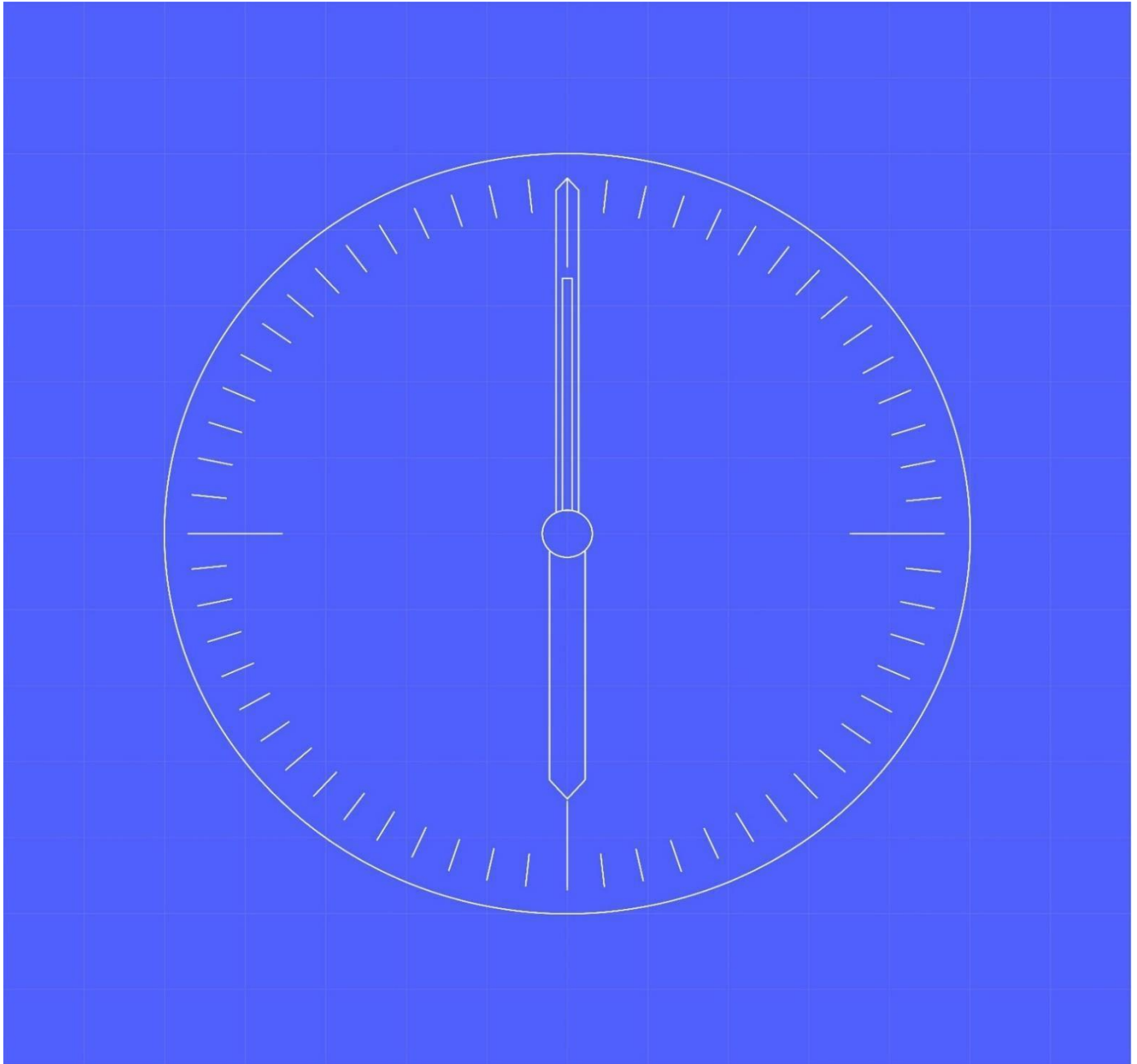




Non-SIT LDSO Qualification Test Data Approach & Plan



Document owner

Paul Morgan

Status:

Approved

Document number

MHHS-DEL2455

Date

28/08/24

Version

V2.0

Classification

Public



1. Contents

1. Contents	1
Change Record	3
Reviewers	3
References	3
Terminology	3
1 Executive Summary	4
2 Introduction	4
2.1 Document Purpose	4
2.2 Background	4
2.3 Reviews and Approvals	4
2.4 Change Forecast	4
3 Objectives	5
4 MHHS Non-SIT LDSO Qualification Test Architecture & Coverage	6
4.1 Non SIT LDSO Qualification Test Environment	7
5 In Scope	8
5.1 MHHS Non-SIT LDSO Qualification Test Harness Tool	9
5.2 Roles	10
5.3 Business Processes in scope	11
6 Test Data Plan on a Page	12
6.1 Test Data Schedule	13
7 Test Data Process	14
7.1 Overview	14
7.2 Data Test Plan circulation	14
7.3 Initial Data Analysis	14
7.4 Test cases - including Test Data conditions	14
7.5 Data validation/analysis against test cases	15
7.6 Data cut	15
7.7 Test Data Allocation	16
7.8 Test Data Augmentation – Data Cleansing	16
7.9 Test Data Loading	17
7.10 Test Data Sharing – Secure File Transfer Protocol (SFTP)	20
7.11 Test Data sign off	20
7.12 Start of non-SIT LDSO Qualification Testing	20
8 Test Data Scenarios	21
8.1 LDSO-Systems > DIP > LDSO Systems	21
8.2 MHHS Testing Tool > DIP > LDSO Systems	22
8.3 LDSO Systems > DIP > MHHS Testing Tool	22

9	Test Data Anonymisation	23
10	Roles and Responsibilities	24
10.1	Non-SIT LDSO Qualification Test Data Team Roles and Responsibilities	24
10.2	Non-SIT LDSO Participant Roles and Responsibilities	25
11	Assumptions	26
12	Dependencies and Risks	26
12.1	Dependencies	26
12.2	Risks	26
13	Out of Scope	27
Table 1	LDSO Roles in scope of Non-SIT LDSO Qualification	10
Table 2	Business Processes in scope of Non-SIT LDSO Qualification Testing	11
Table 3	Test Data Schedule	13
Table 4	Data Cut Deliverables	15
Table 5	Non-SIT LDSO Qualification Test Data Team Roles and Responsibilities	24
Table 6	Non-SIT LDSO Participant Roles and Responsibilities	25
Figure 1	Target Operating Model	6
Figure 2	Non-SIT LDSO Test Environment Architecture	7
Figure 3	Non-SIT LDSO Qualification Test Tool Example Test Scenario Flow	9
Figure 4	Non-SIT LDSO Qualification Test Data Plan on a Page	12
Figure 5	MHHSP TOM Workflow	17
Figure 6	Test Data Loading Non-SIT LDSO systems	18
Figure 7	Test Data Loading - DIP	19
Figure 8	LDSO Systems > DIP > LDSO Systems	21
Figure 9	MHHS Testing Tool > DIP > LDSO Systems	22
Figure 10	LDSO Systems > DIP > MHHS Testing Tool	22

Change Record

Date	Author	Version	Change Detail
20/02/24	Paul Morgan	0.1	Initial Draft
22/02/24-11/03/24	Paul Morgan	0.2-0.6	Amendments made following internal review comments
20/03/24	Paul Morgan	0.7	Amendments made following Code Body review comments
28/03/24	Paul Morgan	0.9	Issued for Industry Consultation
23/05/24	Paul Morgan	1.0	Approved
03/07/24	Paul Morgan	1.1	References to NFT and Operational Testing removed to reflect Annex 1
28/08/24	Paul Morgan	2.0	Baseline document approved at QAG

Reviewers

Reviewer	Role
MHHS Programme Team	Various
LDP	Various
SRO	Various
Code Bodies (BSC and REC)	Various

References

Ref No.	Document	Publisher	Published	Additional Information
REF-1	MHHS-DEL2183 Annex 1 Non SIT LDSO MHHS Qualification Test Approach and Plan	BSC and REC Code Bodies	4th March 2024	
REF-2	MHHS-DEL813 Overarching Test Data Approach & Plan	SI Test Team	19th July 2023	
REF-3	MHHS-DEL1309 SIT Data Cut High-Level Guidance for 19 th August	Cesar Lopes	19th July 2023	
REF-4	MHS-DEL1556 Test Data SFTP Guide	Cesar Lopes	15 th September 2023	
REF-5	MHHS-DEL1181 MHHS Programme Data Cleanse Plan	Migration Team	24th July 2023	
REF-6	MHHS-DEL1128 MHHS – Migration, Cutover and Data Strategy	Migration Team	2nd June 2023	
REF-7	MHHS-DEL 1309 SIT CIT Test Data Approach & Plan	Cesar Lopes	19th July 2023	
REF-8	MHHS-DEL2112 SIT Functional Data Loading High-Level Guidance	Cesar Lopes	4th January 2024	
REF-9	MHHS-DEL1662 SIT Migration Test Data Approach & Plan	Cesar Lopes	20th December 2023	
REF-10	MHHS-DEL1118 Qualification Approach & Plan	BSC and REC Code Bodies	31st January 2024	

Terminology

Term	Description
Various	For terminology, see Programme Glossary on the MHHS portal: Programme Glossary (SharePoint.com)

1 Executive Summary

The Non-SIT LDSO Qualification Test Data Approach & Plan should be read in conjunction with Annex 1 and the Qualification Approach & Plan (REF-10). It is a child document of the Non-SIT LDSO MHHS Qualification Testing Approach and Plan which describes the overall approach to non-SIT LDSO Qualification Testing. It is recommended that the Non-SIT LDSO Qualification Testing Test Data Approach and Plan is read in conjunction with the Non-SIT LDSO MHHS Qualification Testing Approach & Plan [REF-1] alongside any other relevant documents referenced in the References section.

The current working assumption is that non-SIT LDSO Qualification Testing execution will commence from 1st October 2024 and will be preceded by the completion of SIT Functional Testing Cycle 2, the release of Interim Release 8 and Non-SIT LDSO Participants' readiness activities.

The MHHS Programme and Code Bodies have published the Qualification Approach and Plan (QA&P) with supporting Annexes for industry consultation following Non-Functional and Operational Testing updates to the artefacts. An updated version of the Non-SIT LDSO Qualification Test Data Approach & Plan is being issued to reflect these changes – see section 3

2 Introduction

2.1 Document Purpose

This document aims to define a Test Data approach and provide a detailed view of specific data requirements for the Non-SIT LDSO Qualification Testing.

The Test Data process for Non-SIT LDSO Qualification Testing is detailed in Section 8.

2.2 Background

The Market-wide Half Hourly Settlement Programme (MHHS) when completed will contribute to a more cost-effective electricity system, encouraging more flexible use of energy and helping consumers lower their bills.

The Non-SIT LDSO Qualification Test Data Approach & Plan will detail the approach to the Test Data activities and deliverables required to commence Non-SIT LDSO Qualification Testing.

2.3 Reviews and Approvals

- The Non-SIT LDSO Qualification Test Data Approach & Plan will initially go through a MHHS Programme review. Upon this review any comments and feedback would be incorporated before going to Code Bodies for formal review.
- Upon completion of the Code Bodies review it will be distributed to the DWG and QWG for consultation where comments will be incorporated leading to a recommendation of approval by the group.
- Approval will then be requested from Qualification Advisory Group (QAG).
- The document will be made available for information via the Programme portal.

2.4 Change Forecast

The MHHS Non-SIT LDSO QT Data Team will own this document and keep it up to date, with review and approval by MHHS programme governance as appropriate. This document includes Test Data Requirements for Functional and Migration Testing where the default position will be to populate Test Data using Migration processes.

3 Objectives

Test data will be agreed and delivered to support the delivery of the following Non-SIT LDSO Qualification Testing objectives:

- To provide confidence that individual Non-SIT LDSO Qualification Testing participants can successfully operate under the MHHS arrangements by M10 for the scope of their roles and MPIDs, meeting the assessment criteria set out by BSCCo and RECCo and approved by the BSC and REC PABs.

The objective of the Non-SIT LDSO Qualification Test Data Approach & Plan is as follows:

- To define the Test Data and Data types required to support Non-SIT LDSO Qualification Testing
- To define the responsibilities of the Non-SIT LDSO Qualification Test Data team to deliver the required Test Data milestones to commence Non-SIT LDSO Qualification Testing.
- To define the responsibilities of the Non-SIT LDSO participants to deliver the required Test Data milestones to commence Non-SIT LDSO Qualification Testing.
- To define the tasks required to deliver the Data required for Non-SIT LDSO Qualification Testing.
- To confirm the Test Data Milestones and underlying tasks required to deliver the Non-SIT LDSO Qualification Test Data.
- To define the data required to support the Functional, Migration and Non-Functional Tests which make up Non-SIT LDSO Qualification Testing
- To define the data to support the usage of the MHHS Non-SIT LDSO Qualification Test Tool.
- To define the data to support Non-Functional Testing and Operational Testing. This Testing will be conducted against low volumes meaning that MPANs provided for Functional Testing will be re-used, should additional MPANs be required this will not be a high volume.

Please Note

Where Placing Reliance has been agreed, an LDSO may not need to carry out all the activities listed in this document. As Placing Reliance is agreed on a case by case base, this document will not detail where deviances may occur. If LDSO has a query about the applicability of this document to their circumstances, please contact LDSO_QT@mhhsprogramme.co.uk

4 MHHS Non-SIT LDSO Qualification Test Architecture & Coverage

The scope of the MHHS ecosystem that needs to be available to support Non-SIT LDSO Qualification Testing, corresponds to MHHSP design required for LDSO roles and is shown at high level in the orange boxes on the logical architecture diagram. The orange boxes represent the LDSO services under test.

The systems and interfaces in scope relate to LDSO services: Registration, Unmetered Supplies Operator (UMSO) and LDSO that are connected to MHHSP central systems – DIP and BSC Central Systems (provided by Helix). All other roles, services and systems are out of scope for LDSO qualification and will be simulated if required to facilitate testing.

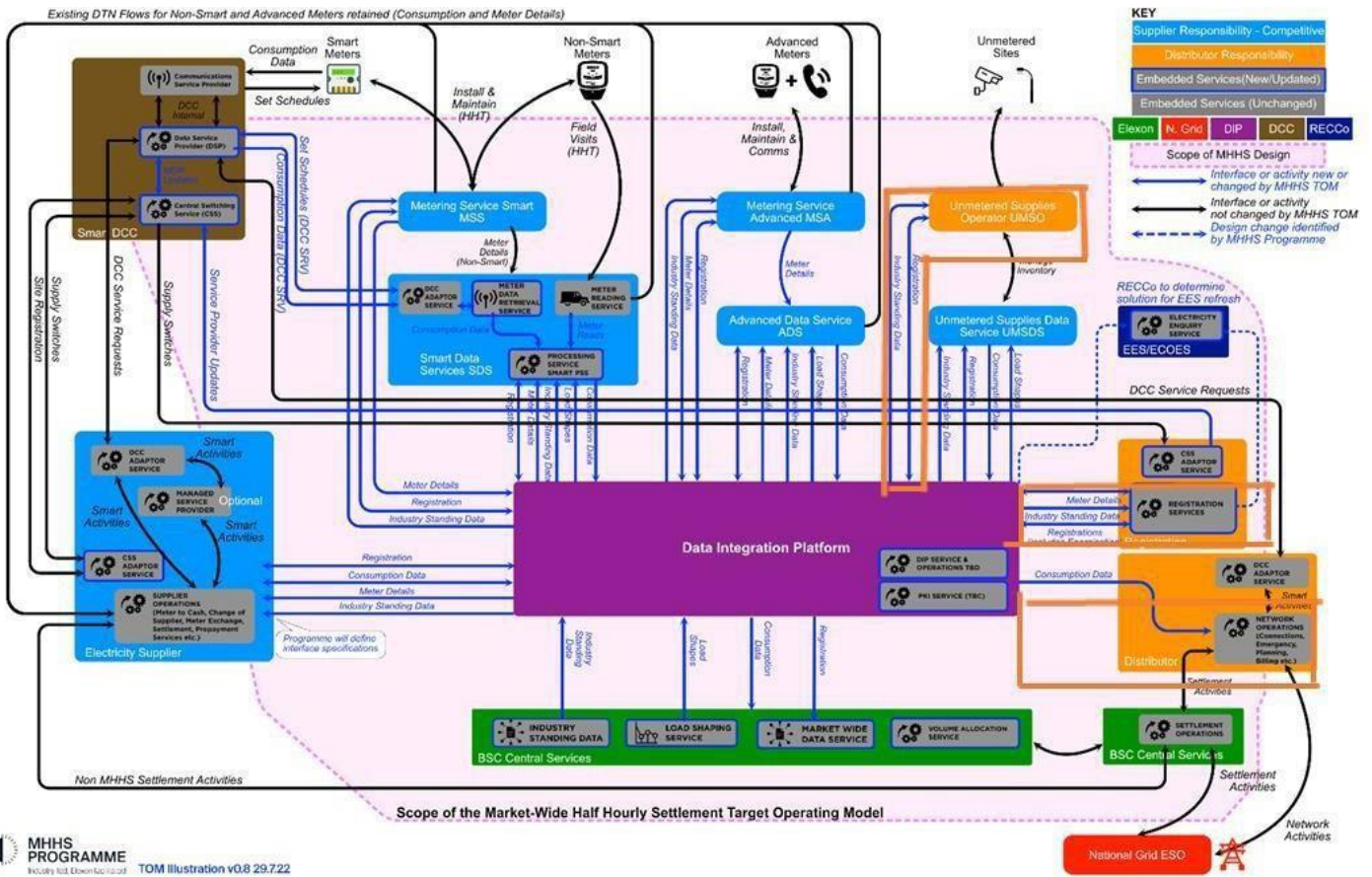


Figure 1 Target Operating Model

4.1 Non-SIT LDSO Qualification Test Environment

Non-SIT LDSO QT will take place in the MHHSP UIT environment, an environment that will be separated from SIT. The same central system environment (DIP) will be used for other Programme Participants' QT:

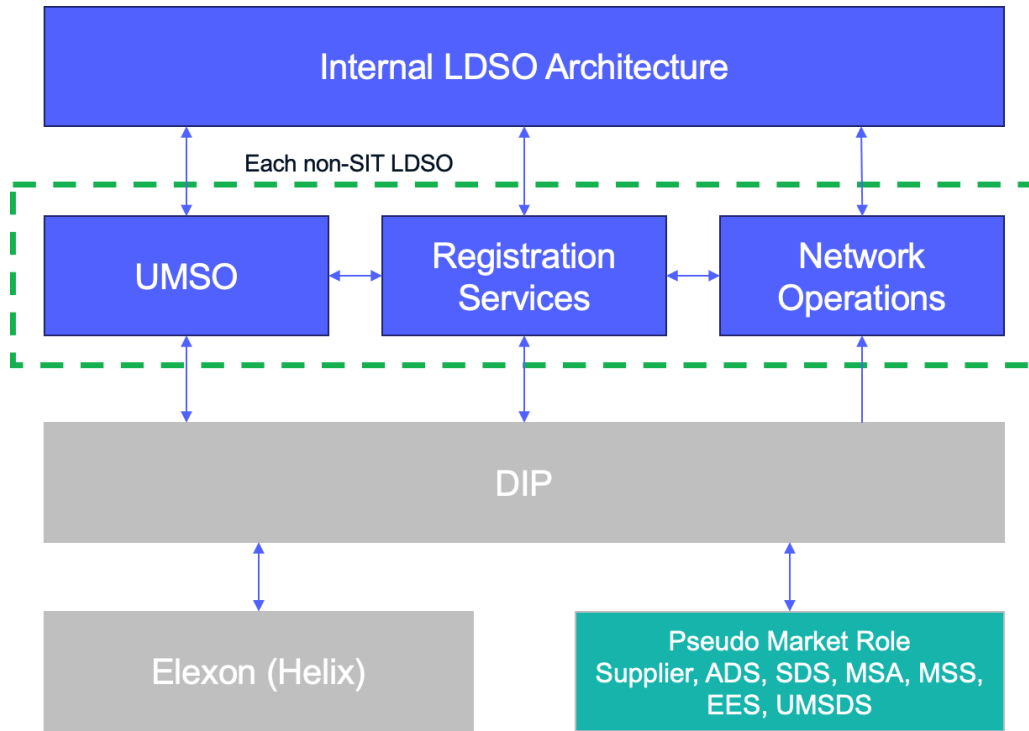


Figure 2 Non-SIT LDSO Test Environment Architecture

5 In Scope

This section sets out the Test Data required to support Non-SIT LDSO Qualification Testing Test Data Systems and Services:

The Base Industry Data required to commence Non-SIT LDSO Qualification Testing is listed below:

- Licensed Distribution System Operator (LDSO).
- Registration Service (REGS).
- Unmetered Supplies Operator (UMSO).
- DIP.
- Industry Standing Data.

Data required to facilitate Non-SIT LDSO Qualification Testing:

- Provision of Test Data for Functional and Migration Testing.
- Provision of Test Data for the MHHS Non-SIT LDSO Qualification Test Harness Tool
- Confirmation/Manipulation of data for IF/PUB messages (to be driven out from Non-SIT LDSO Qualification Testing Test Cases).

5.1 MHHS Non-SIT LDSO Qualification Test Harness Tool

Non-SIT LDSO Qualification Testing for Non-SIT LDSOs requires a test environment in which certain roles outside of LDSO, Registration Services and UMSO (for example Agents and Suppliers) will be simulated by a Non-SIT LDSO Qualification Test Tool. As part of the Non-SIT LDSO Qualification Testing the LDSOs will be required to stand up their own instances of LDSO, Registration Services and UMSO and as a result these roles will not be included within the Test Tool build.

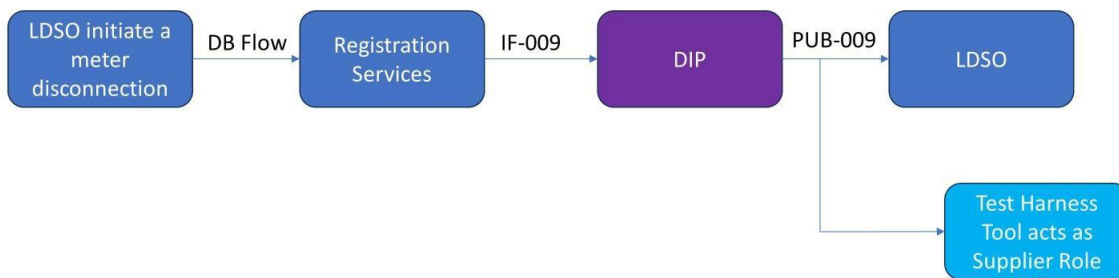
This tool will be built by the MHHS Programme Sims & Ems Team and will be delivered within the required timescales for Non-SIT LDSO Qualification Testing. It will have the ability to send IF messages to the DIP and receive PUB messages from the DIP. This tool will mimic the DIP responses for roles outside of the three roles listed above, for example a message relating to a Supplier role will be generated via the Tool rather than a physical Supplier role and the data will be manipulated to support this Business Process/Test Case i.e. supplier.

The Test Data identified by the Non-SIT LDSOs for Non-SIT LDSO Qualification Testing will need to be manipulated by the Non-SIT LDSOs in order to replace current Supplier and Agents with the Test Harness Tool Supplier and Agents. The replacement values will be provided by the Non-SIT LDSO Qualification Test Data Team enabling DIP messages to be sent to the Test Harness Tool.

The processes under scope will include sending an IF message, sending an IF message that is a response and receiving a PUB message, an example test scenario flow is listed below:

Non-SIT LDSO Qualification Test Tool Example Test Scenario Flow

LDSO initiated disconnections of the meter point and Registration Services generate a message for onward processing via DIP to LDSO and Test Harness



Legend



Figure 3 Non-SIT LDSO Qualification Test Tool Example Test Scenario Flow

5.2 Roles

Non-SIT LDSO Qualification Testing will be role based, however, to reduce complexities, be closer to how operational process will operate and increase assurance that LDSOs are able to operate under the new MHHS arrangements, Registration Services, UMSO and LDSO will be considered as a suite of roles. Non-SIT LDSO Qualification Testing participants will be expected to commission test instances of all test roles in an integrated test environment.

This is expected to be consistent with the LDSO production infrastructure and host arrangements and therefore Non-SIT LDSO QT participants should be standing up like for like environments where possible however they are not expected to be production scale environments. As a Non-SIT LDSO QT participant will have to qualify in all roles, as per current BSC obligations, this will need include UMSO even if a Non-SIT LDSO Qualification Testing participant has no UMS MPANs registered.

LDSO Role	Description
Registration Service (REGS)	Service that holds meter point standing data information about each MPAN within its distribution region. Data includes the processing and metering services appointed to the MPAN
Licensed Distribution System Operator (LDSO)	Defined role within the MHHS Design Baseline which encompasses LDSO functions that are required for MHHS, but not part of Registration (e.g. services related to billing, operation and maintenance of the distribution networks).
Unmetered Supplies Operator (UMSO)	Service that interfaces with the Unmetered Supplies (UMS) customer and other industry stakeholders

Table 1 LDSO Roles in scope of Non-SIT LDSO Qualification

5.3 Business Processes in scope

The test data required for Non-SIT LDSO Qualification Testing for both Non-SIT LDSO testing and the MHHS Non-SIT LDSO Qualification Test tool will be derived from the Non-SIT LDSO Qualification Testing Test cases driven by the Functional and Migration Business Processes below:

Business Process
MHHSP-BP001 Change of Supply
MHHSP-BP002 Change of Service Metering Service
MHHSP-BP003 Change of Service Data Service
MHHSP-BP003B Change of Existing Service Appointment Details
MHHS-BP005 Data Processing
MHHSP-BP007 Disconnection
MHHSP-BP008 Change of energisation Status
MHHSP-BP009 Change of Meter
MHHSP-BP010A/10B/10C/10D/10E Change of Registration Data
MHHS-BP011B - Change of Connection Type and /or Market Segment
MHHS-BP005 Data Processing
MHHS-BP013 Demand Disconnection Events
MHHS-BP016 Consumption Amendment
MHHS-BP018 Load Shaping Services
MHHS-BP019 BSC Central Services – Market Wide Data Service
MHHS-BP021 Industry Standing Data
MHHS-BPM-001 - Change of Supply – Forward Migration
MHHS- BPM-002 - Change of Service – Metering Service – Forward Migration
MHHS- BPM-003 - Change of Service – Data Service – Forward Migration
MHHS- BPM-001 - Change of Supply – Reverse Migration
MHHS- BPM-002 - Change of Service – Metering Service – Reverse Migration
MHHS- BPM-003 - Change of Service – Data Service – Reverse Migration

Table 2 Business Processes in scope of Non-SIT LDSO Qualification Testing

6 Test Data Plan on a Page

The diagram below represents the high level Plan on a Page for Non-SIT LDSO Qualification Test Data deliverables. The dates prior to start of Qualification Testing are indicative and will be refined during milestone discussions with the Non-SIT LDSOs:

on SIT LDSO Qualification Test Data Plan on a Page

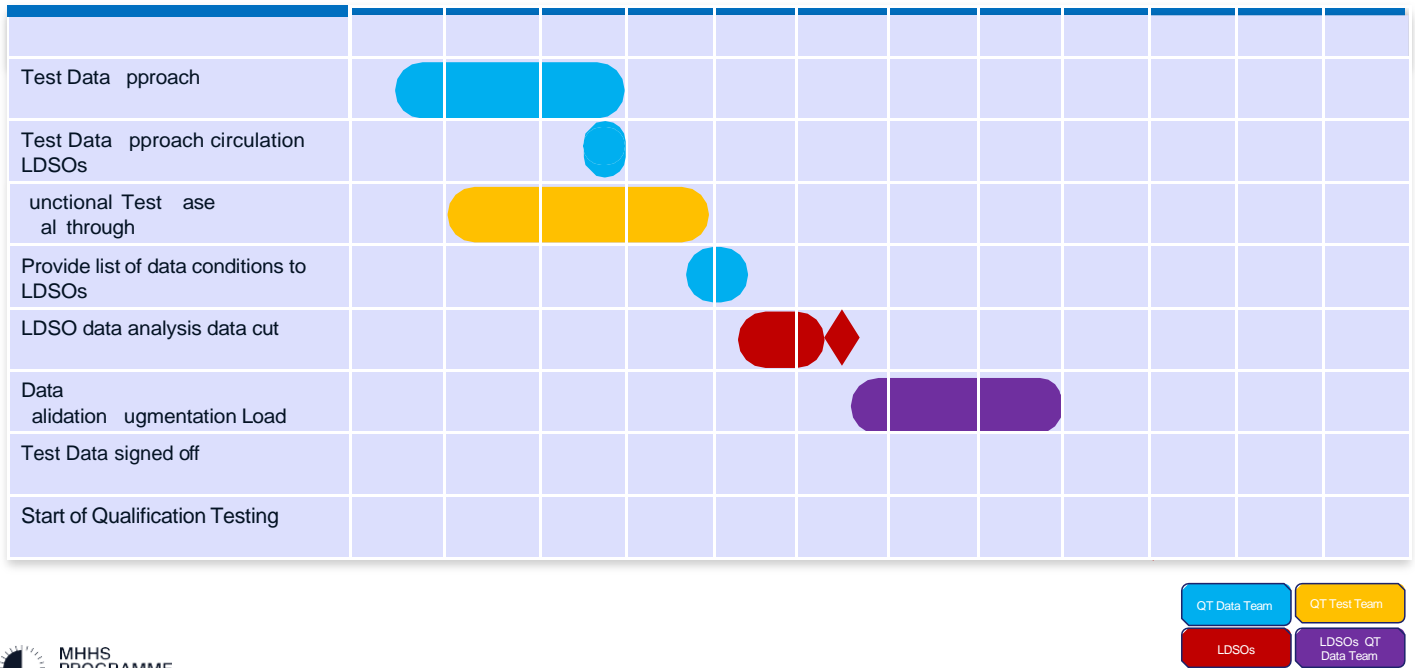


Figure 4 Non-SIT LDSO Qualification Test Data Plan on a Page

6.1 Test Data Schedule

The Test Data schedule represents the milestones and related dates required to deliver the required Test Data to commence Non-SIT LDSO Qualification Testing:

Milestone	Milestone Date
Placing Reliance Form Submission - Functional	05/01/2024
Test Data Approach & Plan Review/ – Code Bodies	11/03/24
Test Data Approach & Plan consultation - Non-SIT LDSO participants	31/03/24-15/04/24
Test Data Approach & Plan Review approval – QAG	23/05/24
Initial Data Analysis – MHHS Non-SIT LDSO Qualification Test Team	01/02/24-31 03 24
Functional Test case walkthrough (including data requirements – MHHS Non-SIT LDSO Qualification Test Team	31/01/24-31 03 24
Provide list of data conditions to LDSOs - MHHS Non-SIT LDSO Qualification Test Team	15/05/24
Data validation against test cases – Non-SIT LDSO participants	01/05/24-07/06/24
Data cut – Non-SIT LDSO participants	10 06 24 - to be agreed with the Non-SIT LDSOs
Publishing of Industry Standard Data – Helix Team	Tbc
Test Data Analysis and Provision for DIP Connectivity Test Assurance – MHHS Non-SIT LDSO Qualification Test data team	01/06/24-01/08/24
Test Data allocation – Non-SIT LDSO participants	17/06/24-31/08/24
Test Data Loading into LDSO systems – Non-SIT LDSO participants	17/06/24-31/08/24
LDSO data sign off – Non-SIT LDSO participants	01/09/24
Start of Non-SIT LDSO Qualification Test - Non-SIT LDSO participants	01/10/24

Table 3 Test Data Schedule

7 Test Data Process

7.1 Overview

As each Non-SIT LDSO will be completing Non-SIT LDSO Qualification Testing individually and as there is no pairing as per MHHS SIT, test data does not need to fully align between different participants. However, each Non-SIT LDSO will be required to load valid and consistent data across their systems. The MHHS LDSO QT Team will propose a list of data conditions from the Non-SIT LDSO Qualification Testing Test Cases. This will allow the Non-SIT LDSOs to check their available data – it is recommended that the following data is used:

- Data which has completed data cleansing activities.

If a Non-SIT LDSO does not have data that is matched to Qualification Testing Data conditions the MHHS Non-SIT LDSO Qualification Test Data Team will work with the Non-SIT LDSOs to meet this gap.

Note - the assumption is that Non-SIT LDSO Qualification Testing will be starting with Migration in place and therefore data taken from the data cut will be processed via Migration regimes.

Current production data will be used wherever possible to meet the test data conditions defined in the non-SIT LDSO Qualification Testing Test Cases, as requested by LDSOs and agreed in the Qualification Working Group. This gives the best chance for that data to be populated across UMSO, Registration Services and LDSO test systems in a complete and coherent manner for Non-SIT LDSO Qualification Testing execution.

The onus will then be on the MHHS Programme to:

- Generate IF flows from the test harness consistent with this test data.
- To validate PUB flows received at the test harness appropriately.
- Populate Helix (or alternative test harness) to support receipt and validation of PUB flows received and to generate REP flows generated.

7.2 Data Test Plan circulation

Prior to QAG approval the Non-SIT LDSO Qualification Test Data Plan and Approach document will be circulated to the Non-SIT LDSOs for consultancy.

7.3 Initial Data Analysis

The MHHS Non-SIT LDSO Qualification Testing Data Team will perform initial data analysis from February 2024. The purpose of this exercise is to perform an early mapping exercise against market data held in the Electricity Enquiry Service (EES) file. This will allow the non-SIT LDSO Qualification Test Data team to assess the Non-SIT LDSO participant data held within the EES file. This early analysis can then be used as a starting point to identify the most appropriate data from the data cut to be taken to support Non-SIT LDSO Qualification Testing, as below. It will also allow the Non-SIT LDSO Qualification Testing test team to identify where test data may need to be augmented for individual LDSOs where data may not currently exist to match to test cases (e.g. newer iDNOs who may not have MPANs to cover all test cases, for example UMS).

7.4 Test cases - including Test Data conditions

The Non-SIT LDSO Qualification Testing Team will derive a set of Test Scenarios, Test Cases and high-level test scripts from the Non-SIT LDSO Qualification Testing scope. The Non-SIT LDSO Qualification Testing Test Data Team will derive a set of Test Data conditions from these deliverables and distribute to the Non-SIT LDSO participants to enable analysis of the data required for Non-SIT LDSO Qualification Testing against the existing Non-

SIT LDSO participant data set. Any data transfer between the Data Team and LDSOs will be via Secure File Transfer Process (SFTP).

7.5 Data validation/analysis against test cases

The Non-SIT LDSO Qualification Testing test cases will allow the Non-SIT LDSO participant to review their data requirements against their current dataset to assess whether there are any gaps in the existing data, in this case the MHHSP Non-SIT LDSO Qualification Testing Data Team will support with any data augmentation required.

7.6 Data cut

The Non-SIT LDSO participants will be asked to take a cut of their data on an agreed date – indicative date 10/06/24 – to be confirmed.

#	Item	Description
1	When (Date and Time)	10/06/24 – to be confirmed – Note: There is flexibility in the data cut date across LDSOs but we will be looking to action the data cut within 7 days either side of 10/06
2	Participants	LDSOs taking part in MHHSP Non-SIT LDSO Qualification Testing
3	What	A data backup of the MHHS Qualification Testing Participant's production systems impacted by Qualification Testing scope
4	Purpose	Populate the Non-SIT LDSO participant's system under test in their test environments for Qualification Testing
5	Backup format	The participants shall take a data backup in the format suitable for later loading to their systems in the test environments
6	Backup storage	The backup shall be stored in the Non-SIT LDSO participant's secure IT Infrastructure: <ul style="list-style-type: none"> The Non-SIT LDSO participant will not be required to send the full backup files to the MHHS Programme
7	MPANs	It is required to backup data related to MPANs
8	Personable Identifiable Data	No Personally Identifiable Data will be loaded into the test environment with the exception of: <ul style="list-style-type: none"> MPAN

Table 4 Data Cut Deliverables

The MHHSP Non-SIT LDSO Qualification Testing Data Team will validate the data and confirm that the data can be loaded into the LDSO test environments to facilitate Non-SIT LDSO participant Qualification Test Data sign off.

If the data requires manipulation the MHHSP Non-SIT LDSO Qualification Testing Data Team will make these amendments and return the data to the Non-SIT LDSO participants via SFTP to load into the LDSO test environments and to facilitate Non-SIT LDSO participant Qualification Test Data sign off.

7.7 Test Data Allocation

If a Non-SIT LDSO participant does not have data that matches the data condition needed, the Non-SIT LDSO Qualification Testing Data Team will work with them to meet this gap. In such cases Non-SIT LDSO participants might be able create new data/a new MPAN using their BAU processes, alternatively data augmentation will be considered for data that is required to run a test scenario.

In the event of appropriate data not being available for New Entrants the MHHSP Non-SIT LDSO Qualification Testing Data Team will work with them to create the appropriate data required to execute the required Non-SIT LDSO Qualification Test Cases.

There will be no changes to MPAN details for MPANs already existing in the data cut as any amendments might have a detrimental impact on data consistency across Non-SIT LDSO participants' systems and processing of DIP requests – the exception to this is manipulation of specified data fields to allow the data to interact with the MHHS testing tool for example current supplier being amended to the Test Harness Tool supplier details.

It is the participant's responsibility to load the allocated test data, including any manufactured test data to the test environment. It is recommended that data is selected where:

- Data cleanse activities have completed.

All MPANs records used in testing will be allocated unique reference IDs that will be used in all communications, including test results and defect reports.

- The reference ID is to protect MPAN data (GDPR PII) and that the use of MPANs in emails, instant messages, test results and defect reports must not happen to prevent a risk of GDPR non-compliance.
- During the Test Data preparation activities for Non-SIT LDSO Qualification Testing, a data integrity check will be executed between Programme Participant and the MHHSP LDSO QT Data Team to confirm the data is suitable for the tests.

7.8 Test Data Augmentation – Data Cleansing

Following CP1558 (Population of Connection Type) and R0032 (Creation of data item within the Registration Service and the ability for MEMs to maintain this data via the D0312) implementation in Jun-23, new data attributes have been created in the Registration Services. LDSOs will be asked to provide data where the new data attributes have been populated. In the case of missing data the options are:

- LDSOs populate the new data attributes.
- Data is augmented by the Non-SIT LDSO Qualification Test Data Team.

A decision will be taken on a case by case basis based on the available data.

Please refer to MHHS-DEL1181 MHHS Programme Data Cleanse Plan for further information.

7.9 Test Data Loading

The primary method of data population will be via Migration business processes. This will be the first test for the Non-SIT LDSO Qualification Testing and the expected way of populating data, for example Migration regimes may be run to populate Test Data even if LDSOs have completed Migration Test scenarios/Test Cases in scope of their testing .

In line with the QA&P [REF-10], non-SIT LDSO QT will be role based. However, to reduce complexities, be closer to how operational process will operate and increase assurance that LDSOs are able to operate under the new MHHS arrangements, Registration Services, UMISO and LDSO will be considered as a suite of roles. Non-SIT LDSO QT participants will be expected to commission test instances of all test roles in an integrated test environment as shown on Figure 5. This is expected to be consistent with the LDSO production infrastructure and host arrangements and therefore non-SIT LDSO QT participants should be standing up like for like environments where possible however they are not expected to be production scale environments:

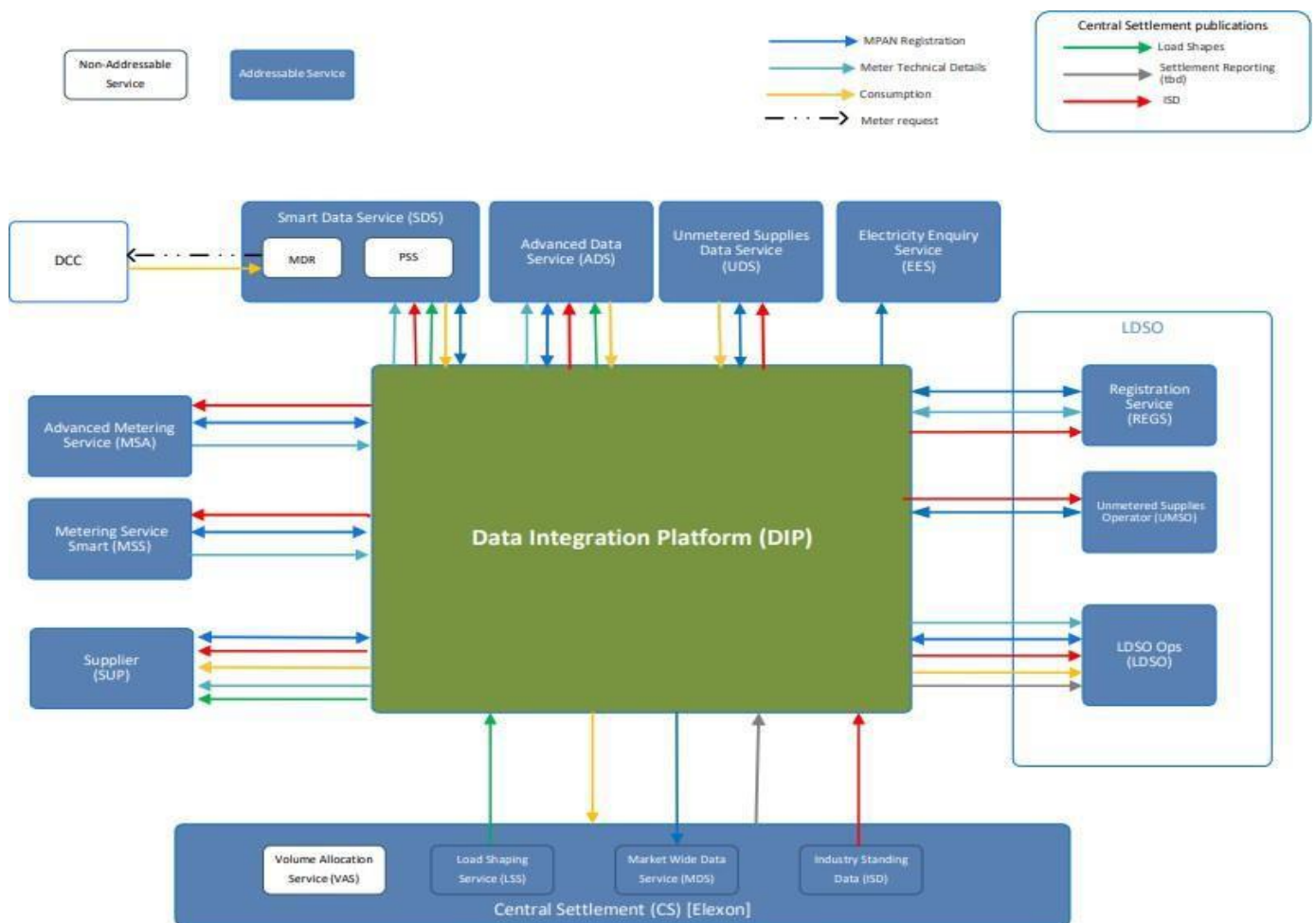


Figure 5 MHHSP TOM Workflow

The scope of Non-SIT LDSO Qualification Testing and required data load involves the following roles:

- Registration Service (MPRS).
- LDSOs.
- Unmetered Supplies Operator (UMSO).
- DIP – note: Data seeding will not be required if Migration processes are in place prior to the start of Non-SIT LDSO Qualification Testing)

Industry Standing Data will need to be loaded into each appropriate system.

All other roles, including Helix, will not need to be populated as the MHHS Non-SIT LDSO Qualification Testing tool will simulate these roles – this work is being carried out by the Non-SIT LDSO Qualification Test Team. A key element of the data build will be populating the MHHS Non-SIT LDSO Qualification Testing tool with the appropriate data to be able to generate test flows into the UMSO, Registration and LDSO roles and to validate the receipt of test flows from those systems.

Test Data Loading – LDSO, UMSO and Registration Service Systems

The Non-SIT LDSOs will load the relevant Test Data in the Registration Services, LDSO and UMSO systems post the agreed data cut. The Non-SIT LDSOs will also be responsible for loading any augmented data requested from the MHHS Non-SIT LDSO Qualification Testing Data Team:

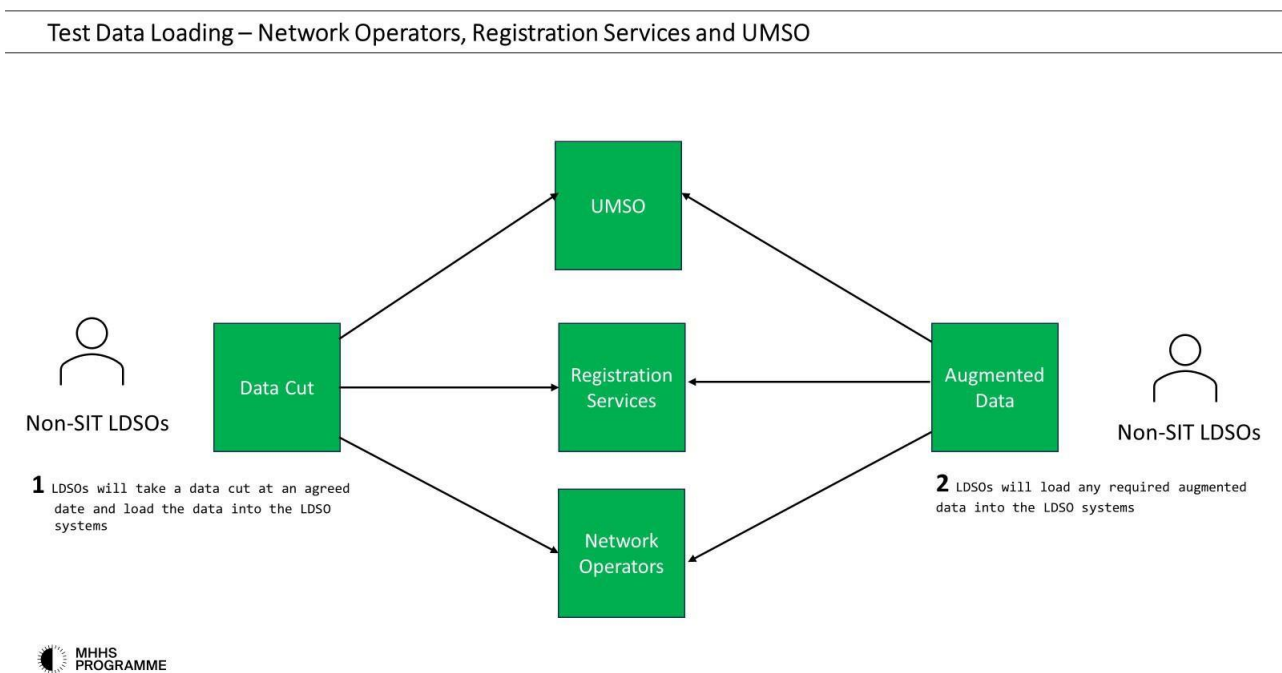


Figure 6 Test Data Loading Non-SIT LDSO systems

Please note: This test data plan is written on the basis that migration process will be able to be used to populate test data for non-SIT LDSO QT for migration and functional testing. If for some reason it is not possible to use migration regimes, other test data loading mechanism will need to be explored.

Test Data Loading – DIP

DIP will be loaded with the following Test Data prior to non-SIT LDSO Qualification Testing commencement:

- **Migration Process**
- DIP will be populated with Migration Data as part of the Migration Process at the start of Non-SIT LDSO Qualification Testing.
- **Industry Standing Data**
- ISD file will be loaded – DIP end points to be amended based on non-Registration Services, UMSO and Network Operator roles being simulated – to be confirmed.

Test Data Loading – Helix – to be stubbed

- **Helix**
- Data will be required to populate reports to be sent to LDSOs - Design discussions in progress – however it has been agreed that a Helix stub rather than a physical Helix environment will be used for Non-SIT LDSO Qualification Testing.

Test Data Loading – DIP

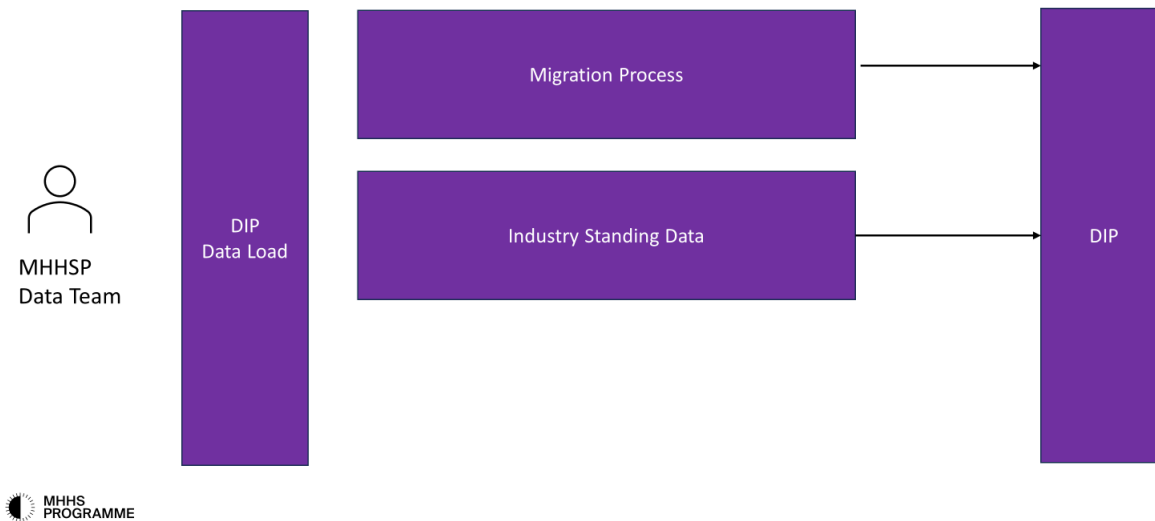


Figure 7 Test Data Loading - DIP

7.10 Test Data Sharing – Secure File Transfer Protocol (SFTP)

During Non-SIT LDSO Qualification Testing there will be a requirement to transfer sensitive data between the MHHS Non-SIT LDSO Qualification Testing Test Data team and the non-SIT LDSOs. An example of this would be the Non-SIT LDSOs requiring augmentation of their test data by the MHHS Non-SIT LDSO Qualification Testing Data team. Secure File Transfer Protocol (SFTP) will be utilised to securely transfer the data between the two parties.

The SFTP is a network protocol for securely accessing, transferring and managing large files and sensitive data. The Programme has an SFTP Service configured to transfer Test Data between the Programme and the participants.

To support participants with SFTP, a Test Data SFTP Guide has been produced which provides a summary of the SFTP and a technical description of the environment – the Qualification process will mirror that of the SIT approach **note** the detail in the document below will be amended by 15/05 to account for amendments required to tailor the requirements for Qualification Testing.

[Programme Collaboration Base - MHHS-DEL1556-Test Data SFTP Guide v1.1.pdf - All Documents v2 \(sharepoint.com\)](#)

7.11 Test Data sign off

The Non-SIT LDSO participants will be asked to provide formal sign off that the Test data is confirmed as valid to commence Qualification Testing – scheduled date 01/09/24 with Non-SIT Qualification to commence on 01/10/24.

7.12 Start of non-SIT LDSO Qualification Testing

Non-SIT LDSO Qualification Testing Qualification Testing to start on 01/10/24 following data milestones completion.

For the start of Non-SIT LDSO Qualification Testing each participant must load the data from its data cut including any augmented/manufactured data supplied by the MHHSP Non-SIT LDSO Qualification Testing Data Team unless the data is being migrated.

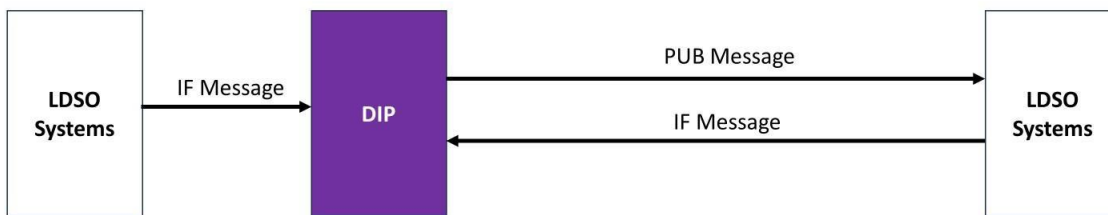
8 Test Data Scenarios

The Diagram in Section 8.1 represents the data flow between the LDSO systems and DIP as per the Business As Usual processes for Registration Services, UMSO and LDSO roles. Diagrams in section 8.2 and in section 8.3 show how the data will flow with MHHS Test Harness Tool representing the roles outside of Registration Services, UMSO and LDSO.

8.1 LDSO-Systems > DIP > LDSO Systems

Scenario 1 – LDSO Systems > DIP > LDSO Systems

- LDSO Systems generate IF Message to DIP
- DIP routes the PUB message to the LDSO Systems
- LDSO Systems respond to the PUB message with the expected IF message



Note – LDSOs may opt out of LDSO-LDSO messaging via DIP and use internal interfaces as an alternative as per CR029

Figure 8 LDSO Systems > DIP > LDSO Systems

8.2 MHHS Testing Tool > DIP > LDSO Systems

Scenario 2 – MHHS Testing Tool > DIP > LDSO Systems

- MHHS Testing Tool generates IF Message to DIP
- DIP routes the PUB message to the LDSO Systems
- LDSO Systems respond to the PUB message with the expected IF message

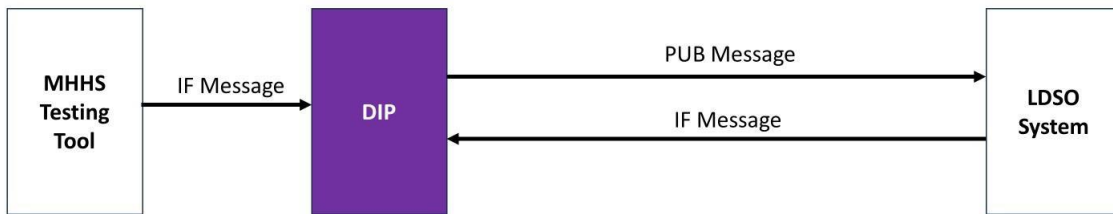


Figure 9 MHHS Testing Tool > DIP > LDSO Systems

8.3 LDSO Systems > DIP > MHHS Testing Tool

Scenario 3 – LDSO Systems > DIP > MHHS Testing Tool

- LDSO Systems generates IF Message to DIP
- DIP routes the PUB message to the MHHS Testing Tool
- MHHS Testing Tool responds to the PUB message with the expected IF message

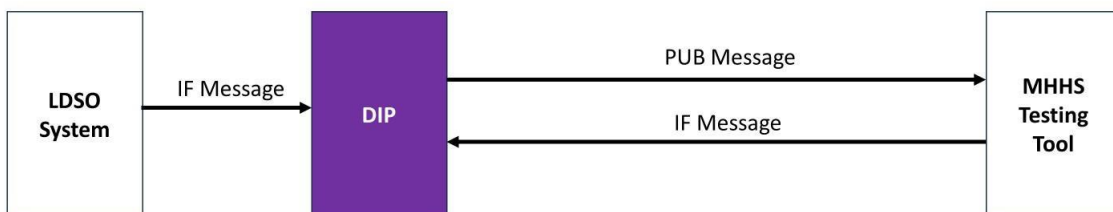


Figure 10 LDSO Systems > DIP > MHHS Testing Tool

9 Test Data Anonymisation

Due to data integrity across systems Live MPANs will be used for Non-SIT LDSO Qualification Testing. As the MPAN is considered Personal Identifiable Information (PII) and cannot be shared in Test Reports and any evidence, logs or images attached to Azure DevOps. The participant needs to obfuscate the MPAN while keeping the ability of assurance teams to verify the content.

For reports and test evidences:

- The participant shall remove or obfuscate the unique identifier digits of the MPAN Digits 1 to 13 of the Core MPAN.
- For image files, the participants can blur or overlay the unique identifier with any colour graphic shape (e.g.: a white rectangle covering the unique identifier digits).
- The same obfuscation approach shall be applied for Domestic and Non-Domestic MPANs.

All MPANs records will be allocated a unique reference ID that will be used in all communications, including test results and defect logging in ADO.

Due to the MPAN being considered Personal Identifiable Information (PII), it cannot be shared outside of the Qualification Test Environment. i.e.: While the real MPAN can be used in the IF/PUB or DTS messages transferred and processed in the test environment, it cannot be shared in communication means like email, test reports, bug triage, etc.

The Non-SIT LDSO Qualification Testing Test Data Team will provide a table to all participants with Unique Ref ID for the allocated MPANs to be used in communication.

10 Roles and Responsibilities

10.1 Non-SIT LDSO Qualification Test Data Team Roles and Responsibilities

The table below represents the tasks that the Non-SIT LDSO Qualification Team will need to perform in readiness to commence Non-SIT LDSO Qualification Testing:

Activity	Detail	Timeline
Initial Data Analysis	<ul style="list-style-type: none"> Analyse data from EES file to gain a forward view of available Test Data 	<ul style="list-style-type: none"> 31/01/24-31/03/24
Test Data Conditions	<ul style="list-style-type: none"> To be provided to Non-SIT LDSOs - dependant on Test Scenarios and Test Cases 	<ul style="list-style-type: none"> 15/05/24
Test Data transfer	<ul style="list-style-type: none"> Transfer data from/to Non-SIT LDSOs using SFTP 	<ul style="list-style-type: none"> 17/06/24 – 31/08/24
Test Data Validation	<ul style="list-style-type: none"> Data analysis to confirm early analysis and finalise proposed data set 	<ul style="list-style-type: none"> Post Data Cut
Sensitive Test Data Anonymisation	<ul style="list-style-type: none"> Socialise the process to de-sensitise any sensitive data for Test Reporting 	<ul style="list-style-type: none"> Post Data Cut
Test Data validation – LDSO support	<ul style="list-style-type: none"> Validate Test Data prior to Non-SIT LDSOs loading data into LDSO environments 	<ul style="list-style-type: none"> Following Test Case/Script circulation by the MHHSP Non-SIT LDSO Qualification Testing Team – dates tbc
Test Data Augmentation	<ul style="list-style-type: none"> Augment data where appropriate 	<ul style="list-style-type: none"> 17/06/24 – 31/08/24
Test Data Manufacturing	<ul style="list-style-type: none"> Manufacture data where Live data not available 	<ul style="list-style-type: none"> 17/06/24 – 31/08/24
Test Data Loading	<ul style="list-style-type: none"> Load data into relevant systems 	<ul style="list-style-type: none"> 17/06/24 – 31/08/24
Test Data support	<ul style="list-style-type: none"> Provide general support to Non-SIT LDSOs 	<ul style="list-style-type: none"> Prior to and during Qualification Testing execution
Defect Management support – Test Data	<ul style="list-style-type: none"> Provide defect triage support for any defects relating to data 	<ul style="list-style-type: none"> Qualification Testing execution
Secure File Transfer Process (SFTP) Socialisation/support	<ul style="list-style-type: none"> Socialise the SFTP process to the Non-SIT LDSOs and provide support as required 	<ul style="list-style-type: none"> 31/05/24 – indicative

Table 5 Non-SIT LDSO Qualification Test Data Team Roles and Responsibilities

10.2 Non-SIT LDSO Participant Roles and Responsibilities

The table below represents the tasks that the LDSOs will need to perform in readiness to commence Non-SIT LDSO Qualification Testing:

Activity	Detail	Timeline
Non-SIT LDSO participant data initial analysis against existing data sets – pre data cut	<ul style="list-style-type: none"> Validate that data held within the LDSO data sets meets the requirements for Qualification Testing 	<ul style="list-style-type: none"> Following Test Case/Script circulation by the MHHSP LDSO QT Team – dates tbc
	<ul style="list-style-type: none"> Highlight any data gaps to the MHHSP Non-SIT LDSO Qualification Testing Data Team 	
Non-SIT LDSO participant Data Cut	<ul style="list-style-type: none"> Take a data cut at an appropriate time (to be confirmed) 	<ul style="list-style-type: none"> 03/06/24-17/06/24 – to be agreed with the Non-SIT LDSOs
Non-SIT LDSO participant data initial analysis against existing data sets – post data cut	<ul style="list-style-type: none"> Validate that data held within the LDSO data sets meets the requirements for Qualification Testing 	<ul style="list-style-type: none"> Post Data Cut
	<ul style="list-style-type: none"> Highlight any data gaps to the MHHSP Non-SIT LDSO Qualification Testing Data Team 	
Secure File Transfer Process (SFTP)	<ul style="list-style-type: none"> Familiarise with process for transferring and receiving data files 	<ul style="list-style-type: none"> Following training by the MHHSP Non-SIT LDSO Qualification Testing Data Team - 31/05/24 – indicative
Data Loading	<ul style="list-style-type: none"> Data Load into LDSO systems under scope of Qualification Testing 	<ul style="list-style-type: none"> 17/06/24 – 31/08/24
Data Transfer	<ul style="list-style-type: none"> Data Transfer to and from the MHHSP Non-SIT LDSO Qualification Testing Data Team 	<ul style="list-style-type: none"> 17/06/24 – 31/08/24
Data Anonymisation	<ul style="list-style-type: none"> Anonymise sensitive data used for reporting including Defect Management 	<ul style="list-style-type: none"> During Qualification Test execution

Table 6 Non-SIT LDSO Participant Roles and Responsibilities

11 Assumptions

The following Non-SIT LDSO Qualification Testing Test Data assumptions have been identified:

- The latest EES data file will be available to allow early validation of the data required for Non-SIT LDSO Qualification Testing.
- Non-SIT LDSO Qualification Testing Test data will be sourced from the live data cut except for when data is not available for specific test scenarios at which point the data will be manufactured.
- Data will be manufactured for iDNOs and new entrants where historic data is not available.
- The MHHS Non-SIT LDSO Qualification Testing Tool will be in place by the required timelines and built to align to the Non-SIT LDSO Qualification Testing requirements.
- The Secure File Transfer process between the Non-SIT LDSO participants and MHHS Non-SIT LDSO Qualification Testing Test Data Team will be socialised with the Non-SIT LDSOs by the Non-SIT LDSO Qualification Test Data Team DIP and Helix (subject to ongoing environment discussions) are loaded with all required pre-requisite data.
- Data that has already gone through the Data Cleanse activity will be selected for Non-SIT LDSO Qualification Testing.
- Non-SIT LDSO Qualification Testing is able to start with Migration Testing.

12 Dependencies and Risks

The section below details the Dependencies and Risks relating to the Data Preparation for the Non-SIT LDSO Qualification Testing:

12.1 Dependencies

- Test data requirements will be available upon completion/review of the Non-SIT LDSO Qualification Testing Test cases.
- The MHHS Non-SIT LDSO Qualification Testing Test Tool Test data requirements will be driven by the MHHS Test Tool build and Non-SIT LDSO Qualification Test Cases
- Requirement for participants to undertake data analysis to identify MPANs required for Non-SIT LDSO Qualification Testing and identify any data augmentation required to allow any undertaking of Test Data Augmentation by the Non-SIT LDSO Qualification Testing Test Data Team.
- Secure File Transfer Protocol set up to allow secure transfer of Test Data between Non-SIT LDSO Qualification Test Data team and Non-SIT LDSOs.
- Ability to use Migration process for Non-SIT LDSO Qualification Testing.
- Non-SIT LDSOs having completed the data cleanse for sufficient data points.
- MHHS Programme Placing Reliance entries reviewed and approved
- Participant Non-SIT LDSO Qualification Test Plans submitted and agreed by the MHHS Programme

12.2 Risks

- Test data manufacturing volumes may be increased based on the number of new entrants participating in Non-SIT LDSO Qualification Testing /new entrant data availability.
- Non-SIT LDSO Qualification Testing Test Data Team early Data Analysis could be impacted if an up to date EES file is not available.
- Issues occurring in SIT Migration may impact the population of data as expected.

13 Out of Scope

The section below details the elements Out of Scope for the Non-SIT LDSO Qualification Testing:

- Any Test Data activities not explicitly linked to Non-SIT LDSO Qualification Testing.
- Non-SIT LDSO participant roles not listed in section 5.2.
- Applications/processes not explicitly listed in section 5.
- All test stages preceding Non-SIT LDSO Qualification Testing.
- All SIT Stages – these will be the subject of separate Test Approach and Plan documents.
- All other Qualification routes and UIT Test stages - these will be the subject of separate Test Approach and Plan documents.
- Facilities for enduring testing post go-live will be covered as part of the enduring Qualification Testing process.