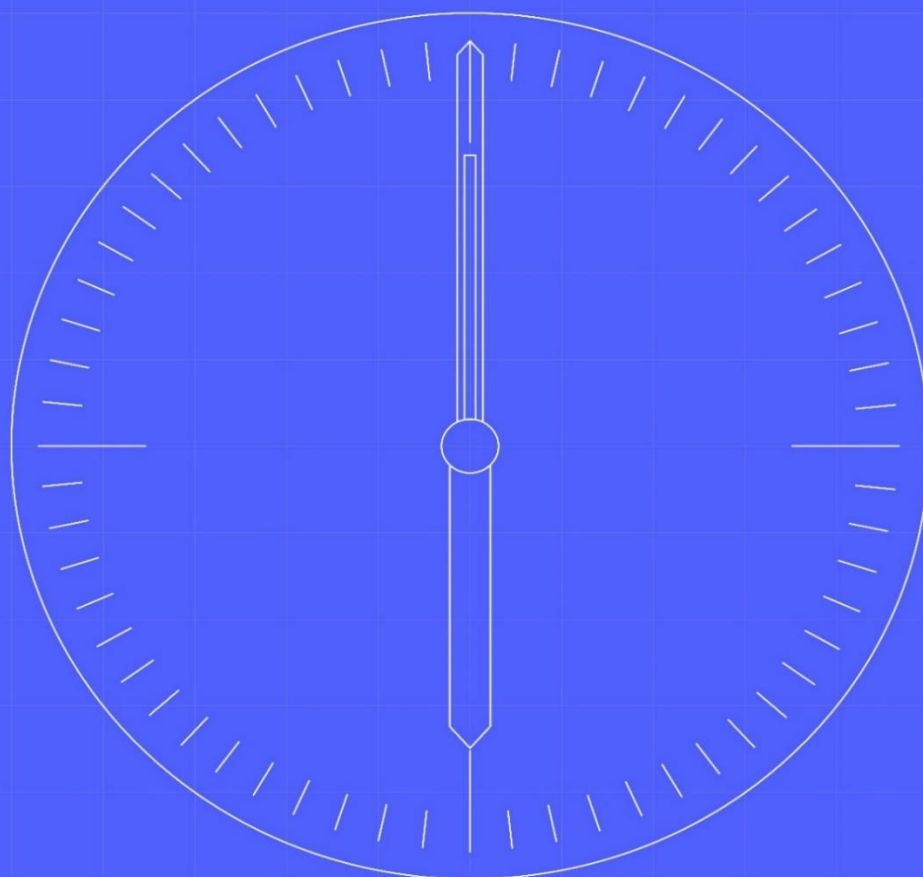


Non-SIT Supplier and Agent Qualification Test Data Approach and Plan



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BSC and REC

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Change Record

Date	Author	Version	Change Detail
07/05/2024	Non-SIT S&A QT Team	0.1	Initial Draft
09/05/2024	Non-SIT S&A QT Team	0.2	Incorporated internal review comments and added PoaP and milestone dates.
31/05/2024	Non-SIT S&A QT Team	0.3	Incorporated Code Body comments.
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07/06/2024	Non-SIT S&A QT Team	0.5	Final comments addressed and finalised for consultation
26/06/2024	Non-SIT S&A QT Team	0.6	Addressed comments from industry consultation
18/07/2024	Non-SIT S&A QT Team	1	Approved at QAG
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MHHSP Programme Team	Various
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References

Ref No.	Document	Publisher	Published	Additional Information
REF-1	MHHS-DEL1118 Qualification Approach & Plan	BSC and REC Code Bodies	3 rd April 2024	
REF-2	MHHS-DEL2433 QA&P Annex 2 – Non-SIT Supplier and Agent MHHS Qualification Testing Approach & Plan	Elexon	18 th March 2024	
REF-3	MHHSP EDI021 ISD Entities v5.7	MHHS Programme	11 th June 2024	

Terminology

Term	Description
Various	For terminology, see Programme Glossary on the MHHS portal: Programme Glossary (SharePoint.com) and Appendix A of [REF-1].

1 Executive Summary

The Non-SIT Supplier and Agent Qualification Test Data Approach and Plan should be read in conjunction with the Qualification Approach & Plan [REF-1]. It is a child document of the Non-SIT Supplier and Agent MHHS Qualification Testing Approach & Plan [REF-2] which describes the overall approach to Non-SIT Supplier and Agent Qualification Testing.

This document sets out the test data requirements for Qualification Testing, how these will be met and who will be responsible for meeting them.

The current working assumption is that Non-SIT Supplier and Agent Qualification Testing execution will commence from 25th August 2025 and will be preceded by the completion of Non-SIT Supplier and Agent Participants' readiness activities for those in Qualification Wave 1.

2 Introduction

2.1 Document Purpose

This document defines the approach to providing the test data necessary for Non-SIT Supplier and Agent Qualifying Parties (“Qualifying Parties”) to conduct Non-SIT Supplier and Agent Qualification Testing. It sets out the method for generating the required test data and how this will be populated within the Qualifying Parties’ systems prior to commencing Non-SIT Supplier and Agent Qualification Testing. It defines the required Test Data deliverables and those responsible for their delivery.

2.2 Background

When completed, the Market-wide Half Hourly Settlement (MHHS) Programme will contribute to a more cost-effective electricity system, encouraging more flexible use of energy and helping consumers lower their bills. In order to operate in the MHHS market, participants are required to qualify with the Balancing and Settlement Code (BSC) and/or Retail Energy Code (REC) dependent on their role; either through participation in the Systems Integration Testing (SIT) phase of the MHHS Programme or via the Qualification Testing phase. Suppliers and Agents qualifying via the Qualification Testing phase (“Qualifying Parties”) are required to complete Non-SIT Qualification Testing which involves successfully conducting a set of end-to-end business process-based tests in which all market roles other than their own are simulated by a Qualification Testing Framework (QTF). In order to undergo the majority of these tests, the Qualifying Parties must have a set of test data pre-populated.

2.3 Reviews and Approvals

The Non-SIT Supplier and Agent Qualification Test Data Approach and Plan will initially be reviewed by the Non-SIT S&A QT Team before undergoing formal review by the Code Bodies and MHHS. On completion of the Code Bodies’ and MHHS review, it will be distributed to the Data Working Group (DWG) and Qualification Working Group (QWG) for consultation. Comments will be considered and, where appropriate, incorporated to obtain a recommendation of approval from the QWG. Approval will then be requested from the Qualification Advisory Group (QAG).

The document will be made available for information via the MHHS Programme Portal.

2.4 Change Forecast

The Non-SIT S&A QT Team will own this document and keep it updated, with reviews and appropriate approvals as set out under MHHS Programme governance. At time of writing, Batches 1, 2 and 3 of the Functional Qualification Test Cases (QTCs) have been released for review. Release of a fourth Batch of QTCs is being considered to cover Non-SIT S&A Qualification Non-Functional Testing that can be executed in the QTF using Functional Tests. Should a fourth Batch be released, this document may require an update.

This document includes the test data requirements for Non-SIT S&A Qualification Functional and Migration Testing. It is not expected that the document will require updating should any additional functional tests be required for Non-SIT S&A Qualification Non-Functional Testing and Operational Testing.

2.5 Objectives

The objectives of Non-SIT S&A Qualification Testing are set out in [REF-2]. The objectives of this document are to define the Non-SIT S&A Qualification Test Data (henceforth referred to as “Test Data”) required to support Non-SIT S&A Qualification Functional and Migration Testing, including:

- the Test Data deliverables;
- the methods by which Test Data is populated prior to commencement of Non-SIT S&A Qualification Testing;
- the tasks to be performed in the production, distribution and loading of Test Data;
- the roles and responsibilities of parties for performing these tasks;
- the key milestones relating to Test Data.

3 MHHS Non-SIT S&A Qualification Testing Background

The scope of the MHHS ecosystem required to support Non-SIT S&A Qualification Testing and the Market Roles supported within Non-SIT S&A Qualification Testing are defined in [REF-2]. The Non-SIT S&A QT Team will provide a Qualification Testing Framework (QTF) that comprises the UIT (User Integration Testing) instance of the Data Integration Platform (DIP) and, in line with Systems Integration Testing (SIT), will also have access to the live Data Transfer Network (DTN).

Qualification requires Qualifying Parties to provide evidence of successfully completing a set of Qualification Test Cases (QTCs). A QTC is a representation of an end-to-end business process and comprises a number of Qualification Test Steps (QTSSs). The set of QTCs that each Qualifying Party will be required to complete (the “QTC Set”) will be determined by the Market Role for which the Qualifying Party is seeking Qualification and any modifications to this resulting from the Qualifying Party placing reliance on another participant and agreement with the Code Bodies. There will be a standard QTC Set for each Market Role. However, each Qualifying Party will have their own QTC Set that reflects any placing of reliance and/or optionality/exemptions they have agreed with the Code Bodies. The Non-SIT S&A QT Team will generate the test data required for the Qualifying Party from their QTC Set, once it has been agreed. As such, the number of test MPANs generated for each Qualifying Party will be dependent on their Market Role and any placing of reliance/optionality/exemptions agreed with the Code Bodies. Test data will be generated as part of the onboarding process.

Qualifying Parties will execute their QTC Set using the QTF. When executing a QTC within the QTF, the Qualifying Party performs the QTSSs relating to the Market Role for which they are seeking Qualification, with all other Market Roles involved in the end-to-end QTC being simulated by the QTF. A high-level representation of the QTF is illustrated below in Figure 1.

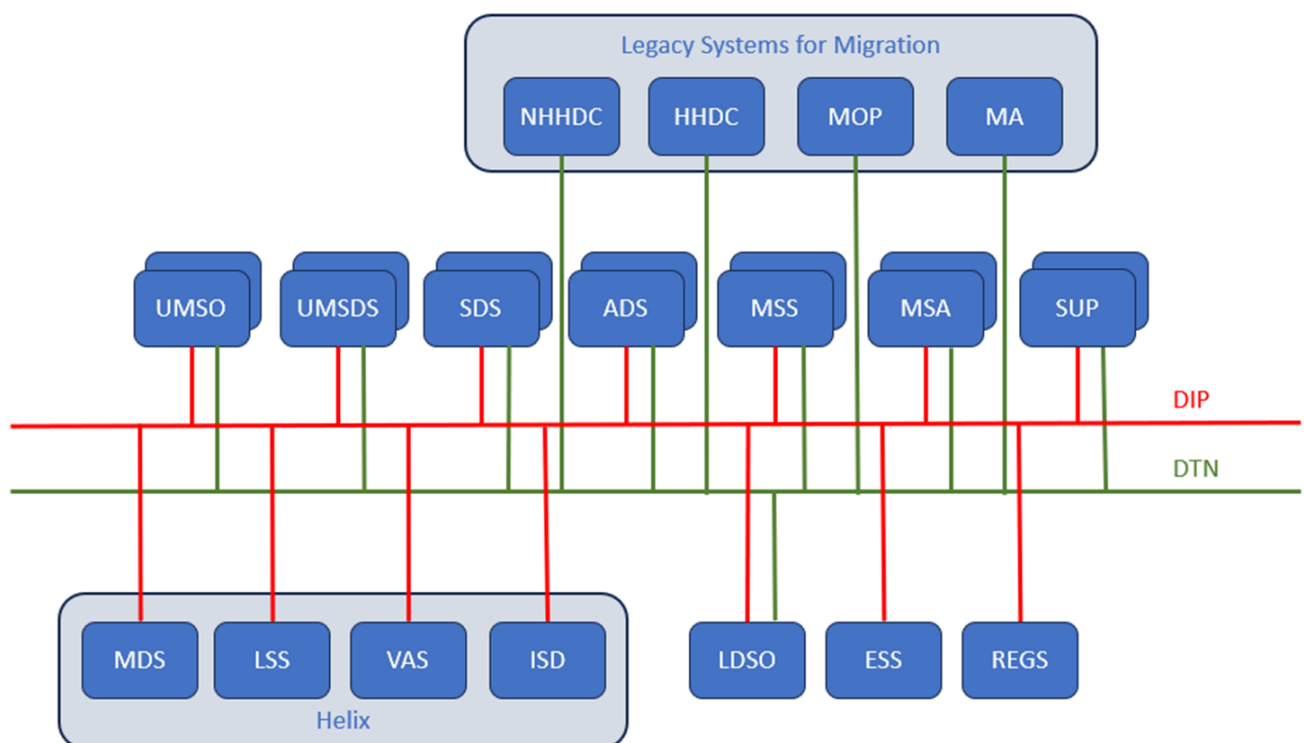


Figure 1: Qualification Testing Framework

4 Types of Test Data

4.1 Market Domain Data (MDD)

Qualifying Suppliers will require Qualification MDD (provided in D0269 and D0270 files) containing the MPIDs of the legacy test stubs contained within the QTF.

The decision to use an artificial Distributor ID when generating test MPANs for use in Non-SIT Supplier and Agent Qualification Testing (see sections 4.3.1 and 4.3.2) also requires additions to be made to the MDD used by Qualifying Suppliers (MDD is only required by Suppliers, all other Qualifying Party Market Roles will use ISD). In order to append a new Distributor ID, the Non-SIT S&A QT Team will copy all MDD entities relating to an existing Distributor ID and replace the existing Distributor ID with the new Distributor ID.

4.2 Industry Standing Data (ISD)

All Qualifying Parties will be required to load Qualification Industry Standard Data (ISD) in order to undergo Qualification Testing. Loading of this data set will form the first QTC to be performed within the Qualifying Party's QTC Set.

The Qualification ISD is the same as that used in non-SIT LDSO Qualification Testing. It will be based on SIT ISD but with the addition of Market Participant Organisations (ISD Entity ID 1), Market Participant to DIP Participant Mappings (ISD Entity ID M16) and Market Participant Role (ISD Entity ID 45) for the Market Participants simulated by the QTF and those Qualifying Parties going through Qualification. The Qualification ISD will also contain a modified Master Settlement Timetable (ISD Entity ID M14) to support the compressed Settlement Timetable used in Qualification Testing. The ISD Entity IDs referred to here can be found in [REF-3].

As with MDD (see section 4.14.1), the use of an artificial Distributor ID (see sections 4.3.14.3.1 and 4.3.24.3.2) also requires additions to be made to ISD. These include Market Participant Role (ISD Entity ID 45),

4.3 Meter Point Administration Numbers (MPANs)

4.3.1 Use of artificial MPANs

As described in [REF-2], Qualification Testing will use realistic, artificial MPANs modelled on Production data. The rationale for this is it:

- avoids all GDPR constraints such as the need for secure transmission and obfuscation of MPAN Cores;
- simplifies production of MPANs with the characteristics required for each QTC;
- ensures that MPANs can be generated in sufficient volumes to allow QTCs to be repeated in the event of failures and/or regression;
- avoids the need for a Production data cut;
- caters for new market entrants/new market roles who are not able to take a Production data cut;
- enables the QTF to automatically orchestrate the appropriate simulated messages and expected results checks associated with the QTC being executed.

To ensure that Qualification Testing is representative of Production operation, the artificial MPANs will be modelled on MPANs in Production sourced by the Non-SIT S&A QT Team from SIT MPANs and/or Electricity Enquiry Service (EES). All MPAN Cores will be manufactured by the Non-SIT S&A QT Team.

4.3.2 MPAN Core

MPAN Cores will comprise:

- a two-digit Distributor ID (96) consistent with that distributed in the Qualification MDD and ISD;
- a sequential identifier, unique to the Qualifying Party and to a specific QTC they are required to perform;
- a valid single check digit calculated from the combined Distribution ID and sequential identifier.

Non-SIT Supplier and Agent Qualification is being conducted in the same environment (UIT) as Non-SIT LDSO Qualification. There is also the possibility that the two LDSO SIT Participants wish to conduct Sandbox testing in the UIT environment once having qualified through SIT. For this reason, in order to maintain data segregation between participants and testing phases, it is not practicable to select an existing Distributor ID for use in Non-SIT Supplier and Agent Qualification. The Non-SIT S&A QT Team will, therefore, select an unused Distributor ID ('QTFE' with Distributor Short Code 96) when generating MPAN Cores. This will require additions to both Market Domain Data (see section 4.1) and Industry Standing Data (see section 4.24.1). The necessary updates will be performed by selecting and copying an existing Distributor ID and then substituting the existing Distributor ID for the selected artificial Distributor ID.

A common sequential identifier will be maintained for all Qualifying Parties, thus ensuring that each MPAN Core generated is unique.

The single check digit will be calculated using the industry-agreed algorithm to ensure that it passes production validation.

MPAN Cores will be produced by the Non-SIT S&A QT Team during Qualifying Party onboarding once the Qualifying Party's QTC Set has been agreed. Each MPAN Core will be unique to a given Qualifying Party and QTC. Sufficient MPAN Cores will be generated for each QTC in the QTC Set to allow the Qualifying Party to re-run QTCs to allow for re-tests and regression testing. The Non-SIT S&A QT Team will generate 20 Test MPANs/MPAN sets for each QTC of a Qualifying Party's QTC Set. An MPAN set is a set of 2 or more MPANs required to run a QTC, for instance an Import/Export MPAN pair, or Primary/Secondary Related MPAN pair.

4.3.3 MPAN Attributes

In the context of this document, an MPAN Attribute is a characteristic that contributes to the definition of an MPAN. For example, Energy Direction is an MPAN Attribute that defines whether the MPAN is associated with import or export. The Non-SIT S&A QT Team has identified between 100 and 150 MPAN Attributes that are required to fully define an MPAN. These MPAN Attributes have been identified by analysing the contents of DIP messages, DTC data flows and CSS messages during the acquisition of new customers through change of supply or new connections. When generating MPANs for Qualification Testing, the Non-SIT S&A QT Team will source the values of MPAN Attributes from Production MPANs, SIT MPANs and/or EES to ensure Test MPANs are realistic and reflective of live operation.

4.3.4 MPAN Attribute Dependencies

The values of some MPAN Attributes are dependent on the values of others. For example, ISD Entity ID M7 "Valid Market Segment/Connection/Meter Type/Meter Group [REF-3] defines the valid combinations of these four MPAN Attributes. When selecting values for MPAN Attributes, the Non-SIT S&A QT Team will ensure that known dependencies between MPAN Attributes are considered to avoid the resulting MPANs from being rejected by Qualifying Parties' systems.

An obvious example of MPAN Attribute dependency is ensuring consistency between MPAN Attributes relating to GSP Group. This includes the Distributor ID, GSP Group, Meter Timeswitch Class (MTC) ID, Profile Class (PC) ID, Standard Settlement Configuration (SSC) ID, Line Loss Factor Class (LLFC) ID, postcode and the Distributor ID contained within the MPAN Core.

The Non-SIT S&A QT Team will distribute a list of MPAN Attributes for review by Qualifying Parties. This will also identify those MPAN Attribute dependencies that the Non-SIT S&A QT Team has identified. As part of the review of this mapping, Qualifying Parties will be requested to identify any missing MPAN Attributes and/or MPAN Attribute dependencies.

4.3.5 MPAN Types and MPAN Type Attributes

As in SIT, each QTC must be run with a certain type of MPAN. For example, when executing a QTC that involves the energisation of an Advanced meter, the test should commence with a de-energised Advanced meter. In this example, the MPAN Attributes of Meter Group, Metered/Unmetered Indicator and Energisation Status should have the prescribed values of "Advanced", "M" and "D", respectively.

As described above, each MPAN Core generated by the Non-SIT S&A QT Team is allocated to a specific Qualifying Party and QTC. Linking an MPAN Core to a QTC enables the Qualification Testing Framework to orchestrate the

appropriate simulated messages and expected result checks associated with that QTC. The linking of an MPAN Core to a QTC also defines the values of some of the MPAN Attributes. For the purposes of this document, these MPAN Attributes are defined as MPAN Type Attributes and the collection of these for a given MPAN define the type of the MPAN (or “MPAN Type”).

The Non-SIT S&A QT Team has identified 19 MPAN Type Attributes that define the MPAN Types required to run the current set of QTCs. The MPAN Type Attributes that have been identified are:

- Meter Group (Advanced, Smart, Traditional, Unmetered);
- Type (Single, Linked, Related);
- Energy Direction (I, E);
- Energisation Status (E, D);
- MPAN Type (Primary, Secondary);
- Connection Type (U, W, L, H, E);
- Consent Granularity (H, D, M, N);
- Meter Configuration (None/Main/Check);
- SMETS (SMETS1/SMETS2);
- Tariff (Single Rate/E7);
- History (Meter Exchange/No Meter Exchange);
- Domestic Premise Indicator (True/False);
- Metered Indicator (True/False);
- Measurement Class (A/C/D/F/G);
- Supplier (Import = Export, Import <> Export);
- Switch Regime (998/Not Applicable);
- Contract Reference (Exists, Doesn't Exist);
- SMSO (Set/Not Set);
- IHD (Present/Not Present).

Permitted values are taken from the latest Swagger definitions.

Each QTC requires an MPAN with specific values for one or more of these MPAN Type Attributes. The Non-SIT S&A QT Team has identified ~90 MPAN Types (i.e. different combinations of one or more MPAN Type Attributes) required to run the QTCs. The Non-SIT S&A QT Team has also identified that some QTCs require more than one MPAN of different MPAN Types (e.g. linked Import and Export MPANs).

4.3.6 MPAN Templates

In the context of Qualification Testing, an MPAN Template is defined as the collection of MPAN Attributes that fully define an MPAN of a specific MPAN Type. This comprises the set of MPAN Attributes necessary to fully define an MPAN, including one or more MPAN Type Attributes; the values of which are defined by the MPAN Type of the MPAN Template. The Non-SIT S&A QT Team use MPAN Templates to generate Test MPANs for a Qualifying Party that are of the required MPAN Types for a Qualifying Party's QTC Set.

4.3.7 MPAN Files

As described in section 4.3.27.1, the Non-SIT S&A QT Team is responsible for generating the Test MPANs required by a Qualifying Party to execute Qualification Testing. Each Test MPAN is unique to a Qualifying Party and a QTC. The Non-SIT S&A QT Team will generate sufficient MPAN Cores for each QTC to enable multiple runs by the Qualifying Party to allow for failures, re-tests and regression tests. The Non-SIT S&A QT Team will combine each MPAN Core with the appropriate MPAN Template to generate a Test MPAN of the appropriate MPAN Type for the QTC to which it has been assigned.

The MPAN Core and the set of MPAN Attributes derived from the MPAN Template that are required by Suppliers to set up the MPAN within their system(s) will be saved in .CSV files (“MPAN Files”). Each Test MPAN required for a Supplier to complete Qualification will be provided by the Non-SIT S&A QT Team in one of two different CSV MPAN Files, namely:

- **A Legacy MPAN File:** containing the Test MPANs the Supplier should load as legacy (existing) MPANs prior to migrating these MPANs to MHHS at the start of Qualification Testing
- **A Gain MPAN File:** containing details of Test MPANs to be created/won during Qualification Testing (e.g. MPAN Attributes for an MPAN that is to be gained into MHHS through a Change of Supply QTC, or a newly created MPAN in the case of a New Connection QTC). Whilst the Gain MPAN File does not need to be loaded into a Qualifying Party's system(s) prior to the start of Qualification Testing, the contents will be required by the Qualifying Party when running specific QTCs, notably those where a Supplier is gaining an MPAN into MHHS and needs to know the MPAN they are gaining in order to initiate the QTC. Suppliers may need to load some of these data items to be able to set up their system(s) prior to gaining the MPAN, for example MPAN, address, market segment etc. These would likely be the data items that are currently obtained from ECOES/EES API as part of a quote process.

No obfuscation of MPAN Cores or secure transfer of the MPAN Files between the Non-SIT S&A QT Team and the Qualifying Party will be required because the QTF uses artificial Test MPANs.

Agents will not require such MPAN Files as their systems will be populated with Test MPANs as part of the bulk Change of Service QTC to be run at the start of Qualification Testing. In the case of Agents, the QTF will use the Legacy, and Gain MPAN Files generated by the Non-SIT S&A QT Team to instigate the bulk migration through which the Agent's system(s) will be populated and to introduce any new Test MPANs required during the course of Agent Qualification.

All roles will be provided:

- **A Default Configuration Data File:** containing default data values required for QTCs where that data is not explicitly described in the QTF (e.g. the MPIDs of the MHHS Agents to be appointed during the migration process);
- **A library of Consumption Data:** for each QTC as appropriate, a spreadsheet of consumption and/or meter readings to be submitted during settlement or consumption-related QTCs to enable the QTF to verify the expected results (e.g. the contents of IF-021s submitted by the Data Service). Each spreadsheet and the data within it, is specific to a QTC and contains the meter readings or consumption values that must be used for specific steps in that QTC. It includes the calculations for the particular method from the appropriate Methodology statement to determine the expected consumption values used in the QTF template expected result files. For instance, should a Supplier need to run QT-272, they must send a Consumption Amendment request in an IF-027. The Consumption Amendment Period Start Date, Consumption Amendment Period End Date and Gross Revised Consumption values to be used are provided in QT-272 Consumption Data.xlsx. Using values other than those provided will cause the test to fail.

Examples of each of these files will be made available on the Collaboration Base. A summary of the files to be received by the different Qualifying Party Roles is provided in the table below.

File	Data Service	Metering Service	Supplier
MDD (D0269/D0270)	No	No	Yes
Legacy MPAN File	No	No	Yes
Gain MPAN File	No	No	Yes
Default Configuration Data File	Yes	Yes	Yes
Library of Consumption Data	Yes	Yes	Yes

Table 1: QTF Files required by role

5 Test Data Process

Qualification Testing will commence with the population of a Qualifying Party's system(s) with the Test Data necessary to conduct all QTCs within the Qualifying Party's QTC Set. The process by which this is achieved varies depending on the Market Role of the Qualifying Party.

The set of Test MPANs required to complete Qualification will be generated for all Qualifying Parties as part of the Qualification onboarding process and will take the form of a Legacy MPAN File and Gain MPAN File (see section 4.3.7). These will be tailored to the individual Qualifying Party's QTC Set which, itself, may have been customised for the Qualifying Party to reflect any agreed placing of reliance or optionality/exemptions the Qualifying Party has agreed with Code Bodies.

A summary of the availability of the various Test Data is shown below in Table 2: Non-SIT S&A Team Test Data availability

Test Data Type	Required by Roles	Availability Location	Produced	Delivered	PP Upload
MDD	Suppliers	Collaboration Base	04/04/2025	04/04/2025	Prior to loading Legacy MPANs
Legacy MPAN File	Suppliers	Distributed via dedicated Teams channel	Produced during onboarding of each Supplier	Once produced	Prior to commencing QT
Gain MPAN File	Suppliers	Distributed via dedicated Teams channel	Produced during onboarding of each Supplier	Once produced	Prior to commencing QT
ISD	All	As per URI in IF-047	ISD updated per Wave with QPs details.	IF-047 issued at start of Wave and for each subsequent QP onboarded to QTF	First QT run during Qualification. Consume IF-047, download ISD, apply ISD
QTF Default Configuration File	All	Collaboration Base	Ahead of Wave 1	Ahead of Wave 1	Refer to contents during QT
Library of Consumption Data	All	Collaboration Base	Ahead of Wave 1	Ahead of Wave 1	Refer to contents during QT

Table 2: Non-SIT S&A Team Test Data availability

5.1 MDD

All Suppliers will be required to load a Qualification set of MDD as described in section 4.1 so that QTF legacy agent stubs can be appointed to legacy MPANs.

MDD D0269 and D0270 files have been made available on the Collaboration Base.

5.2 ISD

All Qualifying Parties will be required to load a Qualification set of ISD as described in section 4.2. The process for doing so will be receipt and processing of an IF-047 which will be the first QTC to be executed in the Qualifying Party's QTC Set.

Each time an IF-047 is sent by the QTF, the DIP sends the corresponding PUB-047 to all roles. The QTF will trigger multiple IF-047 messages (once per Qualifying Party running their first QTC), and each Qualifying Party connected to

the UIT DIP will receive the PUB-047 message. The only changes expected to the contents of ISD during Qualification will be the addition of Qualifying Parties details in Market Participant Organisations (ISD Entity ID 1), Market Participant to DIP Participant Mappings (ISD Entity ID M16) and Market Participant Role (ISD Entity ID 45). Therefore, Qualifying Parties that download and apply their ISD automatically may want to consider deactivating the message channel following successful receipt of IF-047 to prevent this reapplication of near duplicate ISD.

5.3 Test MPANs

The process for loading Test MPANs into a Qualifying Party's system(s) will depend on the Market Role for which the Qualifying Party is seeking Qualification and whether the Qualifying Party is appointed to the MPAN at the start of the QTC.

5.3.1 Suppliers

Legacy MPANs

Qualifying Parties wishing to qualify for the Supplier Market Role will be required to upload the Test MPANs contained in the Legacy MPAN File provided by the Non-SIT S&A QT Team to their system(s) as legacy/existing MPANs before performing a migration by following a Change of Service Forward Migration business process.

For purposes of clarity, Change of Service Forward Migration business processes are being used to populate the Qualifying Party's system(s) with sufficient MHHS Test MPANs to complete Qualification Functional Testing.

Sufficient MPAN Attributes will be provided in the Legacy MPAN File to define the legacy MPAN. The MPAN File contains a superset of attributes that a Supplier would be likely to be informed of during a legacy set up. The subset of data items required for a Supplier to set up a legacy MPAN is specific to each Supplier.

By providing this data, potential validation failures in Supplier's systems can be avoided when running a QTC. For instance, System Voltage is included in the D0268 sent to Supplier by the Advanced Metering Service, therefore the value that will be used in the QTC is provided within the MPAN file to avoid mismatches and D0268 exceptions.

The Default Configuration Data File will contain the MPIDs of the MHHS Agents that should be appointed for each MPAN when it is migrated to MHHS.

Having successfully loaded the set of Qualification ISD (see section 5.25.2), the Supplier will be required to instigate a series of QTCs to migrate the Test MPANs contained in the Legacy MPAN File to MHHS via Change of Service Forward Migrations. Separate QTCs will be defined for migrating Traditional, HH Advanced, NHH Advanced, HH Smart, NHH Smart and Unmetered MPANs.

Gain MPANs

The Non-SIT S&A QT Team will provide Qualifying Parties wishing to qualify for the Supplier Market Role with Test MPANs contained in a Gain MPAN File. This contains Test MPANs to be created/won during Qualification Testing (e.g. MPAN Attributes for an MPAN that is to be gained through a Change of Supply QTC or a newly created MPAN in the case of a New Connection).

Whilst the Gain MPAN File does not need to be loaded into a Qualifying Party's system(s) prior to the start of Qualification Testing, a subset of the data attributes will be required by the Qualifying Party when running specific QTCs, notably those where a Supplier is gaining an MPAN and needs to know the MPAN they are gaining in order to initiate the QTC.

The MPAN File contains a superset of attributes that a Supplier would be likely to be informed of during a new connection set up. The subset of data items required for a Supplier to set up a new MPAN is specific to each Supplier. Suppliers may need to load some of these data items to be able to set up their system(s) prior to gaining the MPAN, for example MPAN, address, market segment etc. These would likely be the data items that are currently obtained from ECOES/EES API as part of a quote process.

5.3.2 Agents

Qualifying Parties wishing to qualify for an Agent Market Role will load their Test MPANs via Change of Service Forward Migrations. These will be instigated by the Qualifying Party by running a series of QTCs in which the Supplier responsible for migrating the Test MPANs will be simulated by the QTF. Population of the Agent's system(s) will be achieved through Agent appointment.

5.4 Post-Test MPAN population

5.4.1 Selecting QTCs to run

Having successfully completed the ISD QTC, the Qualifying Party is free to conduct the remaining QTCs in its QTC Set in any order. As each Test MPAN or MPAN set is linked to a single QTC, there is no dependency between QTCs other than the MPAN onboarding QTC to migrate the legacy MPAN to MHHS if required.

5.4.2 Selecting MPAN(s) for a QTC run

When electing to run a QTC, the Qualifying Party will be prompted to select a Test MPAN from a list of those that have been assigned to that QTC and have not already been used. If the QTC requires multiple MPANs (e.g. Related or Linked MPANs), these will be automatically associated with the selected Test MPAN. If the QTC requires the MPAN or MPAN set to be migrated to MHHS, an MPAN Onboarding QTC must be run first. Each QTC is linked to a specific MPAN Onboarding QTC which is relevant to the Qualifying Party's role, the market segment etc. Only when the MPAN Onboarding QTC has run successfully, can the QTC itself be run.

If the QTC does not require the MPAN or MPAN set to be migrated to MHHS, for instance for a New Connection scenario QTC (where the MPAN is established as MHHS), no MPAN Onboarding QTC will be linked to this QTC, and the QTC can be run immediately.

The QTF does not retain knowledge of Test MPANs beyond that required to run the QTC to which the Test MPAN has been assigned. It is not possible to re-run a QTC using the same Test MPAN. For this reason, the Qualifying Party will only be presented with unused Test MPANs when selecting an MPAN or MPAN set with which to run a QTC.

The Non-SIT S&A QT Team will generate multiple Test MPANs/Test MPAN sets for each QTC to enable QTC re-runs. The intention is to generate 20 Test MPANs/MPAN sets to support all re-runs likely to be required during Qualification (whether to address QTC Run failures or support regression testing). However, should a Qualifying Party require additional Test MPANs, these can be requested from the Non-SIT S&A QT Team via the QP's dedicated Teams channel. Should a Qualifying Party wish to use the QTF for Sandbox testing, the Non-SIT S&A QT Team will issue them with a new set of Test MPANs for this purpose. Issuing new Test MPANs for Sandbox testing will ensure segregation between Qualification and Sandbox testing is maintained. The MHHS Programme retains overall responsibility for the provision of the Sandbox environment as described in the E2E Testing and Integration Strategy (DES315).

5.4.3 Generation of Trigger Files

The QTF simulates all Market Roles other than that for which the Qualifying Party is undergoing Qualification. This involves generating the messages (DIP and DTN) that these simulated Market Roles are required to send in support of each QTC. In the context of this document, these simulated messages are termed "Trigger Files".

The QTF generates the required Trigger Files dynamically during QTC running.

To simplify the data within QTCs and the production of Trigger Files, any optional DIP message blocks/fields or DTN data items are not populated or present unless the QTC explicitly requires them.

5.4.4 Generation of Expected Result Files

In addition to simulating all Market Roles other than that for which the Qualifying Party is undergoing Qualification, the QTF also automatically validates messages produced by the Qualifying Party. It does this by comparing specific elements of messages produced by the Qualifying Party with Expected Result Files. Expected Result Files are created dynamically during QTC running. The elements compared depend on the message, but the comparison is designed to

ensure compliance with the underlying MHHS business process. 5.4.3The QTF automatically stores results of comparisons between Qualifying Party messages and Expected Result Files as evidence in the QTF and ADO. If the comparison is successful, the QTF automatically proceeds to the next QTS in the QTC. However, if a comparison fails, the QTF will automatically fail the QTC run. The Qualifying Party can then view the results of the comparison to determine the cause of the failure and re-run the QTC with a new MPAN or MPAN set once the problem has been addressed.

6 Test Data Anonymisation

6.1 Artificial Test Data

As the Test MPANs used in Qualification Testing are artificial, they are not considered to be Personal Identifiable Information (PII). As such, MPAN Cores can be shared in Test Reports and uploaded as evidence without the need for obfuscation or anonymization. Similarly, MPAN Files can be exchanged without the need for secure transfer arrangements.

7 Roles and Responsibilities

7.1 Non-SIT S&A QT Team Test Data-related Responsibilities

Table 3 below lists the Test Data-related tasks that the Non-SIT S&A QT Team will perform prior to and during Qualification Testing.

Activity	Detail	Timeline
Test Data Plan and Approach	Create Test Data Plan and Approach and manage to sign-off	18/07/2024
Identify MPAN Types	Identify complete set of MPAN Types required by full set of QTCs	Complete
Identify MPAN Attributes	Identify complete set of MPAN Attributes required for each MPAN Type	Complete
Identify MPAN Attribute Dependencies	Identify complete set of MPAN Type Dependencies between MPAN Attributes	Complete
Provide MPAN Type/Attribute Mapping	Provide a mapping of MPAN Attributes required for each MPAN Type, including MPAN Type Dependencies	Complete
Provide sample MPAN Files to Suppliers	Generate a set of sample Test MPANs and distribute to Suppliers in MPAN Files to validate format/content prior to start of Qualification.	31/03/2025
Generate Test MPAN Cores	Generate a set of Test MPAN Cores for a specific Qualifying Party based on their agreed QTC Set.	Part of Qualifying Party onboarding.
Allocate Test MPAN Cores to QTCs	Assign Test MPAN Cores to QTCs within Qualifying Party's QTC Set.	Part of Qualifying Party onboarding.
Generate MPAN Files	Combine Test MPAN Cores with appropriate MPAN Templates to generate Test MPANs for a specific Qualifying Party based on their agreed QTC Set.	Part of Qualifying Party onboarding.
Generate Trigger Files and Expected Result Files	Generate a set of Trigger Files and Expected Result Files based on the QTCs in Qualifying Party's QTC Set and the Test MPANs that have been allocated to them.	Dynamically during QTC execution
Test Data support	Provide general support to Non-SIT S&A Qualifying Parties	Prior to, and during, Qualification Testing execution.
Defect Management support – Test Data	Provide defect triage support for any defects relating to data	Prior to, and during, Qualification Testing execution.

Table 3: Non-SIT S&A Team Test Data-related Responsibilities

7.2 Non-SIT S&A QT Qualifying Party Data-related Responsibilities

7.2.1 All Qualifying Parties

Table 4, below, lists the Test Data-related tasks that all Qualifying Parties will be required to perform prior to, and during, Qualification Testing.

Activity	Detail	Timeline
Review Test Data Plan & Approach	Provide feedback during industry consultation of the Non-SIT S&A Test Data Plan & Approach.	07/06/2024 – TBC
Identify any missing MPAN Attributes/MPAN Attribute Dependencies	As part of a review of the mapping of MPAN Attributes to MPAN Types released by the Non-SIT S&A QT Team, Qualifying Parties are requested to identify any missing MPAN Attributes required by their systems and/or MPAN Attribute Dependencies whose absence would result in the MPAN failing system validation.	07/06/2024 (2 weeks after issuing in 24/05/2024)
Commence Qualification Testing by executing the ISD QTC.	All Qualifying Parties should commence Qualification Testing by loading the Qualification ISD set. This is done by executing the ISD QTC.	Start of Qualification Testing
Commence Qualification Testing by executing the Forward Migration QTCs	Having loaded the Qualification ISD set by successfully executing the ISD QTC, all Qualifying Parties should populate their systems with the necessary MHHS Test MPANs required to complete Qualification Testing by running the Forward Migration QTCs. Each single MPAN migration must be completed before attempting the QTC.	Start of Qualification Testing

Table 4: All Non-SIT S&A Qualifying Party Responsibilities

7.2.2 Suppliers

Table 5, below, lists the additional Test Data-related tasks that Supplier Qualifying Parties will be required to perform prior to and during Qualification Testing.

Activity	Detail	Timeline
Preliminary load of sample MPAN Files	Supplier Qualifying Parties will be asked to attempt to load a sample MPAN Files released by the Non-SIT S&A QT Team to validate its structure and content.	14/06/2024 (2 weeks after issuing on 31/05/2024)
Load MPAN File prior to start of Qualification Testing	Supplier Qualifying Parties will be provided with a Legacy MPAN Files containing the Test MPANs required for them to complete Qualification Testing. The contents of the Legacy MPAN File should be loaded as legacy MPANs prior to the start of Qualification Testing.	Part of Qualifying Party onboarding.
Use provided MPAN Attributes for initiating Change of Supply Gains/New Connection-related QTCs	Supplier Qualifying Parties will be provided with a separate Gain MPAN File containing MPAN Attributes for MPANs to be used in Change of Supply Gains/New Connection-related QTCs in which the Supplier is required to initiate the QTC by entering details of a new MPAN.	During Qualification Testing.

Table 5: All Non-SIT Supplier Qualifying Party Responsibilities

7.2.3 Agents

There are no additional Test Data-related activities required of Agents other than those listed in section 57.2.1.

8 Assumptions, Dependencies and Risks

8.1 Assumptions

In formulating this Non-SIT S&A Qualification Test Data Approach & Plan, the following assumptions have been made:

- Qualifying Parties will use artificial MPAN data provided by the Non-SIT S&A QT Team.
- Suppliers will be able to populate their systems with legacy MPANs based on MPAN Attributes contained in the Legacy MPAN File provided to them by the Non-SIT S&A QT Team.
- Qualifying Parties will successfully execute the ISD QTC prior to attempting any other Qualification QTC.
- Test MPAN population of Qualifying Party systems will use Forward Migration Change of Service business processes to migrate legacy MPANs populated from MPAN Files to MHHS.
- Sandbox testing will inherit the same environment, QTF and Test Data approach as is provided for Qualification Testing.

8.2 Dependencies

In formulating this Non-SIT S&A Qualification Test Data Approach & Plan, the following dependencies have been identified:

- Qualifying Parties will review the MPAN Attributes and MPAN Attribute dependencies proposed by the Non-SIT S&A QT Team and identify any missing attributes/dependencies that may prevent the successful loading and migration of artificial legacy MPANs.
- The QTF will be in place by the required timescales and built to align with the Non-SIT S&A Qualification Testing requirements.
- The ISD QTC should be successfully completed prior to attempting any other Qualification QTC.
- The Forward Migration Change of Service (MPAN Onboarding) QTC should be successfully completed prior to attempting each Qualification QTC (other than the ISD QTC, CoS Gain or New Connection QTCs which do not require MPAN Onboarding).
- Suppliers will successfully complete the load of legacy MPANs contained in the Legacy MPAN File provided by the Non-SIT S&A QT Team prior to commencing Qualification Testing.
- Since QTCs are based on SIT Functional, Migration, Non-Functional and Operational Test Cases, the Non-SIT S&A QT Team is dependent on having access to stable SIT Test Cases.

8.3 Risks

In formulating this Non-SIT S&A Qualification Test Approach & Plan, the risks contained in Table 6: Qualification Test Data-related RisksTable 6 have been identified.

Risk	Description	Prob	Impact	Score	Mitigation
Suppliers are unable to use artificial MPANs	It proves unfeasible for Suppliers to load legacy MPANs from MPAN Attributes provided in MPAN Files.	Med	High	Med	Consider asking affected Suppliers to populate MPAN Templates based on Production MPANs. Reintroduce MPAN Core SFTP and obfuscation.
Problems with Migration	SIT Migration reveals problems with Forward Migration Change of Service business processes.	Low	Low	Low	Consider populating Qualifying Parties' systems with MHHS MPANs though Change of Agent/Change of Supply.

Table 6: Qualification Test Data-related Risks