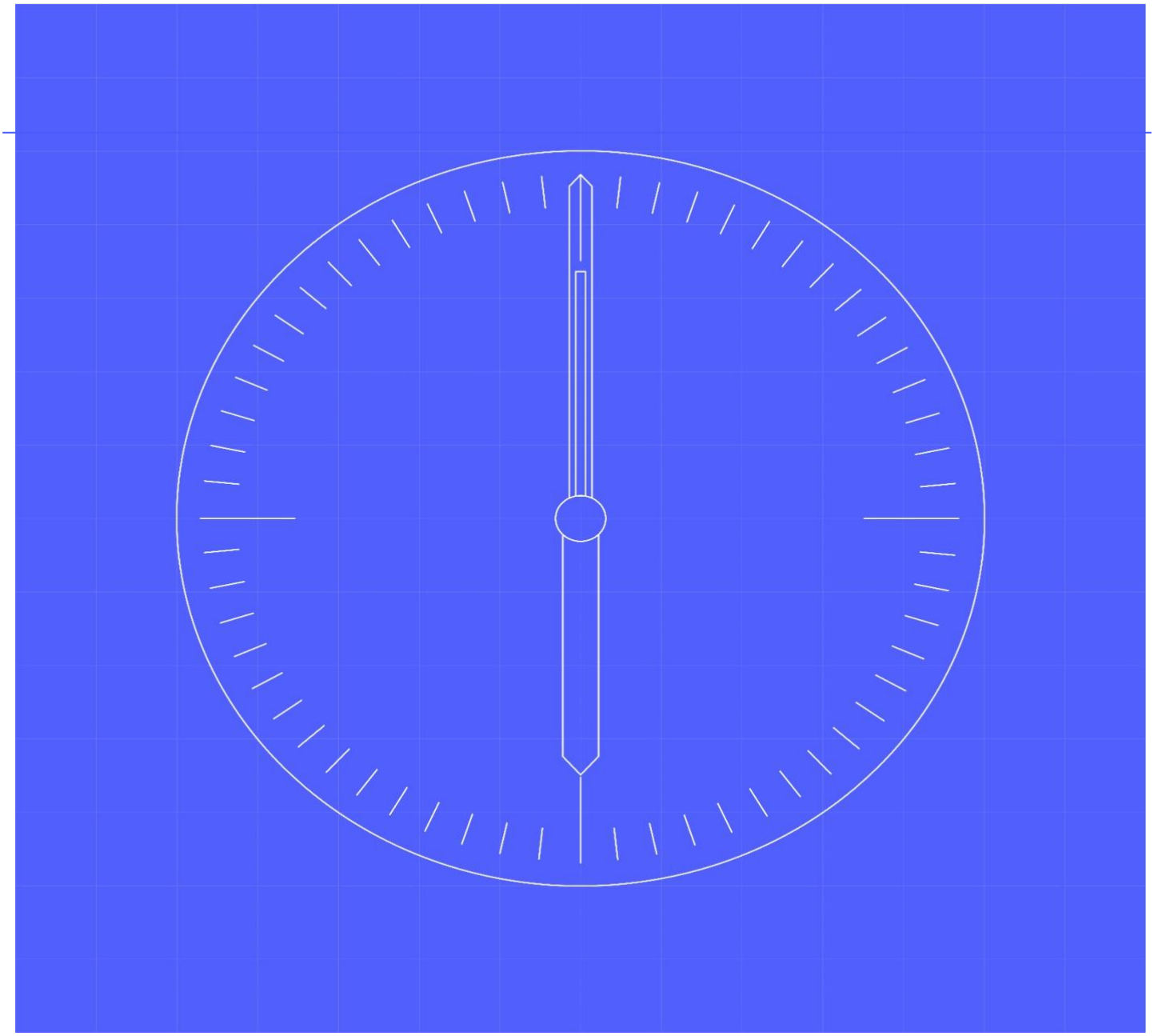
MHHS PROGRAMME
Industry-led, Elexon facilitated

SIT Regression Testing Approach & Plan



Document owner	Document number	Version
Roger Robar	**MHHS-DEL3255**	**1.0**
Status:	Date	Classification
Approved	**28th February 2025**	**Public**

MHHS PROGRAMME
Industry-led, Elexon facilitated

Contents

Figures

Tables

1.1 Change Record

Date	Author(s)	Version	Change Detail
27th January 2025	Roger Robar	0.1	Initial Draft
11th February 2025	Roger Robar	0.2	Draft incorporating industry feedback
20th February 2025	Roger Robar	0.3	Draft for Approval
28th February 2025	Roger Robar	1.0	Issued to V1.0 following SITAG Approval

1.2 Approvers

Reviewer	Role
Adrian Ackroyd	SRO Function Programme Test Manager
Smitha Pichrikat	SRO Function Client Delivery Manager
Nicola Farley	SRO Function Qualification Test Manager
Kiran Raj	SRO SIT Functional Test Lead
SIT Advisory Group (SITAG)	

1.3 Reviewers

Reviewer	Role
Adrian Ackroyd	SRO Function Programme Test Manager
Smitha Pichrikat	SRO Function Client Delivery Manager
Nicola Farley	SRO Function Qualification Test Manager
Kiran Raj	SRO SIT Functional Test Lead
Keith Clark	LDP Programme Manager
Paul Pettitt	Design Lead
Jason Brogden	Industry Programme Advisor
Salman Bukhari	SI Test Architect
John Wiggins	Enterprise Architect / SME
Dominic Mooney	SIT Delivery Manager
Stuart Scott	Industry Programme Expert
David O'Riordan	Non-Functional Test Lead
Steve Evans	Operational Test Lead
Richard Puddephatt	SI Data Manager
Heath Thomas	SI Environments and Release Manager

Ankur Pande	SIT Migration Lead
Carol-Anne Smith	Defect Manager
Roger Robar	Programme Test Manager

1.4 References

Ref No.	Document/Link	Publisher	Published	Additional Information
REF-01	MHHS-DEL315 - E2E Testing & Integration Strategy	SI Testing	29th April 2022	
REF-02	MHHS-DEL852 - Pre-Integration Test Guidance	SI Testing	3rd April 2023	
REF-03	MHHS-DEL618 - Environment Approach & Plan	SI Testing	28th February 2023	
REF-04	MHHS-DEL1089 - Release and Configuration Management Approach & Plan	SI Testing	17th May 2023	
REF-05	MHHS-DEL813 - Overarching Test Data Approach and Plan	SI Testing	5th May 2023	
REF-06	MHHS-DEL1064 - Placing Reliance Policy	SI Testing	27th April 2023	
REF-07	MHHS-DEL466 - Defect Management Plan	SI Testing	23rd May 2023	
REF-08	MHHS_DEL-030_MHHS_Programme_Governance_Framework_V3.1.pdf	PMO	08th Mar 2023	
REF-09	MHHS-DEL1140 - Milestone Register	PMO	26th May 2023	
REF-10	MHHS-DEL1332 - Test Management Tool User Guide	SI Testing	16th June 2023	
REF-11	MHHS-DEL1259 SIT Functional Test Approach & Plan	SI Testing	16th August 2023	
REF-12	MHHS-DEL1781 SIT Migration Test Approach and Plan	SI Testing	20th December 2023	
REF-13	MHHS-DEL2127 SIT Non-functional Testing Approach and Plan	SI Testing	24 July 2024	
REF-14	MHHS-DEL2417 SIT Operational Testing Approach and Plan	SI Testing	12th April 2024	
REF-15	MHHS-DEL1117 - SIT Functional Test Scenarios	SI Testing	15th May 2023	
REF-16	MHHS-DEL961 - Migration Design Document v1.4.pdf	SI Testing	30th May 2024	
REF-17	MHHS-DEL2755 SIT Non-functional Test Scenarios	SI Testing	18th September 2024	
REF-18	MHHS-DEL2676 SIT Operational Test Scenarios	SI Testing	18th December 2024	
REF-19	SIT Regression Test Framework and Evaluation Score Sheet	SI Testing		
REF-20	SIT Regression Test pack	SI Testing		

Ref No.	Document/Link	Publisher	Published	Additional Information
REF-21	MHHS-DEL2238 - SIT Functional C3 and Migration DITL Guidance - MASTER v3.0	SI Testing	21st October 2024	Published in the General Cohort Teams folders.
REF-22	MHHS-DEL1367 - SIT Functional Test Data Approach and Plan	SI Testing	16 August 2023	

1.5 Terminology

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

2 Executive Summary

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.

'MHHS-DEL315 - E2E Testing & Integration Strategy' [REF-01] describes the overall, end-to-end (E2E) approach to testing - the manner in which all parties involved in the MHHS programme will conduct testing. It spans initial testing of individual systems through to complete E2E tests ahead of the start of the Migration Period (where the new systems are progressively introduced and old systems progressively retired).

The E2E Testing and Integration Strategy defines that “System Integration Testing (SIT) will include functional, non-functional, operational and migration testing. Each of these elements will have a set of regression tests to verify change/defect fixes.” This document sets out regression testing for each of the above phases, where deemed appropriate through the test scoring process outlined below.

Regression testing ensures that code changes introduced over the course of the programme have not adversely affected the overall solution since they were initially tested. It is a crucial step in detecting unintended defects and preventing issues during the transition and later stages of the programme.

The Programme has a defined set of documentation which will be produced to support the preparation and conduct of each SIT stage. This Approach and Plan document specifically relates to the SIT Regression Test stage, describing the associated objectives, scope, approach, schedule, management, governance, and assurance of the test stage. This is a child document of 'MHHS-DEL315 - E2E Testing & Integration Strategy' [REF-01] and the ‘MHHS-DEL1259 SIT Functional Test Approach & Plan’ [REF-11], therefore it is recommended that for context all documents are read in conjunction.

This includes scope for Settlement Testing done in parallel with the currently scheduled Change of Supplier tests scheduled for the SIT-A test environment. Since these tests are being done in a controlled environment, we should be able to prove settlement functionality continues to meet its purpose.

2.1 Regression High Level Overview

2.1.1 Regression Test Scoring and Core Pack

Regression tests will be chosen by a scoring system in consultation with SIT Working Group (SITWG) and a Core Regression Test Pack will be created by the Programme, recommended by SITWG after industry review and approved by SIT Advisory Group (SITAG). Additionally, artefacts to be delivered as part of the Regression Test phase include the SIT Regression Test Framework and Evaluation Score Sheet [REF-19] (which will determine the actual tests included in scope of the test phase), and the Core Regression Test Pack [REF-20].

2.1.2 Three-Sprint Approach

The main phase of regression testing will be divided into three sprints: the first will drive out regression test defects. If it runs smoothly and successfully, there will be an option to exit Regression Testing early. If defects are found or the Programme chooses not to exit early, the second sprint will test fixes applied and ensure new defects were not found. A third sprint after this will prove that the entire ecosystem is running smoothly before migration.

The number of tests will be derived from the velocity of faster participants in a specified sprint (to be determined). The intention is that this will provide a balance of achievable tests run and coverage.

Please note for the rest of this document “faster cohorts” refers to cohorts that complete SIT Functional and Migration testing by the end of Sprint 16, and “slower cohorts” refers to cohorts that need more time to complete these test stages.

The detail of scope will be addressed in section 7, but will be determined through the scoring process.

2.1.3 Pre-Regression Settlement Tests

The Settling Normally test case will be run before the main test phase in parallel with the Settlement tests, with both being executed in the SIT-A environment. This will include testing accuracy reports and is considered a part of Regression Testing.

2.1.4 Slower Cohort Regression Testing

Slower cohorts will have to restart but be able to continue with any unfinished SIT Functional (SITF) and SIT Migration (SITM) tests in the SIT-A environment once the Settlement tests have completed. Then, they can run regression testing in parallel with the faster cohorts. All slower SIT Participants must still complete Regression Testing but need to complete prior SIT stages before they begin. On the other hand, any slower cohort will be able to run regression testing in parallel with the faster ones during the regression period provided they conclude SIT Functional and Migration testing by the end of Sprint 16.

2.1.5 Operational and Non-Functional Tests

Operational and Non-Functional Tests will be scored and evaluated as part of the construction of the Core Regression Test Pack. However, it is expected that any tests added to the Core Regression Test Pack from these test phases will be conducted in the SIT-B environment alongside or after the end of the Operational Test phase.

2.1.6 Voluntary Supplemental Tests

The Programme is offering the opportunity to conduct additional voluntary supplemental tests under specific conditions over and above the Core Regression Test Pack. These tests will be supported by the Programme but will be monitored to ensure that there are no adverse effects on Programme milestones committed to Ofgem.

2.2 Overall Test Schedule

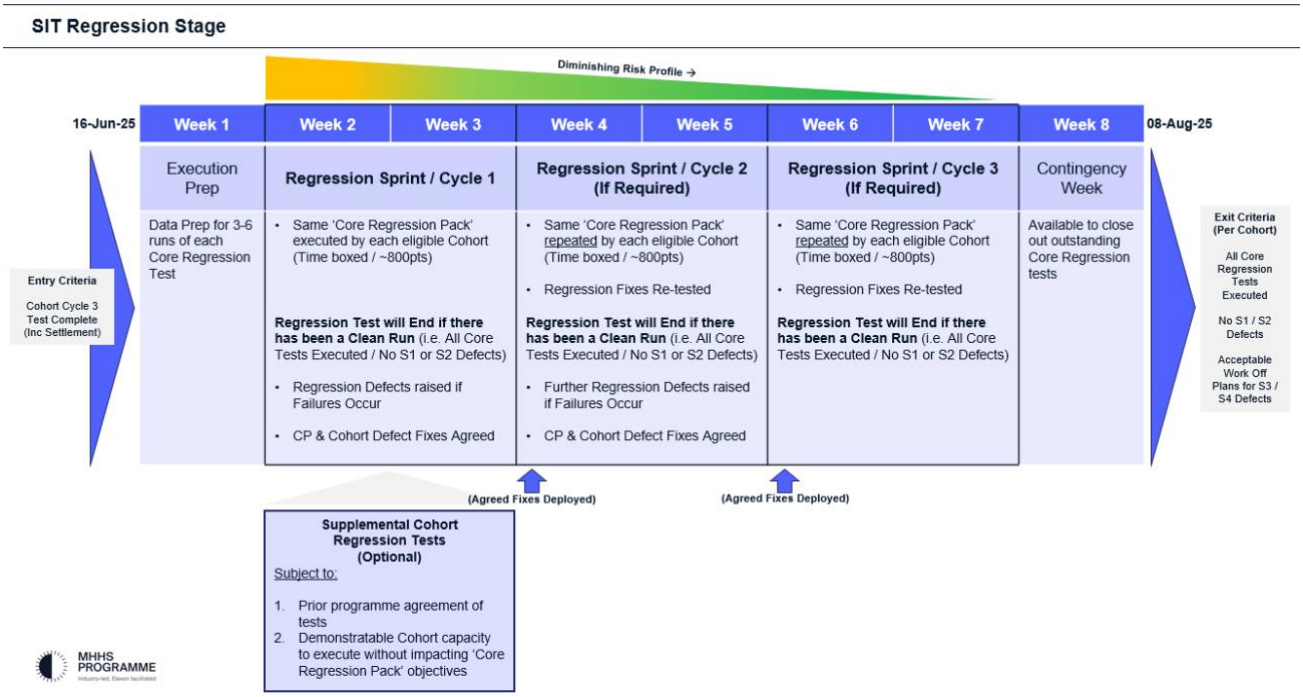


Figure 1 –Regression Test Stage Schedule and Structure

3 Introduction

3.1 Document Purpose

The SIT Regression Test Approach and Plan (this document) sits within a two tier MHHS Test documentation hierarchy. Please note this document references tier 1 parent documents throughout and does not seek to repeat content contained within them. Readers will be signposted to these documents for further detail where relevant.

The Regression Test Approach and Plan covers:

- Test Stage Objectives
- Scope
- Architecture and Coverage
- Approach (Preparation & Execution), covering:
    - Test Scenarios and Cases
    - Test Data (to be read in conjunction with the SIT Functional Test Data Approach and Plan [REF-21])
    - Stubs and Harnesses
    - Test Management Tool
    - Evidence Capture
    - Defects Management
    - Environments & Releases
    - Readiness and Completion Reports
    - Entry and Exit Criteria
- Schedules
- Management & Organisation
- Governance & Reporting
- Assurance

This document is intended to be read by the following groups:

- Senior Responsible Owner Function (SRO)
- Lead Delivery Partner (LDP)
- SIT Advisory Group (SITAG)
- All Programme party teams and resources involved in SIT execution or support.
- Balancing and Settlement Code (BSC) and Retail Energy Code (REC) Code Body Qualification teams
- Independent Programme Assurance (IPA)
- Data Integration Platform (DIP) Manager

3.2 Reviews and Approvals

The SIT Regression Test Approach and Plan will go through initial LDP review. The SRO team will perform a review in parallel with the LDP team review.

Upon completion of the SRO review it will then be distributed for industry review and feedback (including the Code Bodies). Once this phase is complete, the Programme will bring an amended document to SITWG for review where comments will be incorporated leading to a recommendation of approval by SITWG.

When comments and feedback have been incorporated, approval will be requested from:

SIT Advisory Group (SITAG).

The document will be made available for information via the programme portal.

3.3 Change Forecast

The SI team will own this document and keep it up to date, with review and approval by MHHS programme governance as appropriate. Each new version supersedes the previous version in its entirety.

SIT regression preparation should commence in parallel with reviews and approval of this document. This will include a review of all SIT tests, scoring them for inclusion in the SIT regression test pack using the SIT Regression Test Framework and Evaluation Score Sheet [REF-19] and documenting the final tests to execute in the SIT Regression Test pack [REF-20]. The existing SITF, SITM, Non-Functional, and Operational test cases will be analysed to determine the scope, priority and the sequence and timing by which they will most efficiently be executed during the SIT Regression test phase. For details on this process, please see Section 7.1.1 SIT Test Scenarios and Test Cases. All of these will be developed in consultation with SITWG. Subsequently, the agreed output will then be formalised in a new full version of this document that will be brought for approval to SITAG, alongside the new regression test suite.

All updates to this document will follow the review and approval process outlined in section 3.2.

3.4 Summary of Changes

This is the first draft.

3.5 Assumptions and Caveats

3.5.1 Assumptions

The following assumptions have been made in the development of this document:

Completion of Earlier Test Phases

- SIT Cycle 3 testing completes on time (or exits with caveats to continue in the SIT-A environment where possible).
- All SIT functional and migration Cycle 3 Exit Criteria have been met before the start of the SIT Functional and SIT Migration Regression Test.
- Regression testing can successfully be resourced and executed by cohorts across SIT-A as well as concluding SIT Operational in the SIT-B environment. SIT Cycle 3 Settlement exit criteria have been met:

Set	Test Objective	Reason for Testing	No. of Test Cases	Test Environment	Exit Criteria – - Number of Cohorts Required to complete Test Cases
1	Settling Normally Test	**Testing the MHHS Programme E2E Design** - Integrity and accuracy of Elexon Central Settlement Systems, including Helix internal and output accuracy checks, Supplier and LDSO output report accuracy checks successfully tested - One Main TC and 2 Reporting Variant TCs (Helix/EMRS/ESO only tests)	3	SIT-B	Min 2 cohorts (Any 2, doesn't have to be MVC candidates)
2	Settlement Accuracy Tests	**Testing the MHHS Programme E2E Design** -As per Test set 1 + Additional coverage of key events that can impact reported consumption totals, and critical parameters such as Consumption Component Class, from one Settlement run to another, or from one Settlement day to another TC execution requires HELIX Settlement Accuracy Input Reports for validating the new MHHS Settlement Output Reports	21	21 in SIT-B 4 in SIT-A (Requires CSS)	**Each cohort only runs a Sub-set of these TCs and NOT all of them** Min 2 cohorts (Any 2, doesn't have to be MVC candidates) Min 2 MVC candidates
3	Supporting Market Role Qualification Testing - Non-Accuracy Tests	**Supporting Qualification Testing** Any additional Settlement Test Cases that are required to be run to provide Test Coverage by Market Role (Data Services) to support Qualification Testing • Note - If required, These Test Cases can be run in the SIT-A environment	13	SIT B --- SIT A *(contingency for non MVC)*	Min 2 MVC candidates All 8 Cohorts required to execute each TC to ensure that each Data Service passes each Test Case to support their Qualification Testing evidence.

Figure 2 – Detail of SIT Cycle 3 Settlement Exit Criteria

- Participants may choose to conduct further supplemental regression testing over and above that set out by the Programme (should timescales allow), and any tests undertaken by Participants will not affect completion of the Regression Testing Phase by faster cohorts.
- SIT Regression completion is required before participants can fully exit SIT and go into Qualification approval.
- Settlement testing will not overrun in the SIT-A environment and will be complete before SIT Regression testing can commence.
- SIT Settlement tests will form part of the Core SIT Regression test pack. The “Settling Normally” test case will be run in parallel with SIT-A Settlement tests. However, no Licenced Distribution System Operator (LDSO)’s are connected in SIT-A, and Distribution Use of System (DUoS) is not available. Thus, the full test case cannot be run in this environment. Once the rest of SITF and SITM regression testing starts, the Settling Normally test case will be impractical to run.
    - For further detail, LDSOs are not set up to receive the IF-021 consumption data on SIT-A or receive the settlement output reports for ingestion into their associated DUoS Billing Systems as this was not part of the original test scope.

Test Execution

- We will run 3 cycles of regression testing, executing the same set of regression test scripts. This will allow for any defects found in the first cycle to be fixed and retested during the second. The third cycle should then ensure any defect fixes have not introduced new defects.
- Participants will be able to achieve a similar test velocity during the regression phase to that achieved in comparable SIT Functional and SIT Migration cycles.
- Any SIT Operational or Non-Functional Regression tests evaluated in the core pack and deemed to be in-scope for Regression Testing can be tested in the SIT-B environment alongside the conclusion of the Operational Testing phase.
- The SIT Regression test window is planned for an 8-week period, and testing completes within these timescales.
- Any changes to participant cohort team makeups are manageable and will not impact test velocity.
- Slower participant cohorts can continue to test in parallel without affecting faster cohort regression testing in the SIT-A environment.
    - Slower participant cohorts can extend Regression Testing into the extended support window.
- Design is stable and no further Interim Releases (IRs) to be deployed.

3.5.2 Caveats

N/A.

4 Objectives

The objective of the Regression Testing stage is to ensure that previously passed tests, defects and software still perform as expected after changes have been made. The regression tests are performed to ensure new code and defect fixes have not introduced new bugs or triggered any previously undiscovered defects that would cause software to regress unintentionally.

5 Scope

5.1 In Scope

5.1.1 SIT Functional, Migration, Operational and Non-Functional Testing

All SIT Functional and Migration tests, and appropriate Operational and Non-Functional tests will be documented in the ‘SIT Regression Test Framework and Evaluation Score Sheet’ [REF-19]. This document will form the basis for reviewing and selecting the core regression test pack, using the framework described in the Test Approach section below. SIT Regression test scope will cover the following tests from SIT:

- SIT Functional
- Settlement tests, including “Settling Normally”
- Migration
- Operational End to End
- Non-Functional Tests

All of the above tests will be listed in the ‘SIT Regression Test Framework and Evaluation Score Sheet’ [REF-19]. This artefact will be used to consider the factors below in selecting a subset of tests to be executed as part of a Core SIT Regression test pack. Further details of this process can be found in section 7.1 Test Preparation.

The roles and Participants in scope for the SIT Regression Test stage are:

- Data Integration Platform (DIP)
- BSC Central Services (VAS, Settlement Operations, LSS, MDS, ISD)
- Registration Service (REGS)
- Smart Data Service (SDS)
- Advanced Data Service (ADS)
- Metering Service Smart (MSS)
- Metering Service Advanced (MSA)
- Electricity Suppliers (SUP)
- Network Operations (LDSO)
- Electricity Enquiry Service (EES)
- Unmetered Supplies Operator (UMSO)
- Unmetered Supplies Data Service (UMSDS)
- Data and Communications Company (DCC) (DSP, CSS)
- Electralink (DTN)

(Please note that this document is agnostic of specific industry SIT volunteer organisations).

SIT Regression Testing will evaluate all theme areas below:

Theme
SIT Functional
1 - New Connections
2 - Change of Registration
3 - Change of Supplier
4 - Change of Data
5 - Change of Metering
6 - Metering Changes
7 - Consumption
8 - Settlement
9 - ISD
SIT Migration
Forward Migration CoA
Forward Migration CoS
Reverse Migration CoS
SIT Operational
SIT Non-Functional

Table 1 - SIT Themes under evaluation

5.1.2 SIT Operational and Non-Functional Testing

The Programme recognises there are logistical and environmental constraints around regression testing the Operational and Non-Functional Testing phases. Therefore, whilst all Operational and Non-Functional tests will be evaluated according to the SIT Regression Test Framework and Score Sheet, they will have to be executed within the currently scheduled test phases upon completion of the primary SIT tests if they are included in the Core Regression Test Pack.

Constraints include but are not limited to:

- Test Data Load for Non-Functional Stress Tests
- LDSO and DUoS availability in the SIT-A environment
- Resource availability for Operational testing

5.1.3 Slower Cohort Regression Testing

Slower cohorts will be required to run the same Core Regression Test Pack as the faster cohort candidates.

If slower cohort candidates complete SIT Functional and Migration testing by the end of Sprint 16, they will be able to run regression tests alongside faster cohort candidates with the support of the Programme.

The Programme will continue to offer support to slower cohorts for their continued SIT F & M testing alongside the faster cohort regression testing, however slower cohorts should not expect the same level of focus and flexibility during this period of faster cohort regression testing, where the faster cohorts' regression objectives and releases will take priority. Any slower cohort testing defects that arise will only be considered for fix in this period if they are deemed regression defects.

At the end of Cycle 3, all MPANs will be cleared from the SIT-A test environment to support Settlement testing. During Settlement testing, no other functional testing may occur as this will impact the accuracy reports needed for the Settling Normally test case. Thus, outstanding SITF and SITM tests will be paused during Settlement testing in the SIT-A environment. All tests outstanding must be restarted after Settlement testing is complete.

. The Programme will work with slower cohorts to minimise disruption to their testing.

Slower candidates can count on programme support during the formerly titled 'Non-MVC Support' phase outlined in the Programme Plan (here).

5.2 Out of Scope

The following areas will be out of scope for the SIT Regression test scope:

- MDR live meter testing.
- Test script defects. We will use the latest versions of the test scripts.
- DCC User Entry Process Test (UEPT) – Participants adopting the SDS MDR role are to engage with the DCC and follow and complete the associated User Entry Process Test procedures as a pre-requisite to entering SIT Regression Test.
- Pre-Integration Test (PIT), which takes place on the Programme participant's own standalone test environment and is a pre-requisite for entry into SIT or Qualification Testing. Guidance for this test phase can be found in 'MHHS-DEL852 - Pre-Integration Test Guidance' [REF-02].
- All other SIT Stages – these will be the subject of separate Test Approach and Plan documents:
    - Component Integration Testing (CIT)
- User Integration Test (UIT) Test Stages:

- Qualification Testing
- E2E Sandbox Testing

6 Test Architecture and Coverage

SIT Regression testing will be undertaken primarily within the MHHS SIT-A environment, with potential Operational and Non-Functional tests executed in the SIT-B environment. This is an established environment, which we have been using for several months for SITF and SITM testing. The following configuration will be made to the SIT-A environment prior to regression start:

1) The “SIT-B settlement calendar” Master Settlement Timetable Industry Standing Data (ISD) file will be implemented in SIT-A, for the start of this phase of testing, so that II, SF and RF settlement runs can occur. The standard Master Settlement Timetable ISD, reflective of production, will then be utilised in SIT-A following the completion of Settlement Accuracy Tests. This will require two versions of the Master Settlement Timetable ISD to be published by Elexon via the IF-047. No other changes to the ISD are planned.
2) The “settlement accuracy reporting” will be implemented to support Settlement tests in SIT-A.
3) Helix will be performing an environment maintenance uplift to their latest build, per CR055 commitment.
4) All previous Meter Point Administration Number (MPAN) test data will be removed from Helix and DIP environments before SIT regression commences. In order to simulate a true likeness to Migration start, the SI team will endeavour to replicate the start of M11 as close to live as is practically possible. MPAN data used for SIT testing to date will be removed. Other Central Services and PPs systems will not need to be cleared down of previous test data MPANs, but those MPANs will not be utilised for regression testing. Those parties can opt to remove previous MPAN data from their systems, but it is not mandated, as some services have significant technical constraints in undertaking this activity.
    a. Slower cohort participants will need to restart any tests in flight, as no MPANs will be retained.
5) New test data will be provided to all central services and PPs for loading in the regression window prior to regression start, which the exception of Helix and DIP, whose environments will start with no existing data within them and will be populated by execution of migration processes.

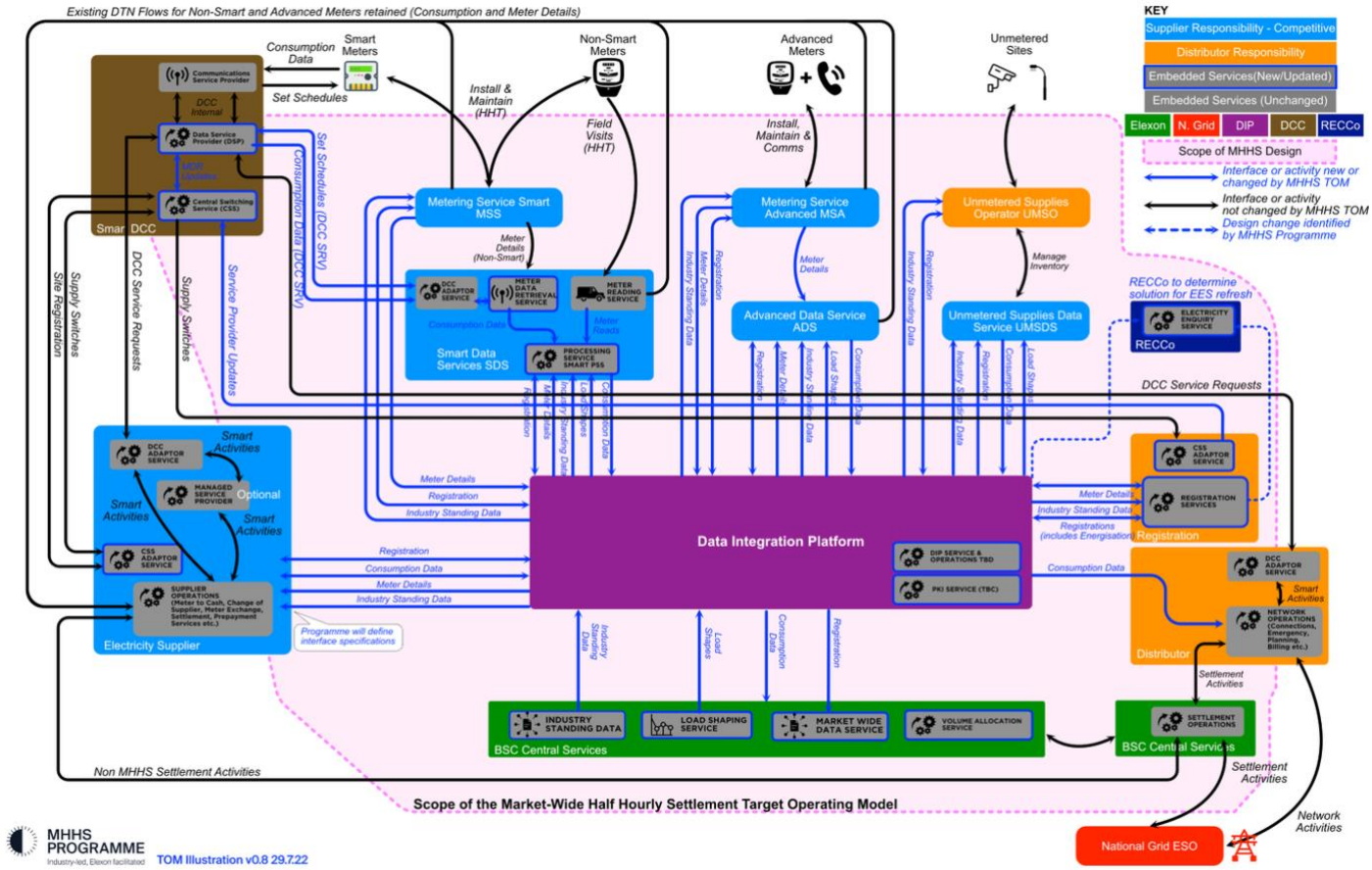


Figure 3 - TOM illustration

SIT Test participants will have proven their connectivity to the environment. Please refer to section 7.1.2 Test Data for further details.

To smoke test the SIT-A environment, we will request Helix to send an IF-047, which all participants will need to confirm receipt of. We will also request the Data Services to send an IF-021 and provide confirmation the message was successfully delivered to the DIP, by checking the DIP Portal. This smoke testing will take place prior to the Settlement Testing in SIT-A, prior to the start of SIT Functional and SIT Migration regression testing.

In parallel with Settlement Testing in SIT-A, the Programme will undertake the Settling Normally test case. It will not be feasible to do this later in the regression test schedule when the other SIT-F and SIT-M tests are being run. Additionally, it should be noted that LDSO's are not connected to the SIT-A environment and no DUoS Billing related test steps will be able to be run.

Additionally, any Operational or Non-Functional Tests included in the Core Regression Test Pack must be run in the SIT-B environment, which is also under current use by the programme.

SIT environments requirements are set out in 'MHHS-DEL618 - Environment Approach & Plan' [REF-03]. Please refer to this document for the details on:

- Management and tracking environment build, and associated reference data.
- Planning and allocation in the use of environments for relevant participants, including user access permissions and control.
- Environment Connectivity Proving.
- Maintenance, availability, and monitoring of environments, including the specification of back-ups, exports, refreshes, or roll backs.
- Controlling deployments into environments, including data configuration, version control and release notes.
- Tracking and coordination in resolving environment issues using the defect management workflow.
- Environment requirements for the various stages within PIT, SIT and UIT phases.

7 Test Approach

7.1 Test Preparation

SIT Regression testing will evaluate and re-use existing test cases from previous test stages.

Before testing commences the SI Test team will prepare and walk participants through a DITL “Day in the Life” pack, providing all necessary SIT Regression execution details.
It should be noted that the currently scheduled regression test window will be relatively short. Test evaluation and selection will need to be pragmatic and high value.

7.1.1 SIT Test Scenarios & Test Cases

The SI project teams will create a framework to assess and evaluate all SITF, Settlement, SITM, Non-Functional and Operational test scripts and defects raised during the SIT test phases. Several SI project teams will be involved in reviewing different SIT assets (details below), with different focuses. All tests and defects will be scored based on criteria detailed below, in the SIT Regression Test Framework and Evaluation Score Sheet [REF-19]. This process will enable the SI team to select a sub-set of tests for SIT Regression testing. The tests with the highest score ratings will be detailed in the SIT Core Regression test pack and will follow the review and approval process documented in 7.1.1.7.

No new tests will be a part of the Core Regression test pack.

7.1.1.1 Analysis and Risk Assessment

As part of building the Regression Test Framework, the Programme will undertake analysis of SIT Functional and Migration test coverage to date. The key questions asked are: Has the MHHS Industry Programme done sufficient SIT testing to enable the programme decision to stop SIT testing? Can we quantify the risk of code regression having occurred throughout the course of 12 months of SIT Functional & Migration testing? (Note that CIT is discounted from this assessment, because CIT interface tests were simple and binary in nature, if they failed no subsequent SIT testing would be possible)

The assessment of this risk needs to be evidence based, and the amount, and type, of regression testing undertaken should be proportionate to that risk – with analysis derived from:

- Releases
- Test execution data
- Defect data

The assessment also needs to consider the risk of Central Party regression and the risk of Voluntary Party regression.

Risk Assessment Questions related to tests include:

- What tests have not been run and passed more recently i.e. since Cycle 1 or Cycle 2?
- Of those tests, how many of those Business Processes and Requirements, or Functional Areas been exercised since in other tests and by which Cohorts more recently?
- How effective was the balancing of test coverage between Cohorts in ensuring that the MHHS solution was broadly exercised throughout the SIT F & M timescales?
- What was the degree of Tests that were ‘Passed with Observations’ or ‘Passed with Workaround’ and does the regression coverage need to account for this?

- Have any assurance findings increased the regression risk in any areas?

Risk Assessment Questions related to defects include:

- Which types of defect can we discount from the analysis, are Functional defects that resulted in code releases the only type of defect to focus on? (e.g. Documentation defects wouldn't be subject to regression risk, but design defects may be a factor)
- How many IR and Central Party releases have we had and when were they?
- Have we seen a relationship between releases and defects, or defect rates?
- Do we have evidence that any defects have been regression issues? And if so, have there been any patterns seen? (Note – may need a new defect type of 'Code Regression' in ADO)
- Have any areas been problematic / complex, and yielded higher numbers of test failures and defects?
- Have we seen a relationship between processes, requirements and functional areas and the rate of defects being raised in these areas - and has recent testing Passes built subsequent confidence in those areas?
- We need to assess CP regression risk vs. voluntary party regression risk (can the latter be mitigated in other ways, e.g. additional testing at the end of Cycle 3, additional PIT testing?)
- Have certain Central Parties had more defects than others?
- Have we seen any trends or patterns in the CP defects and is there any risks we need to mitigate in regression? e.g. DIP had more defects early in testing, with MPRS being involved in the most processes and functions have had a more consistent defect rate throughout as new functionality has been exercised through the course of testing
- Have certain voluntary parties had more defects than others? Are there any patterns or trends? Were there good reasons i.e. certain market roles? Were they leaders in the execution, or just generally more transparent?

How can we maximise the potency of the testing undertaken in the regression window?

- Do we need to cover all business processes? Do we have a risk assessment to support and justify that? Is there any impact of change requests on tests?
- Do we have evidence that some error prone or complex areas should be included?
- Are there 'super tests' that cover a breadth of requirements or functional areas?
- Is there a potential to mitigate regression risk in targeted 'Early Regression Testing' i.e. during Sprint 13 – 16

Can, and should, we increase / maximise the breadth and coverage of testing in the 8-week regression window? (Pros & Cons Analysis):

1. Less sprints / cycles?
2. More tests?
3. By Cohorts running different tests to each other?

7.1.1.2 SIT Asset reviews

The following SI assets will be reviewed to ensure a comprehensive SIT Regression test pack is created:

Teams	Assets to be reviewed	Coverage review
SI Test Assurance Team SI Design Team SI Data Team Industry Programme Experts Technical SME SIT Functional Lead SIT Migration Lead Operational Test Lead Non-Functional Test Lead	• All Business processes • Test scripts • Defects • Evaluation score sheet [REF-19] • Core Regression test pack [REF-20]	• Key business processes and the scripts covering these • High priority tests that are required by Code Bodies for Qualification • Day 1 proximity business processes • Parties and Party roles • Operational Choreography type tests • Defects associated with key business processes - to be confirmed by the design team • Areas with a high number of updates/DINs; temporary fixes; or where workarounds and “passed with observations” were used
Test Coordinators	• Defects • Test results • Evaluation score sheet [REF-19] • Core Regression test pack [REF-20]	• Tests marked as “passed with observations” and “passed with workarounds” • Areas where there were a high number of defects raised • Tests where there were a high number of reruns. • Test cases passed with declarations or dispensations.
Defects Team	• Defects • Evaluation score sheet [REF-19] • Core Regression test pack [REF-20]	• All S1 & S2 Defects raised during SIT (after triage), and Operational test phases, including those resolved by Central Party and Participants. • Defects, focusing on those areas which were problematic for both Central Parties and Programme Participants. • Areas where we advised the participants to use a workaround, or “pass tests with observations”, during test execution, for example MDR Appointments related to CR56; and SEG changes.
Release Management	• Release Notes • Evaluation score sheet [REF-19]	• Impact notes withing the Release notes • Change requests / DINs and Temporary fixes delivered during execution
SRO	• Evaluation score sheet [REF-19] • Core Regression test pack [REF-20	• Review of evaluation score sheet for scoring of test cases • Review of SIT Regression test pack for coverage
Code bodies	• Core Regression test pack [REF-20]	• Confirmation of key areas to be covered during SIT Regression test execution • Review of SIT Regression test pack for coverage against qualification requirements

Teams	Assets to be reviewed	Coverage review
Central parties	• All Business processes listed in the scope section of this document • Test scripts • Defects • Evaluation score sheet [REF-19] • Core Regression test pack [REF-20]	• Key business processes and the scripts covering these • High priority tests that are required by Code Bodies for Qualification • Day 1 proximity business processes • Parties and Party roles • Operational Choreography type tests • Defects associated with key business processes - to be confirmed by the design team • Areas with a high number of updates/DINs; temporary fixes; or where workarounds and “passed with observations” were used
Participants	• All Business processes listed in the scope section of this document • Test scripts • Defects • Evaluation score sheet [REF-19] • Core Regression test pack [REF-20]	• Key business processes and the scripts covering these • High priority tests that are required by Code Bodies for Qualification • Day 1 proximity business processes • Parties and Party roles • Operational Choreography type tests • Defects associated with key business processes - to be confirmed by the design team • Areas with a high number of updates/DINs; temporary fixes; or where workarounds and “passed with observations” were used

Table 2 - SIT Asset reviews

NOTE: Participants are welcome to review further test scripts, cases and scenarios if they wish to supplement the Core Regression Pack. This activity is voluntary at the cohort’s discretion and may be impacted by other programme priorities.

7.1.1.3 SIT Regression Test Scoring

The SI test team will create a framework to review all tests, CR’s, interim releases and defects; and select a sub-set of these tests to run during SIT Regression. Each test and defect will be reviewed against several criteria, all of which will carry a weighting. We will ask Programme Participants, the Code Bodies and Central Parties to feed into the selection criteria, by confirming the key business processes / tests which they believe should be executed during SIT Regression testing.

Once the SIT Regression Test Framework and Evaluation Score Sheet [REF-19] has been created and reviewed by the SI project members, the document will be sent for review to the SRO team. Agreed tests with the highest

score ratings will be selected for the core regression test pack and will then be documented in the SIT Regression Test pack [REF-20].

The SIT Regression selection criteria we are considering are as follows:

1) Criticality of business processes and those which will be used near Day 1, as advised by the code bodies and SI project teams.
2) Areas with a high number of defects
    a. This includes all Programme Participants, including Central Parties
3) Areas with a high number of updates/DINs; temporary fixes; or where workarounds and “passed with observations” were used
4) Areas where there has been high Test Case volatility
5) Tests passed against earlier versions of code (e.g. IR 5 or IR 7)
6) Tests that passed with workarounds, declaration, or observations
7) LDP/SRO assessment

The following will be reviewed in the scoring process and considered for inclusion in the regression test pack, ensuring comprehensive Regression test coverage:

- All business processes and themes, focusing on the key business processes, and including coverage of central parties’ processes (these can be found in the Collaboration SharePoint site.)
- All Parties and Party roles
- Areas where there have been multiple cohorts with the same tests which have been “passed with observations” and/or “passed with workarounds”
- Areas which were problematic, especially those where Sev-1 and Sev-2 defects were raised.
- Areas where we advised the participants to use a workaround, or “pass tests with observations”, during test execution, for example MDR Appointments related to CR56; and SEG changes.
- Areas where there were many Change requests / DINs and Temporary fixes delivered during execution
- Environmental constraints (eg SIT-B connectivity and timelines)

TC Ref	Theme	TC Title	Critical Business Process	CBP Score	Central Party Defects	CP Score	Updates/ DINs	DINs Score	TC Volatility	Volatility Score	Earlier IR	IR Score	LDP/SRO Assessment	LDP/SRO Score	Total Score
SITFTS-0010 TC0X	3 - Change of Supplier	SITFTS-0010 TC0X Sample 1	5	5	1	0.7	2	0.6	1	0.5	4	2.8	4	2	**11.6**
SITFTS-0020 TC0Y	5 - Change of Metering	SITFTS-0020 TC0Y Sample 2	3	3	2	1.4	3	0.9	3	1.5	2	1.4	2	1	**9.2**

CBP Weight	CP Weight	DINs Weight
1	0.7	0.3

TC Volatility Weight	IR Weight	LDP/SRO Weight
0.5	0.7	0.5

Figure 4 – Sample SIT Regression Test Framework and Evaluation Score Sheet

Details of the scoring criteria is not in scope for this document. After recommendation and approval by the governing bodies, these details will be brought to SITWG for discussion and agreement; it is the intention of the Programme to be fully transparent on this process. Feedback will be incorporated into the approval process outlined in section 7.1.1.7 SIT Regression Test pack Review and Approval Process below.

7.1.1.4 Core Regression Test Pack

The Core Regression Test pack [REF-20] will be the output of the SIT Asset reviews and Scoring process and will be built from a sub-set of tests selected (i.e. those with the highest score) in the SIT Regression Test Framework and Evaluation Score Sheet [REF-19]. Once created, the core regression test pack will be made available for review by the usual process, as per section 7.1.1.7.

The intention is the Core Regression Test pack will be sized according to a reasonable test velocity from a SIT Functional & Migration sprint. This will allow for a balance between achievability and breadth of coverage. It should be noted that the Core Regression Test pack will be much smaller than the scope of SIT Functional and SIT Migration Testing: essentially it will be the size of one sprint.

The Core Regression Test pack will be executed by every SIT cohort, and will cover tests for key business processes in the following test pack:

- Migration (SITM), including reverse migration
- SIT Functional (SITF)
- Settlement testing, including Settling Normally. Please note this test case must be run in parallel with Settlement testing in SIT-A, not alongside the rest of the Core Pack
- Operational and/or Non-Functional End-to-End Tests, as needed

The Core Regression Test pack will be developed in conjunction with the SIT Working Group, with transparency around the development methodology.

Based on the contents of the Core Regression Test Pack, the Programme (in consultation with SITWG) may choose to change the structure of the three-sprint approach.

7.1.1.5 Operational and Non-Functional Regression Tests

Tests from both Operational Testing and Non-Functional Testing will be evaluated as part of this process. However, the programme schedule currently has the end of Operational Testing in the SIT-B environment running in parallel with the start of Regression Testing in the SIT-A environment. Thus, any tests from these phases identified for regression testing should be run at the end of or after the completion of Operational Testing in the SIT-B environment.

These tests should be selected for both achievability and value provided. Practicality of running these tests will be a criterion in the scoring process.

7.1.1.6 Test Prioritisation

During the test preparation phase, whilst collating the SIT Regression Test pack [REF-20], the selected SIT Regression tests cases will be prioritised and scheduled based on the following criteria:

- Dress Rehearsal of the migration process, to migrate legacy MPANs into an MHHS state
- Tests which will mimic processes used near Day 1 of live operations
- Key MHHS business processes and customer journeys

We will be using the latest versions of existing SITF, SITM, Functional Settlement and Operational test scripts, so no further test script preparation is required.

Test prioritisation will be fully transparent throughout the scoring process and in the Core Regression Test Pack when distributed to Programme Participants.

7.1.1.7 SIT Regression Test pack review and approval process

The Core SIT Regression test pack will be constructed using the Regression Test Framework, and undergo the following review, consultation, and approval process:

1) LDP Peer Review
2) SRO and Design Team Review
3) Code body review
4) Central party review
5) Participant review

6) SITWG Review / Consultation
7) SITAG Approval

7.1.1.8 Supplemental Voluntary Regression Tests

The SIT Regression Test pack [REF-20] should be seen as the minimum testing coverage required for regression test purposes. We encourage cohorts to seek to run additional tests to ensure their individual solutions are robust, especially with respect to any internal defects. The Programme feels this is an opportunity that may not be available after the scheduled Regression Test period. The Programme will endeavour to support cohorts in these efforts but programme milestones and timelines may take precedence, so this should be a factor in any decision to run additional tests. These tests are undertaken at participants' risk, and the following directions should be noted:

1) Any supplemental tests must be run within the first sprint, and must be the same tests from sprint to sprint
2) Core regression tests must take priority over supplementary tests
3) All supplementary tests must be agreed in advance with the Programme
4) Participants must demonstrate and attest that resources and capability to run supplementary tests without impacting core regression objectives
5) Sev-1 and Sev-2 Central Party defects are considered material to the exit of the Regression Testing phase. Other considerations, including completion of in-flight tests, are not

---

7.1.2 Test Data

Prior to SIT Regression Test commencement, the SI Data team will ensure all necessary data pre-requisites have been implemented and identify sets of suitable data that participants can use for each of their SIT test cases in scope. A sub-set of tests will be used to migrate MPANs, and then these migrated MPANs will be used in follow on tests, to mimic a more production-like data scenario. This detail will need to be part of the Core Regression test pack and schedule.

All MPANs will be loaded by Cohort PPs, ESS, DCC and LDSOs in a legacy state. Helix and DIP will not load any test data as their systems will be populated by executing migration business processes.

Initially PPs will execute the migration business processes for a defined set of MPANs (which will be <400 MPANs across all Cohorts) to support Settlement tests. All MPANs will be provided at the same time as all will start in a legacy state, the 400 settlement MPANs will be migrated to MHHS first. Following completion of settlement testing further MPANs will be migrated to support regression tests.

Details of this test data creation and loading process and the mechanisms for this are below:

7.1.2.1 Test Data Creation within MPRS and CSS/DSP

1) MPAN Core identifiers will be provided by SCS for a total of up to 8,000 MPANS (split 50/50 between ETCL and SOUT). This number to be confirmed through the data preparation process.
2) Using these MPAN Cores, MPAN attributes will be created based on MPAN records already existing in the data cut and augmented with additional Cohort aligned data as appropriate.
3) If required, depending on scoring, a higher proportion of related and linked MPANs may be created.
4) The following "new connections" process will be run to populate MPRS, DSP, CSS and LDSO systems within the data load maintenance window prior to Regression Test Phase commencement:

i. Identify MPANs which are at a Created state within the August 2023 data cut and do not have an Initial Registration.
ii. CSS1700. Produced by MHHS and loaded into MPRS, data synchronised to CSS and DSP.
iii. D0205 - Produced by MHHS and loaded into MPRS, data synchronised to CSS and DSP.
iv. D0368 - Produced by MHHS and loaded into MPRS, synchronised to CSSD0312 - Produced by MHHS and loaded into MPRS
v. DB05 - to Link Import and Export Meters as the final augmentation step in MPRS

7.1.2.2 Test Data Creation within DIP

1) The DIP SIT-A environment will be cleared down of historical MPAN data.

7.1.2.3 Test Data Creation within Elexon Settlement

1) The Helix SIT-A environments will be cleared down of historical MPAN data.
2) Helix will generate ISD files.

7.1.2.4 Test Data Creation within EES

1) The EES SIT-A environment be populated with the 8,000 MPANs via the CSV provided.

7.1.2.5 Test Data Allocation by Cohort

1) Each Cohort will be allocated 1,000 MPANS with the necessary data conditions to carry out the regression test scenarios.
2) Data will be loaded by Participants and central parties as per previous SIT Cycles via CSV or IF messages. Meter technical details will be provided for each MPAN
    i. D0150/D0149 produced for Meter Group Traditional
    ii. D0268 produced for Meter Group Advanced
    iii. Unmetered MPANS - “generic inventories” will be applied by UMSO to unmetered MPANs created
3) The SI Data team will confirm with participants that data has been loaded correctly.

7.1.3 Test Management Tool

All SIT Regression Test execution and defects will be managed within the MHHS Azure DevOps (ADO) Test Management Tool.

In preparation for SIT Regression Test all test cases applicable to a participants’ role in the test stage will be loaded into their ADO cohort test plan ready for execution.

7.1.3.1 Test Management Tool Onboarding

The SI will set up all nominated test resources for each SIT participant within ADO and provide the necessary access and user guidance tutorial material.

Details of ADO set up, onboarding and usage is published within the 'MHHS-DEL1332 - Test Management Tool User Guide' [REF-10].

7.1.4 Participant Preparation

In preparation for the SIT Regression Test stage, participants will be required to plan, execute, and complete the following activities, and confirm that these activities have been completed:

- Participants to review tests for SIT Regression testing as part of the Core Regression Pack.

- SIT-A Environment connectivity confirmed. Helix to send an IF-047, which all participants will need to confirm receipt of. Data Services to send an IF-021 and provide confirmation the message was successfully delivered to the DIP, by checking the DIP Portal.
    - Please note this will be done during the Settlement tests taking place in the SIT-A environment preceding the main phase of Regression Testing. The ISD will be published at the start of the test phase.
- SIT-B Environment connectivity confirmed, subject to Operational and Non-Functional tests in scope.
- Test Data allocation has been loaded and verified by the participant and the SI Data team. Please refer to the 'MHHS-DEL813 - Overarching Test Data Approach and Plan' [REF-05] and section 7.1.2 Test Data of this document.
- Participant users have been onboarded to the MHHS Test Management Tool.
- Participants have confirmed they have resources with the requisite skills and system access to support the test stage execution and defect management process – note this will be subject to assurance.

Participants may also wish to assess any supplementary tests they wish to run in addition to the Core Regression Test Pack.

7.1.5 Test Entry Criteria

SIT Regression test entry will be dependent on the following SIT exit criteria having been met:

- All SIT Functional, Migration (including Settlement where possible), and Non-Functional tests have executed, and the overall test pass rate is 85% or above or any exceptions are documented and agreed.
- There are no outstanding severity 1 or 2 defects, or any exceptions are documented and agreed.
- The number of outstanding severity 3 or 4 defects, are within the following thresholds:
    - 10% of test cases allocated per Market Role x Severity 3 Defects
    - 20% of test cases allocated per Market Role x Severity 4 Defects
- Work-off plan for any outstanding defects has been produced and agreed.
- Test results and evidence has been captured in the test management tool.
- Defects have been captured in the defect management tool.
- Participant SIT Cycle 3 Test Completion Reports published and approved.
- SI SIT Cycle 3 Test Completion Report published and approved.
- Non-Functional Test Completion Report published and approved.
    - Note: Operational testing will not be scheduled to be complete by the time Regression testing is due to start.
- Settlement testing in the SIT-A environment has been completed (NB this is an interim point after Settlement Regression testing has started and will address the start of SIT Functional and Migration Regression testing). Note: Participants may have to include a caveat should this testing not be complete in their own test completion reports.

The following artefacts are required for test entry into regression by the Programme:

- Test Approach and Plan (this document)
- SIT Regression Test Framework and Evaluation Score Sheet [REF-19] – listing a sub-set of existing SITF, SITM and Operational test cases selected for SIT Regression testing.
- Core SIT Regression test pack [REF-20]
- Test execution schedule
- DITL – Day in the Life test execution pack

The following have been set up and confirmed by the SI as ready for test commencement:

- Test data has been allocated to participants.
- Test Management Tool
    - Tests have been loaded.
    - Tests have been assigned to relevant participants.
- SIT PP pairing confirmed. This will be the same pairings as at the end of the SITF test phase. This is for the purpose of any paired-cohort tests in the Core Regression Test Pack. For faster cohorts, both cohorts will need to fultill the entry criteria for Regression Testing.
- Test case priority, sequence, and execution schedule
- Core regression tests have been identified and approved.
- Defect Management process
- Environment Management process
- Release Management process
- Test governance
- Test meetings
- Test Reporting
- SIT-A Environment has been confirmed as ready
- SIT-B Environment has been confirmed as ready based on Operational or Non-Functional Tests.

For Participants entering SIT Regression Test the following has been confirmed:

- Evidence of a successful SIT Completion has been submitted (including a SIT Completion Report), assured by the SI and any work off plans agreed and tracked.
- Smoke testing of the IF-047 message has been successfully received by all participants from Helix; and for Data Services, an IF-021has been successfully delivered to the DIP.
- Test Data allocation has been loaded, verified, and assured by the SI.
- Participant users have been onboarded to the MHHS Test Management Tool.
- Participants have confirmed they have resources with the requisite skills and system access to support the test stage execution and defect management process.

7.1.5.1 SI Test Readiness Report

Prior to SIT Regression Test entry the SI will compile an overarching SIT Regression Test Readiness report on the status of these entry criteria, which will note any exceptions or work off plans that have been agreed and include the SI recommendation to proceed or pause. This report will form the basis on which governance approval to commence SIT Regression Test execution will be sought via the MHHS Governance Framework – please see section 10.1.

7.2 Test Execution

The SIT Regression approach will test process flows through MHHS lifecycles and customer journeys, using tests that are selected to be part of the Core Regression Test Pack.

The environment will be setup to simulate a position as close to a legacy state as possible, i.e. where there are no MPANs or participants currently in the market. Testing will commence in parallel with the currently scheduled Settlement tests in the SIT-A environment; the Settling Normally test case will be the only regression test in scope at this time. C&C will be asked to check that the MPANs have been correctly migrated into the EES system.

After Settlement testing is complete, there will be a full week of migration activities scheduled to condition MPANs for subsequent testing. These migration tests will populate the SIT-A environments with the required number of MHHS state MPANs to execute Settlement tests. Once those tests have completed the environment constraints (e.g. no more than 400 MHHS MPANs present within Helix) will be removed and SIT-A will then support the regression test cycles for faster cohorts and continuance of SIT testing for slower ones.

This will also provide testers with some MPANs for further testing, in addition to a data load. Migration will be followed by 3 cycles of SIT Regression testing, if necessary.

- If all tests pass and no Severity 1 or Severity 2 defects are outstanding, there will be a checkpoint scheduled to assess whether the Regression Phase can complete early.
- Otherwise, the plan will be to run the Core SIT Regression test pack 3 times:
    - once to flush out initial defects,
    - once to ensure any defect fixes have not introduced new issues, and
    - once to test any 'fixes of fixes.'

During this time, we will monitor defects raised and only put forward S1 and S2 CP defects for release. These will be scheduled at the end of the first and second regression cycles. S3 and S4 defects will be subject to work off plans created in conjunction with the Programme. Any defects found in slower cohorts will be added to the programme backlog, triaged and prioritised.

All cohorts will execute the Core SIT Regression test pack. Completion of these SIT regression packs will enable cohorts to fully exit SIT and go into Qualification approval and sign off.

The day-to-day test execution approach will remain the same as that used during the SIT Cycle 3 test phase, including slower cohorts who may finish outside the regression test schedule.

The SI Test Team will coordinate and support the execution where hand offs of test cases are required between participants.

Each SIT PP will be required and obligated to support other participants' testing, so a participant should look at the tests for all Roles and be prepared to support those tests where involvement is needed to ensure the test can be run in an end-to-end manner. For core capability providers (Elexon (Helix), DIP, LDSOs / (St Clements), RECCo, DCC, ElectraLink) this will up until the end of SIT testing, some none-core capability PPs may be asked to continue involvement beyond the completion of their own tests to maintain a cohort for the purpose of supporting the remaining participants to complete their SIT testing.

7.2.1 Test Pass and Fail

A test will pass if the actual result matches the expected result. Where this is not the case, a defect will be raised.

Where a test has failed, but during triage a workaround for the associated defect has been identified, which in turn reduces the severity of that defect, the associated failed test can be re-executed using the recommended workaround, if this enables the test to be concluded successfully then the test can be set to "passed with workaround(s)". Special attention will be given to any tests that have been set to this status during execution, and where a full fix becomes available during the SIT test stage the test will be scheduled for re-testing. If any tests remain in this state at the end of testing, then they will be clearly marked in the Regression Test Completion Report and agreement sought by all concerned parties that this acceptable for go-live and that an agreed work off plan is in place. Note, these tests may need to be re-run in the second or third regression cycle; a true test that "passed with workarounds" is not desirable at this late stage in the programme lifecycle.

Under some circumstances tests will be marked as "blocked" if they were due to be executed in the schedule but are unable to be due to a known defect. This status will be used sparingly where it assists in informing management stakeholders of the impact of open defects on testing progress or completion.

7.2.2 Test Data Usage

Each SIT Regression Test participant will be allocated a set of suitable test data for each test case in scope for their role. All MPANs records used in testing will be allocated unique reference IDs that will be used in all communications including test result and defect logging in ADO.

A sub-set of tests will be used to migrate MPANs, and then these migrated MPANs will be used in follow on tests. This detail will need to be part of the Core Regression test pack and planned in the execution schedule.

Full details of how test data will be generated and managed during test execution are documented in the SIT Functional Test Data Approach and Plan [REF-21].

7.2.3 Azure Dev Ops (ADO)

ADO will be used for:

- Managing test case execution, hand-offs between SIT Participants and evidence capture
- Tracking and reporting test execution progress and coverage
- Raising and managing defects (including Environment issues)
- Tracking and reporting defect status and progress
- Release Management
- Maintaining requirements to test traceability.
- Tracking and reporting test coverage status

Details of the ADO set up are published within 'MHHS-DEL1332 - Test Management Tool User Guide' [REF-10].

7.2.4 Test Evidence Capture

At the time of writing, the current evidence capture process remains the same as current SIT phases, as set out in their Test Approaches and Plans. However, the programme may relax these requirements in consultation with code bodies and other stakeholders.

Programme participants conducting SIT Regression Test will need to provide test evidence for the test steps in ADO where it has been indicated as required. This evidence will be used during test assurance to validate actual vs. expected result of the test. In addition, test evidence will be critical for triaging defects. This may require both the evidence of the failure event, and upstream test step evidence to assist in analysing the failure.

Screenshots of the test system, messages and or electronic logs of messages must be provided as appropriate and should be annotated with the Test Case reference and test step that they apply to. The evidence requested is standard for any test assurance process and should be similar to that required by the Programme participants' own quality gate and internal audit.

It should be noted that test evidence requirements are expected to be similar to that required for the SIT Functional and SIT Migration phases.

Test Evidence capturing will be co-ordinated across the Programme. SI Test will, through daily SIT Functional Management, remind cohort participants and Central Parties of Test Evidence capturing obligations against relevant tests.

Programme Participants

Test Evidence is required to be captured at every point indicated within SIT Functional Test Cases, with any exceptions documented and agreed.

Central Parties

Central Parties include any Party that is supporting multiple test runs across all Cohorts.

On the basis each of the 8 SIT Functional Cohorts have the same suite of Tests for execution, then Central Parties will be required to support the execution of at least 8 Test Runs per planned Test. Test Evidence will be required from Central Parties, at the relevant points captured within the Test Case.

7.2.5 Placing Reliance

Where applicable, day-to-day test execution will be managed and coordinated in accordance with the MHHS-DEL1064 - Placing Reliance Policy [REF-06] and RACI that has been agreed during preparation with those participants that have chosen to adopt the policy to meet their test requirement. Participants are not expected to submit any additional placing reliance requests should they already be in place for SITF and SITM.

7.2.6 Defect Management

The Defect Management process will remain unchanged during the SIT Regression test execution test phase.

The MHHS programme defines a defect, in respect of any tests, as:

a) Anything that is preventing the execution of the tests; or
b) Once commenced or executed, the test has an unexpected or unexplained outcome or response.

A defect is raised in respect of any of the following:

- Failure in the way systems (or system components) operate (both functionally and non-functionally).
- Failure in the way systems have been integrated and/or communications between these systems.
- Failure in the performance of test emulators, simulators, or data generators.
- Failure in relation to different Test environments.
- Failure in relation to the Test specifications, scripts, data or expected results.
- Documentation Issue.

All defects will be raised and managed within MHHS Test Management Tool (ADO) and will follow the process depicted below.

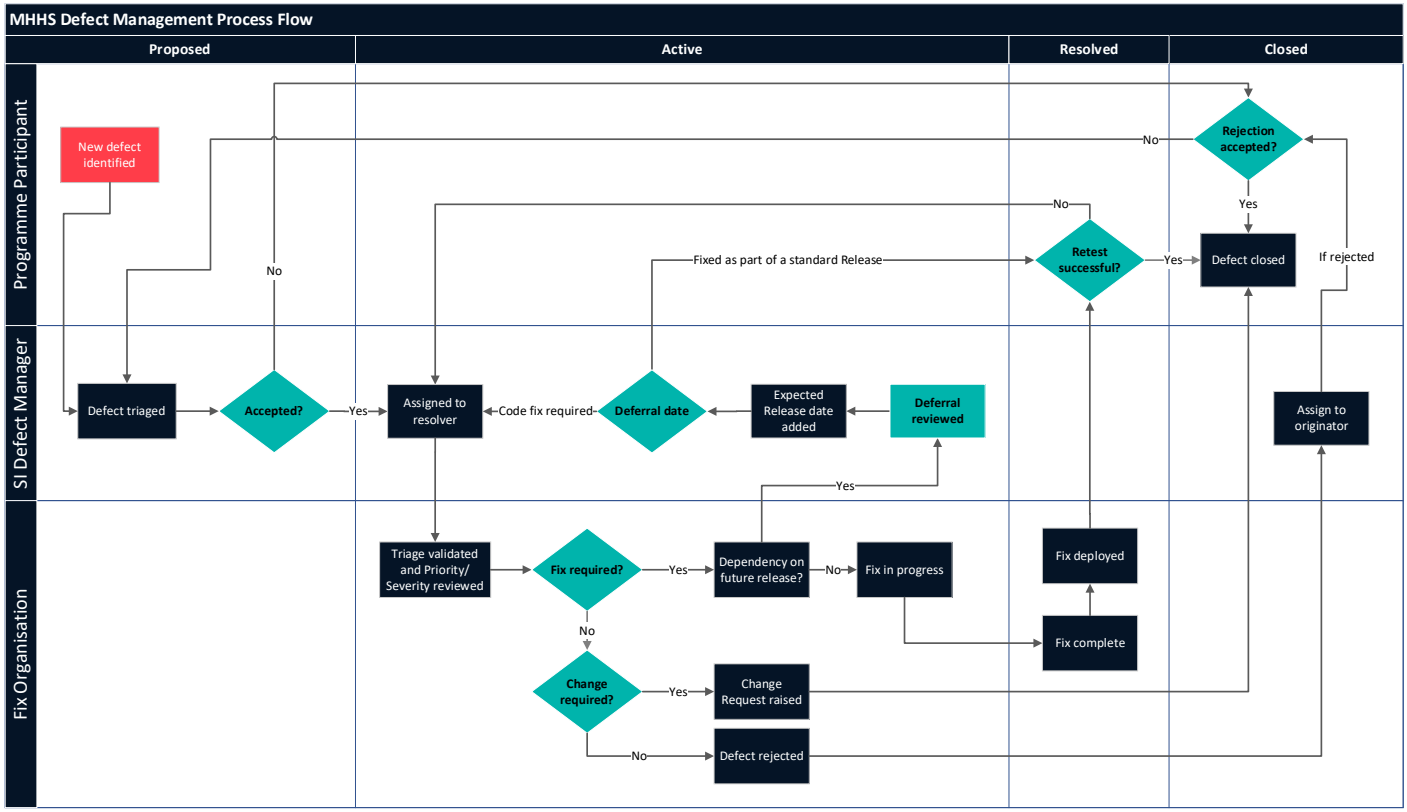


Figure 5 - ADO Defect Process Flow

Defects arising within the SIT Regression Test stage will be managed in accordance with the 'MHHS-DEL466 - Defect Management Plan' [REF-07].

7.2.7 Release & Configuration Management

The SIT Regression test cycle will have 3 cycles in sprint format, to enable retesting and regression testing of any defect fixes deployed during this test phase. A pragmatic approach to release management will be necessary, given the tight timelines associated with the regression test schedule.

Code releases will continue to be managed in accordance with the 'MHHS-DEL1089 - Release and Configuration Management Approach & Plan' [REF-04]

Each participant will be expected to maintain a SIT-Staging environment for the purposes of testing releases ahead of deployment into the SIT-A environment (this will be a PIT type environment managed in the participants' own network domain). A condition of release deployment will be evidence of release testing and regression testing having been undertaken which will be reviewed by the SI test assurance team.

7.2.8 Test Suspension and Resumption Criteria

During SIT Regression, any PP has the right to suspend testing where it considers necessary, by agreement with the SI team. Testing will only recommence when agreed between the PP and SI team. Where the SI team believes there are reasonable grounds to suspend all testing, this can be done by agreement with the SRO.

Reasonable grounds for suspending testing may include any of the following:

- Application components are not available as scheduled;
- A testing issue prevents further useful testing from proceeding;
- A large percentage of planned test scripts for a given day fail and significant root cause analysis needs to be undertaken to establish the cause. The outcome of any root cause analysis activity may result in testing being suspended; or

- Test cases to be executed are in a “blocked” status due to an identified testing issue.

Where testing has been suspended, either the SI team or the PP (as appropriate) will produce a test suspension report reflecting the cause of the suspension and the actions to be taken by whom and when for testing to resume – the test resumption criteria. Testing will only resume once the PP has demonstrated to the SI team or the SI team to the SRO that the test resumption criteria have been met.

7.2.9 Test Exit Criteria

- All tests have been run to completion within the currently scheduled time period allocated for SIT Regression or any exceptions are documented and agreed;
- All tests have passed, and any exceptions are documented and agreed;
- There are no outstanding severity 1 or 2 defects, or any exceptions are documented and agreed;
- The number of outstanding severity 3-4 defects on each system and the total number of severity 3-5 defects across all systems are documented and agreed;
- Work-off plans for any outstanding defects has been produced and agreed;
- Test results and evidence has been captured in the test management tool;
- Defects have been captured in the defect management tool.

Note: This is the final M10/11/12 code base, and rigour will need to be exercised around maintaining its integrity. This will be managed by the Programme and is outside the scope of this document, but participants should be aware. Outstanding S3 to S5 defects may be re-examined as required for M11/12, where this criterion may not have applied in previous test phases.

7.2.9.1 SI Test Completion Report

At the end of the faster cohorts’ SIT Regression Testing, the SI will produce an overarching test stage completion report which will cover:

- Test Execution Results (Anonymised as appropriate)
- Summary of Test Status (Planned vs. Actual)
- Passed with Workarounds (If applicable)
- Failed Tests (If applicable)
- Descoped or Deferred Tests (If applicable)
- Status of work off plan from previous phase / stage (If applicable)
- Defects Summary (Anonymised as appropriate)
- Raised and closed (Inc closure reason analysis)
- Outstanding Defects with their status and work off plan
- Outstanding Defects (By Priority and Severity)
- Outstanding Defects (By Test Participant)
- Defects Analysis (Anonymised as appropriate)
    - By Category
    - By Closure Reason
- Defect Lessons Learned and Improvement Plans for the next phase / stage.
- Test Exit
    - Exit Criteria Status
    - Work Off Plans

- Overall Test Execution Observations, Lessons Learned and Improvement Plans for the next phase / stage (If applicable)
- Conclusion and Recommendation

Please note this will be focused solely on faster cohorts' Regression Testing. This report will form the basis on which governance approval of the completion of the SIT Regression Test stage will be sought via the MHHS Programme Governance Framework – please see section 10.1.

8 Test Schedule

8.1 SIT Regression Test

The current SIT test phases and dates are as per the below Plan on a Page diagram.

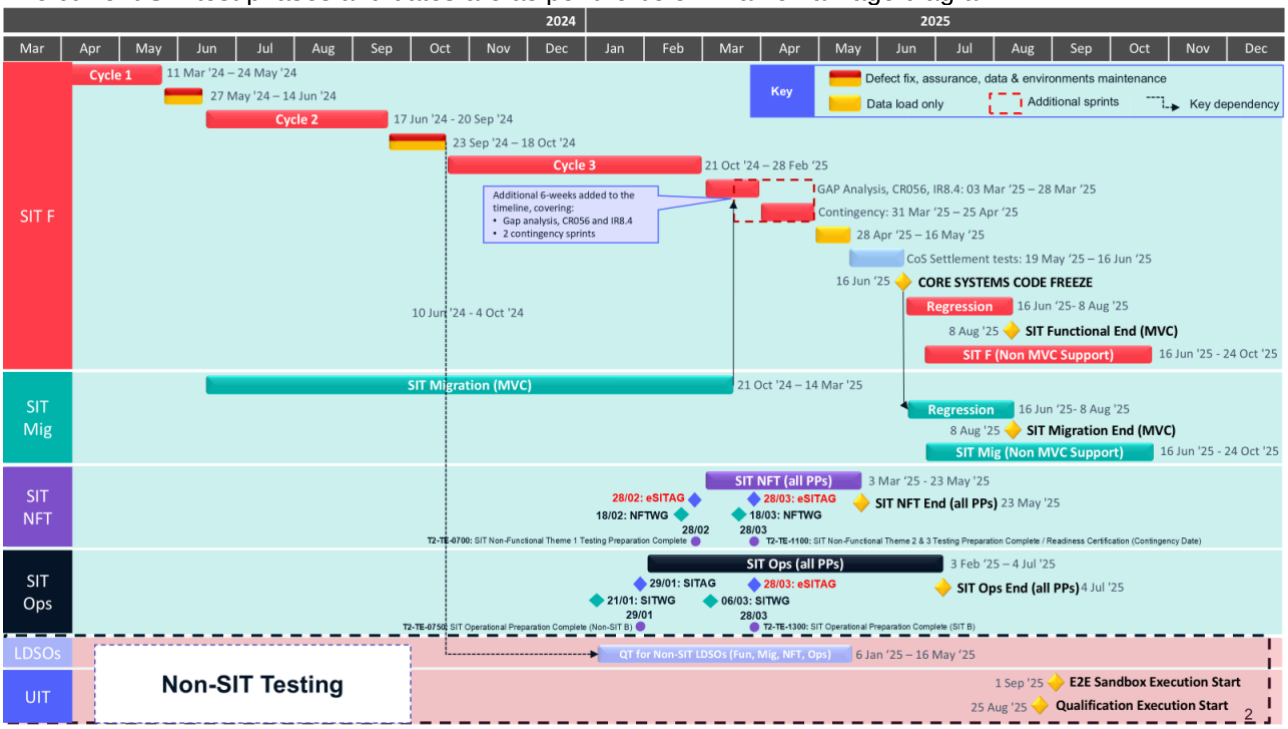


Figure 6 - SIT Stages Plan on a Page, version 3.0

Should these plans change the latest Programme Plan will always be found here.

8.2 SIT Regression Test Preparation Schedule

8.2.1 SIT Regression Preparation Schedule

SIT Regression readiness dates that the SI is working towards at the time of writing are as follows:

Activity / Milestones	Notes	Completion / Milestone Dates
Industry Review of SIT Regression Approach and Plan		7th Feb 25
SITWG Paper Day for SIT Regression Approach and Plan		11th Feb 25
SITWG SIT Regression Approach & Plan Recommendation		18th Feb 25
SITAG SIT Regression Approach & Plan Approval	T3-TE-0123	28th Feb 25
Build Regression Test Framework		27th Feb 25
SIT Regression Test Pack drafted (including Regression Test Framework)		6th Mar 25
SITWG Review of Regression Test Framework*		6th Mar 25
SRO Review of SIT Regression Test Pack		7th Mar 25
Industry Review of SIT Regression Pack*		21st Mar 25

Activity / Milestones	Notes	Completion / Milestone Dates
Second Industry Review of SIT Regression Test Pack*		*4th Apr 25*
eSITWG Paper Day for SIT Regression Test Pack		*8th Apr 25*
eSITWG SIT Regression Pack Recommendation*		*15th Apr 25*
eSITAG Paper Day for SIT Regression Test Pack		*17th Apr 25*
eSITAG SIT Regression Pack Approval*	T3-TE-0122	*24th Apr 25*
SIT Regression Test Data Load Complete	T2-TE-1000	16th May 25
SIT Regression Test Execution Start	T2-TE-1050	16th Jun 25

Table 3 - SIT Regression SI Preparation Schedule

** Indicates an opportunity for Programme Participant feedback on the Regression Test Framework and the Core Regression Test Pack.*

Please note that this includes the schedule for test assurance and governance activities for the SI deliverables. It also assumes that contingency time in the programme plan is used for SITF and SITM completion. Dates in italics are not yet confirmed by SITAG but have been added on an indicative basis, to support a second industry review of the SIT Regression Core Test Pack.

8.3 Test Execution Schedule

The SIT Regression test timelines are currently as follows:

Activity / Milestones	Notes	Completion / Milestone Dates
SIT-A Settlement Test execution	Settling Normally test case run in parallel	19th May 25 – 13th Jun 25
SIT-A Settlement Test Checkpoint	Determines readiness for Regression Testing start	13th Jun 25
Migration Activities	Migrate legacy MPANs in preparation for Cycle 1	16th Jun 25 – 20th Jun 25
Regression Test Cycle 1	First regression cycle	23rd Jun 25 – 4th Jul 25
Regression Test Checkpoint	Determines whether cycles 2 and 3 are needed	4th Jul 25
Regression Test Cycle 2	Second regression cycle	7th Jul 25 – 18th Jul 25
Regression Test Cycle 3	Third regression cycle	21st Jul 25 – 1st Aug 25
Contingency	Contingency in case of slippage	4th Aug 25 – 8th Aug 25
SIT Regression Execution completes		8th Aug 25

Table 4 - SIT Regression Execution Schedule

Contingency time should be used to accommodate defect fixes, and sprint start dates can be adjusted as necessary depending on deployment timelines. Please see Section 3.3.

Based on the contents of the Core Regression Test Pack, the Programme (in consultation with SITWG) may choose to change the structure of the three-sprint approach, without changing programme milestones.

9 Test Management & Organisation

The following resources will be required to prepare and execute the SIT Regression Test stage. The resources below are a guideline to the types of resource required by organisations participating in the day-to-day activities of Regression Testing. It is the responsibility of each Participant to provide sufficient and appropriate resources to support the Test Stage.

Organisation	Role/Resource Type
SIT Regression Participants	• Test Manager • Test Analyst • Business Analyst • Defect Manager / Analyst • Programme Management • Infrastructure, application, and network support • Release and configuration management support • Environment Management support
SI Team	• Test Manager • Test Lead / Analyst(s) • Test Data Lead / Analyst(s) • Defect Manager / Analyst(s) • Programme Management • Environment Manager • Release Manager • Test Architect / Assurance Manager • Test Assurance Lead / Analyst(s) • Test Management Tool Lead / Analyst(s)

Table 5 - Test Teams & Roles

9.1 Test Meetings

Daily Test Meetings

During Test Execution, the SI will hold regular stand-up meetings with their individual and joint cohorts to confirm test execution for the day by discussing the following topics:

- To discuss that day's Cohort testing schedule and discuss any blockers that may impact execution.
- Review of previous day's activity, and any tests waiting in PPs queues.
- Validate planned tests for the day from the execution schedule / order.
- Discuss any Cohort or Central Party defects or blockers impacting the planned testing.
- By Exception – discuss specific defects or topics with contribution from Central Parties, Defect Management, Test SMEs, or the Design Team.

A full list of all the daily meetings can be found in the DITL pack [REF-21]

Meetings Hosted & Chaired by SI	Internal / External	Time	Duration	Chaired by	Objective / Purpose	MHHS Attendance Requirements							
						SI Test	Defect Managers	SI Design	SRO Design	SRO Test	Release Manager	ADO Team	PPC
Cohort A Stand Up	External	9:00 AM	15 Mins	SIT F Coordinator 1	**Purpose** - To discuss that day's Cohort testing schedule and discuss any blockers that may impact execution. **Standing Agenda:** • Review of previous day's activity, and any tests waiting in PPs queues. • Validate planned tests for the day from the execution schedule / order. • Discuss any Cohort or Central Party defects or blockers impacting the planned testing. • By Exception – discuss specific defects or topics with contribution from Central Parties, Defect Management, Test SMEs or the Design Team.	X	By Exception	By Exception		Optional		Optional	FYI
Cohort F Stand Up	External	9:00 AM	15 Mins	SIT F Coordinator 2		X	By Exception	By Exception		Optional		Optional	FYI
Cohort G Stand Up	External	9:15 AM	15 Mins	SIT F Coordinator 3		X	By Exception	By Exception		Optional		Optional	FYI
Cohort B Stand Up	External	9:15 AM	15 Mins	SIT F Coordinator 2		X	By Exception	By Exception		Optional		Optional	FYI
Cohort C Stand Up	External	9:15 AM	15 Mins	SIT F Coordinator 4		X	By Exception	By Exception		Optional		Optional	FYI
Cohort J Stand Up	External	9:30 AM	15 Mins	SIT F Coordinator 1		X	By Exception	By Exception		Optional		Optional	FYI
Cohort H Stand Up	External	9:30 AM	15 Mins	SIT F Coordinator 3		X	By Exception	By Exception		Optional		Optional	FYI
Cohort E Stand Up	External	9:30 AM	15 Mins	SIT F Coordinator 4		X	By Exception	By Exception		Optional		Optional	FYI
Daily Design Team Stand Up	Internal	10:00AM	30 mins	Design Team	**Purpose** - to feedback / discuss any design issues ahead of the 11am Defect Triage Meeting			X	X				
Daily Defect Triage Meeting	Internal	11:00 AM	60 Mins	Defect Management	**Purpose** - the Programme will review all new defects and assess if they are legitimate defects. If yes, then Triage will allocate the Defect to the right Resolver Group	X	X	X	X	X	X	Optional	FYI
Daily Settlements Stand Up	External	12:30pm	30 mins	SIT Delivery Manager	**Purpose** – all Cohorts to join and discuss high priority Settlement issues, blockers, queries and releases	X	By Exception	By Exception		Optional			**FYI**
A&J Linked Cohort Stand Up	External	01:00 PM	15 Mins	SIT F Coordinator 1	**As per the Cohort Stand Ups but focused on linked Cohort testing.**	X	By Exception	By Exception		Optional		Optional	FYI
F&B Linked Cohort Stand Up	External	01:15 PM	15 Mins	SIT F Coordinator 2		X	By Exception	By Exception		Optional		Optional	FYI
G&H Linked Cohort Stand Up	External	09:45 AM	15 Mins	SIT F Coordinator 3		X	By Exception	By Exception		Optional		Optional	FYI
C&E Linked Cohort Stand Up	External	01:30 PM	15 Mins	SIT F Coordinator 4		X	By Exception	By Exception		Optional		Optional	FYI
A/G/J UMSDS Linked Cohort Stand Up	External	01:45 PM	15 Mins	SIT F Coordinator 1		X	By Exception	By Exception		Optional		Optional	FYI
Daily Defect Management Meeting	External	02:30 PM	60 Mins	Defect Management	**Purpose** - Review Central Party defect status, owners, and progress updates, based on priority and/or severity of the defect, including the planning and coordination of Central Party fix releases.	X	X	X	X	X	X	Optional	FYI
Central Parties Stand Up (CPs Only)	External	04:00 PM	30 Mins	SIT Delivery Manager	**As per the Cohort & Linked Cohort Stand Ups, with the addition of discussing any Central Party support constraints or blockers which may impact planned Cohort testing, and the alignment of fix releases.**	X	X	X	X	X	X	X	X
MHHS Daily Stand Up	Internal	04:30 PM	30 Mins	SIT Delivery Manager	**Purpose** – internal MHHS meeting to discuss high priority issues, blockers and releases	X	X	X	X	X	X	X	X

Figure 7 – Daily Testing Meetings

Weekly Test Execution Progress Meetings

The SI will conduct weekly Test Progress meetings with all test participants engaged in testing at that point in the schedule, to:

- Collaborate with all Test Participants on matters relating to Test Execution
- Review testing progress for the week to date;
- Review planned testing for the following week
- Review any changes required to scheduled testing e.g. for blocking Defects.

This meeting will also involve representatives from the Environments, Data, Defect Resolution and Release Management.

Note that the default period for reporting will be from Friday to Thursday to allow for collation and distribution of reports. The meeting will be conducted using Microsoft Teams.

Defect Management Meetings

Please refer to the 'MHHS-DEL466 - Defect Management Plan' [REF-07]

Environments and Release Management Meetings

Please refer to:

- 'MHHS-DEL618 - Environment Approach & Plan' [REF-03]
- 'MHHS-DEL1089 - Release and Configuration Management Approach & Plan' [REF-04]

Fast Track Implementation Group

The SI will provide status updates within the FTIG forum and escalate any blocking issues which may need collaboration at this forum to resolve.

9.2 Test Roles & Responsibilities

9.2.1 SIT Regression Test RACI

Activity	Participant	SI	SI Test Assurance	Code Bodies	SI TWG	SI TAG
SIT Regression Test Scenarios	I	R, A	C	C	C	I
SIT Regression Test Scenarios Approval	I	C	C	C	C	R, A
SIT Regression Test Cases	I	R, A	C	C	C	I
SIT Regression Test Cases Approval	I	C	C	C	C	R, A
SIT Regression Test Approach and Plan	I	R, A	C	C	C	I
SIT Regression Test Approach and Plan Approval	I	C	C	C	C	R, A
Set up and operation of SIT Regression Test Stubs and Harnesses	I	R, A	C	I	I	I
Set up and administration of Test Management Tool (ADO)	I	R, A	C	I	I	I
Set up of Participant users within (ADO)	I	R, A	C	I	I	I
Test Data Allocation	C	R, A	C	I	C	I
Loading and assigning of Test Cases in ADO	I	R, A	I	I	I	I
SIT Regression Preparation, Execution and Completion	R	A	I	I	I	I
Coordination of Environment Connectivity Proving	C	R, A	I	I	I	I
Environment Connectivity Proving	R	A	I	I	I	I
Test Data Load and Verification	R	A	I	I	I	I
Participant mobilisation of appropriate Test and Support Resources	R, A	C	I	I	I	I
SI SIT Regression Test Readiness Report	C	R, A	C	I	I	I
SI SIT Regression Test Readiness Report Approval	I	C	C	C	C	R, A
Decision to commence SIT Regression Test Execution	I	C	C	C	C	R, A

Activity	Participant	SI	SI Test Assurance	Code Bodies	SI TWG	SI TAG
Completion of assigned SIT Regression Test Case Execution within ADO (inc. evidence capture)	R	A	I	I	I	I
SIT Regression Test Case Execution Coordination and Support	C	R, A	I	I	I	I
Defect Management Coordination	C	R, A	I	I	I	I
Fixing assigned Defects (inc. Environment Defects)	R	A	I	I	I	I
Coordinating Releases & Code Deployments	C	R, A	I	I	I	I
Deployment of Releases	R, A	C	I	I	I	I
Chairing Test Meetings	C	R, A	I	I	I	I
Participant Test Meeting Attendance	R, A	C	I	I	I	I
Reporting on Overall Test Execution and Completion Progress and RAG status	C	R, A	C	I	I	I
SI Participant Test Completion Assurance	C, A	A	R	I	I	I
SI SIT Regression Test Completion Report	C	R, A	C	I	I	I
SI SIT Regression Test Completion Report Approval	I	C	C	C	C	R, A

Table 6 – SIT Regression Test RACI

10 Test Governance & Reporting

10.1 Governance

SIT Regression Testing will operate in accordance with the 'MHHS-DEL030 - Programme Governance Framework' [REF-08] adhering to the decision making and escalation principles set out within.

The table below is an extract from the 'MHHS-DEL1140 - Milestone Register' [REF-09] identifying SIT Regression Test milestones and the decision-making authority (governance group). The SI will be responsible for reporting status and RAG for all Tier 2 and 3 SITAG milestones.

Milestone Tier	Level 1 Milestone	Milestone ID	Milestone Title	Decision-making authority

				(governance group)
T3		T3-TE-0123	SIT Regression Testing Test Approach & Plan approved	SITAG
			SIT Regression Testing Preparation Complete	SITAG
T3		T3-TE-0122	SIT Regression Core Pack Approval	SITAG
T2		T2-TE-1000	Regression Test Data Load Start	SITAG
T2		T2-TE-1050	Regression Test Execution Start	SITAG
			SIT Regression Testing End	SITAG
			SIT Regression Testing Test Completion Report Approved	SITAG
			SIT Regression Testing End (Other Participants)	SITAG
			SIT Regression Testing Test Completion Report Approved	SITAG

Table 7 – SIT Regression Test Milestones

10.2 Reporting

Once test execution for the test stage has started, the responsible party will ensure that test execution progress is kept up to date in ADO and tracked within configurable ADO dashboards (See below for an ADO dashboard example). The SI team will then produce regular aggregate progress reports based on this information. The reports will be collated by the SI team for use within Test progress, Defect Management and Release Meetings and for upward reporting to the SRO, FTIG, SITWG and SITAG.

Reporting be available as follows:

Report / Extract	Details	Frequency	Audience	Distribution Mechanism
Hourly ADO Extract	**Status of each active Sprint test including** the test order, how many steps have been executed and which party the test is currently assigned to	**Hourly**	**All SIT PPs**	**Published to Collaboration Base**
ADO Dashboards	**Test Status for all Sprints**	**Realtime**	**All SIT PP ADO Users**	**ADO**
	Test Status view for each Sprint			
	Test Case Assigned to Market Roles (All Sprints)			
Daily Report	**Test Status for Active Sprints only**	**Daily**		**.pdf Report and Excel**

Report / Extract	Details	Frequency	Audience	Distribution Mechanism
	No. of Tests Assigned to each Market Role		**All SIT PPs / MHHS Programme**	**Extracts uploaded to the Cohort / CP Teams Channels, with email notification**
	Defect Summaries for the following Categories: • All Defects • All Central Party Defects • Per Voluntary Party • Per Workstream Sprint • Test Case Defects			
	Daily Excel Extracts (Unchanged)			
Daily Flash Reporting	**Test steps and points available for the Sprint with achievement per Cohort against these metrics**	**Daily**	**All SIT PPs / MHHS Programme**	**PowerPoint report**
Post Sprint Reports	**Same Information as daily reports, but also including:** • Status of Priority Test Groupings • Theme and Business Process Coverage • Cohort Performance against estimation modelling	**Post Sprint**	**All SIT PPs / FTIG / MHHS Programme**	**.pdf Report and Excel Extracts uploaded to the Cohort / CP Teams Channels, with email notification**

ADO dashboard example:

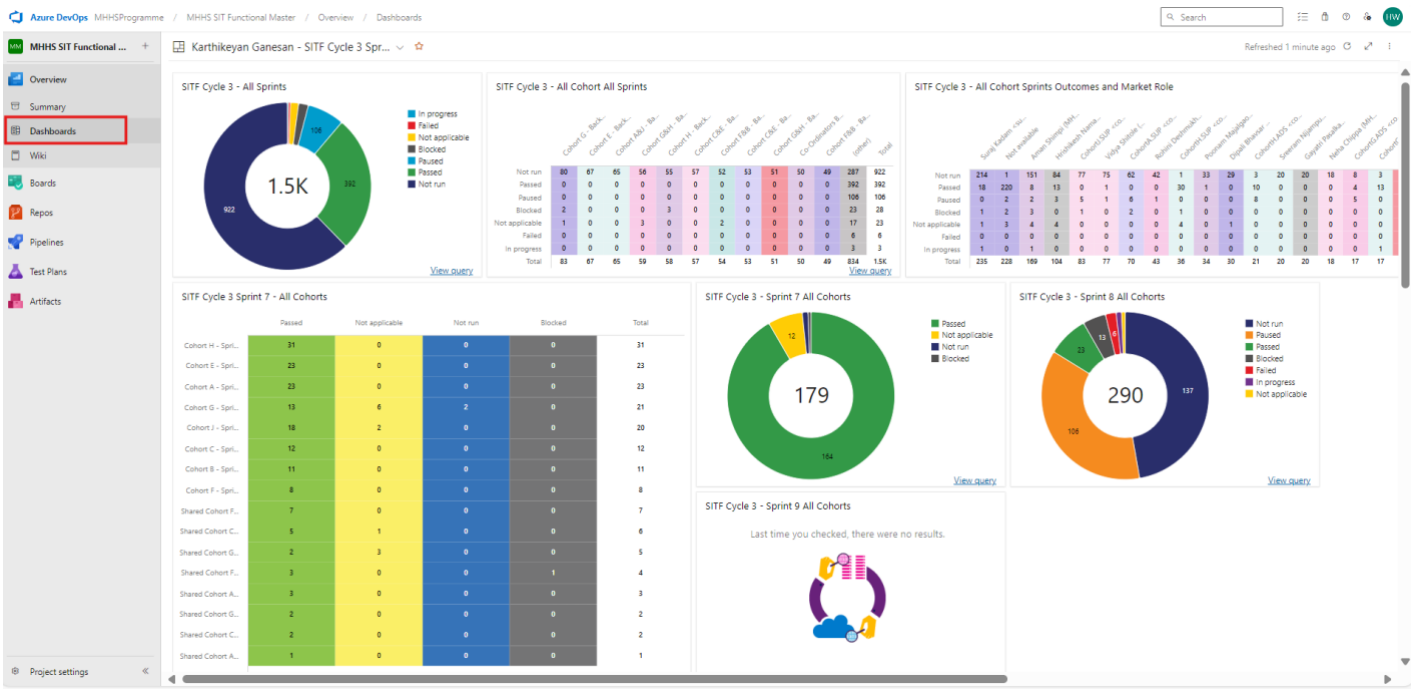


Figure 8 - ADO Dashboards

11 Test Assurance

11.1 Approach

SI Team will carry out monitoring and outcome assurance throughout SIT Regression testing.

In addition to this SI will engage in assurance of Programme participant SIT readiness activities i.e.

- Environments
- Test Data
- Test and Support Resource mobilisation

During and following SIT Regression Test execution the SI will undertake assurance of test execution results with a specific focus on:

- Validating evidence of actual vs. expected results of tests
- The quality of supporting information and evidence within defects
- Evidence of local defect retesting prior to fix release deployment to the SIT-A environment
- Test Stage Exit Criteria and Completion Status

12 Appendix

N/A