



**MHHS  
PROGRAMME**  
Industry-led, Elexon facilitated

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# Design Assurance Findings

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19 October 2022

MHHS-DEL645

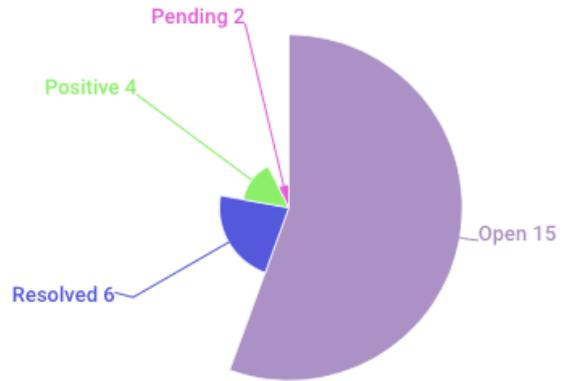
Version 1.0 SI Design Assurance Team

**The SI Design Assurance Team has recorded 27 observations for this report, a number of which are positive or which have been resolved by the SRO Design team.**

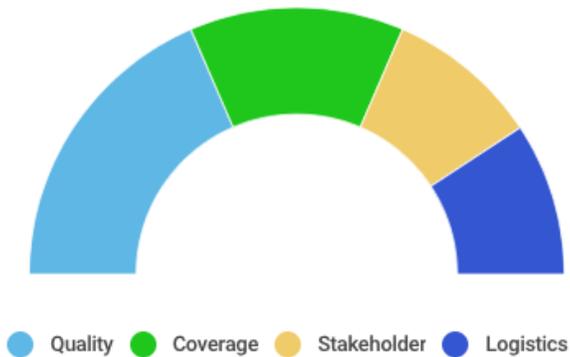
### **Key Headlines:**

- The design represented by the MHHS artefacts provides full coverage for the Target Operating Model at an acceptable level of quality and the design can be baselined (with a suitable and agreed work off plan for open matters)
- The SRO design team has effectively engaged with and responded to programme participants throughout the development of the artefacts
- Opportunities to improve the quality of the design content exist and actions are recommended to reduce the risk of ambiguity or interpretation that could impact all participants entering Design Build and Test (DBT). These recommendations seek to minimise the need to change the MHHS artefacts – e.g. adding acceptance criteria for requirements where these are not apparent from the requirement

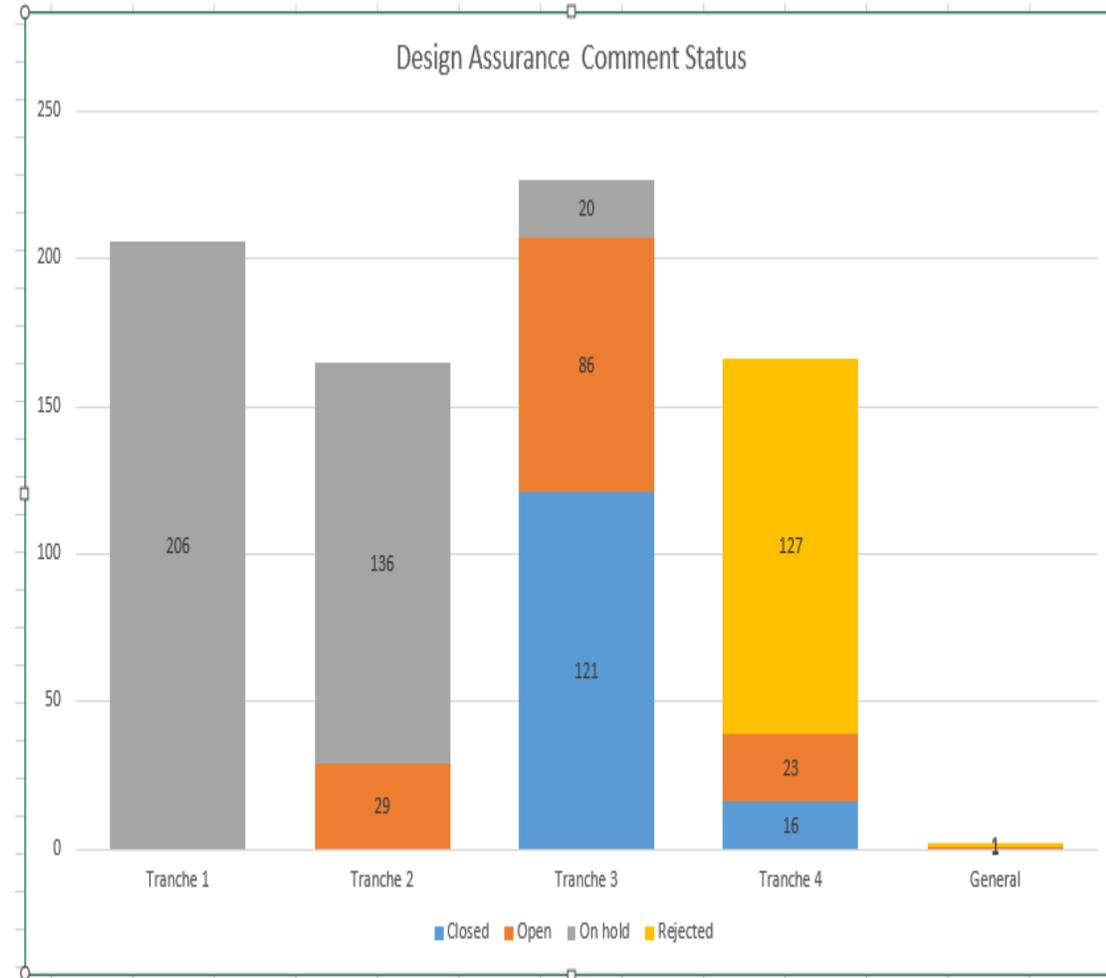
Observation Status



Observation Theme



Assurance Comments by Tranche



These trackers will be available with the 'Enduring Design Hub' release on the Collaboration Base

The assurance team identified zero Sev 1's, and agreed actions are in place for the Sev 2 comments

The actions to resolve Assurance findings will be agreed by the programme and documented as part of work off activities

## Coverage

- This deck provides a summary of the 27 Design Assurance findings identified since February 2022.
- The findings are covered in four themes:

Design Coverage

Delivering the Target Operating Model in the design artefacts

Design Quality

Opportunities to improve the design – removing ambiguity, conform to quality standards

Programme  
Logistics

Operation of the design development activity in the programme context

Stakeholder

Working with participants, bringing them on the journey, acting on their feedback

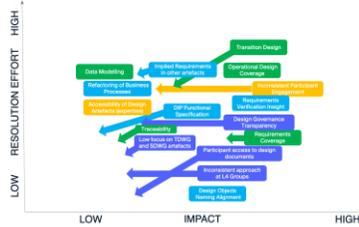
Resolved

Resolved  
Observations  
Marked with  
Grey

- An overview slide details the relative position of each finding in terms of impact to the programme and, where relevant, an estimation of the effort to resolve the recommendations – *as shared with DAG for several months*
- This report includes assurance observations which are positive, and a number which have been resolved as the programme has progressed
- The assurance observations are presented in short form in a summary table
- Details of the assurance observations and findings, the phase of the project the finding relates to, any actions taken to mitigate the observation and recommendations to address the observation
- This design assurance activity by the Lead Delivery Partner SI Design team is part of the M5 acceptance process between LDP and SRO – it is being provided to DAG for information and transparency (not approval)

# Structure of Assurance Observations

Governance



Summary overview as presented periodically to DAG

Design Review and Assurance Report (M5 Deliverable)

Created from content of this deck and record of SI Design activity to date

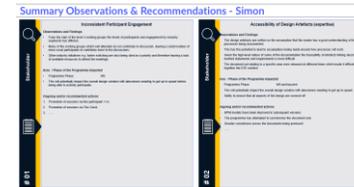


Report

Observation	Description	Date Observed	Current State	Discussed with BRO	RAID log
Observability	The highest resolution view not always incorporate the design artifacts, and the current version has not been formalized to include certainty or other expected elements.	May	Stable	In progress	
Participant Engagement	Different working groups and governance groups were using variable levels of participation and engagement from participants.	Apr	Resolved	Yes	
Interdisciplinary Design	There are unmet requirements in the design artifacts that should be noted to participants to ensure consistent interpretation by participants.	Aug	New	In progress	
Participant Design	The design of artifacts and iterations are intended to follow the design standards - which may result in confusion for participants on some elements of the design.	June	Improved	Yes	

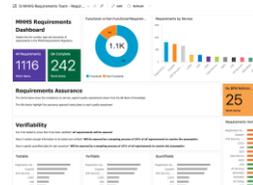
Summary table for tracking (this deck)

Detailed observations and recommendations (this deck)



Evidence

Artefact review comments recorded in the SRO/LDP comment log as part of loading the design into iServer (excel)



Requirements assurance is captured in the dashboard and detail queries (ADO)



Assurance findings papers – summarising themes identified in the review of the design artefacts

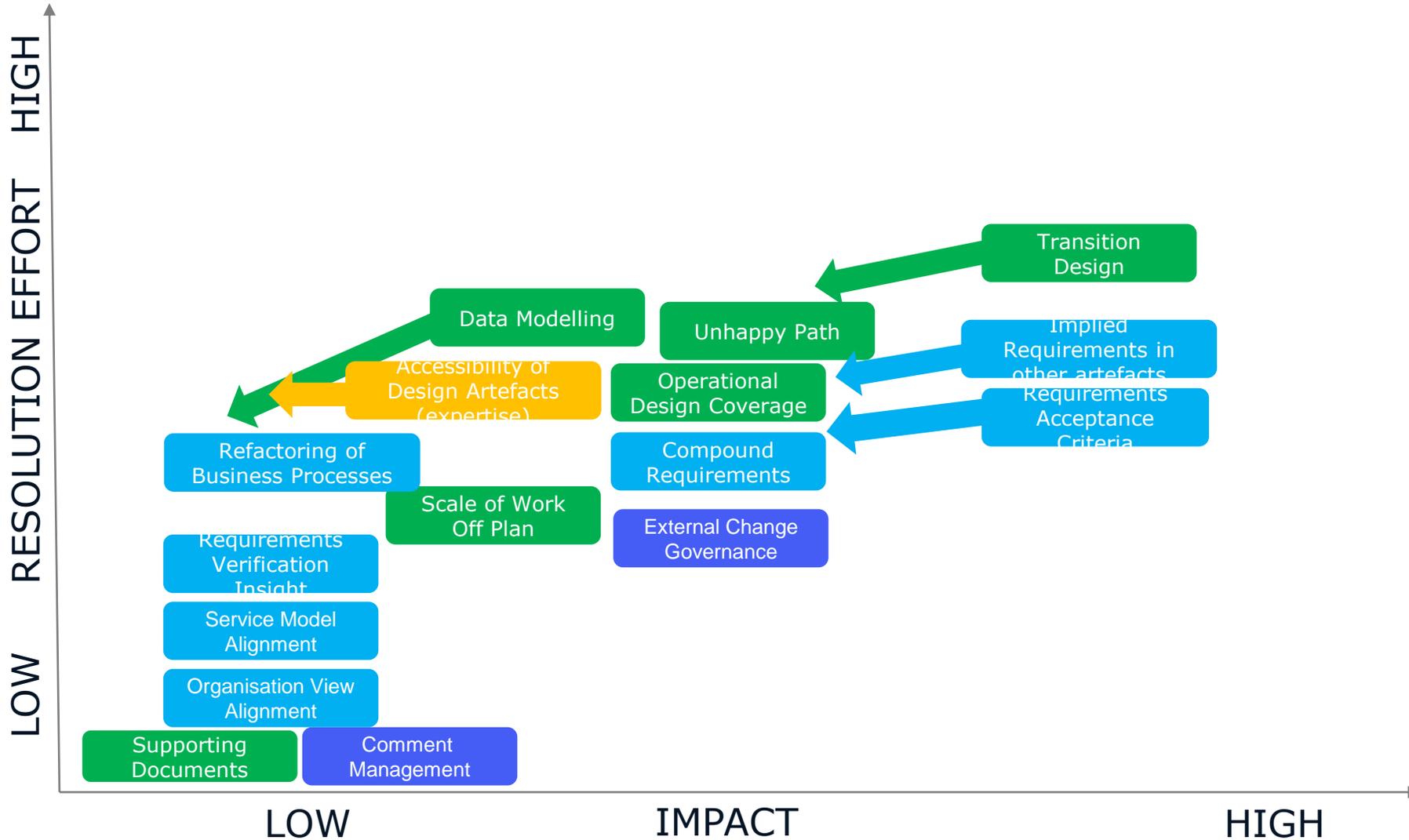


Team observations from attending design working groups and participant bilateral discussions

# SI Design Assurance Observations Overview at 24 October

## Themes

- Design Coverage
- Design Quality
- Programme Logistics
- Stakeholder
- Grey shows resolved



## Resolved

- Artefact Quality
- Design Development Approach
- Low focus on TDWG and SDWG artefacts
- Participant access to design documents
- Inconsistent approach L4 Groups
- Inconsistent Participant Engagement

## Positive Findings

- TOM Coverage
- Responding to Participant Needs
- Security Design
- Consequential Change Approach

# Observations Summaries (1 of 6)

Themes

Design Coverage

Design Quality

Programme Logistics

Stakeholder

Observation	Ref	Description	Date Logged	Impact	Effort	Current State	SRO Aware
Transition Design	01	The design for transition (and migration) has yet to be defined, this will have an impact on participants and the programme timelines	May	High	Med	Controlled	Yes
Post M5 Work Off Plan	02	The number of comments, issues and assurance observations relating to the M5 baseline will not be clear until DAG approval. The timeline to deliver the work off will be critical to inform participant and programme planning and confidence in the stability of the design	Sep	Low	Med	Open	Yes
Requirements Acceptance Criteria	03	There is an opportunity to mitigate the risk of participant interpretation of a number of requirements by defining user acceptance criteria to support build and test across participants	Aug	Med	Med	Evaluating	Yes
Implied Requirements in other artefacts	04	Assurance analysis has highlighted an opportunity to decompose a number compound requirements in method statements and other artefacts to support consistent participant interpretation of the lower level detail for build and test	Aug	High	Med	Evaluating	Yes
Compound Requirements	05	Assurance analysis of the requirements has shown that a high proportion (70%) include multiple conditions to be satisfied to prove compliance. The recommendation is to review these and create singular requirements for participant build and test	Aug	Med	Med	Evaluating	Yes

# Observations Summaries (2 of 6)

Themes

Design Coverage

Design Quality

Programme Logistics

Stakeholder

Observation	Ref	Description	Date Logged	Impact	Effort	Current State	SRO Aware
Unhappy Path	06	The design provide limited guidance to participants on how exceptions should be managed – to ensure a consistent approach through testing and into operation, common or specific exception actions could be added	July	Med	Med	Evaluating	Yes
Operational Design Coverage	07	The design has limited reference to how the new services should be operated. Work could commence post M5 with operations teams to determine an appropriate ITIL frame for service transition, service design, service management etc.	May	Med	Med	Static	Yes
Data Modelling	08	The data model artefact provided by the programme did not cover the entire scope of the design, and did not specify key relationships between data items. The SI Design Assurance team has produced a data model based on the artefacts to address this	June	Med	Med	Improved (could close)	Yes
Refactoring of Business Processes	09	The Assurance team has logged a number of comments to seek to address inconsistencies within the design artefacts – resolving these will reduce the risk of ambiguity and interpretation errors by participants	May	Low	Med	Static	Yes
Supporting Documents	10	Alongside the Design Artefacts, the programme has produced a number of papers providing guidance or insight on specific issues. These papers are not under programme governance and should be reviewed to create a level playing field for all participants, not just those present when they were issued	Aug	Low	Low	Static	Yes

# Observations Summaries (3 of 6)

Themes

Design Coverage

Design Quality

Programme Logistics

Stakeholder

Observation	Ref	Description	Date Logged	Impact	Effort	Current State	SRO Aware
Accessibility of Design Artefacts (expertise)	11	The design artefacts presume a level of expertise in the MHHS context of legacy arrangements and the TOM. Work could be done to provide participants who were not party to the design process with more context	June	Low-Med	Med	Improved	Yes
Requirements Verification Insight	13	Assurance analysis of the 1100 requirements against a series of quality measures highlighted a number of opportunities to improve for the build and and test activities e.g. unique identifiers, risk owners etc.	Aug	Low	Low	New	Yes
Organisation View Alignment	14	Modelling in the artefacts in the architecture repository has highlighted that organisational naming across artefacts is not consistent – this could be improved to support clear scope for participant design, build, test and operate	July	Low	Low	Static	Yes
Service Model Alignment	15	As with #14, the artefacts are not consistent in naming and referencing services. Good business architecture practice would resolve these uncertainties to mitigate the risk of gaps or duplication by participants in DBT	Aug	Low	Low	Static	Yes

*Observation 12 removed following discussion with Programme*

# Observations Summaries (4 of 6)

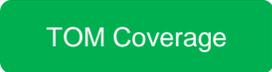
Themes

Design Coverage

Design Quality

Programme Logistics

Stakeholder

Observation	Ref	Description	Date Logged	Impact	Effort	Current State	SRO Aware
	16	Assurance, mainly from creating the architecture repository models, confirms that the design addresses the requirements of the TOM	Sep			Positive Finding	Yes
	17	The SRO Design team has continued to respond to feedback from participants across a number of areas, and received positive responses as a result	July			Positive Finding	Yes
	18	The development of the security artefacts has been observed to be in accordance with standards, and there has been good collaboration with the assurance team where feedback has been provided	Aug			Positive Finding	Yes
	19	The programme listened to participant concerns relating to non-Settlement impact on their businesses and has demonstrated flexibility as a response	July			Positive Finding	Yes
	20	The programme responded to participant frustration and feedback and provided much clearer structure to the artefacts and working documents	Apr			Resolved	Yes

# Observations Summaries (5 of 6)

Themes

Design Coverage

Design Quality

Programme Logistics

Stakeholder

Observation	Ref	Description	Date Logged	Impact	Effort	Current State	SRO Aware
 Design Development Approach	21	The design development journey changed a number of times, and provoked comments from participants on conditional approval of early tranche documents. This was resolved in later tranches	Jun			Resolved	Yes
 Inconsistent Participant Engagement	22	The programme experienced mixed support from participants in the initial design activity, prompting concerns on the mandate from artefact review. This was resolved as more participants engaged in the later stages of design	Mar			Resolved	Yes
 Inconsistent approach L4 Groups	23	The design workstream did not observe consistent approaches to call, manage or minute meetings, leading to comments from participants about clarity of the activity they were engaging with. This was resolved as the delivery plan was progressed	Apr			Resolved	Yes
 Artefact Quality	24	The assurance team noted variations in the quality of artefacts issued for review – largely resolved for T4, although some documents were issued with errors that could have been avoided through peer review or quality assurance	May			Resolved	Yes
 Low focus on TDWG and SDWG artefacts	25	The participant and broader programme support for the artefacts for technical and security content was significantly lower than for developing the business process content	Apr			Resolved	Yes

# Observations Summaries (6 of 6)

Themes

Design Coverage

Design Quality

Programme  
Logistics

Stakeholder

Observation	Ref	Description	Date Logged	Impact	Effort	Current State	SRO Aware
	26	By sampling across artefacts and responders, the assurance team has verified that the SRO design team has been consistent in its approach to triaging industry comments, and found to be appropriate when determining "clarification, cosmetic, rejected" etc.	Oct	Low	Low	New	
	27	Observed that MHHS SRO design team worked hard to resolve issues that were not under programme governance, distracting key resource, and programme meetings, from core activities	Oct	Med	Low-Med	New	

**The SI Design Assurance Team has reviewed the development and outcome of the design activity against the following criteria to arrive at observations and findings:**

- Coverage of the TOM
- Transparency when working with programme participants, supporting less experienced and working with established experts
- Effective collaboration with participants, programme colleagues and wider industry governance
- Insight from experience of previous major transformation programmes – e.g. Faster Switching, Smart Metering
- Demonstrable and consistent governance whilst producing iterative versions of the artefacts
- Use of standards to document the design to support quality (e.g. BPMN, BA Book of Knowledge, NIST etc.)
- Internal consistency of the design across artefacts

# Assurance Observations & Recommendations

# 01

Design Coverage





## Transition Design

**Observations and Findings**

- The design has focused on the end state of the Target Operating Model
- There has been a consistent request from participants in working groups and bilateral sessions for detail of how the cutover and transition will be effected
- The programme has proposed for this activity to be provided after the design has been agreed, which has caused concern for a number of participants, as understanding the design in the context of their own business processes and systems is critical to define their own delivery programmes
- The operators of what will become legacy services need to understand how the programme expects them to turn off those services
- This is related to the ongoing uncertainty relating to how migration will operate between relevant programme milestones
- The DWG produced consulted upon proposals for transition in 2019, but these will need to be revisited following the design development by the programme to ensure they remain relevant and appropriate

**Area / Phase of the Programme impacted**

- Participant and programme planning and delivery
- Regulatory bodies are citing that they cannot proceed with Code drafting until the migration approach is finalised

**Ongoing and/or recommended actions**

1. Design for Transition and Cutover to new arrangements should be resolved as soon as possible following M5 – including industry agreement/consultation
2. The design will need to identify when new services need to be operational, the criteria for closing legacy services and any interim processes, such as migration
3. Implications for performance assurance and Settlement quality should also be included

# 02

Design Coverage





## Design Activity Post M5 (work off)

**Observations and Findings**

- A significant level of feedback has been provided by the industry against the design, as anticipated.
- Over 3000 comments were received from 20 participants, and after the initial triage the design team has highlighted
- There were also 300 assurance comments raised by the SI design team, and a number of recommended actions relating to assurance observations – particularly relating to the clarity and coverage of the requirements
- The SRO design team has reviewed and actioned the industry comments to produce updated versions of the artefacts
- Over 20 items have been identified as requiring more detailed consideration for resolution by the SRO design team post M5 – and this constitutes part of the work off plan.
- All uplifts to artefacts resulting from addressing the work off plan will be subject to design change controls being introduced by the SI from approval of the M5 baseline – ensuring that participants can have confidence in controlled change to the artefacts
- The draft work off plan did not include plans to address assurance observations, but activity is now planned to discuss and progress agreed activities.
- The LDP notes that no timings are provided in the draft work off plan

**Area / Phase of the Programme impacted**

M5 and subsequent DBT for participants

**Ongoing and/or recommended actions**

1. SRO to agree the work off plan content and approach with DAG and the LDP, to include provisional times to resolve the content of the plan

# Assurance Observations & Recommendations

Design Quality

# 03

## Requirements Acceptance Criteria

### Observations and Findings

- The assurance team has followed a process to extract all of the explicit requirements in the design artefacts – business and non-functional – and has established traceability between the artefacts, the architecture repository models and the requirements repository in Azure DevOps. Quality assurance of the 1000+ requirements in the repository has applied a number of verification checks against each requirement using best practice from the IIBA Business Analysis Book of Knowledge (BABOK)
- The observations of a number of these verifications is included in other findings, but the key concern identified was the ability of programme participants to unambiguously identify how the requirements should be tested. Unless this is available, there is a significant risk of interpretation by participants developing solutions and the multitude of test analysts who will be creating test cases and scenarios for Pre-Integration and Systems Integration Testing
- The Smart Metering programme has repeatedly demonstrated the potential impact to programme timelines where clarity on requirements and how to test them is not addressed at the outset
- The requirements in the design artefacts do not describe any acceptance criteria
- The team found it was challenging to agree how requirements could or should be tested, especially for the business process requirements – we believe this could also lead to discussion and debate in programme participants, compounding the interpretation risk discussed above

### Area / Phase of the Programme impacted

Build and test for all participants

### Ongoing and/or recommended actions

- The Assurance team recommends that the Azure Dev Ops requirements work item has the User Acceptance Criteria field populated to provide guidance on testing to participants. This can be done within the tooling without affecting the original requirements or design artefacts or programme timelines, allowing it to be done independently of the M5 baseline
- The team has developed a paper (MHHS-DEL665) to establish a consistent approach and convention for populating this field and is undertaking sample exercises to create acceptance criteria for a cross section of requirements
- The effort to address this issue will be multiplied should the observations relating to implied and compound requirements, and the unhappy path finding, be accepted as requiring further work post M5

Design Quality

# 04

## Implied Requirements in other artefacts

### Observations and Findings

- The programme has developed artefacts containing explicit definition of business, non-functional, security and end to end requirements
- There are other artefacts e.g., Process Descriptions and Method statements that contain statements to be met and define needs that are not recorded as requirements in the requirements artefacts. For assurance purposes these are referred to as implied requirements
- The level of implied requirements in the other artefacts is significant. These requirements are not currently included in the requirements repository or the requirements traceability matrix – this will impact the development of test materials, and potentially introduce the risk of interpretation and ambiguity in the DBT activity for all participants
- Analysis of the method statements, process descriptions and business process models (BPMs) has identified ~720 additional implied requirements

Area	Implied Requirement
DDE Method Statement	46
LSS Method Statement	38
MDS Method Statement	68
VAS Method Statement	73
SDS Validation & Estimation	14
ADS - Validation & Estimation	96
UMSDS- EM Functions	83
UMSO Method Statement	61
Annual Consumption	14
Process Descriptions ~20 docs 5 requirements per Doc	100
BPMs ~26 docs 5 requirements per doc	130
<b>Total</b>	<b>723</b>

### Area / Phase of the Programme impacted

M5 Baseline signoff  
Participant Design, Build and Test – and Operation  
Service provider procurement

### Ongoing and/or recommended actions

- Agree an approach to decompose the implied requirements and add them to the existing requirements set
- Update impacted artefacts and the requirements traceability matrix as part of the M5 work off activity – estimated to be around 20 days of effort
- Programme to consider industry review/acceptance/approval of the expanded requirements set
- Reassess the impact of increased numbers of requirements on the testing activities

# Assurance Observations & Recommendations



Design Quality



# 05

## Compound Requirements

### Observations and Findings

- The team has undertaken extensive review of the requirements using a series of tests, one of which is to check that the requirement is singular
- These are not duplicate requirements; it is where a requirement has used terms such “and do...” or “plus it should” etc. suggesting multiple actions that need to be satisfied
- This will introduce the risk of ambiguity and interpretation by all participants in how they develop and test to support the requirements
- Of the 1116 explicit requirements in the tranche 4 artefacts 783 (70%) have been identified as not singular
- Example of “Not Singular” –

**REQUIREMENT 3693**

3693 [ADS/SDS-MHHS-BR-DS-003] - Receive Metering Service appointment notification

Shaid Hussain 1 comment ADS/SDS X +

State	Active	Area	SI MHHS Requirements
Reason	Accepted	Iteration	SI MHHS Requirements

**Description**

ADS/SDS must obtain Registration Service Notification of Service Appointment & Supporting Info updates, confirming a Metering Service appointment and providing MPAN/ Meter Technical details, via the appropriate interface on the Data Integration Platform and maintain records accordingly for all meter types

**Area / Phase of the Programme impacted**  
Design & Testing

### Ongoing and / or recommended actions

1. At the conclusion of requirements verification, the assurance team will provide a total for the number of requirements identified as being ‘not singular’, and will develop queries inside ADO to support extracting and filtering the relevant requirements
2. Requirements that are not singular should be identified and the programme should consider the following options to remedy
  1. User Acceptance Criteria created to support unambiguous interpretation and testing of those requirements. This means the original requirements are not changed and industry will not need to accept changes
  2. New requirements formed from extrapolating compound requirements to provide the clearest statement of the intended design

Either of these approaches, or an alternative, could be resolved in the work off activity post M5.



Design Coverage



# 06

## Unhappy Path

### Observations and Findings

- The process maps focus mainly on expected outcomes and do not address all cases where an exception occurs
- Most of the processes do not define the steps for an unsuccessful outcome
- Where exceptions are identified in the process maps, the actions to be taken are not included, some of these require manual intervention and the actors and responsibilities for addressing exceptions are not fully defined
- Issues such as ‘timed out’, message failure, incorrect or missing data, no response, invalid rights, approval rejection, cancellation, calculation errors, duplicates, resubmissions, recovery etc. need to be considered.

### Area / Phase of the Programme impacted

1. Design - This may impact and hinder the participants understanding of the processes and what to do in event of exceptions. This will identify additional requirements not currently captured
2. Testing – lack of test cases/script to cover exceptions will increase risk that the system is not sufficiently robust for unexcepted outcomes.
3. Implementation – there will be increased support issues, or exceptions will not be actioned, or responsibilities not identified to address exceptions.

### Ongoing and/or recommended actions

1. Identify and add an unsuccessful outcome to the existing processes
2. Identify and define steps to be taken to address exceptions or prevent unsuccessful outcomes
3. Define additional requirements

# Assurance Observations & Recommendations

Design Coverage

# 07

## Operational Design Coverage

**Observations and Findings**

- Viewed from an ITIL position, the design is largely silent on how the services should be operated – which could leave scope for interpretation by participants and crucially the providers responsible for the core infrastructure of the design
- Aside from some limited reference in the DIP requirements, the design does not detail the operational or service design or the service management aspects of the service
- Many of services do not identify how the services will be managed, monitored and maintained
- The design stipulates that 3rd party services must report to the responsible owner, generally these reporting lines are unclear
- Specific responsibilities for dealing with and authorising configuration changes or request for service access have not been identified
- Standard service-related processes are not identified
- Expected SLA's or service response criteria for incidents etc are missing

**Area / Phase of the Programme impacted**

1. Design
2. Testing
3. Implementation and operation
4. Code drafting
5. DIP Procurement

**Ongoing and/or recommended actions**

1. The programme should work with participants after M5, to agree and document how the services will be operated, using an ITIL framework for service design, transition and management. The scope should be clear to identify intra participant responsibilities and dependencies. An approach for establishing SLAs, severities and other key criteria, and how they are monitoring and maintained should be agreed and documented
2. Governance should be agreed around the operation and change of the new DIP services should be transparent to participants – e.g., how to request a new message or event type, or messaging pattern

Design Coverage

# 08

## Data Modelling

**Observations and Findings**

- Data models are developed to support consistency in naming conventions, default values, ensuring quality of the data
- The Logical Data Model (LDM) delivered by the programme only covers Registration and Consumption
- It does not show the relationship between services, cardinality of information or traceability back to the Target Operating Model
- There is no supporting information provided with the LDM to explain how the information was derived
- There are no processes relating to the governance or stewardship of data including GDPR
- Interfaces will relate to data items within the data models
- There are data entities which exist within specific services which will need to be maintained by these service providers and much of this data is not identified e.g., Channels

**Area / Phase of the Programme impacted**

1. Design - This may impact and hinder participant understanding of the data relationships across the design, there is a likelihood of an increased number of clarifications being raised by participants
2. Testing – potentially ambiguous configuration and test data, as needed for testing purposes
3. Implementation – data ownership is not agreed leading to update/control issues

**Ongoing and/or recommended actions**

1. Redraw the LDM providing a conceptual data model and link to a lower-level diagrams e.g., the Group information contained within the Interfaces, as this will help resolve and document the relationships
  1. The SI Design Team has developed this conceptual data model approach as MHHS-DEL666
2. Identify and make consistent the naming of entities and attributes across documentation, requirements and interfaces
3. Identify data ownership and responsibilities for governing data

# Assurance Observations & Recommendations



Design Quality

## Refactoring of Business Processes

### Observations and Findings

- The BPM models produced by the programme were developed to assist in and provide a talking point for the industry working groups
- The models did not follow a specific modelling standard, and the approach varied by workstream
- This has led to models containing multiple processes, no clear start and end points and inconsistencies in naming conventions
- Many of the process models contain multiple scenarios and different processes within one model
- Decision points, start and end points are not labelled to explain the process
- Many of the steps have duplication across different processes where the same step(s) is reused
- Pool naming is inconsistent in identifying who is responsible, mainly identify a service (or group of services) and is not at an actor level (see organisation view alignment observation, #19)
- Some steps have been found to be in the incorrect pool, for example where the step description says "The DIP will send a message to the Data Service", it is included as an activity in the Data Services pool where the description clearly states it is a DIP action and should be in the DIP pool
- Initially many business processes lack a description and business process descriptions documents did not match to the revised business process models leaving missing descriptions and potentially redundant descriptions in the BPD's, this was significantly improved in the tranche 4 issue of the documents

### Area / Phase of the Programme impacted

Participant understanding of the design

### Ongoing and/or recommended actions

1. There are limited options to change processes without significantly redrawing the existing business processes, therefore it is proposed that only light touch amendments are made to retain original set that industry workgroups have defined and reviewed
2. Light touch would include consistency in naming, use of message flows, removal of some unnecessary gateways, redesign of areas which "fetch" data not as a start point, resolve missing ends etc
3. Alternatively, the option is to refactor the models to break them down in to specific and well-structured business processes. But this would result in models that look and feel very different to the existing versions and might require industry review

# 09



Design Coverage

## Design Artefact Coverage

### Observations and Findings

- Whilst the design is extensive – comprising 80 artefacts – the programme has produced an amount of supporting material that is not included in the artefacts. These include the following
  - Guide to Settlement Timetable
  - DIP to DTN Role Code Mapping
  - Annual Consumption
  - Change of Supplier Transfer Reads
  - MPAN Enquiry
- These were generally produced to support working group or ad hoc discussions, or in response to requests from participants.
- As subsidiary information to support the design they serve a useful purpose to clarify areas of ambiguity for participants, but they are not currently controlled under programme document discipline. Participants might not be aware of them, or whether their content is now outdated or obsolete

### Area / Phase of the Programme impacted

M5 and subsequent DBT for participants

### Ongoing and/or recommended actions

1. Review supporting material for relevance and accuracy, and create formal programme documents under PMO management that are available to participants on the Collaboration base, with programme document references

# 10

# Assurance Observations & Recommendations

**Stakeholder**

**# 11**

## Accessibility of the Design (expertise)

**Observations and Findings**

- The design artefacts assume that the reader has a good understanding of the processes being documented, and the wider Settlement and industry context
- This could lead less experienced or less expert participants (and their service providers) to make assumptions about detail of the design, and could affect their readiness or confidence to use the new arrangements
- The observation was more acute in the early stages of design developments – with context and explanation being provided in the artefacts or other materials as the activity progressed. Broader engagement from a wider pool of participants in the latter stages of development has helped to improve the accessibility of the design artefacts for non-expert participants
- The design playback activity following the conclusion of the proposed design was also very well attended and received by participants

**Area / Phase of the Programme impacted**

- Design, Build, Test and Run
- Ensuring all participant have a good understanding of their responsibilities relating to the design, and the impact on their own businesses

**Ongoing and/or recommended actions**

1. The programme should continue to develop supporting materials for participants, deliver the enduring design hub, develop knowledge management and query support tooling as DBT for participants progresses
2. Support participants through further bilateral activity with PPC
3. Check participant understanding and implementation of the design by operating the participant design assurance processes proposed for post M5

**Design Quality**

**# 12**

## Observation Removed

1. Following discussion with SRO – SI Design Assurance accepted this observation was no longer valid

# Assurance Observations & Recommendations



Design Quality



# 13

## Requirements Verification Insight

### Observations and Findings

The review and verification of the requirements as they are loaded into Azure DevOps has identified the following observations in addition to the specific findings [03, 04, 05 and 06]:

- Duplication: ID's were not unique, often reused when covering a similar topic under a different business area (LSS & ADS examples as to what is being referred to as Business Area) leading to traceability issues
- Lack reference to Risk Stakeholders. These are the roles (name roles as well as people as people move on) that are affected by changes made to the processes the requirements support & therefore should be identified.

### Area / Phase of the Programme impacted

Design & Testing

### Ongoing and / or recommended actions

1. The process used to collate all the Business Requirements into ADO & iServer will be enhanced to ensure each requirement has a Unique ID by adding a pre-fix to highlight which business area the requirement is from (for example LSS).
2. That the Programme Glossary location is issued at the same time as the requirements are made available to stakeholders as this will help remove misunderstandings about abbreviations / MHHS terms that may not be familiar.
3. That Risk stakeholders are identified. These are the people / roles that will be impacted by any changes to the process that the requirement(s) support.



Design Quality



# 14

## Organisational View alignment

### Observations and Findings

- The pools used in the business process models contain duplicate/different names or uses a group reference for different organisations and actors across the entire design
- Example: Supplier, Supplier Old, Supplier New, Supplier incumbent and Supplier Prospective are used
- Example: group pools are defined as Data Services which represents a group of different services namely SDS, ADS UMSDS, or generalised for example "Other BSC systems"
- The naming does not always align with the services defined by the TOM. This causes issues in the ease of referencing correct organisation responsible for performing each process or task.
- For example any task in the ADS pool/swimlane is immediately understood to be a task responsible for ADS. But tasks in the Data Services pool/swimlane is also a responsibility of ADS.
- If you wanted to identify the responsibilities of a specific service provider or actor you currently have to be aware of multiple different naming and group names that include the service provider responsible
- The referencing is primarily to a "service" or group of services and this could be a system or a combination of system and actors to deliver. The organisation model and definition of organisation has been defined with Organisation representing the Service provider, it is not a system view.
- Services are delivered through combination of Actors/People and systems. Defined responsibilities for individual actors within services are currently limited, so you cannot currently identify, beyond a service provider, who is responsible for a given activity
- Details of the organisational model are defined within the Organisation view standards and guidelines.
- Fixing this following the M5 baseline would result in impact to the original business process scenarios.

### Area / Phase of the Programme impacted

Design & Testing

### Ongoing and/or recommended actions

1. Rationalise and make consistent the naming of organisations and where models frequently refer to same organisation entity but in New/Incoming or Incumbent/outgoing basis. This will be treated as roles within the organisation. This will improve referential integrity between organisation view and the business process view ensuring more of the processes are aligned to the correct organisation or actor responsible. (note this will impact the pools on the original process journey models)
2. Service Provider treated as an Organisation (not an actor or a system) allows possibility to identify if the tasks are assigned to different actors or as system responsibilities within the provider in the future.
3. Minimise where group naming applies for services where this is unavoidable will create a "pseudo" organisation containing the real organisations. Where multiple groups exist then it will require a user to interrogate different Organisation/actors applicable to themselves to identify what is their responsibility, leading to more queries.

# Assurance Observations & Recommendations



Design Quality



# 15

## Service Model View Alignment

### Observations and Findings

- In business architecture, service models provide a comprehensive overview of a service and the processes and tasks it is responsible for.
- MHHS introduces, and changes, a number of services – without service models, determining scope and responsibility for service management is difficult
- Some of the MHHS services do not have a service description or service model e.g., CSS Adaptor Service, DCC Communications Service CSP, DCC Data Service Provider DSP, Electricity Enquiry Service EES, Meter Reading Service, Network Operations, Smart DCC etc.
- While the services which are not TOM services do not need a service model, the service description should make this clear
- Within each service model many of the services have duplicate processes for example Industry Standing Data has 16 processes included (taken from the business process models) many referring to retrieval of ISD which should be rationalised. Registration service has 72 processes and Load Shaping service has 31 different processes identified for the service.
- This observation combined with the Organisation view observation where the activities are associated to grouped organisation/service makes it very difficult to get a clear view for a specific service of what is it responsible for doing and to give an accurate list/representation of all the activities it must undertake.

### Area / Phase of the Programme impacted

- Design
- Testing
- Operation

### Ongoing and/or recommended actions

This gap can be resolved within the iServer tooling:

1. Populate service models for MHHS services
2. Provide only a service description and no model for services mentioned that are not impacted by MHHS
3. Rationalise the processes contained in the services removing any redundant or duplicate processes (although this will impact original business process journey models steps)
4. Enrich the design to support testing and operation, by adding systems and application detail linked to the service models which will enable/realise the service. Add any actor responsibilities to the service model to give a more comprehensive and informative overview for the service
5. Include service management responsibilities (see operational design coverage)
6. Show interrelationship/messaging between service and DIP on the service model

## Target Operating Model Coverage



Design Coverage



# 16

### Observations and Findings

- The design assurance team has undertaken extensive review of the design artefacts and participated in the design workshop process alongside participants. All of the design artefacts have been assured and loaded into the programme design tooling models and requirements repository
- Subject to ongoing activities – including decomposition of implied requirements, resolution of industry comments and regulatory code drafting - we are not aware of any substantive gaps in the design as related to the Target Operating Model that the programme was instructed to deliver
- The design discovery journey has highlighted some additional scope, mainly reflecting the development of the industry model in the time that has elapsed since the Design Working Group concluded their work in 2019
- These have been captured in a controlled document entitled the 'TOM Augmentation Record' following the identification of a new interface between the registration service and the central switching service. This record will provide the programme

### Area / Phase of the Programme impacted

- This is a positive finding

### Ongoing and/or recommended actions

1. Govern and Maintain the TOM augmentation record document and ensure visibility on the programme Collaboration Base

# Assurance Findings

**Stakeholder**

**# 17**

## Responsiveness to Participants



### Observations and Findings

- The design assurance team has observed the diligence of the SRO design team in how it has engaged with industry participants across a spectrum of knowledge and support for the programme
- As noted in observation [xx] the programme has encouraged participants to engage with the process and greatly improved the transparency and accessibility of proceedings and the artefacts
- The SRO design team has also demonstrated resilience to resolve significant numbers of comments from a small cohort of participants against the earlier tranches of design artefacts
- The SRO team has also ensured that participants who have pushed for their concerns and questions to be prioritised, regardless of the materiality or impact in the broader programme context
- The SRO team also revised their governance approach as a result of the early activities in the programme
- The design assurance team has worked alongside the SRO team, and the Programme Party Coordinator to support multilateral engagement with collective, constituency and individual groups of participants and has observed consistent feedback and praise for the approach of the SRO team to support participant engagement and understanding
- In doing so, a number of key programme risks relating to participant engagement and support have been mitigated

### Area / Phase of the Programme impacted

- This is a positive finding

### Ongoing and/or recommended actions

1. Not applicable

**Design Quality**

**# 18**

## Security Design



### Observations and Findings

- The Security Design workstream has been delivered under a different approach from the business and technical design areas, with access to meetings and artefacts controlled to nominated subject matter experts
- The workstream lead has worked with participants, and the assurance team, to draft and review the security design artefacts in an effective and responsive manner. Comments from the assurance team against artefacts for the DIP RFP process were discussed and resolved.
- The security artefacts make clear reference to established standards, reflecting the nature of the security context, and which has resulted in fewer assurance comments that were raised against other artefacts
- Observation 25 highlights some of the challenges with the operation of the security design working group, where participant support was mixed at best, presenting challenges to the workstream lead

### Area / Phase of the Programme impacted

- This is a positive finding

### Ongoing and/or recommended actions

1. The Security workstream is expected to persist for the discussion of system and participant readiness, and assurance of proposed solutions – the existing collaborative and standards based approach should continue

# Assurance Findings

**Stakeholder**

**# 19**

## Establishing Consequential Change

**Observations and Findings**

- The programme design has been focused on delivering the TOM, as directed by the programme sponsor. This has included proposing changes to a significant number of data items and processes, typically in the non half hourly domain, that will become redundant for settlement once all meters are migrated to market wide half hourly arrangements
- A significant number of participants expressed concern that these changes could adversely impact their processes beyond Settlement where their designs make use of specific data items
- The programme has established the Consequential Change Impact Assessment Working Group to support participant discussion on such matters and concerns – which has been welcomed by participants and mitigated the risk of escalation on detail to the IPA and programme sponsor. The group is meeting regularly and actions to address participant issues are being progressed
- The SRO design team has demonstrated flexibility in responding to participant feedback on the impact of the initial design proposals – for example introducing the annual consumption data item to support non-Settlement processes in participant businesses that previously made use of the EAC data item that becomes redundant under market wide half hourly settlement

**Area / Phase of the Programme impacted**

- This is a positive finding

**Ongoing and/or recommended actions**

1. Not applicable

**Programme Logistics**

**# 20**

## Participant access to design documents

**Observations and Findings**

- Initial versions of the programme collaboration portal grouped all artefacts into a single directory with multiple versions and little signposting, provoking significant challenge from participants seeking to understand which documents were still relevant, or indeed how to find them
- This was improved over time with better sign posting, structure and supporting documentation on the Collaboration Base
- Programme communication via the Clock and the Design newsletter has continued to support the participants engagement
- The design artefact tracker was introduced to highlight progress with the development and approval of individual artefacts – significantly reducing the amount of challenge from participants about housekeeping

**Area / Phase of the Programme impacted**

- M5 And beyond

**Ongoing and/or recommended actions**

1. Continue to adopt and enhance the transparency and clarity to support participant engagement and understanding

# Assurance Observations & Recommendations

**Programme Logistics**

**# 21**

## Design Development Journey

### Observations and Findings

- As a result of the ongoing development of the design delivery plan and iterative movement of the M5 baseline, the artefacts were released for review by participants in a piecemeal manner in 4 tranches
- Business process maps were issued for review in early tranches without supporting process descriptions, requirements specifications or methodology statements.
- The full design could only be considered at tranche 4, but participants were asked to review and approve artefacts in earlier tranches. Concerns about conditional approval and subsequent update were raised by representatives at the L4 working groups and DAG.
- Product descriptions were not available for the relevant artefacts to highlight to participants where information they might consider missing would be provided in future tranches. Participants have also requested a high level design to support their understanding of the MHHS design, which was not available
- This will have contributed to the unexpected volume of comments from participants in earlier tranches, where questions were raised about the gaps in materials provided and the overall scope of the design
- The programme also walked back from an initial proposal to support two review windows for artefacts in earlier tranches
- However, the release of the full design in tranche 4 did provide participants with an early and extended opportunity to review the entire scope of the design in order to provide informed feedback

### Area / Phase of the Programme impacted

- Design development

### Ongoing and/or recommended actions

1. It is unlikely that the programme will undertake further extended collaborative development of material with participants, but where this might happen, it is recommended that the scope, plan and purpose of the reviews is made very clear with participants to help their understanding and seek to mitigate any comments about the process rather than the substantive content

**Stakeholder**

**# 22**

## Inconsistent Initial Participant Engagement

### Observations and Findings

- From the start of the level 4 working groups the levels of attendance and engagement by industry segments was very variable. Attendees, whilst relatively high in number, were not generally vocal. This allowed a small number of individuals to drive discussion and debate – which proved very difficult to manage
- Participants repeatedly stated that their SMEs were deployed on activities taking priority – such as Faster Switching transition, or the changes in the energy market
- The assurance team supported multiple bilateral sessions to discuss design with participants, alongside the PPC. Away from the domineering individuals in the working groups, it was clear that many participants were struggling to mobilise design resource, or were intending to adopt a passive position
- The programme was concerned that it would be difficult to establish a clear mandate of being design lead, if the representatives at working groups were passive or non-committal
- Refreshed engagement activity by the programme, and the shift in priorities for participants resulted in greatly improved attendance at all working groups and a levelling of the influence of the previously dominant individuals

### Area / Phase of the Programme impacted

- Design development

### Ongoing and/or recommended actions

1. As with recommendations for other assurance observations, the programme should continue to develop the relationships with individual and collective groups of participants to bring them on the journey post M5
2. Continued clear signposting of meetings, with agendas and clear intended outcomes

# Assurance Observations & Recommendations

**Programme Logistics**

**# 23**

## Inconsistent Approach to Design Working Groups Improved

**Observations and Findings**

- The design assurance team, by attending working group sessions, noted differing approaches across the programme. Some groups were well signposted with clear agendas being issued before the meetings, actions followed up and people held accountable. Other groups were less structured with no clear agenda, continuity between meetings and repetition of topics
- As the programme progressed this improved markedly. By the conclusion of the working group activity, with better transparency supported by the use of the Collaboration Base, and increased engagement and support from programme participants themselves.

**Area / Phase of the Programme impacted**

- Initial design development period

**Ongoing and/or recommended actions**

1. Further design working groups should continue the model established for the latter approach to design development activity, with transparency on attendance, content and proceedings

**Design Quality**

**# 24**

## Design Artefact Quality

**Observations and Findings**

- The programme has developed a series of design artefacts that represent the MHHS design. These include business process maps, method statements, business process descriptions, functional specifications, security and technical documents amongst others
- These artefacts do not have supporting product descriptions to assist participants to understand the scope, purpose, composition, derivation or intended audience for the documents
- Early releases of artefacts reflected the time pressure to provide for review, with no quality assurance of the documents prior to issue, leading to challenge and feedback from participants, and the assurance team
- The approach towards the conclusion of the design phase was greatly improved with use of clear version control, change marking and transparency for participants – with a corresponding reduction in the level of feedback and challenge on hygiene factors around the design artefacts
- At the same time, a number of cross-cutting artefacts were produced after the conclusion of the working groups, and in the absence of peer review or quality assurance, there is a risk that their content is not as robust as artefacts discussed in working groups, these include:
  - The Logical Data Model (see observation 08)
  - The Physical Interface Specification
  - Operational Choreography
  - Business Process Model 16A

**Area / Phase of the Programme impacted**

- M5 design baseline
- DIP service provider procurement – with a relatively high level of clarification questions from bidders and a broad range of proposed prices reflecting interpretation of the specification and requirements (resolved through dialogue)

**Ongoing and/or recommended actions**

1. The programme has a clear document control process in place, adherence for LDP documents and meeting materials produced by the PMO is monitored by the Quality Manager

# Assurance Observations & Recommendations

Programme Logistics



# 25

## Engagement for TDWG and SDWG artefacts



### Observations and Findings

- Activities and artefacts delivered by the Technical Design Working Group (TDWG) and the Security Design Working Group (SDWG) were not as well supported by participants as those for the Business Process Working Group (BPRWG), particularly during the early stages of the design activity
- The nature of the artefacts called for much more specific technical capability which naturally limited the audience. Often the meetings were very short in duration, with very little feedback for the SRO design leads from participants as they developed options and materials
- The level of engagement at TDWG was significantly improved towards the conclusion of the design process
- Initially TDWG included attendees from potential DIP service provider bidders in attendance, who were very informed and capable, but who felt they may be compromised in engaging with the group. The programme provided guidance for those parties.
- These groups did not appear to be as organised in their approach to artefacts being delivered. A lack of clear product descriptions meant artefacts tended to be repurposed version of faster switching programme documents. This led to some confusion from participants as to their purpose and ultimately their quality
- The SDWG sessions are generally brief which follow a meeting agenda that is usually issued 1 day prior to the meeting
- Meeting frequency has varied for TDWG and SDWG has been variable, compared to the regular monthly cadence of BPRWG
- Participant engagement at SDWG in particular has been very limited

### Area / Phase of the Programme impacted

- M5 and Beyond,
- Service Provider Procurement
- Assessing security readiness for market participants

### Ongoing and/or recommended actions

1. It is anticipated that SDWG will continue post M5 – it would benefit from clear support as provided to other L4 working groups – with agenda and proceedings papers being managed by the PMO, allowing the chair to focus on content and discussion with participants.
2. TDWG should be succeeded by a DIP User Group forum facilitated by the selected DIP service provider, lessons from engagement experience at TDWG should be shared with the DIP service provider



Stakeholder



# 26

## Comment Assurance

### Observations and Findings

- As part of the assurance of the M5 milestone, the SI Design Assurance team has reviewed the approach and actions taken by the SRO design team to address comments raised by participants against the tranche 4 complete set of design artefacts
- Individuals from the team performed a sample analysis against the following artefacts
  - Security artefacts
  - Technical artefacts
  - Logical Data Model
  - BP004 Business Process
- A minimum of 15 comments from a minimum of 2 participant responders per document were reviewed to assess if the SRO team were treating all participants equitably and consistently. The team reviewed their assessments collectively to calibrate consistency across the relevant artefacts.
- We observed that some participants might object to their comment being flagged as cosmetic rather than minor, but also that the comment would be addressed and resolved appropriately regardless of categorisation
- We have not reviewed the SRO triage of comments with any participant
- We note that the SRO has yet to release the artefacts as updated to address the comments, so cannot provide a view on how the comments have been reflected in the documents
- In conclusion, our assurance observation is that the SRO triage of participant comments against the tranche 4 artefacts is consistent and appropriate

### Area / Phase of the Programme impacted

M5 Baseline

### Ongoing and/or recommended actions

1. It was noted that the clarification responses provided by the SRO team to the provider of the comment provided very useful information that could enrich broader participant understanding of the design. We propose that the clarification question responses be taken forward to support knowledge management for participants – this could be on the Collaboration Base, or added as extra context information to relevant elements of the architecture repository

# Assurance Observations & Recommendations



## External Industry Change Governance

### Observations and Findings

- The SI Design Assurance team has observed that the MHHS Design programme has encountered challenges in attempting to resolve industry issues that have an impact wider than the MHHS programme
- The key example is the MP162 SEC modification – raised by Smart DCC to deliver the changes to the Smart Energy Code that were called out by the Design Working Group
- Impact assessment of this change highlighted an imbalance in the service provision by DCC to import suppliers and independent agents. Agents had raised this issue during the SEC evaluation of the modification, but it was not determined as material by SEC governance
- This issue existed prior to MHHS, and it was never within the gift of the programme to resolve it – but the modification remains a key dependency for MHHS to deliver timely outcomes
- The SRO design team spent significant unplanned time working with various parties to broker an outcome. The Design Advisory Group was dominated by discussions to the extent that extraordinary sessions were needed to cover off the standing agenda
- Eventually, it was acknowledged that the SEC modification needed to be revised within SEC governance to produce new options for impact assessment
- Strategically important issues such as this have been absorbed by the SRO design team in the same manner as if they were MHHS design issues arising from the design development activity they were leading. A great deal of time has been spent by the team and design groups looking at an issue that needed to go back to SECAS and DCC to review

### Area / Phase of the Programme impacted

- M5 and any subsequent cross code issues arising

### Ongoing and/or recommended actions

1. The programme should determine which Level 3 governance group is best placed to evaluate strategic issues arising, and where the resolution sits outside the programme – manage that directly with the responsible party