REC Assessment Criteria for MHHS Qualification

~~26/03/2024~~18/06/2024



RETAIL ENERGY CODE

CHANGE HISTORY

Version	Status	Issue Date	Author	Comments
1.0	Final	05/09/2023	REC Code Manager	Approved by PAB
1.1	Draft	19/03/2024	REC Code Manager	Draft for PAB approval. Changes include: • Addition of Non-Functional and Migration Requirements • Updates to align with the latest version of the Qualification Approach and Plan • General housekeeping changes
2.0	Final	26/03/2024	REC Code Manager	V1.1 approved by PAB for publication
2.1	Draft	18/06/2024	REC Code Manager	Draft for PAB approval. Changes include: • Addition of Operational Testing Requirements • Updates to align with the latest version

				of the Qualification Approach and Plan and its annexes • General housekeeping changes

Contents

1 TABLE OF CONTENTS

2 Introduction 554

2.1 MHHS Qualification 554

2.2 Role of the REC Performance Assurance Board (PAB) 554

2.3 Approach for MHHS Qualification 554

2.4 High-level Requirements for Qualification 665

3 Approach for Qualification Testing 776

3.1 Purpose of Qualification Testing 776

3.2 Assumptions 776

4 REC Assessment Criteria for MHHS Qualification 10109

4.1 Functional Requirements 10109

4.1.1 DNO (including Registration Service) 10109

4.1.2 Supplier 212120

4.1.3 MEM 444443

4.2 Migration Requirements 696968

4.2.1 DNO (including Registration Service) 696968

4.2.2 SUPPLIER 757574

4.2.3 MEM 777776

4.3 Non-Functional Requirements (NFR) 808079

4.3.1 All Roles – DNO (including Registration Service), Supplier and MEM 808079

4.4 Operational Requirements 858583

4.4.1 All Roles – DNO (including Registration Service), Supplier and MEM 858583

2 INTRODUCTION

The Marketwide Half Hourly Settlement (MHHS) Programme is a major reform within the Electricity sector sponsored by Ofgem with the objective to develop and then implement an enduring process for MHHS that delivers benefits for consumers by maximising the opportunities provided by smart metering in enabling an intelligent, flexible electricity system. MHHS will change many processes that are governed under the Balancing and Settlement Code (BSC). However, it will also result in changes under the Retail Energy Code (REC), which will need changes to processes for electricity Suppliers, electricity Metering Equipment Managers (MEMs), Distribution Network Operators (DNOs, including the Registration Service operated by DNOs), Electricity Enquiry Service (EES) and Central Switching Service (CSS), with associated technology changes.

2.1 MHHS QUALIFICATION

The MHHS Programme does not deliver Qualification activities, with this responsibility remaining with the Balancing and Settlement Code Company (BSCCo) and the REC Code Manager.
MHHS Qualification assesses whether Programme participants that plan to operate in MHHS arrangements, have the appropriate systems, processes and controls in place to undertake relevant BSC and REC processes.
To assess this, the REC Code Manager and BSCCo are jointly developing the Qualification process in consultation with Programme participants through the Qualification Working Group (QWG).

2.2 ROLE OF THE REC PERFORMANCE ASSURANCE BOARD (PAB)

The REC PAB's role within the MHHS Qualification process is to:

- Set the policy, approach, and risk appetite for MHHS Qualification under REC.
- Take key decisions on the nature, extent, and timing of assurance activities.
- Discharge the responsibility to make individual Qualification decisions to the REC Code Manager.

2.3 APPROACH FOR MHHS QUALIFICATION

The REC Code Manager, jointly with the BSCCo, is responsible for developing two key artefacts for Qualification – the Qualification Approach and Plan (QA&P) and the Qualification Assessment Document (QAD).
The QA&P sets out the purpose of Qualification during the MHHS Programme and the high-level plan and requirements for Programme participants in relation to the BSC and REC. The latest version (v2.0) of the QA&P ~~will be~~was published in ~~March~~ April 2024, following approval from the Qualification Advisory Group (QAG) of the MHHS Programme and the REC and BSC PABs. The Code Bodies (REC Code Manager and BSCCo) will continue to update this on an iterative basis as additional information is published by the MHHS Programme, with the expectation to baseline the document in August 2024.

The Code Bodies ~~are currently developing~~have developed the Qualification Assessment Document (QAD) that ~~will be~~is based on the principles set within the QA&P and ~~will~~ provides a detailed view on MHHS Qualification requirements for Programme participants by market roles they intend to operate in the new arrangements. This document will be further iterated with the baseline expected to be delivered in August 2024.

To develop this, the REC Code Manager, along with RECCo, has reviewed the business, migration, ~~and~~ non-functional, and operational requirements by role for DNOs, electricity Suppliers and electricity MEMs published by MHHS Programme to identify areas relevant for REC, assessed the associated retail risks, and developed the assessment criteria by role as outlined in this document and approved by REC PAB. This is based on the existing requirements within the current design baseline. ~~The lower-level detail, including the approach to testing new response timescales (defined in the Operational Choreography) will be applied following agreement of the high-level approach.~~ Some areas of design are still outstanding, e.g. lower-level service management requirements. We expect these to be developed by Elexon and tested centrally through SIT Operational testing facilitated by MHHS Programme. These may also need to be tested during ~~Qualification~~ PIT and covered through questions within the QAD. Whilst the Code Manager has anticipated how these would be covered during Qualification, ~~T~~this document ~~will be~~may require further update~~d~~ once further clarity on the lower-level detail is available from the MHHS Programme.

2.4 HIGH-LEVEL REQUIREMENTS FOR QUALIFICATION

To complete MHHS Qualification, a Programme participant needs to complete the following:

- Pre-Integration Testing (PIT)[1]: All participants will complete internal testing to evidence they have designed, built and tested their systems to operate within the MHHS arrangements. This evidence will be used to also cover risks where testing is not possible in the central integrated environment, as well as in cases where sufficient assurance can be gained from the review of PIT evidence, and further testing within the central integrated environment is not required.
- System Integration Testing (SIT) or Qualification Testing (QT): Depending on the route to Qualification a participant opts for, they will need to complete end-to-end testing in an integrated environment either through SIT facilitated by the Programme, or through QT facilitated by the Code Bodies to prove interoperability with other Market Participants.
- QAD: All participants will complete the QAD, where they will provide details and evidence that their business solution – comprising business processes, local work instructions, management procedures and IT applications – meets their Code requirements that are changing.

[1] As per the E2E Testing and Integration Strategy published by MHHS Programme, Programme participants are expected to carry out a final test where all components are tested for business scenarios in an end-to-end manner which is often referenced as User Acceptance Testing (UAT). PIT refers to this UAT and not to any earlier tests carried out as part of development.

3 APPROACH FOR QUALIFICATION TESTING

3.1 PURPOSE OF QUALIFICATION TESTING

The REC Code Manager and BSCCo will use Qualification Testing to satisfy the following objectives:

- Mitigating risk: Testing beyond what has been tested by the Participant in PIT, allows us to cover high-risk interfaces and business processes.
- Efficiency during QAD completion: By conducting a test, we can reduce the amount of evidence required to demonstrate participant's ability to meet the requirements.
- Efficiency during testing review: To have a test conducted with defined scripts mitigates the risk of different parties operating the test differently.

3.2 ASSUMPTIONS

The REC Code Manager has made the following assumptions, which may be revised as further information is made available:

- No Qualification Testing will be required where MHHS requirements are entirely reflective of existing functionality. For example, existing Data Transfer Network (DTN) interfaces that will be retained under MHHS, Supplier interfaces with CSS, execution of on-site metering works by MEMs.
- The Data Interface Platform (DIP) Manager / MHHS Programme will support Programme participants' onboarding to the DIP, including appointment of security officers and provision of testing security certificates.
- Previously, we had assumed the DIP Manager / MHHS Programme will provide a minimum level of DIP Connectivity Testing, which covers testing the sending / receipt of each DIP Interface relevant to each market role the participant is applying to qualify for, and were intending to place reliance on this testing to support Qualification. However, the scope of testing completed as part of DIP onboarding has been clarified and is no longer expected to cover the sending / receipt of each DIP interface relevant to each market role the participant is applying to qualify for. ~~Instead, it will only cover the sending and receipt of one DIP interface.~~ Therefore, requirements previously marked as covered by DIP Connectivity Testing in version 1 of this document have ~~now~~ been moved into the scope for Qualification Testing from version 2 onwards.
- No testing is required for the Unmetered Supplies Operator (UMSO) under the REC.
- Registration Service functionality relating to exchange and validation[2] of DIP Interfaces sits with the Supplier Meter Registration Service (SMRS) under the Balancing and Settlement Code (BSC)

[2] The IF/PUB messages sent over the DIP are subject to the following validation checks:
- The DIP will check for errors within message structure and invalid values within fields (i.e., character type and length, but not combination of values) at the following levels:
  - Level 1: Synchronous errors that are returned by the API.
  - Level 2: Asynchronous errors that are returned using a message status transaction.
- The recipient will perform the following validation checks wherein the combination of values will be checked for errors:
  - Level 3: Synchronous errors that are returned using a message status transaction.

governance. Therefore, REC will place reliance on BSC testing, provided this includes testing of all DIP interactions relevant to the Registration Service role using a version of the MPRS solution hosted by each DNO.

- The User Interface Testing (UIT) environment will include integration with DIP to cover level 1 and level 2 validation[2] of DIP interface flows during testing.
- The UIT environment will include integration with the Registration Service, or a Registration Service emulator will be available to support testing, to cover level 3 and level 4 validation[2] and business rule validation[2] completed by the Registration Service.
- Where Qualification Testing is required in the UIT environment, SIT test scenarios will cover the required scope of testing and will be adapted for use by the REC Code Manager and BSCCo. Where required, test scenarios may be combined to facilitate end-to-end scenarios which allow coverage of more requirements through fewer tests.
- Appointment of Data Service, Transfer of Reads, Data Collection, Data Processing, Annual Consumption and Consumption Amendment processes are not governed under the REC and therefore not captured in this document. The Code Manager will place reliance on BSC-led testing to mitigate any associated REC risks.
- MEMs will need to specify whether they wish to Qualify for Smart and / or Advanced Market Segments and their individual Qualification requirements will reflect this. This may require creation of additional test case variants to ensure each participant can demonstrate sufficient coverage of the Market Segment they intend to operate.
- At present, the Supplier role doesn't accommodate Qualification to be restricted to only Smart or only Advanced Market Segment. Therefore, all Suppliers will be required to demonstrate they have systems and processes in place to manage both Market Segments to gain MHHS Qualification. Whilst PAB are considering some exemption on this topic, until those are approved and implemented through the required governance routes, Suppliers are required to proceed with their MHHS Qualification on the basis that not exemptions are permitted from Smart and or Advanced Market Segment requirements.
- BSC PAB have however approved that Suppliers who do not operate or intend to operate Unmetered Supplies (UMS) can opt for an exemption from those requirements for MHHS Qualification. These are governed under the BSC only and therefore do not impact the Supplier's scope for MHHS Qualification under the REC.
- Migration Design will be tested through SIT. Qualification Testing will assure individual Participants' ability to complete Migration scenarios.

  - Level 4: Asynchronous errors that are returned using a message status transaction.
  - Level 5: Business Process Validation (e.g., the request date is on or after the MPAN creation date) returned using a defined IF/PUB message.
  - Level 6: Third Party Request Outcome i.e. where the request is accepted or rejected using a defined IF/PUB message.

- Non-Functional Requirements will be assured in line with the approach proposed within MHHS-DEL2128 NFR Categorisation document produced by MHHS Programme through consultation with the Non-Functional Testing Working Group (NFTWG) and reviewed by BSC and REC.
- Operational Design will be tested through SIT. Code Bodies intend to use Qualification Testing to gain additional assurance on Participants' ability to meet key requirements such as Operational Choreography timescales. Testing of some of these requirements within Qualification Testing may be combined with Functional Test Scenarios to streamline testing execution.
- As the Central and Participant systems used in Qualification Testing are not expected to be scaled environments, Code Bodies will rely on PIT to assure Participants' ability to meet certain non-functional and operational requirements. This will also be supplemented with questions within the QAD where the Participant will be required to describe controls they will operate to ensure requirements are met along with an assertion from the Company Director that their systems are compliant and will meet Code requirements.

4 REC ASSESSMENT CRITERIA FOR MHHS QUALIFICATION

The following assessment criteria by role has been developed by the REC Code Manager and approved by REC PAB on 05 September 2023. This ~~will~~ may be updated as further information is published by the MHHS Programme.

4.1 FUNCTIONAL REQUIREMENTS

The following assessment criteria to cover MHHS Business Requirements (Functional) by role has been developed by the REC Code Manager and approved by REC PAB on 05 September 2023. This will be updated as further information is published by the MHHS Programme. This is based on:

- MHHSP-BRS002 Metering Services Requirements v5.5
- MHHSP-BRS003 Registration Services Requirements v5.4
- MHHSP-BRS004 Supplier Overview Requirements v5.2
- MHHSP-BRS005 LDSO Overview Requirements v5.2

4.1.1 DNO (INCLUDING REGISTRATION SERVICE)

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
DNO	MEM Appointment – DNO requires MEM details to support metering activities	MHHS-BR-LD-002	LDSO must obtain Metering Service de-appointments via the appropriate interface on the Data Integration Platform and maintain records accordingly. In the case where Related MPANs or Import/Export linked meters exist, LDSO should expect to receive de-appointment notifications for all the MPANs in the Related MPAN or Import/Export group.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement – MHHS change is limited to the use of the DIP (IF036 / IF037) DNO can check MEM details via the EES.	✓	✓	✓	QAD question to determine whether the DNO is amending existing systems / processes. PIT evidence demonstrating how the DNO maintains MEM appointment data Where the DNO is using the DIP, the Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-LD-003	LDSO must obtain Metering Service notification updates via the appropriate interface on the Data Integration Platform, maintain records accordingly and investigate any discrepancies with data received from the Metering Service via the DTN. In the case where Related MPANs or Import/Export linked meters exist, LDSO should expect to receive appointment notifications							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			for all the MPANs in the Related MPAN or Import/Export group.							
		MHHS-BR-LD-021	LDSO must obtain Service Provider de-appointment notifications via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
DNO	Energisation Status Details - DNOs requires details of energisation status change and associated reads	MHHS-BR-LD-024	LDSO must obtain updates on Change of Energisation status via the appropriate interface on the Data Integration Platform and maintain records accordingly.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement – MHHS change is limited to the use of the DIP (IF008, IF041) and receipt of data from Data Service (D0010). DNO can check energisation status via the EES.	✓	✓	✓	QAD question to determine whether the DNO is amending existing systems / processes. PIT evidence demonstrating how the DNO maintains Energisation Status data. Where the DNO is using the DIP, the Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-LD-025	LDSO must receive Change of Energisation cumulative reads sent by the Metering Service via the appropriate interface and maintain records accordingly.							
		MHHS-BR-LD-026	LDSO must receive Change of Energisation register reads from the Data Service via the appropriate interface and maintain records accordingly.							
DNO	DNO Change of Energisation Status – DNO requirements to take and share reads when they change the	MHHS-BR-LD-022	LDSO must be able to receive a Change of Energisation status request via the appropriate interface.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement – MHHS change is limited to the new market roles for MEM DTN messages (D0139 / D0179)	✓	✓		QAD question regarding the change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating testing completed using the new DTN market roles. No Qualification Testing expected.
		MHHS-BR-LD-023	LDSO must be able to process a Change in Energisation status and provide the outcome and reads, where appropriate, to the							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
	energisation status		Metering Service via the appropriate interface.							
DNO	Maintenance of Meter Technical Details (MTDs)	MHHS-BR-LD-027	LDSO must, for Advanced Meters, receive the Meter Technical Details, Commissioning Flows and Meter Readings from the Metering Service via the appropriate interfaces and maintain records accordingly.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement – MHHS change is limited to the use of the DIP (IF006) and receipt of MTDs from MEMs with new Market Roles via the DTN (D0149 / 150 and D0268). DNO can check MTDs via the EES.	✓	✓	✓	QAD question to determine whether the DNO is amending existing systems / processes for interactions with the DIP. QAD question regarding the change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating how the DNO maintains MTDs, including tests completed using the new DTN market roles and potentially the DIP Simulator. Where the DNO is using the DIP, the Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-LD-028	LDSO must, for Traditional Meters, receive the new Meter Technical Details & register readings from the Metering Service via the appropriate interfaces and maintain records accordingly.							
		MHHS-BR-LD-030	LDSO must obtain Change of Metering acceptances via the appropriate interface on the Data Integration Platform and maintain records accordingly							
		MHHS-BR-LD-054	LDSO must obtain Change of Metering acceptances, following on site works by the prospective Metering Service for a Change in Market Segment, via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
DNO	Sharing Site Technical Details – DNO required to share details	MHHS-BR-LD-012.1	LDSO must, on receipt of a Metering Service request (D0170), send Site Technical Details to the Metering Service via the appropriate interface	Retail Risk 7: Inaccurate meter point master data results in	Low	Existing requirement – MHHS change is limited to the new market roles for MEM DTN messages (D0170 / D0215)	✓	✓		QAD question regarding the change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating testing

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
	on request from the MEM.			errors that impact consumers.						completed using the new DTN market roles. No Qualification Testing expected.
DNO	Disconnection – DNO to disconnect metering point and send notifications	MHHS-BR-LD-016	LDSO must be able to receive a customer disconnection request and carry out the physical disconnection where the request is valid.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement – MHHS change is limited to receipt of disconnection notification from the SMRS (IF-009)	✓	✓	✓	QAD question to determine whether the DNO is amending existing systems / processes. PIT evidence demonstrating how the DNO maintains connection status of metering points. Where the DNO is using the DIP, the Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-LD-017	LDSO must be able to receive a disconnection request from the Supplier via the appropriate flow and carry out the physical disconnection where the request is valid.							
		MHHS-BR-LD-018	LDSO must update records of any disconnected MPANs and notify the Registration Service on completion of a physical disconnection via an internal flow.							
		MHHS-BR-LD-019	LDSO must be able to send a rejection to the Supplier with a rejection reason, where the disconnection request is not valid, via the appropriate interface.							
		MHHS-BR-LD-020	LDSO must obtain details of disconnections from the Registration Service via the appropriate interface on the Data Integration Platform.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
DNO	Meter Removal – existing requirements to remove meters e.g. emergencies	MHHS-BR-LD-031	LDSO must follow existing processes for notifying Suppliers and Metering Services of any LDSO led removal of metering equipment (e.g. Emergencies).	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement – MHHS change is limited to the new market roles for MEM DTN messages (D0010)	✓	✓		QAD question regarding the change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating testing completed using the new DTN market roles. No Qualification Testing expected.
DNO	Address Data – DNOs required to maintain MPL Address	MHHS-BR-LD-033	LDSO must send notification to the Registration Service of any changes of MPL Address and/or GSP Group ID via internal interface.	Retail Risk 6: Inaccurate Address Management data results in errors that impact consumers.	Low	Existing requirement – no change for MHHS	✓			QAD question to confirm whether any changes have been made to existing systems / processes. No Qualification Testing expected.
DNO	Domestic Premise Indicator / Energy Direction / Metered Status	MHHS-BR-RS-034	Registration Service must check for any linked Export MPANs when a Metering Service appointment has been confirmed.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	MHHS change is limited to the use of the DIP (IF018). DNO can check MTDs via the EES.	✓	✓	✓	QAD question to determine whether the DNO is amending existing systems / processes. PIT evidence demonstrating how the DNO maintains Related Metering Point data. Where the DNO is using the DIP, the Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-RS-040	Registration Service must hold a history of Metering Service customer direct contract flags against each MPAN. This must consist of the following new data items: Customer Direct Contract Metering Service DIP ID Customer Direct Contract Metering Service Effective To Date.							
		MHHS-BR-RS-043	Registration Service must obtain Supplier Service Appointment Requests for a proposed Data Service via the appropriate							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			interface on the Data Integration Platform.							
DNO	Related Metering Points – DNOs required to maintain records	MHHS-BR-LD-037	LDSO must obtain successful Related MPAN updates, issued by Registration Service on the Data Integration Platform, via the appropriate interface and maintain records accordingly.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement - MHHS change is limited to the use of the DIP (IF020). DNO can check MTDs via the EES.	✓	✓	✓	QAD question to determine whether the DNO is amending existing systems / processes. PIT evidence demonstrating how the DNO maintains Related Metering Point data. Where the DNO is using the DIP, the Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
DNO	Change of Connection Type – limited to coordination with MEM on MTD updates	MHHS-BR-LD-047	LDSO must receive requests from the Supplier to change the Connection Type via a bilaterally agreed communication method.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing provisions exist for changing Connection Type – MHHS change relates to operational choreography to ensure any associated change of market segment / change of meter is co-ordinated.	✓	✓		QAD question to confirm that the DNO understands the link between this process and wider MEM / Registration Service activities. QAD question requiring evidence that procedure documentation reflects the engagement with MEMs and updating SMRS within [2WDs]. No Qualification Testing required for the REC but option to place reliance on BSC testing covering the end to end change of market segment process.
		MHHS-BR-LD-048	LDSO must liaise with the Supplier to agree and confirm a target work date.							
		MHHS-BR-LD-049	LDSO must carry out the agreed change of Connection Type site work in line with the Supplier request and on the agreed date.							
		MHHS-BR-LD-050	LDSO must notify the Supplier via a bilaterally agreed mechanism, if the Connection Type site work cannot be completed on the agreed date							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-LD-051	LDSO must notify the Registration Service via internal interface, when the Connection Type has been successfully updated. LDSO should provide the update as quickly as possible, but no later than 2 working days after completion of the work. In the case of Related MPANs the LDSO must update and notify changes for all Secondary MPANs in line with the Connection Type for the Primary MPAN. In the case of linked Import/Export MPANs, the LDSO must update and notify changes for all Export MPANs in line with the Connection Type for the linked Import MPAN.							
DNO	Commissioning – requirement on DNO to share commissioning details	MHHS-BR-LD-054	LDSO must obtain Change of Metering acceptances, following on site works by the prospective Metering Service for a Change in Market Segment, via the appropriate interface on the Data Integration Platform and maintain records accordingly.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement – MHHS change is limited to the new market roles for MEM DTN messages (D0383 / D0384)	✓	✓		QAD question regarding the change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating testing completed using the new DTN market roles. No Qualification Testing expected.
DNO	ISD – DNOs required to receive ISD updates	MHHS-BR-LD-059	All Parties must obtain Industry Standing Data (ISD) update notifications via the appropriate interface, and if required take necessary steps to obtain refreshed ISD data, maintain their records accordingly and reference/ utilise ISD as	Various	Low	The majority of ISD data required to support retail activities is available within the EES. Potential duplication if this functionality is being tested under the BSC.	✓	✓	✓	QAD question to determine whether the DNO is amending existing systems / processes. PIT evidence demonstrating how the DNO maintains standing data. Where the DNO is using the DIP, the Code

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			appropriate as part of the service delivery.							Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
DNO	Generic requirements associated with DIP Interfaces	MHHS-BR-LD-058	All Parties must publish data following ISO8601 format - YYYY-MM-DDTHH:MM:SS±TZH:TZM.	Various	Low	The DNO requirements reference the following DIP interfaces: - IF036 / IF037 – receipt of MEM appointment / de-appointment (expect this to be tested under the BSC in relation to Data Service Appointment). Do not see the need to test receipt of the de-appointment IF037. - IF041 – receipt of read data (expect this to tested under the BSC in relation to Data Service sharing of reads.) - IF-009 – receipt of disconnection data. Do not think there are any retail risks associated with the DNO not receiving this data as long as the registration service has the correct status - IF008 – receipt of change of energisation status. Potential flow may be tested under the BSC. - IF006 – receipt of MTDs. To be tested.	✓	✓	✓	QAD question to determine whether the DNO is utilising the DIP (NB: this is dependent on outcome of Programme query on whether DIP interfaces are mandatory for DNOs). PIT evidence demonstrating interactions using the DIP simulator. Where the DNO is using the DIP, the Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-LD-059.1	All Parties must utilise Industry Standing Data to identify the relevant DIP ID/Role or DTN Market Participant ID/Role, as appropriate, to be used when communicating over the DIP/DTN.							
		MHHS-BR-LD-059.2	All Parties must derive and populate the DIP addressing (primary recipients) for all outbound interfaces in line with the rules described in the interface specification							
		MHHS-BR-LD-062	All Parties must obtain Data Integration Platform error messages in line with the End to End Solution Architecture Document, review the impacted data and re-issue corrected messages/transactions as required							
		MHHS-BR-LD-063	All Parties must return Data Integration Platform error messages in line with the End to							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			End Solution Architecture. Unexpected and/or un-processable messages should be returned to the DIP/ originating party			- IF020 – receipt of metering point relationships (expect this to be tested under the BSC in relation to import / export associations) - IF018 / IF026 receipt of updates to registration data. To be tested.				
		MHHS-BR-LD-064	All Parties, when transacting via the DIP, must ensure that they implement monitoring so as to identify where expected responses are not received within standard DIP SLAs, as outlined in the Operational Choreography, so that the appropriate investigative/ resolution activity can be undertaken.							
DNO	Meter Data Retriever (MDR) Appointment Update to CSS – new requirement to send MDR data and receive response as per R044	MHHS-BR-RS-078.1	Registration Service must, on notification that a Meter Data Retriever MDR appointment is ending, send an update to CSS/DCC to end date the MDR appointment using the existing Electricity Retail Data Service (ERDS) interface	Retail Risk 2: The privacy of consumer data is compromised by inappropriate use of Parties' processes and protocols	Low	New process and amended interface introduced via R0044. Inaccurate MDR data is not a retail risk but this is a key process to support settlement activities.	✓	✓		QAD question regarding implementation of the change to gain evidence from testing. PIT evidence demonstrating interactions using the CSS simulator. The Code Manager will place reliance on SIT evidence demonstrating end to end process within MPRS (the system used by the Registration Service).
		MHHS-BR-RS-078	Registration Service must, on successful completion of a Change in Meter Data Retriever (MDR), send an update to CSS/DCC of the new MDR using the existing Electricity Retail Data Service (ERDS) interface.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-RS-078.2	Registration Service must populate the ERDS interface with: 1. The four digit Market Participant Identifier derived from the DIP/DTN routing look-up list in ISD, based on the DIP ID/ DIP Role code provided in the appointment 2. The Role Code for MDR should be set to "MDR" 3. The Effective From Date of the MDR 4. The Effective To Date of the MDR (Only expected when end dating following notification of "de-appointment") 5. CSS Registration ID							
		MHHS-BR-RS-079	Registration Service must receive a response from CSS/DCC as to whether the MDR details have been updated, using the Electricity Retail Data Service (ERDS) interface. Registration Service should maintain a flag against the SDS/MDR appointment record to show the most recent CSS update outcome.							
DNO	MEM Appointment Update to CSS – existing requirement to	N/A	N/A	N/A – current process is monitored via ERDA SLA reporting, and this is	Low	Existing process. Only change is that the ERDS will need to take both Smart and Advanced MEM details and send with role code M.	✓	✓		QAD question regarding implementation of the change to gain evidence from testing. PIT evidence demonstrating interactions using the CSS simulator.

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
	send MEM data to CSS			deemed as low risk.						SIT evidence demonstrating end to end process – reliance to be places on the testing conducted by St Clements and the SIT participants.

4.1.2 SUPPLIER

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
Supplier	New connection – covering initial establishment of the metering point	MHHS-BR-SU-048.1	Supplier must request LDSO to create a new MPAN when a new Connection is required. Supplier will need to specify the anticipated: Connection Type, Energy Direction, Metered/Un-Metered Indicator & Market Segment required for the new MPAN.	Retail Risk 1: Consumer supply point interruption due to a lack of action or incorrect action by REC Parties.	Low	Existing business processes in terms of interaction with the DNO. Changes to reflect new data required in the SDEP message. This scenario has not captured the Initial Registration with CSS, agent appointment or meter installation as they are reflected below	✓	✓		QAD question regarding the changes to the existing process in particular recognition of the new data items required within a request to the DNO for a new metering point to be established (see SDEP requirements). PIT evidence demonstrating how the Supplier has tested the changes to the request for new metering points solution. No Qualification Testing expected
Supplier	Initial Registration and Switch – In addition to receiving the existing CSS flows, a Supplier will receive DIP interfaces which trigger downstream activities	MHHS-BR-SU-001	Supplier must be able to obtain registration details via the appropriate interface on the Data Integration Platform and maintain records accordingly.	Retail Risk 8: Delayed Switches provides a negative customer experience of the energy market.	Low	DIP interfaces replace existing DTN flows. Whilst the IF002 notification of a Pending Switch triggers agent appointment, the Supplier triggered the Switch request so should be expecting the DIP message. Similarly, the IF001 is received at Secured Active and should coincide with the notification from CSS.	✓	✓	✓	QAD question relating to controls in place to monitor for missing or erroneous DIP interfaces. PIT evidence demonstrating how the Supplier has tested the changes to the Switch process (including agent appointment). The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing. This will be covered as part of appointment scenarios – see below.
		MHHS-BR-SU-004	Supplier must be able to obtain registration details via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-SU-048	Supplier must be able to receive notification that initial registration is secured from CSS.							
		MHHS-BR-SU-049	Supplier must be able to obtain registration details for an Initial Registration via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
Supplier	Metering Service Appointment /	MHHS-BR-	Supplier must determine when it requires to appoint a new Metering Service as part of a	Retail Risk 1: Consumer supply point	Medium	Significant change from existing appointment process.	✓	✓	✓	QAD question(s) regarding the Supplier's implementation of the revised MEM (and Data Service for BSC) process. In particular this

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
	De-appointment NB: This includes scenarios both with and without a Switch.	SU-005	Change of Supplier, New Connection, Change of Market Segment or Change of Metering Service process.	interruption due to a lack of action or incorrect action by REC Parties. Retail Risk 8: Delayed Switches provides a negative customer experience of the energy market.		New event driven architecture and reduced settlement timetable places onus on Supplier to ensure activities are completed in a timely manner. Includes sending and receiving DIP interfaces (IF-031, IF-032. IF-035, IF-036, IF-037, IF-039) and existing process for notifying customer and PSR details. Also includes steps related to MTD receipt via the IF006 and relevant DTN flows.				should capture the distinction between new market segments and the need to appoint agents with appropriate qualification and the approach to design, build and test of the new end to end process. QAD question regarding the Supplier's controls in place to manage Supplier Agent activities to ensure the end to end process is carried out within MHHS defined timescales. QAD question regarding the changes required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating Supplier's testing of the new process, including different scenarios: Switch, Change of MEM without a Switch and Initial Registration for different market segments and testing the new DTN market roles, and new DIP interfaces using the DIP Simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing. End to end business process to be assured through Qualification Testing within the UIT environment, including integration with the Registration Service or an equivalent stub. This should include Switch, Change of MEM without a Switch (including change of Market Segment) and Initial Registration for individual Metering Points and those with related
		MHHS-BR-SU-006	Supplier must publish a new Metering Service appointment request using the appropriate interface on the Data Integration Platform.							
		MHHS-BR-SU-007	Supplier should check that the request is in line with the validation rules outlined in the appropriate interface specification.							
		MHHS-BR-SU-008	Supplier must obtain initial Metering Service rejected appointments from the Registration Service via the appropriate interface on the Data Integration Platform, maintain records accordingly and re-issue Metering Service appointment request as appropriate.							
		MHHS-BR-SU-009	Supplier must obtain initial Metering Service accepted appointments from the Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-SU-010	Supplier must obtain Registration Service Appointment Status Notification updates, with Prospective Metering Service accepted appointments, via the							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			appropriate interface on the Data Integration Platform and maintain records accordingly.							secondary metering points or associated export.
		MHHS-BR-SU-011	Supplier must obtain Registration Service Appointment Status Notification updates, with Prospective Metering Service lapsed/rejected appointments, via the appropriate interface on the Data Integration Platform, maintain records accordingly and re-issue a new Metering Service appointment request as appropriate.							
		MHHS-BR-SU-012	Supplier must obtain Metering Service de-appointment notifications via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-SU-013	Supplier must obtain Registration Service Notification of Service Appointment & Supporting Info via the appropriate interface on the Data Integration Platform and update registration and metering details. For the avoidance of doubt this is the message that indicates that a Metering Service appointment will/has taken effect.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-014	Supplier must receive Meter Technical Details for Advanced meters via the appropriate interface (D0268 on DTN) from Metering Service and maintain records accordingly. In the case where Related MPANs or Import/Export linked meters exist, Supplier should expect to receive Meter Technical Details for all the MPANs in the Related MPAN or Import/Export group.							
		MHHS-BR-SU-015	Supplier must receive Meter Technical Details for Traditional meters via the appropriate interfaces (D0149 and D0150 on DTN) from Metering Service and maintain records accordingly. In the case where Related MPANs or Import/Export linked meters exist, Supplier should expect to receive Meter Technical Details for all the MPANs in the Related MPAN or Import/Export group.							
		MHHS-BR-SU-016	Supplier must obtain de-appointment notifications for any Secondary Related MPANs and/or linked Export MPANs, sent from the Registration Service on the Data Integration Platform, via the appropriate interface and maintain records accordingly.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-017	Supplier must obtain appointment notifications for any Secondary Related MPANs and/or linked Export MPANs, sent from the Registration Service on the Data Integration Platform, via the appropriate interface and maintain records accordingly.							
		MHHS-BR-SU-059	Supplier must obtain Service Provider de-appointment notifications via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-SU-106	Supplier must obtain de-appointment notifications for any Secondary Related MPANs and/or linked Export MPANs, sent from the Registration Service (following MPAN alignment monitoring) on the Data Integration Platform, via the appropriate interface and maintain records accordingly. Supplier should expect to receive automatic notification of the correct Service Provider.							
		MHHS-BR-SU-107	Supplier must obtain appointment notifications for any Secondary Related MPANs and/or linked Export MPANs, sent from the Registration Service (following MPAN alignment monitoring) on the							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			Data Integration Platform, via the appropriate interface and maintain records accordingly.							
		MHHS-BR-SU-135	Supplier must send Notification of Customer Details to the Data Service via the appropriate interface on any change of occupancy.							
		MHHS-BR-SU-136	Supplier must send Priority Service Details to the Data Service via the appropriate interface on any update to the Priority Service Register.							
Supplier	Appointment Amendment	MHHS-BR-SU-031	Supplier must determine when it needs to vary the conditions of an existing Service Provider appointment , for example to change the contract code or change the MDR (SDS only).	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Potentially not relevant to the REC. The process reflects the standard appointment process (using a different event code) so no additional testing proposed.	✓	✓		QAD question regarding the Supplier's expected use for this process to determine whether the Supplier is amending existing systems and/or processes. Reliance then placed on testing of the appointment process scenarios including the Suppliers PIT and testing in the UIT environment for an Appointment Amendment scenario.
		MHHS-BR-SU-032	Supplier must publish a Supplier Service Appointment Request for a proposed Service Provider amendment via the appropriate interface on the Data Integration Platform							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-033	Supplier must obtain Registration Service Response to Supplier Service Appointment Requests, with rejected appointments, via the appropriate interface on the Data Integration Platform, maintain records accordingly and re-issue the Service Provider Appointment Amendment request as appropriate							
		MHHS-BR-SU-034	Supplier must obtain Registration Service Response to Supplier Service Appointment Requests, with accepted appointments, via the appropriate interface on the Data Integration Platform and maintain records accordingly							
		MHHS-BR-SU-035	Supplier must obtain Registration Service Appointment Status Notification updates, with Service Provider accepted amended appointments, via the appropriate interface on the Data Integration Platform and maintain records accordingly. This confirms that the Service Provider amendment has been successfully completed.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-036	Supplier must obtain Registration Service Appointment Status Notification updates, with Service Provider rejected amended appointments, via the appropriate interface on the Data Integration Platform, maintain records accordingly and re-issue a new Service Provider appointment amendment request as appropriate.							
Supplier	Missing or Disputed Switch Meter Reads	MHHS-BR-SU-158	Supplier must, where there is a missing transfer read or there is an issue with a transfer read received, provide a suggested transfer read to the other Supplier via the appropriate interface	Retail Risk 5: Consumers do not receive an accurate first and final bill, which leads to high customer dissatisfaction.	Low	Limited change to the existing Disputed / Missing Read process (main change is associated with the triggers rather than the business process). NB: the steps relating to the Supplier notifying the Data Service of the agreed read have not been includes (SU-161 and SU-162) as these should be reflected within BSC elements of testing.	✓	✓		QAD question regarding the change required to reflect the amended Switch Meter Read exceptions process, specifically recognising the amendments to the triggers for raising a dispute, the extension of the application to cover half hourly metering points and the differing approach for different market segments. PIT evidence demonstrating how the Supplier has tested the revised process, including amended D0300 market message. No Qualification Testing expected.
		MHHS-BR-SU-159	Supplier must receive proposed transfer reads via the appropriate interface and validate that the read is acceptable							
		MHHS-BR-SU-160	Supplier must provide a response to the proposed read request via the appropriate interface							
Supplier	Meter Works – covering standard requests for the MEM to carry out	MHHS-BR-SU-050	Supplier must, where appropriate, following appointment of the relevant Metering Service, request a new meter is installed in line with the Change of Metering process.	Retail Risk 1: Consumer supply point interruption due to a lack of action or	Low	Existing approach to requesting change (D0142, D0001), managing issues where activity has failed to complete (D0002, D0221) and receiving MTDs (D0149 / 150 and D0268) – MHHS change is limited	✓	✓	✓	QAD question regarding the end to end meter works process – whilst most elements of this process are existing functionality, ensuring the Supplier understands the changes to the existing process is important.

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
	metering activities	MHHS-BR-SU-052	Supplier must, where required, request that any existing metering equipment is removed in line with the Change of Metering process.	incorrect action by REC Parties. Retail Risk 13: Retail consumers have a negative customer experience as part of the metering works conducted.		to the new market roles for MEM DTN messages. New DIP interface for receipt of MTDs via the Registration Service (IF006) and receipt of associated cumulative meter reads (IF041). NB: Existing step to configure a smart device in accordance with the SEC (SU-074 has not been included.)				QAD question regarding the change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating testing completed using the new DTN market roles and the new DIP interfaces using the DIP simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-SU-066	Supplier must be able to send a request to fit, exchange or remove a meter via the appropriate interface							
		MHHS-BR-SU-067	Supplier must be able to receive Fault Resolution Report or Request for decision on Further action via the appropriate interface							
		MHHS-BR-SU-068	Supplier must be able to receive Notification of Failure to Install or Energise Metering System via the appropriate interface							
		MHHS-BR-SU-069	Supplier must be able to obtain and process metering change acceptances received from the Registration Service via the appropriate interface on the Data Integration Platform							
		MHHS-BR-SU-070	Supplier must be able to receive Meter Technical Details and register meter reads for Advanced/Traditional meters via the appropriate interfaces							
		MHHS-BR-SU-071	Supplier should reconcile the metering details received from Registration Service with information from the Metering Service and investigate any discrepancies if required.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-072	Supplier must be able to obtain and process metering change cumulative reads received via the appropriate interface on the Data Integration Platform							
		MHHS-BR-SU-073	Supplier must be able to install and commission a Smart meter in line with the Smart Energy Code							
		MHHS-BR-SU-132	Supplier must notify faulty equipment it identifies to the ADS and receive updates via the appropriate interfaces as outlined in the relevant BSCP.							
		MHHS-BR-SU-133	Supplier must receive notification of any faulty equipment from the SDS via a D0001 or bilaterally agreed interface as outlined in the relevant BSCP. For Smart and Traditional meters the Supplier will take the lead investigating faults. The Supplier will be responsible for notifying the Data Service if they require data to be resubmitted as a result of a fault.							
Supplier	Disconnection – steps within BP007 cut across a number of scenarios including meter	MHHS-BR-SU-051	Supplier must identify that a disconnection is required, following existing internal processes.	Retail Risk 5: Consumers do not receive an accurate first and final bill, which leads to high customer dissatisfaction.	Low	No change to existing interactions with the DNO – note that these are captured in the DCUSA and the BSC. Receipt of the IF009 (SU-056) is the only new element within this scenario.	✓	✓	✓	QAD question regarding the end to end disconnection process – whilst most elements of this process are existing functionality, ensuring the supplier understands how these come together into a single business process is key. PIT evidence demonstrating the end to end
		MHHS-BR-SU-054	Supplier must be able to request the LDSO to disconnect a Meter Point via the appropriate interface							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
	works and appointments	MHHS-BR-SU-055	Supplier must be able to receive a rejection to the disconnection request from the LDSO via the appropriate interface and action, as appropriate, based on the rejection reason.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.		NB: Existing steps to deactivate the CSS registration are not included (SU-057.1, SU-058) and requirements relating to meter removal (SU-052), de-energisation (SU-053) and agent appointment (SU-059) are covered elsewhere.				process has been tested using DIP simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-SU-056	Supplier must be able to receive confirmation of disconnection of an MPAN via the appropriate interface and maintain records accordingly.							
Supplier	Change of Energisation Status	MHHS-BR-SU-053	Supplier must, before disconnection, ensure that the Meter Point is de-energised.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers. Retail Risk 8: Delayed Switches provides a negative customer experience of the energy market.	Low	Existing requirement regarding request for energisation status change – MHHS change is limited to the new market roles for MEM DTN messages (D0134 / D0179 D0010). Receipt of the IF007 (SU-061), IF008 (SU-064) IF041 (SU-063) are the only new elements within this scenario.	✓	✓	✓	QAD question regarding the end to end change of energisation process – whilst most elements of this process are existing functionality, ensuring the supplier understands how these come together into a single business process is key. QAD question regarding the change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating testing completed using the new DTN market roles and new DIP interfaces using the DIP simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-SU-060	Supplier must, on identifying a need to change energisation status for an MPAN, request the Meter Service or LDSO (as appropriate) to change the energisation status via the appropriate interface.							
		MHHS-BR-SU-061	Supplier must obtain notifications of a rejection or unable to action a Change of Energisation request via the appropriate interface on the Data Integration Platform and action, as appropriate, based on the rejection reason.							
		MHHS-BR-SU-062	Supplier must, for traditional pre payment meters, receive a D0179 from the Metering Service with the pre-payment change in energisation details.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-063	Supplier must obtain Advanced and Smart cumulative reads for the energisation change, sent by the Metering Service on the Data Integration Platform, via the appropriate interface.							
		MHHS-BR-SU-064	Supplier must obtain accepted Change of Energisation status notifications from the Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-SU-065	Supplier must receive register reads, for non-Smart meters, for the energisation change via the appropriate interface.							
Supplier	Maintenance of Supplier Owned Registration Data	MHHS-BR-SU-076	Supplier must send Central Switching Service updates on domestic premise indicator via the appropriate interface.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers. Retail Risk 10: Inaccurate data or data	Medium	A summary of each data item is set out below: - Domestic Premises Indicator: No change to approach for updating DPI via the CSS. The Supplier will receive update via IF018. - Consent Granularity: governed under the BSC. - Related MPAN: see below.	✓	✓	✓	QAD question regarding maintenance of Supplier owned data – noting that a change to the notification process is only required for IHD, SMSO and Profile Class /SSC updates. PIT evidence demonstrating testing completed using the DIP simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing. This will include IHD, SMSO and Profile Class / SSC updates.
		MHHS-BR-SU-077	Supplier must obtain domestic premise indicator updates via the appropriate interface on the Data Integration Platform and maintain records accordingly. Supplier should consider if there is any impact on the Consent Granularity Indicator.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-078	Supplier must be able to publish Consent Granularity Indicator updates on the Data Integration Platform via the appropriate interface, following customer notification of a change in consent, review following domestic premise indicator update or installation of a new Smart meter.	that is not maintained appropriately leads to delay in the switching process.		- Import / Export association: governed under the BSC. - IHD details: new requirement for supplier to provide IHD details (IF025) and receive updates via IF026. - SMSO details: new requirement for supplier to provide SMSO details (IF025) and receive updates via IF026. - Profile Class / SSC details -new requirement for supplier to provide Profile Class / SSC details (IF025) and receive updates via IF026.				
		MHHS-BR-SU-079	Supplier must obtain Consent Granularity Indicator updates via the appropriate interface on the Data Integration Platform and action as appropriate.							
		MHHS-BR-SU-090	Supplier must, where changes to In-House Display (IHD) details are identified, publish an IHD update to Registration Service via the appropriate interface on the Data Integration Platform.							
		MHHS-BR-SU-091	Supplier must obtain IHD updates from Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-SU-092	Supplier must, where changes to Smart Metering System Operator (SMSO) are identified, publish an SMSO update to Registration Service via the appropriate interface on the Data Integration Platform.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-093	Supplier must obtain SMSO updates from Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-SU-094	Supplier must, where changes to Import/Export linkages are required, publish an Import/ Export linkage update to Registration Service via the appropriate interface on the Data Integration Platform.							
		MHHS-BR-SU-096.1	Supplier must, where changes to legacy data items (Profile Class/SSC) are identified, publish a legacy data update to Registration Service via the appropriate interface on the Data Integration Platform.							
		MHHS-BR-SU-096.2	Supplier must obtain legacy data item (Profile Class/SSC) updates from Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-SU-096.3	Supplier must be able to obtain DCC enrolment updates via the appropriate interface on the Data Integration Platform and maintain records accordingly.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
Supplier	Maintenance of Non Supplier Owned Registration Data	MHHS-BR-SU-075	Supplier must obtain MPL address/ GSP Group ID updates via the appropriate interface on the Data Integration Platform and maintain records accordingly. Supplier should consider if there are any impacts on Service Provider appointments.	Retail Risk 6: Inaccurate Address Management data results in errors that impact customers. Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers. Retail Risk 10: Inaccurate data or data that is not maintained appropriately leads to delay in the switching process.	Low	A summary of each data item is set out below: - MPL Address: No change to approach for updating MPL address. Supplier to receive update via IF018. - DUoS Tariff Id: Not relevant to REC. - Energy Direction: No change to approach for updating Energy Direction. Supplier to receive update via IF018. - Metered Status: No change to approach for updating Metered Status. Supplier to receive update via IF018. - Customer Direct Contract: New data maintained by the Data Service / Metering Service. Supplier involvement limited to receipt of IF-039.	✓	✓	✓	QAD question regarding maintenance of Non Supplier owned data – noting that the only design change is receipt of data via a DIP interface. PIT evidence demonstrating testing completed using the DIP simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-SU-075.1	Supplier must notify the LDSO of any changes to MPL address that it becomes aware of (outside of the PUB-018 notification) via email/ SDEP or other bilaterally agreed mechanism							
		MHHS-BR-SU-080	Supplier must be able to obtain DUoS Tariff ID updates via the appropriate interface on the Data Integration Platform							
		MHHS-BR-SU-075	Supplier must obtain MPL address/ GSP Group ID updates via the appropriate interface on the Data Integration Platform and maintain records accordingly. Supplier should consider if there are any impacts on Service Provider appointments.							
		MHHS-BR-SU-084	Supplier must, where required, request the LDSO to carry out the one time update to the Energy direction via a bilaterally agreed mechanism (eg SDEP or email)							
		MHHS-BR-	Supplier must manage any rejections to the Energy Direction							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		SU-085	update and re-submit as appropriate							
		MHHS-BR-SU-086	Supplier must be able to obtain Energy Direction updates via the appropriate interface on the Data Integration Platform and maintain records accordingly							
		MHHS-BR-SU-087	Supplier must, where required, request the LDSO to carry out the one time update to the Metered Status via a bilaterally agreed mechanism (eg SDEP or email)							
		MHHS-BR-SU-088	Supplier must manage any rejections to the Metered Status update and re-submit as appropriate							
		MHHS-BR-SU-089	Supplier must be able to obtain Metered Status updates via the appropriate interface on the Data Integration Platform and maintain records accordingly							
		MHHS-BR-SU-096.3	Supplier must be able to obtain DCC enrolment updates via the appropriate interface on the Data Integration Platform and maintain records accordingly							
		MHHS-BR-SU-018	Supplier must obtain Customer Direct Contract response via the appropriate interface on the Data Integration Platform and maintain records accordingly. Supplier should utilise this information in future requests for Metering							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			Service appointments for the notified MPANs.							
Supplier	Maintenance of Related Metering Point data	MHHS-BR-SU-081	Supplier must notify Registration Service of any change required to the Metering Point Relationships using the appropriate interface on the Data Integration Platform	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Medium	New end to end process for managing Related Metering point relationship including IF019 to notify the Registration Service about creation of, changes to or ending relationship and IF020 to receive notifications from the Registration Service. NB: MHHS is introducing greater reliance on related metering point relationships for agent appointments so ensuring this works and suppliers have appropriate systems and process in place for maintaining this data is key. However, the application of this process is infrequent.	✓	✓	✓	QAD question regarding maintenance of Related Metering Point data and seeking assurance that the Supplier understands the changes to the use of this data being introduced with MHHS e.g. auto appointment / de-appointment of agents. PIT evidence demonstrating testing completed using the DIP simulator. The Code Manager will require evidence of the DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. Related Metering Point updates to be assured through Qualification Testing within the UIT environment, including integration with the Registration Service or an equivalent stub.
		MHHS-BR-SU-083	Supplier must be able to obtain Related MPAN updates via the appropriate interface on the Data Integration Platform and maintain records accordingly							
		MHHS-BR-SU-131	All Parties, where required, must be able to identify (using the appropriate interface) and appropriately manage related MPANs as described in the Retail Energy Code.							
Supplier	Change of Market Segment	MHHS-BR-SU-097	Supplier must identify when a Change of Connection Type or Market Segment is required following a customer request for change to the connection/metering. The Supplier must liaise with the customer, LDSO and Metering Service as appropriate to coordinate the change and agree a target work date.	Retail Risk 1: Consumer supply point interruption due to a lack of action or incorrect action by REC Parties. Retail Risk 13:	Low	No change to existing interactions with the DNO regarding change to connection type. NB: these are captured in the DCUSA and the BSC. Also existing approach to requesting meter exchange with MEM (noting the change to DTN flows to reflect new market roles).	✓	✓	✓	QAD question regarding the end to end change of market segment process. Whilst most elements of this process are existing functionality, ensuring the Supplier understands how these come together into a single business process is key. QAD should be seeking assurance that the Supplier understands the relevance of this process to wider aspects of the business e.g. appointment / de-appointment of agents.

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-098	Supplier must send a request to the LDSO to change the Connection Type via a bilaterally agreed communication method, where it is identified that a Change of Connection Type is required.	Retail consumers have a negative customer experience as part of the metering works conducted.		Receipt of the IF043 for change of connection type and IF044 for change of market segment are is the only new elements within this scenario. Whilst a number of process steps are governed under the DCUSA / BSC, the impact on agent appointment and metering updates means this is an area REC Qualification requirements should cover.				PIT evidence demonstrating the end to end process has been tested using DIP simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing. This will be covered as part of appointment scenarios – see above.
		MHHS-BR-SU-099	Supplier must send a request to the Proposed Metering Service to change the Metering via a bilaterally agreed communication method, where it is identified that a Change of Market Segment is required.							
		MHHS-BR-SU-100	Supplier must receive confirmation from the LDSO of the agreed target work date for any Change to Connection Type requests via a bilaterally agreed communication method.							
		MHHS-BR-SU-101	Supplier must receive confirmation from the Proposed Metering Service of the agreed target work date for any Change to Market Segment requests via a bilaterally agreed communication method.							
		MHHS-BR-SU-102	Supplier must, where it identifies that new Service Providers are needed, trigger Service Appointments using the Change of Metering Service and Change of Data Service processes, with a scenario of "SEG".							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-103	Supplier must work closely with all parties involved to ensure that the Target Date will be achieved. If Supplier is informed that the date has had to be moved Supplier should re-submit any Service Appointments for the new Target Date							
		MHHS-BR-SU-104	Supplier must obtain Connection Type updates from the Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly. Supplier should monitor for these updates after the agreed target work date and liaise with LDSO to ensure a prompt update.							
		MHHS-BR-SU-105	Supplier must obtain Market Segment updates from the Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly. Supplier should monitor for these updates after the agreed target work date and liaise with Metering Service/LDSO, as appropriate, to ensure a prompt update.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
Supplier	Monitoring Service Advisories	MHHS-BR-SU-108	Supplier must obtain Missing Service Provider Advisory notifications, sent from the Registration Service on the Data Integration Platform, via the appropriate interface and investigate why no Service Provider has been appointed. If necessary Supplier should trigger a new Service Provider appointment.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	New advisory messages issued by the Registration Service relating to missing supplier agents and invalid market segment. Inconsistent consent advisory not relevant to the REC (SU-110)	✓	✓	✓	QAD question regarding receipt of advisory messages and controls / processes in place to resolve identified issues. PIT evidence demonstrating testing completed using the DIP simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
		MHHS-BR-SU-109	Supplier must obtain Invalid Market Segment Advisory notifications, sent from the Registration Service on the Data Integration Platform, via the appropriate interface. Supplier must investigate with the Metering Service and/or LDSO to agree the necessary action to resolve the mismatch of Connection Type to Meter Type combination.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
Supplier	Migration Requirements	N/A	N/A	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	The migration process will be similar to a standard change of agent, therefore testing will be required as separate appointment scenario's (Switch and non Switch). The Supplier's ability to manage the migration in line with the Migration Plan is not in the scope of REC Qualification and will be managed by the programme. Legacy Supplier requirements for e.g. the Gaining Supplier in a Reverse Migration are not in the scope of REC Qualification as Suppliers will need to ensure they can meet these requirements from M11 / M12 which may precede Qualification.	✓	✓	✓	QAD question to assure the Supplier's understanding of the migration process and the options available through a Switch e.g. option to forward migrate or retain metering point in legacy arrangements. PIT evidence and Qualification Testing to demonstrate end to end migration with and without Switch. This should be captured as a separate scenario under the MEM appointment process described above.
Supplier	ISD – Suppliers required to receive ISD updates	MHHS-BR-SU-123	All Parties must obtain Industry Standing Data (ISD) update notifications via the appropriate interface, and if required take necessary steps to obtain refreshed ISD data, maintain their records accordingly and reference/ utilise ISD as appropriate as part of the service delivery.	Various	Low	The majority of ISD data required to support retail activities is available within the EES. Potential duplication if this functionality is being tested under the BSC.	✓	✓		QAD question to determine whether the Supplier is amending existing systems / processes. PIT evidence demonstrating how the Supplier maintains standing data. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing.
Supplier	Generic requirements associated	MHHS-BR-SU-122	All Parties must publish data following ISO8601 format - YYYY-MM-DDTHH:MM:SS±TZH:TZM.	Various	Low	Suppliers are required to receive data via a variety of new DIP interfaces. These have been referenced against the specific	✓	✓	✓	QAD question regarding approach to implementing the new DIP interfaces and controls in place to manage message exceptions.

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
	with DIP Interfaces	MHHS-BR-SU-123.1	All Parties must utilise Industry Standing Data to identify the relevant DIP ID/Role or DTN Market Participant ID/Role, as appropriate, to be used when communicating over the DIP/DTN.			processes detailed above and will be captured in testing as required. This row has been included to captured generic DIP related requirements and is not proposing any addition testing above that already detailed above.				PIT evidence demonstrating interactions using the DIP simulator. The Code Manager will require evidence of coverage of the DIP Interface within Qualification Testing. This will capture core business processes where the Supplier is sending messages to the Registration Service to initiate further downstream activities.
		MHHS-BR-SU-123.2	All Parties must derive and populate the DIP addressing (primary recipients) for all outbound interfaces in line with the rules described in the interface specification.							
		MHHS-BR-SU-124	All Parties must process data and share outputs with other parties in line with timescales set out in the Operational Choreography document.							
		MHHS-BR-SU-126	All Parties must obtain Data Integration Platform error messages in line with the End to End Solution Architecture Document, review the impacted data and re-issue corrected messages/transactions as required							
		MHHS-BR-SU-127	All Parties must return Data Integration Platform error messages in line with the End to End Solution Architecture. Unexpected and/or un-processable messages should be returned to the DIP/ originating party							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-SU-128	All Parties, when transacting via the DIP, must ensure that they implement monitoring so as to identify where expected responses are not received within standard DIP SLAs, as outlined in the Operational Choreography, so that the appropriate investigative/ resolution activity can be undertaken.							
		MHHS-BR-SU-129	All Parties must have familiarity with and actively monitor any Data Integration Platform tools for tracking messages, as outlined in the End to End Solution Architecture, so that the necessary investigative action can be taken when required.							
		MHHS-BR-SU-140	All Parties must maintain and update their records with any data received on interfaces to ensure the most accurate and efficient delivery of the service.							

4.1.3 MEM

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
MEM	Metering Service Appointment / De-appointment – with and without a Switch / Initial Registration	MHHS-BR-MS-001	Metering Service must obtain Registration Service Request for Service Appointment with Metering Service proposed appointment requests, via the appropriate interface on the Data Integration Platform.	Retail Risk 1: Consumer supply point interruption due to a lack of action or incorrect action by REC Parties. Retail Risk 2: The privacy of consumer data is compromised by inappropriate use of parties' processes and protocols. Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Medium	Significant change from existing appointment process. New event driven architecture and reduced settlement timetable requires appointment activities to completed in a timely manner. Includes sending and receiving DIP interfaces (IF-033, IF-034. IF-035, IF-036. IF-037) and sending MTDs via the IF005 and relevant DTN flows.	✓	✓	✓	QAD question(s) regarding the MEM implementation of the revised appointment process. In particular this should capture: - The distinction between new market segments and the need to review appointment requests to ensure they have the appropriate Qualification. - The approach to design, build and test of the new end to end process including the new DIP interfaces. - Controls in place to ensure responses are sent within MHHS defined timescales. - Change required to reflect the new MEM Market Roles within DTN messaging. - Recognition of scenarios where the MEM will be auto de-appointed by the Registration Service e.g. following registration de-activation. - Recognition of the approach to managing appointments for relating and import / export Metering Points. PIT evidence demonstrating MEM testing of the new process, including different scenarios: Switch, Change of MEM without a Switch (including change of Market Segment) and Initial Registration for different market
		MHHS-BR-MS-002	Metering Service must confirm that they are certified to service the connection type and able to contractually deliver the Metering Service based on the information contained in the proposed appointment request and publish a response (acceptance or rejection) on the Data Integration Platform via the appropriate interface. Where a request is rejected the Metering Service must provide an appropriate rejection reason in the response. When the appointment request is accepted the Metering Service should be aware that at this point the appointment remains "prospective" and there is a possibility that it may need to be lapsed at a later stage.							
		MHHS-BR-MS-003	Metering Service must, for any proposed appointments it rejects, delete any metering							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			details received, within 30 days of notifying the rejection.							segments. Testing to include the new DTN market roles and new DIP interfaces using the DIP Simulator. The Code Manager will require evidence of the DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. End to end business process to be assured through Qualification Testing within the UIT environment, including integration with the Registration Service or an equivalent stub. This should include Switch, Change of MEM without a Switch (including change of Market Segment) and Initial Registration for individual Metering Points and those with related secondary metering points or associated export.
		MHHS-BR-MS-004	Metering Service must be able to process requests to vary the conditions of an existing appointment received via the appropriate interface. For example change of contract code. These should be validated and an outcome returned using the appropriate interface. In the case of rejection the existing appointment will continue unamended.							
		MHHS-BR-MS-005	Metering Service must obtain Registration Service Notification of Service De-Appointments via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-MS-006	Metering Service must obtain Registration Service Appointment Status Notifications, with prospective Metering Service appointments, via the appropriate interface on the Data Integration Platform and maintain records of prospective Metering Service.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-006.1	Metering Service must obtain Registration Service Appointment Status Notification updates, acknowledging the Prospective Metering Service accepted/rejected appointments, via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-MS-007	Metering Service must obtain Registration Service Notification of Service Appointment & Supporting Info updates, with confirmed Metering Service appointments, via the appropriate interface on the Data Integration Platform and update records with MPAN and Meter Technical Details (ADS and SDS only). For the avoidance of doubt this is the message that indicates that an appointment will/has taken effect.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-008	MSA/MSS must obtain Export MPAN appointments via the appropriate interface on the Data Integration Platform and update records with registration and metering details. MSA/MSS should note this message will be automatically triggered when a change of Metering Service has successfully completed for the linked import MPAN. (i.e. acceptance of the Export MPAN was implicit in the accepting the appointment to the Import MPAN).							
		MHHS-BR-MS-008.1	MSA/MSS must obtain Related MPAN appointments via the appropriate interface on the Data Integration Platform and update records with registration and metering details. MSA/MSS should note this message will be automatically triggered when a change of Metering Service has successfully completed for the Primary Related MPAN.							
		MHHS-BR-MS-009	MSA/MSS must obtain Export MPAN de-appointments via the appropriate interface on the Data Integration Platform and maintain records accordingly. MSA/MSS should note this message will be automatically triggered when a change of							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			Metering Service has successfully completed for the linked import MPAN.							
		MHHS-BR-MS-009.1	MSA/MSS must obtain Related MPAN de-appointments via the appropriate interface on the Data Integration Platform and maintain records accordingly. MSA/MSS should note this message will be automatically triggered when a change of Metering Service has successfully completed for the Primary Related MPAN.							
		MHHS-BR-MS-017	MSA must be able to send Meter Technical Details and commissioning information to a prospective MSA, on receipt of a notification of that prospective MSA, via the appropriate interface. In the case where Related MPANs or Import/Export linked meters are notified with the prospective MSA, Meter Technical Details must be sent for all the MPANs in the Related MPAN or Import/Export group.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-018	MSS must be able to send Meter Technical Details to a prospective MSS for Traditional meters, on receipt of a notification of that prospective MSS, via the appropriate interface. In the case where Related MPANs or Import/Export linked meters are notified with the prospective MSA, Meter Technical Details must be sent for all the MPANs in the Related MPAN or Import/Export group.							
		MHHS-BR-MS-019	MSA must be able to receive Meter Technical Details and commissioning information from the incumbent Metering Service via the appropriate interfaces and maintain records accordingly.							
		MHHS-BR-MS-020	MSS must be able to receive Meter Technical Details from the incumbent Metering Service for Traditional meters via the appropriate interface and maintain records accordingly.							
		MHHS-BR-MS-021	MSA/MSS must investigate with the Metering Service where Meter Technical Details are not received for Advanced/ Traditional meters in expected timescales as outlined in the Operational Choreography.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-022	MSA/MSS must be able to investigate any discrepancies in Meter Technical Details received from the incumbent Metering Service and those received from the Registration Service. This should identify if Meter Technical Details have been updated between the Metering Service originally receiving the MTDs from the incumbent Metering Service and the time the appointment is confirmed by the Registration Service. In these circumstances the new Metering Service should request a refresh of the MTDs from the incumbent Metering Service.							
		MHHS-BR-MS-023	MSA must be able to send Meter Technical Details to the Supplier, LDSO and Data Service via the appropriate interface. In the event that the Meter Technical Details get refreshed from the incumbent MSA, the new MSA should re-send the MTDs on to the Supplier, LDSO and Data Service.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-024	MSS must be able to send Meter Technical Details to the Supplier, LDSO and Data Service for Traditional meters via the appropriate interface. In the event that the Meter Technical Details get refreshed from the incumbent MSS, the new MSS should re-send the MTDs on to the Supplier, LDSO and Data Service.							
		MHHS-BR-MS-025	Metering Service must obtain Registration Service Appointment Status Notifications, with Metering Service lapsed appointments, via the appropriate interface on the Data Integration Platform and update records accordingly so as to ensure that that the appointment does not become effective. Metering Service must delete meter technical details received for all lapsed appointments within 30 days.							
		MHHS-BR-MS-040	Metering Service must obtain Registration Service Notification of Service De-Appointments, with a de-appointment reason of disconnection, via the appropriate interface on the Data Integration Platform and maintain records accordingly.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-086	MSA/MSS must, on receipt of updated customer details delete or obfuscate the previously held customer details as soon as they are no longer required.							
		MHHS-BR-MS-087	MSA/MSS must receive Priority Service Details from the Supplier via the appropriate interface and maintain records accordingly.							
		MHHS-BR-MS-088	MSA/MSS must, on receipt of updated PSR details delete or obfuscate the previously held PSR details as soon as they are no longer required.							
		MHHS-BR-MS-088.1	MSA/MSS must, on receipt of a de-appointment notification becoming effective, delete or obfuscate the previously held PSR and customer details as soon as they are no longer required.							
MEM	Manage Customer Direct Contract	MHHS-BR-MS-010	Metering Service must publish a Customer Direct Contract Advisory on the Data Integration Platform via the appropriate interface for each MPAN that forms part of the contract, this will also include the contract end date. This can be done only where a contract has been formally agreed with the customer.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Whilst this is a new process introduced for MHHS, the impact on parties and consumers is relatively low as the flag is an optional indicator for Suppliers to get visibility of Customer Direct Contracts.	✓	✓	✓	QAD question regarding the maintenance of Customer Direct Contract data and seeking assurance that the MEM understands the requirements and has systems and processes in place to maintain the data within the Registration Service. PIT evidence demonstrating MEM testing of the new process using the DIP Simulator. The Code Manager will require evidence of the

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-011	Metering Service must obtain Registration Service Customer Direct Contract Advisory Responses via the appropriate interface on the Data Integration Platform.							DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. End to end business process to be assured through Qualification Testing within the UIT environment, including integration with the Registration Service or an equivalent stub .
		MHHS-BR-MS-012	Metering Service must, for accepted responses, maintain records to show which MPANs have been flagged as a customer direct contract.							
		MHHS-BR-MS-013	Metering Service must continue to manually coordinate the appointment of MPANs within the contract with other industry participants.							
		MHHS-BR-MS-014	Metering Service must have the ability to cancel or change the end date of a customer direct contract using the appropriate interface on the Data Integration platform.							
		MHHS-BR-MS-015	Metering Service must investigate any rejections of customer direct contracts and re-submit as appropriate.							
		MHHS-BR-MS-016	Metering Service must, in the case of rejection for an existing contract, liaise with their customer and other participants to determine why it appears overlapping contracts might exist.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
MEM	Change of Data Service – the MEM is captured within these requirements on the basis they must send MTDs to the new DS	MHHS-BR-MS-026	Metering Service must obtain Registration Service Appointment Status Notifications, with prospective Data Service appointments, via the appropriate interface on the Data Integration Platform and maintain records of prospective Data Service.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	The MEM is required to send MTDs to the Data Service to support settlement activities. NB: Whilst this does not have direct retail risk impact, inaction or delay in action from MEM can lead to inaccurate meter point data being held across the agents. Receipt of IF035 and IF036 DIP interfaces will be covered through the MEM appointment testing. The MTDs will be sent via existing DTN flows, so the impact is limited to the change required to reflect the new Market Roles.	✓	✓		QAD question regarding the end to end Data Service Appointment process to ensure MEMs recognise the need to process IF035s relating to DS Appointment. QAD question regarding the change required to reflect the new Data Service Market Roles within DTN messaging. PIT evidence demonstrating testing completed using the new DTN market roles and the new DIP interfaces using the DIP simulator. No Qualification Testing expected.
		MHHS-BR-MS-027	MSA must be able to send Meter Technical Details to a prospective Advanced Data Service, on receipt of a notification of that prospective ADS, via the appropriate interface. In the case where Related MPANs or Import/Export linked meters are notified with the prospective ADS, Meter Technical Details must be sent for all the MPANs in the Related MPAN or Import/Export group.							
		MHHS-BR-MS-028	MSS must be able to send Meter Technical Details to a prospective Smart Data Service for Traditional meters, on receipt of a notification of that prospective SDS, via the appropriate interface. In the case where Related MPANs or Import/Export linked meters are notified with the prospective SDS, Meter Technical Details							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			must be sent for all the MPANs in the Related MPAN or Import/Export group.							
		MHHS-BR-MS-030	Metering Service must obtain Registration Service Notification of Service Appointment & Supporting Info updates, with confirmed Data Service appointments, via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
MEM	Manage Site Technical Detail Requests	MHHS-BR-MS-037.1	MSA/MSS must receive site technical details from the LDSO via the appropriate interface.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	Low	Existing requirement – MHHS change is limited to the new market roles for MEM DTN messages (D0170 / D0215)	✓	✓		QAD question regarding the change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating testing completed using the new DTN market roles. No Qualification Testing expected.
		MHHS-BR-MS-037.1	MSA/MSS must receive site technical details from the LDSO via the appropriate interface.							
MEM	Change of Energisation	MHHS-BR-MS-041	Metering Service must be able to receive a change of energisation status request via the appropriate interface.	Retail Risk 7: Inaccurate meter point master data	Medium	Existing requirement regarding request for energisation status change. MHHS change is limited to the new market roles for MEM DTN	✓	✓	✓	QAD question(s) regarding the MEM implementation of the revised change of energisation process. In particular this should capture:

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-042	Metering Service must be able to receive a change of energisation status outcome from the LDSO via the appropriate interface.	results in errors that impact consumers.		messages (D0134 / D0179 D0010). However, there is a wider change to manage ongoing communication. No change to the actual delivery of physical meter works.				- The approach to design, build and test of the new end to end process including the new DIP interfaces. - Controls in place to ensure responses are sent within MHHS defined timescales. - Change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating MEM testing of the new process. Testing to include the new DTN market roles and new DIP interfaces using the DIP Simulator. The Code Manager will require evidence of the DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. End to end business process to be assured through Qualification Testing within the UIT environment, including integration with the Registration Service or an equivalent stub. This should include acceptance and rejection of the initial supplier request and interaction with meter installation, exchange and removal.
		MHHS-BR-MS-042.1	Metering Service must be able to publish a notification to the Supplier, advising when a change in energisation status cannot be actioned, to the Data Integration Platform via the appropriate interface.							
		MHHS-BR-MS-043	MSA/MSS must be able to capture Advanced and Smart cumulative reads and publish the reads to the Data Integration Platform via the appropriate interface.							
		MHHS-BR-MS-044	MSA/MSS should attempt to recover UTC Period Level Consumption Data, for Advanced and Smart meters (not UMS or Traditional), in line with contractual agreements and share via an agreed mechanism.							
		MHHS-BR-MS-045	MSA must be able to process a change in energisation status for an Advanced meter and provide register reads to the Data Service via the appropriate interface.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-046	MSS must be able to process a change in energisation status for a Traditional meter and provide register reads to Data Service via the appropriate interface.							
		MHHS-BR-MS-046.1	MSS must, for traditional pre payment meters, issue a D0179 to the Supplier via the appropriate interface.							
		MHHS-BR-MS-049	Metering Service must be able to provide updated energisation status details to the Data Integration Platform via the appropriate interface.							
		MHHS-BR-MS-050	Metering Service must be able to obtain and process Registration Service Notification of Change of Energisation Status updates via the appropriate interface on the Data Integration Platform. Any rejections should be investigated and re-submitted as appropriate.							
MEM	Meter Works – including install, remove, exchange, plus general fault resolution			Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	High	Existing approach to requesting change (D0142, D0001), managing issues where activity has failed to complete (D0002, D0221), sending MTDs (D0149 / 150 and D0268) and carrying out Proving Tests. However, there is a wider change to manage ongoing	✓	✓	✓	QAD question(s) regarding the MEM implementation of the revised metering process. In particular this should capture: - The approach to design, build and test of the new end to end process including the new DIP interfaces. - Controls in place to ensure responses are
		MHHS-BR-MS-051	MSA/MSS must be able to receive a metering request via the appropriate interface and							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			arrange for the meter works as per the request.			communications of reads and MTDs. No change to the actual delivery of physical meter works – change is focused on the communication. Risk rating driven by the fact this is a high frequency activity with a number of new DIP interfaces.				sent within MHHS defined timescales. - Change required to reflect the new MEM Market Roles within DTN messaging. PIT evidence demonstrating MEM testing of the new process. Testing to include the new DTN market roles and new DIP interfaces using the DIP Simulator. The Code Manager will require evidence of the DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. End to end business process to be assured through Qualification Testing within the UIT environment, including integration with the Registration Service or an equivalent stub. This should include acceptance and rejection of the initial supplier request and interaction with change of energisation process.
		MHHS-BR-MS-052	MSA/MSS must be able to notify a Fault Resolution Report or Request for decision on Further action via the appropriate interface.							
		MHHS-BR-MS-053	MSA/MSS must be able to provide Notification of Failure to Install or Energise Metering System via the appropriate interface.							
		MHHS-BR-MS-054	MSA/MSS must be able to capture cumulative reads from the meter while on site.							
		MHHS-BR-MS-055	MSA/MSS must, in line with bilateral service agreements, be able to capture Advanced and Smart UTC Period Level Consumption Data and provide the data to the Supplier.							
		MHHS-BR-MS-056	MSA/MSS must be able to install, remove and exchange meters in line with industry codes.							
		MHHS-BR-MS-057	MSA/MSS must, if required, be able to update the energisation status of a newly fitted meter.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-058	MSA/MSS must be able to publish updated metering details on the Data Integration Platform via the appropriate interface.							
		MHHS-BR-MS-058.1	MSA/MSS must notify the MAP of installation/ removal of assets using the appropriate interface.							
		MHHS-BR-MS-058.2	MSA/MSS must receive updates to the Meter Asset Provider (MAP) via the appropriate interface and maintain records accordingly.							
		MHHS-BR-MS-058.3	MSA/MSS must publish updated MAP details on the Data Integration Platform via the appropriate interface.							
		MHHS-BR-MS-059	MSA/MSS must be able to obtain and process meter change acceptances received via the appropriate interface on the Data Integration Platform.							
		MHHS-BR-MS-060	MSA/MSS must be able to obtain and investigate feedback on meter change rejections received via the appropriate interface on the Data Integration Platform.							
		MHHS-BR-MS-061	MSA/MSS must, for Smart and Advanced meters, be able to publish meter change cumulative reads on the Data Integration Platform via the appropriate interface.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-062	MSA must be able to send , following receipt of a meter change acceptance from the Registration Service, Meter Technical Details, commissioning details and register meter readings via the appropriate interfaces to the Data Service, Supplier and LDSO.							
		MHHS-BR-MS-063	MSS must be able to send, following receipt of a meter change acceptance from the Registration Service, Meter Technical Details, mapping details and register meter readings via the appropriate interface to the Data Service, Supplier and LDSO.							
		MHHS-BR-MS-078	MSA must investigate and provide feedback on any faulty equipment notified by the ADS or Supplier via the appropriate interfaces as outlined in Retail Energy Code (REC) Schedule 14 – Metering Operations.							
		MHHS-BR-MS-079	MSS must investigate any faulty equipment notified by the Supplier via the appropriate interface as outlined in Retail Energy Code (REC) Schedule 14 – Metering Operations.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-080.1	MSA must manage proving test processes in line with the existing Half Hourly Data Collection processes as outlined in BSCP-502 section 3.5.							
MEM	MTD Update	N/A	There are no specific requirements within MHHS relating to generic update to MTDs outside a wider metering business process.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.	High	In practice MEMs are required to maintain MTDs and provide updates where attributes change or where they identify an earlier error. This is captured by a Meter Update or Meter History Update within the IF005.	✓	✓	✓	QAD question regarding the MEM approach to providing generic meter updates. PIT evidence demonstrating MEM testing of the interface using the DIP Simulator. The Code Manager will require evidence of the DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. End to end business process to be assured through Qualification Testing within the UIT environment, including integration with the Registration Service or an equivalent stub. This should include positive and negative testing to reflect the IF005 validation rules.
MEM	Maintenance of Registration Data	MHHS-BR-MS-065	Metering Service must obtain MPL address/ GSP Group ID updates via the appropriate interface on the Data Integration Platform and maintain records accordingly.	Retail Risk 6: Inaccurate Address Management data results in errors that	Low	A summary of each data item is set out below: - MPL Address: No change to approach for updating MPL address. MEM to receive update	✓	✓	✓	QAD question regarding maintenance of registration data – noting that the only design change is receipt of data via a DIP interface. Propose a specific question regarding Related Metering Points and Import / Export associations based on the new appointment

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-066	MSA/MSS must obtain domestic premise indicator updates via the appropriate interface on the Data Integration Platform, maintain records accordingly and consider impacts to service delivery as required.	impact customers. Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers.		via IF018. - Domestic Premises Indicator: MEM will receive update via IF018. - Related MPAN: Key data for MEM to be aware of. MEM will receive update via IF020. - Energy Direction: MEM to receive update via IF018. - Metered Status: MEM to receive update via IF018. - SMSO details: MEM to receive updates via IF026. - Import / Export association: governed under the BSC. Key data for MEM to be aware of. MEM will receive update via IF020. - Profile Class / SSC details: MEM to receive updates via IF026.				considerations. PIT evidence demonstrating testing completed using the DIP simulator. The Code Manager will require evidence of the DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. Qualification Testing scope to be confirmed one DIP Connectivity Testing scope if made available. The Code Manager will need assurance that one receipt of updates via the DIP, the data held by the MEM is updated
		MHHS-BR-MS-066.1	MSA/MSS must be able to obtain Related MPAN updates via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-MS-066.2	Metering Service must be able to obtain Energy Direction updates via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-MS-066.3	Metering Service must be able to obtain Metered Status updates via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-MS-066.4	MSS must obtain SMSO updates from Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-066.5	Metering Service must be able to obtain Import/Export linkage updates via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-MS-066.6	Metering Service must obtain legacy data item (Profile Class/SSC) updates from Registration Service via the appropriate interface on the Data Integration Platform and maintain records accordingly.							
		MHHS-BR-MS-077	All services, where required, must be able to identify (using the appropriate interface) and appropriately manage related MPANs as described in the relevant BSCP.							
MEM	Change of Market Segment	MHHS-BR-MS-092	MSA/MSS must, following initial engagement from a Supplier, be able to receive a request to carry out a Change of Segment meter exchange, via a bilaterally agreed mechanism, even when they are not the currently appointed Metering Service.	Retail Risk 1: Consumer supply point interruption due to a lack of action or incorrect action by REC Parties. Retail Risk 13: Retail consumers have a	Medium	No change to existing interactions with the DNO regarding change to connection type. Also existing approach for the Supplier to request a meter exchange (NB: the change to DTN flows to reflect new market roles). However, the link with agent appointment and choreography issues increased the risk associated with the process to be	✓	✓	✓	QAD question regarding the end to end change of market segment process, ensuring the MEM understands how these come together into a single business process is key. QAD should be seeking assurance that the MEM understands the relevance of this process to wider aspects of the business e.g. appointment / de-appointment of agents. PIT evidence demonstrating the end to end process has been tested using DIP simulator. The Code Manager will require evidence of the
		MHHS-BR-MS-093	MSA/MSS must respond to the Supplier, via a bilaterally agreed mechanism, confirming that they can carry out the Change of Segment exchange on the agreed target date.							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
		MHHS-BR-MS-094	MSA/MSS must be able to publish Change of Segment Meter Exchange details and reads via the appropriate interfaces, where it is not formally appointed as the Metering Service but does have an accepted prospective appointment (Appointment Scenario = "SEG"). The MSA/MSS must issue the work update to Registration at the earliest opportunity but within [x] days of completion at the latest.	negative customer experience as part of the metering works conducted.		tested, including various scenarios to test sequencing of activities.				DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. End to end business process to be assured through Qualification Testing within the UIT environment, including integration with the Registration Service or an equivalent stub. This is a combination of a MEM Appointment and Meter Exchange scenario therefore listed separately.
		MHHS-BR-MS-095	MSA/MSS must be able to obtain a Registration Service Change of Segment Meter Exchange confirmation with MTDs and readings via the appropriate interface on the Data Integration Platform, even when it is from a 3rd party Metering Service.							
		MHHS-BR-MS-096	MSA must be able to receive Commissioning details from the LDSO following a connection type update, via the appropriate interface, and maintain records accordingly.							
		MHHS-BR-MS-097	MSA/MSS must be able to obtain Registration Service Change of Connection Type notifications via the appropriate interface on the Data Integration							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			Platform and maintain records accordingly.							
		MHHS-BR-MS-097.1	MSA/MSS must obtain Invalid Market Segment Advisory notifications, sent from the Registration Service on the Data Integration Platform, via the appropriate interface.							
MEM	Monitoring Service Advisories	MHHS-BR-MS-097.1	MSA/MSS must obtain Invalid Market Segment Advisory notifications, sent from the Registration Service on the Data Integration Platform, via the appropriate interface.	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers	Low	New advisory messages issued by the Registration Service relating to missing supplier agents and invalid market segment.	✓	✓	✓	QAD question regarding receipt of advisory messages and controls / processes in place to resolve identified issues. PIT evidence demonstrating testing completed using the DIP simulator. The Code Manager will require evidence of the DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. No Qualification Testing expected.
MEM	Migration Requirements	N/A	N/A	Retail Risk 7: Inaccurate meter point master data results in errors that impact consumers	Medium	The migration process will be similar to a standard change of agent, therefore testing will be required as separate appointment scenario's (Switch and non Switch). However, MEMs will need to support data cleanse activity (especially with regards to quality of MTDs) in preparation for migration. Legacy MEM requirements for e.g.	✓	✓		QAD question to assure the MEM's understanding of the migration process and how this differs from a standard change of agent. QAD question to understand how MEMs will ensure MTD accuracy for migration. PIT evidence and Qualification Testing to demonstrate end to end migration with and without Switch. This should be captured as a

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
						the Gaining MEM in a Reverse Migration or a Losing MEM in a forward migration are not in the scope of Code Qualification as MEMs will need to ensure they can meet these requirements from M11 / M12 which may precede Qualification.				separate scenario under the MEM appointment process described above
MEM	ISD – MEMs required to receive ISD updates	MHHS-BR-MS-071	All services must obtain Industry Standing Data (ISD) update notifications via the appropriate interface, and if required take necessary steps to obtain refreshed ISD data, maintain their records accordingly and reference/ utilise ISD as appropriate as part of the service delivery.	Various	Low	The majority of ISD data required to support retail activities is available within the EES.	✓	✓	✓	QAD question to determine whether the MEM is amending existing systems / processes. PIT evidence demonstrating how the MEM maintains standing data. The Code Manager will require evidence of the DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. No Qualification Testing expected.
MEM	Generic requirements associated with DIP Interfaces	MHHS-BR-MS-070	MSA/MSS must publish data following ISO8601 format - YYYY-MM-DDTHH:MM:SS±TZH:TZM.	Various	Low	MEMs are required to receive data via a variety of new DIP interfaces. These have been referenced against the specific processes detailed above and will be captured in testing as required. This row has been included to captured generic DIP related requirements and is not	✓	✓	✓	QAD question regarding approach to implementing the new DIP interfaces and controls in place to manage message exceptions. PIT evidence demonstrating interactions using the DIP simulator. The Code Manager will require evidence of the
		MHHS-BR-MS-071.1	All services must utilise Industry Standing Data to identify the relevant DIP ID/Role or DTN Market Participant ID/Role, as appropriate, to be used when							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			communicating over the DIP/DTN.			proposing any addition testing above that already detailed above.				DIP Connectivity Testing conducted with the DIP Manager as a part of the QAD. Qualification Testing to capture core business processes where the MEM is sending messages to the Registration Service regarding metering related activities.
		MHHS-BR-MS-071.2	All services must derive and populate the DIP addressing (primary recipients) for all outbound interfaces in line with the rules described in the interface specification.							
		MHHS-BR-MS-072	All services must process data and share outputs with other parties in line with timescales set out in the Operational Choreography document.							
		MHHS-BR-MS-073	All Services must obtain Data Integration Platform error messages in line with the End to End Solution Architecture, review the impacted data and re-issue corrected messages/transactions as required.							
		MHHS-BR-MS-074	All services, when transacting via the DIP, must ensure that they implement monitoring so as to identify where expected responses are not received within standard DIP SLA's, as outlined in the Operational Choreography, so that the appropriate investigative/							

Market Role	Area	MHHS Requirements		Retails Risks	Risk Rating for MHHS Qualification	Rationale of Risk Rating	Proposed Qualification Approach			
							QAD Question	PIT evidence	SIT / Qualification Test Scenario	Further comments on coverage during Qualification
			resolution activity can be undertaken.							
		MHHS-BR-MS-075	All services must have familiarity with and actively monitor any Data Integration Platform tools for tracking flows, as outlined in the End to End Solution Architecture, so that the necessary investigative action can be taken when required.							
		MHHS-BR-MS-083	All Services should implement data validation steps and techniques that they feel are appropriate to ensure the most accurate and efficient delivery of the service.							
		MHHS-BR-MS-091	All Services must maintain and update their records with any data received on interfaces to ensure the most accurate and efficient delivery of the service.							

4.2 MIGRATION REQUIREMENTS

The following assessment criteria to cover MHHS-DEL974 MHHS Migration Design Requirements Log v1.0 by role has been developed by the REC Code Manager and presented to REC PAB for approval on 26 March 2024. This ~~will~~ may be updated as further information is published by the MHHS Programme.

4.2.1 DNO (INCLUDING REGISTRATION SERVICE)

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
DNO (including Registration Service)	Forward Migration	Change of Supply	MHHS-Migration-CoS-RS-001	In the scenario that a Legacy MPAN is switching to a MHHS Qualified Supplier, the Registration Service will send both the IF-002 and the D0217 / D0260 to the incoming Supplier at the same time.		✓	✓	Migration design covered through SIT.
DNO (including Registration Service)	Forward Migration	Change of Supply	MHHS-Migration-CoS-RS-002	Each time a Pending registration is received, Registration Service to consult ISD to determine Qualification status of Supplier in respect to the status of the MPAN.	✓	✓		Migration design covered through SIT.
DNO (including Registration Service)	Forward Migration	Change of Supply	MHHS-Migration-CoS-RS-003	Registration Service to send the D0217/D0260 the next working day at the very latest after the IF-002 (although in most cases the messages will be sent only a few hours apart).	✓	✓		Migration design covered through SIT.
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-001	Registration Service must send a D0170 to the outgoing MOP to request they send the MTDs to the new MS. This D0170 will include a specific enumeration value within the data item 'Requested Action Code' which will specify whether a CoA or CoS Migration is occurring.	✓	✓		Migration design covered through SIT.
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-002	In the scenario that a Migration is already underway and a Pending switch is received, when the D-1 effective from status of the Agent appointment is reached, Registration Service must send IF-035 in place of an IF-036 with specific Migration cancellation value within the 'Event Code' data item to inform incoming Service Providers and incumbent Supplier that the Migration has been cancelled.	✓	✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-004	Related MPANs: Following receipt of a PUB-031, the Registration Service must reject any requested change to the Related status of an MPAN.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-005	Related MPANs: The Registration Service must automatically migrate Secondary MPANs alongside Primary MPANs.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-007	Once the Registration Service receives an IF-031, subsequent D0205's should be rejected.		✓		Migration design covered through SIT.

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-008	Registration Service to remove MPAN from inclusion in the Legacy EES Extract upon successful completion of Forward Migration, indicated through the send of an IF-036.	✓	✓		Migration design covered through SIT.
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-009	If MPAN is Legacy and an IF-031 is sent using a non-Migration appointment code in the 'Service Provider Appointment Scenario' data item, this will be rejected using REG1094 validation rule.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-010	If an IF-031 is rejected due to MPAN being Legacy and the IF-031 is sent using a non-Migration appointment code in the 'Service Provider Appointment Scenario' data item, an IF-032 will be sent back with specific Response Code and Response Message.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-011	Related MPANs: If MPAN is a Secondary MPAN and an IF-031 is sent using a Migration appointment code in the 'Service Provider Appointment Scenario' data item, the IF-031 will be rejected using REG1039 validation rule.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-012	If an IF-031 is rejected due to MPAN being a Secondary MPAN and the IF-031 is sent using a Migration appointment code in the 'Service Provider Appointment Scenario' data item, an IF-032 will be sent back with specific Response Code and Response Message.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-013	In the scenario that a Pending switch is already in place and a Migration is initiated, Registration Service must reject the IF-031 using REG1095 validation rule.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-014	If an IF-031 is rejected due to Pending switch already being in place, an IF-032 will be sent back with specific Response Code and Response Message.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-016	Registration Service will not automatically migrate Export MPAN following successfully Migration of the Import MPAN; they will be migrated independently of one another.	✓	✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-017	Registration Service to automatically appoint same MS and DS to Related MPANs post-Forward Migration.		✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-018	Registration Service to send the IF-036 at the Service Appointment effective from date.		✓	✓	

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-RS-019	Once a Forward Migration is initiated (indicated through the send of an IF-031) or if a MPAN is MHHS, the Registration Service will not accept Legacy D flows for a given MPAN.	✓	✓	✓	
DNO (including Registration Service)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-LDSO-001	LDSO to receive PUB-036 from Registration Service (via the DIP), containing MS appointment notification and MTD.		✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Supply	MHHS-RMigration-CoS-RS-001	In the scenario that a MHHS MPAN is switching to a Legacy Supplier, the Registration Service will only send the D0217 / D0260 to the incoming Supplier. No IF-002 will be sent.		✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Supply	MHHS-RMigration-CoS-RS-002	Related MPANs: The Registration Service will automatically initiate a Reverse Migration for all Secondary MPANs following receipt of a Pending Registration for a Secondary MPAN.		✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Supply	MHHS-RMigration-CoS-RS-003	Each time a Pending registration is received, Registration Service to consult ISD to determine qualification status of Supplier in respect to the status of the MPAN.	✓	✓		
DNO (including Registration Service)	Reverse Migration	Change of Supply	MHHS-RMigration-CoS-RS-004	If a Pending registration prompts a Reverse Migration and the MPAN did not previously exist in Legacy arrangements, MPRS to populate default Legacy data.	✓	✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Supply	MHHS-RMigration-CoS-RS-005	If a Pending registration prompts a Reverse Migration and the MPAN previously existed in Legacy arrangements, MPRS to populate data items from the previous Legacy Registration.	✓	✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Supply	MHHS-RMigration-CoS-RS-008	Once a Reverse Migration is initiated (indicated through the receipt of a Pending Registration) or if a MPAN is Legacy, the Registration Service will not accept DIP flows for a given MPAN.	✓	✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-RS-001	In the case of Smart Meters only, Registration Service to include new Supplier details as part of IF-003 which is sent to outgoing MS (via the DIP).	✓	✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-RS-003	Although the Registration Service can process multiple D0205's, it will only use information from the last accepted D0205 before Secured Active processing at 1800 hours to generate an IF-003 at Secured Active acceptance.	✓	✓		Migration design covered through SIT.
DNO (including Registration Service)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-RS-004	D0205 batch processing to occur within the Registration Service on a frequent basis with batch processing running every 2 hours or more frequently, in the majority of cases.	✓	✓		

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
DNO (including Registration Service)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-RS-005	Registration Service to include identity of MOP in IF-003 if this data was provided in the D0205.	✓	✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-RS-007	As soon as an IF-003 is sent, marking the completion of a Reverse Migration, Registration Service to add MPAN back into the Legacy EES Extract.	✓	✓		Migration design covered through SIT.
DNO (including Registration Service)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-LDSO-001	LDSO to receive PUB-003 from Registration Service (via the DIP), informing of MS de-appointment notification.		✓	✓	
DNO (including Registration Service)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-LDSO-002	The receipt of a PUB-003 will serve as the definitive statement to each service that a Reverse Migration has occurred.	✓			
DNO (including Registration Service)	Cancellation of Migration	Change of Agent	MHHS-Migration-Can-RS-001	Registration Service cancels a CoA Migration and follows the BAU lapsed appointment process, issuing an IF-035.	✓	✓	✓	
DNO (including Registration Service)	Cancellation of Migration	Change of Agent	MHHS-Migration-Can-RS-002	Registration Service cancels a CoA Migration and sends a D0209.	✓	✓	✓	
DNO (including Registration Service)	Cancellation of Migration	Change of Supply	MHHS-Migration-Can-RS-003	A Migration CoS is cancelled and the Registration Service follows the BAU lapsed appointment process, issuing an IF-035.	✓	✓	✓	
DNO (including Registration Service)	Cancellation of Migration	Change of Supply or Change of Agent	MHHS-Migration-Can-RS-005	If subsequent IF-031's are received before the initial Migration completes, the original IF-031 should be lapsed and the IF-031 with the most recent timestamp should be used instead.	✓	✓	✓	
DNO (including Registration Service)	Cancellation of Migration	Change of Supply or Change of Agent	MHHS-Migration-Can-RS-006	If MPAN state changes to terminated, an IF-035 would be sent which would cancel the Migration.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-002	Registration Service will need to check for incomplete Migrations and issue an IF-045 where a Supplier has only migrated either the MS or DS, to inform the Supplier that their Migration is incomplete.	✓	✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-003	If a Forward Migration is underway or MPAN is already MHHS and a D0205 is sent, this will be rejected. A D0203 will be sent back with enumeration value 62 in the 'Rejection Reason Code' data item to specify the rejection reason.		✓	✓	

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-004	If a Forward Migration is underway or MPAN is already MHHS and a D0205 is sent, this will be rejected. A D0203 will be sent back with enumeration value 62 in the 'Rejection Reason Code' data item to specify the rejection reason.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-005	If a Forward Migration is underway or MPAN is already MHHS and a D0304 is sent, this will be rejected. A D0304 will be sent back with enumeration value Q in the 'MPAS D0304 Response Code' data item to specify the rejection reason.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-006	If a Forward Migration is underway or MPAN is already MHHS and a D0312 is sent, this will be rejected. A D0312 will be sent back with enumeration value AD in the 'MOP Flow Response Code' data item to specify the rejection reason.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-007	If a Forward Migration is underway or MPAN is already MHHS and a D0386 is sent, this will be rejected. A D0386 will be sent back with enumeration value Y in the 'Related MPAN Response Code' data item to specify the rejection reason.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-008	If a Reverse Migration is underway or MPAN is Legacy and an IF-005 is sent, this will be rejected using REG1029 validation rule.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-009	If an IF-005 is rejected due to MPAN either undergoing Reverse Migration or being Legacy, an IF-006 will be sent back with specific Response Code and Response Message.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-010	If a Reverse Migration is underway or MPAN is Legacy and an IF-019 is sent, this will be rejected using REG1066 validation rule.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-011	If an IF-019 is rejected due to MPAN either undergoing Reverse Migration or being Legacy, an IF-020 will be sent back with specific Response Code and Response Message.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-012	If a Reverse Migration is underway or MPAN is Legacy and an IF-025 is sent, this will be rejected using REG1046 validation rule.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-013	If an IF-025 is rejected due to MPAN either undergoing Reverse Migration or being Legacy, an IF-026 will be sent back with specific Response Code and Response Message.		✓	✓	

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-014	If a Reverse Migration is underway or MPAN is Legacy and an IF-038 is sent, this will be rejected using REG1075 validation rule.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-015	If an IF-038 is rejected due to MPAN either undergoing Reverse Migration or being Legacy, an IF-039 will be sent back with specific Response Code and Response Message.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-016	If a Reverse Migration is underway or MPAN is Legacy and an IF-040 is sent, this will be rejected using Level 4 validation rule RCP1076.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-017	If a Forward Migration is underway and an IF-019 is sent, this will be rejected using REG1067 validation rule.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-018	If an IF-019 is rejected due to MPAN undergoing Forward Migration, an IF-020 will be sent back with specific Response Code and Response Message.		✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-019	Reverse Migration: Registration Service to adhere to the SLAs specified within the MHHS BAU Design as part of the various read/MTD sharing processes, unless explicitly called out.		✓		
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-020	When sending and processing DIP messages, Registration Service to adhere to the BAU MHHS Design SLAs, which will apply unchanged throughout the Migration period.		✓		
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-021	Registration Service to send all Legacy Data Flows via the DTN or via other agreed means.		✓		
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-RS-022	Registration Service to auto-align Import / Export MPANs which have been fully migrated but appointed to different Agents.	✓	✓	✓	
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-LDSO-001	When sending and processing DIP messages, LDSOs to adhere to the BAU MHHS Design SLAs, which will apply unchanged throughout the Migration period.		✓		
DNO (including Registration Service)	Miscellaneous	Change of Supply or Change of Agent	MHHS-Migration-Mis-LDSO-002	LDSOs to send all Legacy Data Flows via the DTN or via other agreed means.		✓		

4.2.2 SUPPLIER

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
Supplier	Forward Migration	Change of Supply	MHHS-Migration-CoS-SUP-001	If the Supplier is Qualified and they inherit a MHHS MPAN, under no circumstances can the MPAN be reverted to Legacy as part of this particular switch. Reverse Migration is not permitted.	✓			
Supplier	Forward Migration	Change of Supply	MHHS-Migration-CoS-SUP-002	If MPAN is Legacy and the incoming Supplier is MHHS Qualified, the incoming Supplier will make a decision whether to migrate MPAN or continue operating under Legacy arrangements.	✓			
Supplier	Forward Migration	Change of Supply	MHHS-Migration-CoS-SUP-003	Supplier to check whether MPAN is MHHS or Legacy within EES.	✓			Migration design covered through SIT.
Supplier	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-SUP-001	Supplier to send IF-031 to Registration Service and include Migration-specific codes within the 'Service Provider Appointment Scenario' data item to make explicit the intent to migrate the MPAN.		✓	✓	
Supplier	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-SUP-002	In the case of CoA only, incumbent Supplier to send a D0151 to outgoing Meter Operator with specific value in 'Termination Reason' (J0279) data item.		✓		
Supplier	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-SUP-003	In the case of CoS only, outgoing Supplier to send a D0151 to the outgoing Meter Operator with specific value in 'Termination Reason' (J0279) data item.		✓		
Supplier	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-SUP-004	Suppliers, as standard business process, should ensure the effective from date for CoA appointments is at least 1 day in the future from the transmission date of the IF-031.	✓			
Supplier	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-SUP-005	Suppliers to ensure they do not have open IF-031's which are left unresponded to by Agents beyond appointment effective from dates. Suppliers to chase Agents to respond with an IF-034 with an Accept or Reject in this case.	✓			
Supplier	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-SUP-006	For Traditional and HH Advanced CoS only, the D0151 that is sent from outgoing Supplier to outgoing MOP must have data item ‘New Supplier ID’ (J1194) populated.		✓		
Supplier	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-SUP-007	Supplier should send the D0151 using Legacy SLAs.		✓		
Supplier	Reverse Migration	Change of Supply	MHHS-RMigration-CoS-SUP-001	If the Supplier is Qualified and they inherit a MHHS MPAN, under no circumstances can the MPAN be reverted to Legacy as part of this particular switch. Reverse Migration is not permitted.	✓			
Supplier	Reverse Migration	Change of Supply	MHHS-RMigration-CoS-SUP-002	Supplier to check whether MPAN is MHHS or Legacy within EES.	✓			Migration design covered through SIT.

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
Supplier	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-SUP-001	New Supplier to appoint Legacy Agent by sending a D0155 to the new MOP. Will add an additional Group 318 to indicate a Reverse Migration is occurring.		✓	✓	
Supplier	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-SUP-002	New Supplier to send D0205 to the Registration Service before Secured Active sync is received from CSS.		✓		Migration design covered through SIT.
Supplier	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-SUP-003	The receipt of a PUB-003 will serve as the definitive statement to each service that a Reverse Migration has occurred.	✓			
Supplier	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-SUP-004	In the case that a D0205 is not sent to the Registration Service before the IF-003 is issued and MTDs must be transferred manually, Supplier to request their MOP manually provides the details of the incoming MOP and DC to the outgoing MS.	✓			
Supplier	Cancellation of Migration	Change of Agent	MHHS-Migration-Can-SUP-001	Supplier to send a D0151 with the switch date and specific enumerated value in Termination Reason (J0279) data item to existing MOP and DC.		✓		
Supplier	Cancellation of Migration	Change of Supply	MHHS-Migration-Can-SUP-002	The Supplier needs to be able to follow the standard process for informing their existing Agents that their appointment is still in place.	✓	✓		
Supplier	Miscellaneous	Change of Supply and Change of Agent	MHHS-Migration-Mis-SUP-001	Suppliers will not be able to change Market Segment as part of a Migration. They must set Services that match the current Market Segment.	✓	✓	✓	
Supplier	Miscellaneous	All	MHHS-Migration-Mis-SUP-002	All Suppliers will need to have made changes to their services and business processes by M11 to support the Migration of MPANs away from their portfolios when a Migration CoS occurs.	✓			Covered by the Pre-Qualification Submission for Non-SIT Participants.
Supplier	Miscellaneous	All	MHHS-Migration-Mis-SUP-003	All Suppliers wishing to operate the Reverse Migration process (to Switch consumers whose MPAN is under the MHHS arrangements) must have made changes to their services and business processes by M11.	✓			Covered by the Pre-Qualification Submission for Non-SIT Participants.
Supplier	Miscellaneous	Change of Supply	MHHS-Migration-Mis-SUP-004	Reverse Migration: Suppliers to adhere to the SLAs specified within the MHHS BAU Design as part of the various read/MTD sharing processes, unless explicitly called out.		✓		
Supplier	Miscellaneous	Change of Agent or Change of Supply	MHHS-Migration-Mis-SUP-005	When sending and processing DIP messages, Suppliers to adhere to the BAU MHHS Design SLAs, which will apply unchanged throughout the Migration period.		✓		

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
Supplier	Miscellaneous	Change of Agent or Change of Supply	MHHS-Migration-Mis-SUP-006	Suppliers to send all Legacy Data Flows via the DTN or via other agreed means.		✓		

4.2.3 MEM

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
MEM (Legacy)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-MOP-001	When outgoing MOP receives the D0170 from the Registration Service and the enumerated values within the 'Requested Action Code' data item indicate that either a Migration CoA or CoS is occurring, the MOP must operate specific Forward Migration processes which differs from Legacy processes.		✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-MOP-002	When no meter is installed, no MTDs should be sent.	✓	✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-MOP-003	Advanced only: Outgoing MOP to convert current MTDs, stored in a D0150 format, into a D0268.		✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-MOP-004	In the case of NHH Advanced meters, outgoing MOP will need to convert D0149/D0150 and D0313 into D0268 format.	✓	✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-MOP-005	In the case of NHH Advanced meters, MOP may be required to undertake re-programming of the meter.	✓			Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Forward Migration	Change of Agent	MHHS-Migration-CoA(MS)-MOP-006	The MPID assigned to the MOP needs to refer to the MS and the MTDs should be sent to role code MS over the DTN.	✓	✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-MOP-001	New MOP to issue MTDs to incoming DC and incoming Supplier within 5 working days.	✓	✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-MOP-002	New MOP to operate Reverse Migration processes instead of Legacy processes when receiving D0155 with specific Group 318 values.	✓	✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-MOP-003	If Supplier requests their MOP manually provide details of incoming MOP and DC to the outgoing MS, MOP to fulfil this request within 2 working days.	✓	✓		Not required for new organisations entering the market as MHHS MEM only.

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
MEM (Legacy)	Cancellation of Migration	Change of Agent	MHHS-Migration-Can-MOP-001	The existing MOP will receive a D0155 from the incumbent Supplier when a Forward Migration CoA or CoS is cancelled.		✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Miscellaneous	All	MHHS-Migration-Mis-MOP-001	All Agents will need to have made changes to their services and business processes by M11 to support the Migration of MPANs away from their portfolios when a Migration CoS occurs.	✓			Not required for new organisations entering the market as MHHS MEM only. Covered by the Pre-Qualification Submission for Non-SIT Participants.
MEM (Legacy)	Miscellaneous	All	MHHS-Migration-Mis-MOP-002	All Agents wishing to operate the Reverse Migration process (to Switch consumers whose MPAN is under the MHHS arrangements) must have made changes to their services and business processes by M11.	✓			Not required for new organisations entering the market as MHHS MEM only. Covered by the Pre-Qualification Submission for Non-SIT Participants.
MEM (Legacy)	Miscellaneous	Change of Supply	MHHS-Migration-Mis-MOP-003	Reverse Migration: MOPs to adhere to the SLAs specified within the MHHS BAU Design as part of the various MTD sharing processes, unless explicitly called out.		✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Miscellaneous	Change of Agent or Change of Supply	MHHS-Migration-Mis-MOP-004	When sending and processing DIP messages, MOPs to adhere to the BAU MHHS Design SLAs, which will apply unchanged throughout the Migration period.		✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Miscellaneous	Change of Agent or Change of Supply	MHHS-Migration-Mis-MOP-005	MOPs to send all Legacy Data Flows via the DTN or via other agreed means.		✓		Not required for new organisations entering the market as MHHS MEM only.
MEM (Legacy)	Miscellaneous	Change of Agent or Change of Supply	MHHS-Migration-Mis-MOP-006	If MTDs change after these have already been sent by the MOP to the MS, MOP to re-send new MTDs.	✓			Not required for new organisations entering the market as MHHS MEM only.
MEM (MHHS)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-MS-001	In the case of Smart Meters only, 'Skeleton' D0150 is sent by outgoing MS to both new Supplier and incoming MOP with the following business rules: - All mandatory data items are populated - If unknown, the value of the Manufacturers Make and Type is noted as 'not recorded' - Meter Register Details is only populated with Smart Meter Cumulative Register. TOU registers are not included		✓	✓	
MEM (MHHS)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-MS-002	Outgoing MS to adhere to BAU Design SLAs in the sending of MTDs to the new MOP.		✓		
MEM (MHHS)	Reverse Migration	Change of Agent	MHHS-RMigration-CoA(MS)-MS-003	If outgoing MS is requested to transfer MTDs manually to incoming MOP and DC, they must action this within 5 working days.	✓	✓		

Market Role	Migration Scenario	Area	MHHS Reference	MHHS Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
MEM (MHHS)	Cancellation of Migration	Change of Agent	MHHS-Migration-Can-MS-001	Registration Service cancels a CoA Migration and follows the BAU de-appointment process.		✓		
MEM (MHHS)	Cancellation of Migration	Change of Supply	MHHS-Migration-Can-MS-002	Registration Service cancels a CoS Migration and follows the BAU de-appointment process.		✓		
MEM (MHHS)	Miscellaneous	All	MHHS-Migration-Mis-MS-001	All Agents will need to have made changes to their services and business processes by M11 to support the Migration of MPANs away from their portfolios when a Migration CoS occurs.	✓			
MEM (MHHS)	Miscellaneous	All	MHHS-Migration-Mis-MS-002	All Agents wishing to operate the Reverse Migration process (to Switch consumers whose MPAN is under the MHHS arrangements) must have made changes to their services and business processes by M11.	✓			
MEM (MHHS)	Miscellaneous	Change of Supply	MHHS-Migration-Mis-MS-003	Reverse Migration: MS to adhere to the SLAs specified within the MHHS BAU Design as part of the various MTD sharing processes, unless explicitly called out.		✓		
MEM (MHHS)	Miscellaneous	Change of Agent or Change of Supply	MHHS-Migration-Mis-MS-004	When sending and processing DIP messages, MS's to adhere to the BAU MHHS Design SLAs, which will apply unchanged throughout the Migration period.		✓		
MEM (MHHS)	Miscellaneous	Change of Agent or Change of Supply	MHHS-Migration-Mis-MS-005	MS's to send all Legacy Data Flows via the DTN or via other agreed means.		✓		
MEM (MHHS)	Miscellaneous	Change of Agent or Change of Supply	MHHS-Migration-Mis-MS-006	If MTDs change so MOP needs to re-send MTDs to MS, MS to supersede old MTDs with those that have been received most recently and use these details instead.	✓	✓		

4.3 NON-FUNCTIONAL REQUIREMENTS (NFR)

The following assessment criteria to cover MHHS Non-Functional Requirements by role has been developed by the REC Code Manager based on MHHS-DEL2128 NFR Categorisation v2.0 and presented to REC PAB for approval on 26 March 2024. This ~~will~~ may be updated as further information is published by the MHHS Programme.

4.3.1 ALL ROLES – DNO (INCLUDING REGISTRATION SERVICE), SUPPLIER AND MEM

Market Role	NFR Category	NFR Sub-Category	NFR Reference	NFR Title	NFR Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	~~Recommended Test Type~~Further comments on coverage
All	Compatibility	Interoperability	E2E0014	Messaging Interfaces	All services shall send and receive messages for all DIP interfaces and publications via the API definitions in the MHHS Swagger documentation (E2E003)		✓	✓	Demonstrated through Functional Testing.
All	Compatibility	Interoperability	E2E0108	Message Validation (Level 1)	All services shall interpret the http response code to determine the outcome of DIP validation level 1 for each message sent referenced by Sender Unique Reference & Transaction Id		✓	✓	Demonstrated through Non-Functional Testing.
All	Compatibility	Interoperability	E2E0109	Message Validation (Level 2)	All services shall connect to the Receive Status Messages webhook DIP to establish the outcome of level 2,3,4 validation with messages referenced by Transaction Id		✓	✓	Demonstrated through Functional Testing.
All	Compatibility	Interoperability	E2E0201	Schema validation	Services shall undertake Level 3 message validation including structure and the format of individual data fields/elements shall be performed against the appropriate message schema definition of all interface interactions.		✓	✓	Demonstrated through Functional Testing.
All	Compatibility	Interoperability	E2E0207	Content Validation	Level 4 validation of the message content shall be established during processing by the Recipient and reported back to the Sender via the Send Status Messages API using the corresponding status code		✓	✓	Demonstrated through Functional Testing.
All	Compatibility	Interoperability	E2E0211	Message Receipt	All messages received by DIP Participant systems shall be initially acknowledged as received in the http response of the API transaction		✓	✓	Demonstrated through Functional Testing.
All	Performance Efficiency	Capacity	E2E1004	Message Throughput	All Services (see exceptions) shall have capacity to process the following volumes of messages: - average daily volume of 66,000 - peak daily volume of 300,000 - average hourly volume of 2,750 - peak hourly volume of 35,000 - annual volume of 24M		✓	~~✓~~	As the Qualification Testing Framework (QTF) and Participant systems used in Qualification Testing are not expected to be scaled environments, Code Bodies will rely on PIT to assure Participants' ability to meet this requirement.~~Demonstrated through Non-Functional Testing.~~
All	Performance Efficiency	Capacity	E2E1005	Message Throughput (Secure Active)	All Services (unless explicitly referenced below) shall have capacity to process the following volumes of messages: - peak daily volume of 300,000 2,100,000 * portfolio coefficient - peak hourly volume of 300,000 2,100,000 * portfolio coefficient - annual volume of 110M * portfolio coefficient		✓	~~✓~~	As the Qualification Testing Framework (QTF) and Participant systems used in Qualification Testing are not expected to be scaled environments, Code Bodies will rely on PIT to assure Participants' ability to meet this requirement.~~Demonstrated through Non-Functional Testing.~~

Market Role	NFR Category	NFR Sub-Category	NFR Reference	NFR Title	NFR Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	~~Recommended Test Type~~Further comments on coverage
All	Performance Efficiency	Capacity	E2E1006	Message Channel Scalability	All services shall be designed to cope with an increase in message volumes of 25% over 5 years	✓	✓		Demonstrated through Non-Functional Testing.
All	Performance Efficiency	Capacity	E2E1007	Message Throughput (Transition)	During transition all meter points (ca. 31M) will be transition between the old and new services. Therefore, assuming a linear migration over the year this would result in the load below, hence services shall be capable of processing the following volumes: - average daily volume of 680,000 - peak daily volume of 2.4M 5.0M - annual volume of 248M 500M	✓	✓		Demonstrated through Non-Functional Testing.
All	Performance Efficiency	Resource Utilisation	E2E0208	Participant Message/Event Consumption	DIP Participants shall be able to process messages at their own speed, independently to other consumers	✓	✓		Demonstrated through Non-Functional Testing.
All	Performance Efficiency	Resource Utilisation	E2E1008	Message Pattern B Payloads	Services sending messages via the 'Pattern B' model shall provide a publicly available (or using a Federated Identity Management (FIM) capability) URI location that other Services/ Market Participants can access and download content		✓	✓	Demonstrated through Functional Testing.
All	Performance Efficiency	Time behaviour	E2E0101	API Message Capacity	All services shall have the capability to control the number of messages that are sent within a single API call	✓	✓	~~✓~~	As the Qualification Testing Framework (QTF) and Participant systems used in Qualification Testing are not expected to be scaled environments, Code Bodies will rely on PIT to assure Participants' ability to meet this requirement.~~Demonstrated through Non-Functional Testing.~~
All	Performance Efficiency	Time behaviour	E2E1003	Level 3 Processing Times (synchronous)	All Services shall provide an initial synchronous response (Level 3 validation) to a message within the following timeframes: - up to average hourly volume, mean response time of 2s or less - up to average hourly volume, 90th percentile response time of 4s or less - from average hourly to peak hourly volume, mean response time of 5s or less - from average hourly to peak hourly volume, 90th percentile response time of 8s or less		✓	~~✓~~	As the Qualification Testing Framework (QTF) and Participant systems used in Qualification Testing are not expected to be scaled environments, Code Bodies will rely on PIT to assure Participants' ability to meet this requirement.~~Demonstrated through Non-Functional Testing.~~

Market Role	NFR Category	NFR Sub-Category	NFR Reference	NFR Title	NFR Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	~~Recommended Test Type~~Further comments on coverage
All	Performance Efficiency	Time behaviour	E2E1009A	Level 4 Processing Times (Asynchronous)	All Services shall provide an asynchronous response (Level 4 validation) to a message within the following timeframes - up to average hourly volume, mean response time of 6s or less - up to average hourly volume, 90th percentile response time of 12s or less - from average hourly to peak hourly volume, mean response time of 10s or less - from average hourly to peak hourly volume, 90th percentile response time of 16s or less		✓	~~✓~~	As the Qualification Testing Framework (QTF) and Participant systems used in Qualification Testing are not expected to be scaled environments, Code Bodies will rely on PIT to assure Participants' ability to meet this requirement.~~Demonstrated through Non-Functional Testing.~~
All	Reliability	Availability	E2E0105	Participant Back Off & Retry	Each service after invoking a DIP API shall implement an exponential backoff and retry with jitter policy in the event of a comms failure with the DIP resulting from a http 429 response	✓	✓	✓	Demonstrated through Non-Functional Testing. QT will follow the approach taken in SIT.
All	Reliability	Availability	E2E0106	Message/Event Buffering	In the event of a failure to communicate with the DIP, the Service shall be able to buffer messages for a period of at least 72 hours		✓	~~✓~~	~~Demonstrated through Non-Functional Testing.~~
All	Reliability	Availability	E2E0206	Message/Event Receipt	In the event of a failure to communicate with the DIP, Participant systems shall be able to buffer messages for a period of at least 72 hours	✓	✓	✓	Demonstrated through Non-Functional Testing. QT will follow the approach taken in SIT.
All	Reliability	Availability	E2E0402	Participant Downtime	When participant systems/services are unavailable from both unplanned and planned outages the outage shall be communicated to the DIP via e-mail or via the DIP portal **TBC once DIP governance procedures are available**	✓			Non-Testable so covered through self-declaration as part of QAD.
All	Reliability	Availability	E2E1001	Service Availability	All services (those components that physically interface with the DIP, i.e. send and receive messages), unless explicitly defined, shall have an availability of 98% outside planned outage periods	✓			Non-Testable so covered through self-declaration as part of QAD.
All	Reliability	Availability	E2E1009B	Unplanned Outages	All services (involved in BP affecting the Secured Active process), shall not plan outages within the Secured Active processing window	~~-~~✓	~~✓~~	~~✓~~	~~Demonstrated through Non-Functional Testing.~~ Non-Testable so covered through self-declaration as part of QAD.
All	Reliability	Fault Tolerance	E2E0204	Participant Idempotency (SUR)	Participant systems shall check for duplicate messages with the same SUR under Level 3 or Level 4 validation		✓	✓	Demonstrated through Non-Functional Testing.
All	Reliability	Fault Tolerance	E2E0205	Participant Idempotency (Transaction Id)	Participant systems shall check for duplicate messages with the same Transaction Id under Level 3 or Level 4 validation		✓	✓	Demonstrated through Non-Functional Testing. QT will follow the approach taken in SIT.
All	Reliability	Fault Tolerance	E2E0210	Participant Idempotency	In terms of handling messages all participant systems shall be idempotent and have mechanism for handling duplicate messages		✓	✓	Demonstrated through Non-Functional Testing.

Market Role	NFR Category	NFR Sub-Category	NFR Reference	NFR Title	NFR Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	~~Recommended Test Type~~Further comments on coverage
All	Reliability	Maturity	E2E0401	Participant Software/Systems	Participants shall maintain all DIP facing systems so that all operating system, programming languages and their runtime libraries are at minimum supported versions from their respective vendors	✓			Non-Testable so covered through self-declaration as part of QAD.
All	Reliability	Maturity	E2E0404	Participant Software/Systems	Participants shall maintain all DIP facing systems so that all operating system, programming languages and their runtime libraries are at recommended supported versions from their respective vendors	✓			Non-Testable so covered through self-declaration as part of QAD.
All	Reliability	Recoverability	E2E0011	Data Loss	There shall be no data loss in the event of a single component failing	✓	✓	~~✓~~	~~Demonstrated through Non-Functional Testing.~~
All	Reliability	Recoverability	E2E0403	Participant Data Retention	Participant systems shall maintain an archive of all transactional data for 24 months	✓			Non-Testable so covered through self-declaration as part of QAD.
All	Reliability	Recoverability	E2E1002	Service Recovery	In the event of an unplanned outage, each service shall be able to resume operation within 1 hour.	✓	✓	~~✓~~	~~Demonstrated through Non-Functional Testing.~~
All	Security	Accountability	E2E0012	Instance Separation	DIP Participants shall ensure measures are put in place to ensure separation of production and non-production environments	✓			Non-Testable so covered through self-declaration as part of QAD.
All	Security	Authenticity	E2E0103	Signing Messages	All Services shall digitally sign messages		✓	✓	Demonstrated through Functional Testing.
All	Security	Authenticity	E2E0202	Signing Messages	All services shall check that messages are digitally signed with the correct certificate from the Sender of the message	✓	✓	✓	Demonstrated through ~~Non-~~Functional Testing.
All	Security	Non-repudiation	E2E0102	Sender Unique Reference	All Services shall generate a Sender Unique Reference (SUR) for each message/event		✓	✓	Demonstrated through Functional Testing.
All	Security	Non-repudiation	E2E0104	Sender Unique Reference/ Transaction Id	All Services shall use DIP generated Transaction Ids returned in the response body of the API transaction to map against messages for audit and tracking purposes		✓	✓	Demonstrated through Functional Testing.
All	Security	Non-repudiation	E2E0107	Message Receipt	When sending messages all services shall use the http response of the API transaction to establish whether a message has been received by the DIP		✓	✓	Demonstrated through Functional Testing.

Market Role	NFR Category	NFR Sub-Category	NFR Reference	NFR Title	NFR Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	~~Recommended Test Type~~Further comments on coverage
All	Security	Non-repudiation	E2E0209	Message/Event Replay Response	DIP Participants shall put in measures to differentiate the processing of replayed messages c.f. original messages		✓	✓	Demonstrated through Non-Functional Testing.
All	Usability	Operability	E2E0203	Error Reporting	When Level 3 validation fails, e.g. when payload contents cannot be reconciled (schema validation), a response with the corresponding error code shall be reported back to the DIP via the http response in the webhook call-back		✓	~~✓~~	~~Demonstrated through Non-Functional Testing.~~

4.4 OPERATIONAL REQUIREMENTS

The following assessment criteria to cover MHHS Operational Requirements by role has been developed by the REC Code Manager based on MHHS-DEL2417 SIT Operational Approach and Plan v1.0 and MHHSP-OPC001 Operational Choreography v5.4 and presented to REC PAB for approval on 25 June 2024. This may be updated as further information is published by the MHHS Programme.

4.4.1 ALL ROLES – DNO (INCLUDING REGISTRATION SERVICE), SUPPLIER AND MEM

The following requirements will be assessed on the basis of the review of QAD responses and supporting evidence provided by the Participant (including evidence from PIT). The REC Code Manager does not intend to require Participants to test these during Qualification Testing:

- Operational processes for system maintenance, capacity management and change management.
- Business Continuity and Disaster Recovery processes
- Service Management processes including error handling, fault resolution and escalation.
- Security testing and processes for access management, etc. NB: The DIP Manager is responsible for assuring Participant readiness to operate DIP onboarding/offboarding procedure. The REC Code Manager will not conduct any additional assurance and will rely on the DIP Manager's review.
- Operation of controls to ensure Code obligations are met, including monitoring, reporting, etc.
- System availability and performance. Participants are expected to demonstrate evidence that they have tested and proven systems by deploying them in the end state architecture.

The following requirements will be assessed through the QAD review as well as through review of testing evidence from PIT and/or SIT/QT:

- Business requirements not covered in functional testing. For example, requirements for data management, reporting, etc.
- Operational choreography to ensure Participant systems are capable of processing and responding to market messages in line with Code requirements. These include:

DNO	Supplier	MEM	Document reference	Section reference	Reference ID	Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
-	✓	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.3	OPC_120	The Supplier shall be able to process the IF-002 from the Registration Service and send the corresponding IF-031 within 60 minutes of receiving the IF-002.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.3	OPC_130	The Registration Service shall be able to process the IF-031 from the Supplier and send the corresponding IF-032 to Supplier and IF-033 to the Metering Service within 60 minutes of receiving the IF-031.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	✓	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.3	OPC_140	The Supplier shall systematically process 90% of IF-032 from the Registration Service and respond with an IF-031 within 60 minutes with the residual being processed by the end of the following working day.	✓	✓	-	-
-	-	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.3	OPC_150	The Metering Service shall systematically process 90% of IF-033 from the Registration Service and respond with an IF-034 within 60 minutes with the residual being processed by the end of the following working day.	✓	✓	-	-

DNO	Supplier	MEM	Document reference	Section reference	Reference ID	Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.3	OPC_160	The Registration Service shall be able to process the IF-034 from the Metering Service and send the corresponding IF-035 within 60 minutes of receiving the IF-034.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	-	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.3	OPC_170A	The Losing and Gaining Metering Service shall be able to process the IF-035 from the Registration Service within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	-	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.3	OPC_170B	The Losing Metering Service shall be able to issue Advanced or Traditional MTDs to the Gaining Metering and Data Services within 120 minutes of receipt of the IF-035.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.4	OPC_180	On receipt of Secured Active Message at Gate Closure from CSS, the Registration Service shall issue all associated IF-035, IF-036 and IF-037 before 21:00.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.4	OPC_190	The Gaining Supplier and Metering Service shall process the inbound IF-035 within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.4	OPC_200	The DNO, and Gaining Supplier and Metering Service shall process the inbound IF-036 within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	4.4	OPC_210	The Losing Supplier and Metering Service shall process the inbound IF-037 within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	✓	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_220	The Supplier shall be able to process the IF-001 from the Registration Service within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	-	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_240	The Metering Service shall be able to send notification of meter works and updated Meter Technical Details within 3 Working Days of completion of metering works.	✓	✓	-	-
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_250	The DNO shall be able to send the all relevant market messages within 3 Working Days of completion of metering works by the DNO.	✓	✓	-	-
-	-	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_260	The Metering Service shall be able to updated Meter Technical Details within 3 Working Days of completion of metering works by the DNO.	✓	✓	-	-
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_270	The Registration Service shall be able to process the IF-005 from the Metering Service and send the corresponding IF-006 within 60 minutes of receiving the IF-005.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_280	The DNO, Supplier and Metering Service shall process the inbound IF-006 within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios

DNO	Supplier	MEM	Document reference	Section reference	Reference ID	Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_290	The Registration Service shall be able to process the Change of Energisation Status outcome (IF-007) from the Metering Service and send the corresponding IF-008 within 60 minutes of receiving the IF-007.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_300	The DNO, Supplier and Metering Service shall process the inbound IF-008 within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_310A	During CSS De-Activation, all data received prior to 23:00hrs by the Registration Service will be made available to other parties (as applicable) by 06:00hrs the following Working Day.	✓	✓	-	-
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_310B	During CSS De-Activation, all data received after 23:00hrs by the Registration Service will be made available to other parties (as applicable) by the second Working Day - as per existing REC ERDS Service Definition v1.1	✓	✓	-	-
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_320A	Following the notification of disconnection from the Registration Service, DNO, Supplier and Metering Service shall be able to make all data, received prior to 23:00hrs, available to other parties (as applicable) by 06:00hrs the following Working Day.	✓	✓	-	-
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_320B	Following the notification of disconnection from the Registration Service, DNO, Supplier and Metering Service shall be able to make all data, received after 23:00hrs, available to other parties (as applicable) by the second Working Day - as per existing REC ERDS Service Definition v1.1	✓	✓	-	-
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_330	The Registration Service shall be able to process the information received from LDSO and issue Notification of Registration Data Item Changes (IF-018) within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_340	The Supplier and Metering Service shall be able to process the Notification of Registration Data Item Changes (IF-018) from the Registration Service within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	✓	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_390B	The Supplier shall be able to request an update to consent granularity, SMSO or IHD information in Registration Service via a IF-025 within the day the condition has been identified.	✓	✓	-	-

DNO	Supplier	MEM	Document reference	Section reference	Reference ID	Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
-	✓	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_400	The Supplier shall be able to request an update to other information in Registration Service via a IF-025 within 1 working day of becoming aware of change.	✓	✓	-	-
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_410	The Registration Service shall be able to process the IF-025 from the Supplier and issue Notification of Registration Supplier Data Item Changes (IF-026) within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_420	The DNO, Supplier and Metering Service shall be able to process the inbound IF-026 within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
-	-	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_430A	The Metering Service shall be able to issue the Customer Direct Contract Advisory to the Registration Service via IF-038 within 2 working days of the Direct Contract being agreed.	✓	✓	-	-
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_430B	The Registration Service shall be able to process the IF-038 and issue IF-039 within 60 minutes of the receipt of IF-038.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_440	The DNO, Supplier and Metering Service shall be able to process the inbound IF-039 within 60 minutes	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_480	The Registration Service shall be able to process the connection type updates from the DNO and issue Notification of Change in Connection Type (IF-043) within 60 minutes of receipt of the update from the DNO.	✓	✓	-	-
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_490	The DNO, Supplier and Metering Service shall be able to process the inbound IF-043 within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_500A	On issue of a paired Connection Type Change (IF-043) and Meter Exchange (IF-006), the Registration Service will process the change of segment as deemed complete and issue an IF-044 within 60 minutes of receipt of linked IF-043 and IF-006.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_500B	The Registration Service will cancel Metering and Data Service appointments associated with Change of Market Segment if Change of Market Segment is not completed within 3 working days of prospective appointment start date.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios
✓	✓	✓	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_510	The DNO, Supplier and Metering Service shall be able to process the inbound IF-044 within 60 minutes.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios

DNO	Supplier	MEM	Document reference	Section reference	Reference ID	Requirement Description	QAD Question	PIT Evidence	SIT / Qualification Testing Evidence	Further comments on coverage
✓	-	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_520	The Registration Service shall be able to identify missing Service Provider appointments or instances of misaligned Registration Data and send IF-045 in daily batches following the processing of Service Appointment queue after the Secured Active processing window.	✓	✓	-	-
-	✓	-	MHHSP_OPC001_Operational_Choreography v5.4.pdf	5	OPC_530	The Supplier shall be able to process IF-045 from the Registration Service, which notifies of an Agent appointment that is missing or of the invalid segment, within 60 minutes of receipt.	✓	✓	✓	In QT, testing may be combined with Functional Testing scenarios

Further information on MHHS Qualification can be found on the MHHS Programme website: https://mhhsprogramme.sharepoint.com/sites/Market-wideHalfHourlySettlement/SitePages/Qualification.aspx



To find out more please contact:
REC Code Manager
enquiries@recmanager.co.uk

RETAIL ENERGY CODE