will impact test progress although testing is not blocked
4	<p>Issue would:</p> <ul style="list-style-type: none"> • have a minor adverse impact on business activities <p>Non-exhaustive examples are when an issue causes:</p> <ul style="list-style-type: none"> • minor service interruptions in the business process
5	<p>Issue would:</p> <ul style="list-style-type: none"> • have minimal impact on business activities <p>Non-exhaustive examples are when an issue causes:</p> <ul style="list-style-type: none"> • trivial Issues with work-around which are noted for future releases but minimal impact on running existing activities • tests to still pass but there are cosmetic issues

18.1.7 QT Data Approach

This section will be updated in future iterations of the QA&P and will follow the same approach defined by MHHS for SIT.

18.1.8 QT Environment Releases & Configuration Management

This section will be updated in future iterations of the QA&P.

18.1.9 UIT Sandbox

This section will be updated in future iterations of the QA&P.