



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

Design Advisory Group #4

09 February 2022

Version 1.0

MHHS-DEL160

Document Classification: Public

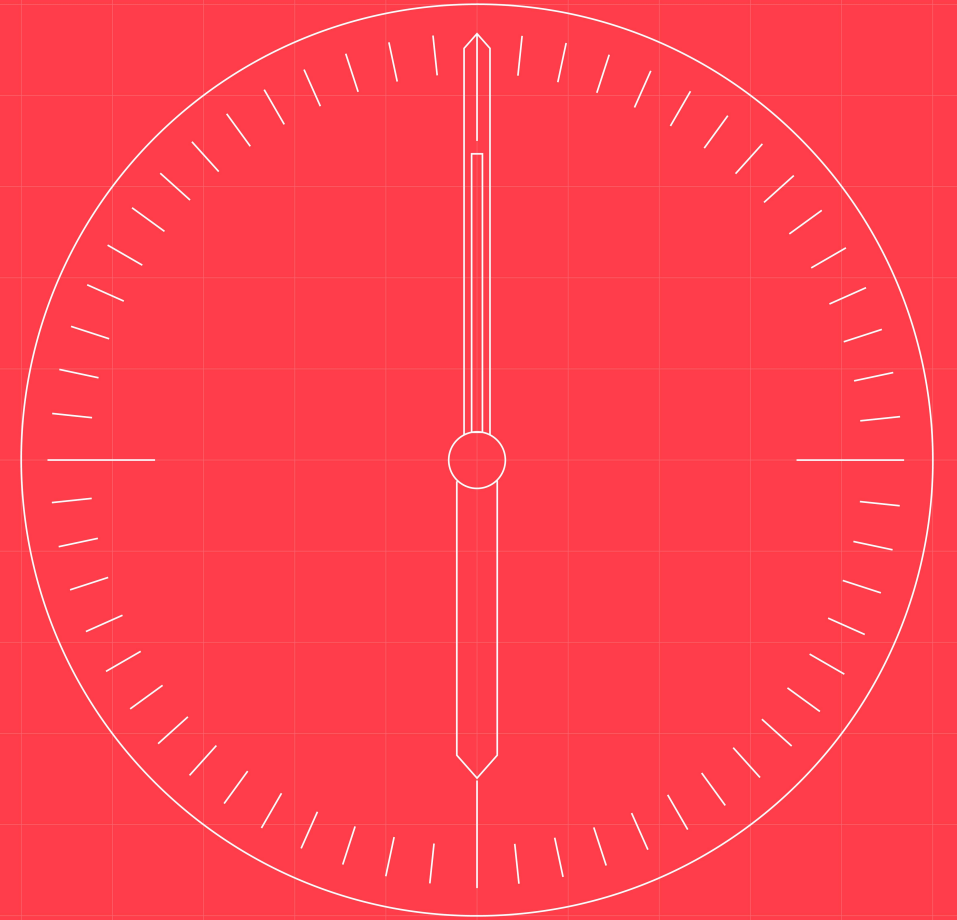
Agenda

1. Welcome Justin Andrews <i>5 mins</i>	2. Minutes and Actions Review Justin Andrews <i>5 mins</i>	3. PSG Update Lewis Hall <i>5 mins</i>	4. Review Terms of Reference Justin Andrews <i>10 mins</i>
5. Design Principles for review Ian Smith <i>40 mins</i>	6. Design Issues Ian Smith <i>15 mins</i>	6A. Technical Assumptions Ian Smith <i>10 mins</i>	7. Report from L4 Working Groups Claire Silk <i>30 mins</i>
8. Summary & Actions Justin Andrews <i>5 mins</i>			

Minutes and Actions Review

Justin Andrews

5 mins



Minutes and Actions Review

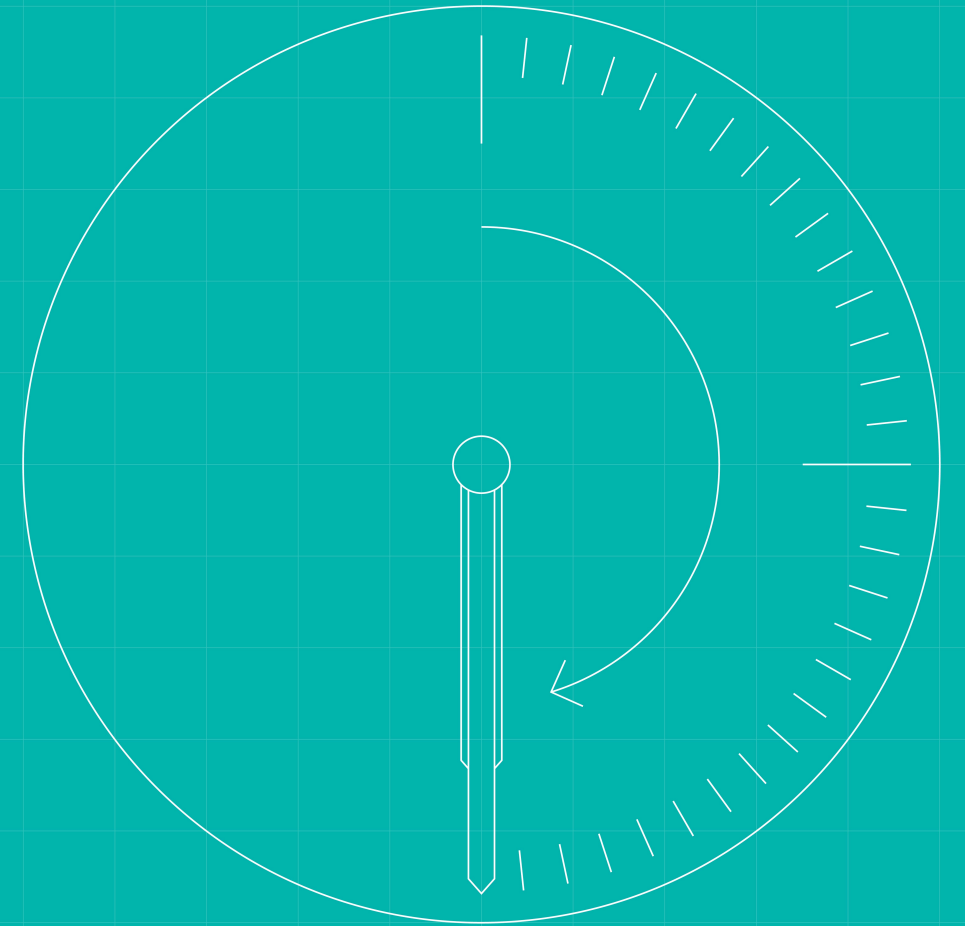
- Approval of [Minutes from 12/01/22](#)
- Open Actions and Actions from DAG 12/01:

Ref	Date	Action	Owner	Due Date	Status
DES-01-04	17/11/2021	IS to ensure DAG members are able to easily review Level 4 working groups and sub group output	Ian Smith	09/02/2022	CLOSED – the MHHS Portal is now live and contains relevant documents. Register for Portal access via the PMO
DES-01-05	17/11/2021	SC to ensure DAG TOR are reviewed in February 2022	Simon Chidwick	09/02/2022	OPEN – for discussion today - Agenda item 4
DES-02-02	08/12/2021	'Draft Design Principles' – Ensure that: a) They are presented at a higher level in themes and categorised; b) A status for each principle is adopted, so it is clear whether the principle is a draft one or has been formally adopted and agreed; c) separate out assumptions or requirements and d) draft a governance approach for DAG approval and where they may be published.	Ian Smith	02/02/2022	OPEN – action complete and for discussion today - agenda item 5
DES-03-01	12/01/2022	SC to circulate updated minutes from December's DAG.	Simon Chidwick	19/01/2022	CLOSED – accessed via MHHS website
DES-03-02	12/01/2022	IS to attend Supplier Agent constituents' 'drop-in' session. LH to engage the Lead Delivery Partner Programme Party Co-Ordinator to potentially attend a future session.	Ian Smith/Lewis Hall	09/02/2022	OPEN - Ian Smith to contact Seth Chapman for follow up
DES-03-03	12/01/2022	Draft Design Principle' – PRI-15 – 'Future Proofing' - IS to ensure the 'Principle Title' is updated so as not to be specific to '15 minutes'.	Ian Smith	09/02/2022	CLOSED – design principle updated as per action
DES-03-04	12/01/2022	SCha and CH to provide their design principle feedback.	Seth Chapman/ Craig Handford	21/01/2022	CLOSED 18/01/22 – Seth Chapman and Craig Handford have provided their feedback
DES-03-05	12/01/2022	'Draft Design Principle' – PRI-20 – 'Retrospective Appointments' - IS, CH and SCha to discuss further for understanding and clarification of this principle.	Ian Smith	09/02/2022	OPEN – internal session held, follow up in progress
DES-03-06	12/01/2022	IS to ensure accuracy of the Design Status Report as currently it shows June DAG activity.	Ian Smith	09/02/2022	CLOSED – Status Report has been corrected
DES-03-07	12/01/2022	JA to ensure placeholders are sent out for extra DAG meetings.	Justin Andrews	09/02/2022	CLOSED – invites shared from PMO mailbox
DES-03-08	12/01/2022	JA to ensure session is held to discuss SEC-Mod-MP162 and RL's design principle and circulate the principle wording, the modification context and considerations/proposal on any further MHHS design requirements.	Justin Andrews	09/02/2022	CLOSED - session held 01/02, update to be provided at meeting

PSG Update

Lewis Hall

5 mins



Mobilisation of Programme Parties

- Programme Parties continue to mobilise their teams to support design development
- Progress of mobilisation against the M5 (Physical Baseline Delivered) milestone in April is being monitored

LDP and IPA mobilisation

- Lead Delivery Partner (LDP) has mobilised, with Independent Programme Assurer (IPA) to follow in the coming weeks
 - Programme Party Coordinator (PPC) are actively engaging Programme Parties
 - Programme Management Office (PMO) are in place and have established processes such as RAID, Governance, Planning, MI Reporting, Change Control
 - System Integrator (SI) are active across programme delivery activities such as Design, Test and are leading on the roll out of the Programme Portal

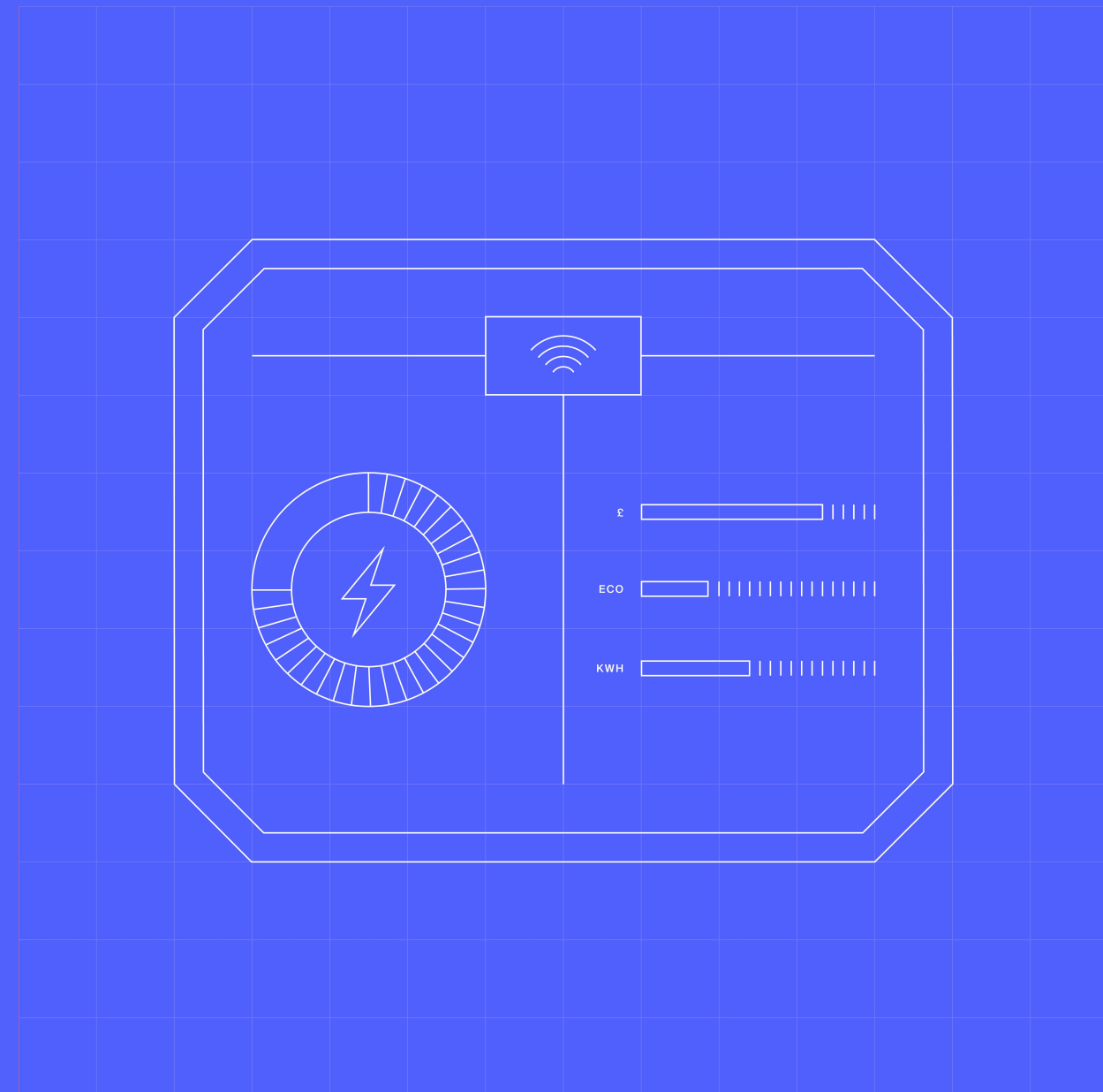
Programme Portal

- The first tranche of programme participants have received log-on credentials to the Programme Portal to aid the review of Design Artefacts
- A roadmap, backlog and release plan to build out the portal's functionality has been defined

Review Terms of Reference

Justin Andrews

10 mins



As per action DES 01-05 in Nov. '21, the DAG requested a review of DAG Terms of Reference in Feb. '22

The DAG ToR are structured in five areas:

- Role
- Objectives
- Membership
- Scope, deliverables, roles and responsibilities
- Decision making

**Following three months of Design, we believe no change is required to the ToR
Are there any areas DAG members believe need changing?**

We plan to review the ToR again in April 2022

DAG Role

The DAG's role is to oversee, review, consult and approve, the MHHS Programme development of the end-to-end business processes, system and data architecture that delivers the detailed system design that enables all programme participants to design, build and test their individual system and business changes

DAG Objectives

- To be the primary decision-making authority for the system and solution design, unless above Ofgem thresholds
- To oversee the Programme design outputs, review and validate the output contents against objectives and expectations, send the deliverables for consultation and approve the design artefacts
- Ensure different programme participant perspectives are appropriately represented during decision making
- Enable Design transparency for all impacted constituency groups and stakeholders
- Delegate appropriate tasks and activities to Level 4 working groups
- Receive escalations from lower-level workgroups and reach consensus on decisions, so the Programme design work progresses to plan
- Provide detailed advice to the SRO, PSG and other groups if required

DAG Membership

The DAG Membership is the SRO as Chair, technical expert representatives from each programme participant constituency and Ofgem as an observer:

1. SRO DAG - Chair
2. SRO Design Manager
3. Lead Delivery Partner (LDP) Programme/Design Manager
4. Lead Delivery Partner (SI) System Integrator Manager
5. Independent Programme Assurance (IPA) Manager
6. Elexon Representative (as central systems provider)
7. DCC Representative (as smart meter central system provider)
8. Any other provider of a central system required for MHHS implementation (e.g. communications provider)
9. Large Supplier Representative
10. Medium Supplier Representative
11. Small Supplier Representative
12. I&C Supplier Representative
13. Supplier Agent Representative (Independent Supplier Agent)
14. Supplier Agent Representative
15. DNO Representative
16. iDNO Representative
17. National Grid ESO
18. Consumer Representative
19. Ofgem (Observer, to attend as appropriate)
20. The PMO will attend to act as meeting secretariat

DAG Terms of Reference (extracted from MHHS-DEL031 MHHS Programme Governance Framework v1.1)

Purpose and Duties of MHHS Design Advisory Group

- DAG's purpose is to be the mechanism that oversees, reviews and approves end-to-end business processes, system and data architecture deliverables that produce the detailed system designs that enables all programme parties to design, build and test their individual system and business changes.
- DAG is responsible for all design decisions and all requests that impact on design.
- DAG is responsible for overseeing the development of the physical baseline which will provide the detail necessary for all parties to commence system design and build.

DAG Scope, Deliverables, Roles and Responsibilities

- DAG's scope is the development and management of all system and process design artefacts.
- The SRO (or someone delegated by the SRO from within the MHHS Implementation Manager function) will chair the meetings.
- The PMO will maintain and communicate up to date meeting documentation.
- The PMO will maintain an up-to-date Programme plan, RAID log and actions log.
- The PMO will provide all meeting management services and deliver all regular and ad hoc meetings.
- DAG Members (or nominated alternatives) will attend every meeting.
- DAG Members will be fully meeting prepared before the meeting starts.
- DAG Members should be a mix of business, system, data, design, security and solution technical experts.

Decision Making

The DAG will make Level 3 decisions and Level 2 decisions when delegated from the PSG. (Level 1 decisions will be escalated to Ofgem by the SRO or IPA). The DAG can delegate decisions to another Level 3 group or a lower-level work group.

The DAG will ensure that any decisions are based on full transparency with programme participants and appropriate consultation.

Where parties raise significant concerns with a DAG decision, the concern will be resolved by DAG or escalated to the PSG via a constituency representative.

Consultation will be carried out on an ongoing basis, with the DAG taking decisions based on information developed by Design Working Groups.

Where the DAG is presented with recommendations from Design Working Groups they will have the ability to:

- i. Accept the recommendation – the proposal/recommendations are aligned to the TOM and overall objectives.
- ii. Reject the recommendation – the proposal/recommendations does not align to the TOM, programme principles or requires further work/clarity.
- iii. Refer the recommendation for additional work or analysis.
- iv. Accept the recommendation, subject to additional work being completed.
- v. Refer to the PSG when the recommendation meets the threshold for Ofgem intervention or DAG cannot reach consensus.

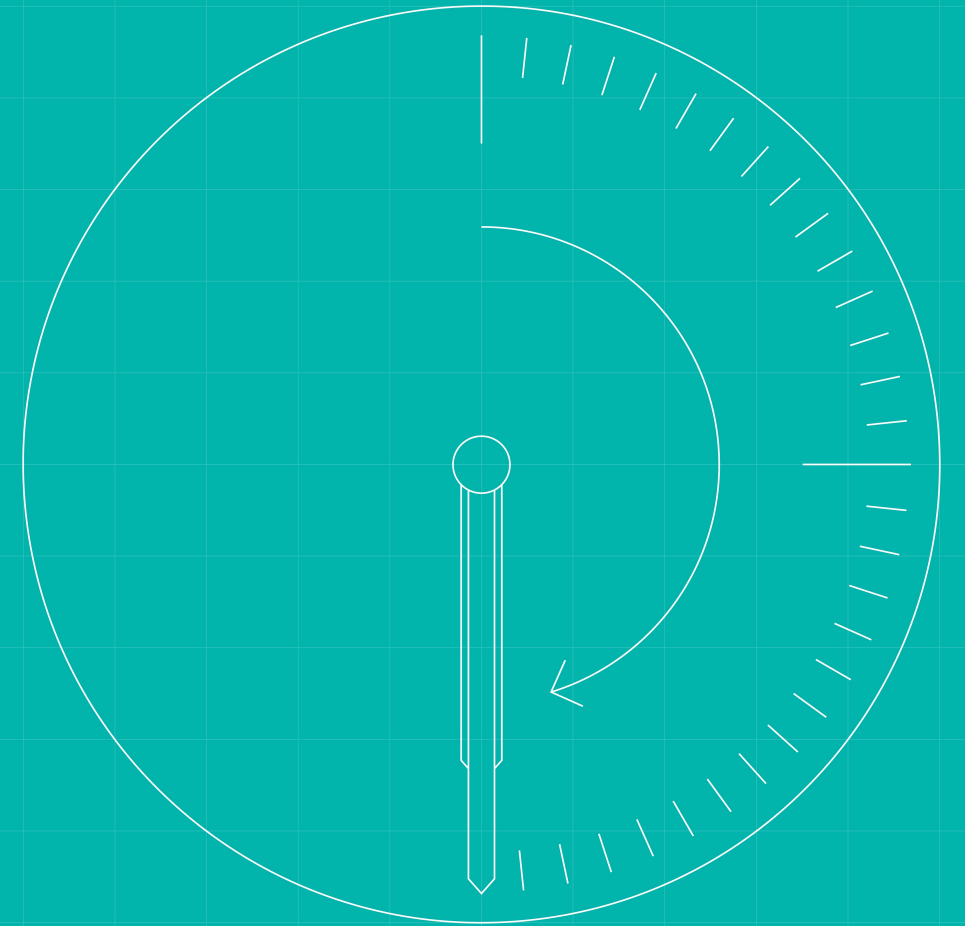
Decisions and outputs of the DAG will be published within 10 working days of the meeting.

5

Design Principles for review

Ian Smith

30 mins



High Level Design Principles (1 of 2)

A review has been conducted of the current granular design principle with a view to deriving a set of over-arching principles as per the DAG request. A number of the original set have been re-categorised as requirements and assumptions and will be incorporated into the detailed design artefacts. The items listed below represent the current programme view of the high-level principles to be applied to the end-to-end design.

Ref	Principle	Scope	Sub-Principle	References
1	The solution will implement the TOM at a service level with prescribed interfaces between TOM services. The design will be agnostic as to the physical resolution that parties choose in the build of the services, it will only proscribe requirements and such physical characteristics as to enable interface build.	System Wide		PRI017
2	Energy Suppliers can choose how they deliver their TOM Data Services (direct or procured)	System Wide		PRI016
3	The DIP solution will remain stateless and will not execute Business Processing rules	DIP	Sending parties are responsible for any follow up for business processes requiring completion (PRI026)	PRI024.PRI025
4	No new DTC flows will be created to resolve interface requirements for MHHS. Nor will there be facsimiles of existing DTC flows created on the DIP.	System Wide		
5	Where optionality exists with regard to resolving an interface to either the DIP or remaining on the DTN the solution will seek to group the resolution based on related flows within the business process. i.e., if the majority of flows within a process use the DIP it would not be desirable for outliers to remain on the DTN.	System Wide		

High Level Design Principles (2 of 2)

Ref	Principle	Scope	Sub-Principle	References
6	Solution assumes that the data held/mastered by the owner/manager is correct. Services will undertake processing in good faith based on the data provided to them. This does not preclude the potential requirements for exception reporting and reconciliation requirements to rectify data quality issues.	System Wide	Will not duplicate items held in other systems(PRI004/005) Will only hold what is required to route messages Will not validate customer opt out (PRI008)	PRI003. PRI001. PRI010. PRI011. PRI019
7	Service providers will be responsible for reporting data accuracy issues to the data owner/manager	System Wide		PRI003
8	Data will be processed within the services promptly and in accordance with BSC Procedures	System Wide	[Data services should process data in accordance with the settlement timetable]	PRI010
9	The solution will seek to minimise cost to industry participants in the delivery of the OFGEM approved TOM services and Integration platform	System Wide		PRI027
10	The solution will be secure, scalable for volume, latency, interfaces and other key technical dimensions.	System Wide		PRI015.PRI028
11	Interfaces will only pass those elements of data required in direct support of their governing business process and requirements.	System Wide		
12	Design will be articulated with sufficient breadth and detail required to enable regulatory code drafting in addition to enabling Service Design, Build, Test & Operate.	System Wide		
13	Any technology selection will be mindful of future use cases	DIP		

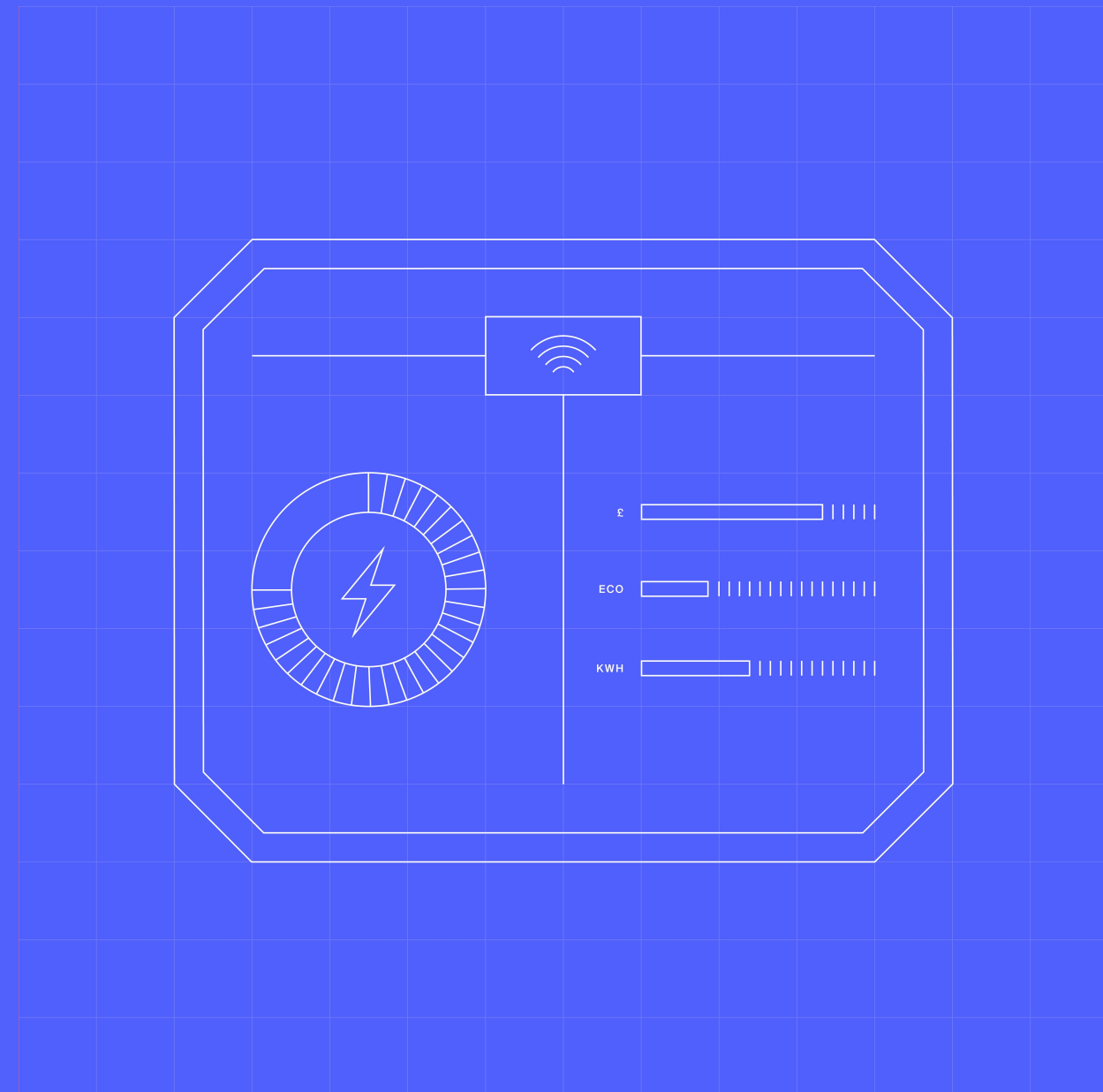
New design principle on level playing field

- New design principle proposed at January DAG meeting (and DAG agreed action DES-03-08):
 - *“Level playing field – All participants operating under MHHS will be afforded the ability to deliver the same level of service regardless of role”*
- DAG sub group:
 - meeting held 1 February 2020
 - discussed context, design principles and potential design proposals (see slides available via [MHHS website](#) - document titled *MHHS-DEL200 DAG sub group 01 February 2022 v1.2*)
 - Agreed design principle with clarified wording
 - Agreed MHHS base requirement is a 24 hour TRT
- MHHS Design team proposed new wording for DAG agreement:
 - *“Level playing field – All **market** participants operating under MHHS **Target Operating Model** will be afforded the ability to deliver the same level of service **for the same MHSS role or service** regardless of role”*
- Next steps:
 - Look at options on how design proposals taken forward, e.g. under SDS workstream, DAG sub group
 - Canvas views on other design proposals (additional to SEC drafting restrictions or Supplier as MDR)

Design Issues

Ian Smith

15 mins



Two key areas will be passed to DAG seeking a decision. A significant number of logical design artefacts cannot be progressed until a decision has been made regarding the approach for these areas. The process to collect and process participant feedback could not be completed in time for this DAG session and therefore an extraordinary DAG session has been requested to consider these.

▪ **Change of Agent**

- CCDG recommended an approach for the appointments to be mediated by the registration service as opposed to the current supplier mediated process. Following consultation OFGEM requested that this be considered as part of the decision to proceed with the recommendation for the use of the EDA pattern following responses challenging the CCDG recommendation. It was agreed that this issue be considered by the programme and dealt with via Design governance.
- The design team have been working with industry participants to articulate the options available. These are the CCDG recommended approach and an alternative Supplier mediated approach.
- These options have been presented to the Registration Sub-Working group and a request for written responses has been made. These responses are being collated and following an additional sub-working group session to refine feedback the positions will be presented to DAG where a decision will be sought.

▪ **Interface Approach**

- Optionality exists regarding the richness of data to be provided in various logical interfaces. There are a range of options ranging from very lightweight interfaces to very data rich interfaces mirroring some of the flows that are used today.
- Options have been presented to the working group and written responses requested.
- The responses have been received and are being processed by the design team. A further sub-working group session will be held after which a paper will be submitted to DAG detailing the options and requesting a decision.

6A

Technical Assumptions

Ian Smith

10 mins

- TDWG have been considering a number of core principles and key technical characteristics that inform the Functional Specification of the integration platform
- Following multiple working group sessions, the TDWG has reached consensus on a number of core elements
- TDWG now seeks approval from DAG on these elements as these will form key drivers for the detail underpinning the DiP Functional Specification current being developed and under review

High Level Design Principles

#	Principle	Description	Agree (y/n)
001	Business Logic	DIP is devoid of any business logic (the exception is the routing of messages to correct participants)	Yes
002	Message/Event routing	DIP is responsible for routing messages from senders to receivers	Yes
003	Message/Event Validation (DIP)	DIP will undertake message header and schema validation rather than full content validation.	Yes
004	Message/Event Validation (Participant)	Recipients will validate the message payload	Yes
005	Error Reporting	DIP/Message Recipients will report logically invalid messages back to recipient	Yes
006	Future Requirements	The DIP is a platform for the future and should be designed such that additional business events can easily be added	Yes
007	Flexible Templates	Support templated design as new industry initiatives may require different patterns of message/event exchange	Yes
008	Connection Pattern	Standardised connection patterns across all services. All services will present as a minimum API HTTPS interfaces with JSON payloads with API inbound, webhook outbound.	Yes
009	API Monitoring	All API activity (inbound & outbound) will be monitored and available for reporting	Yes

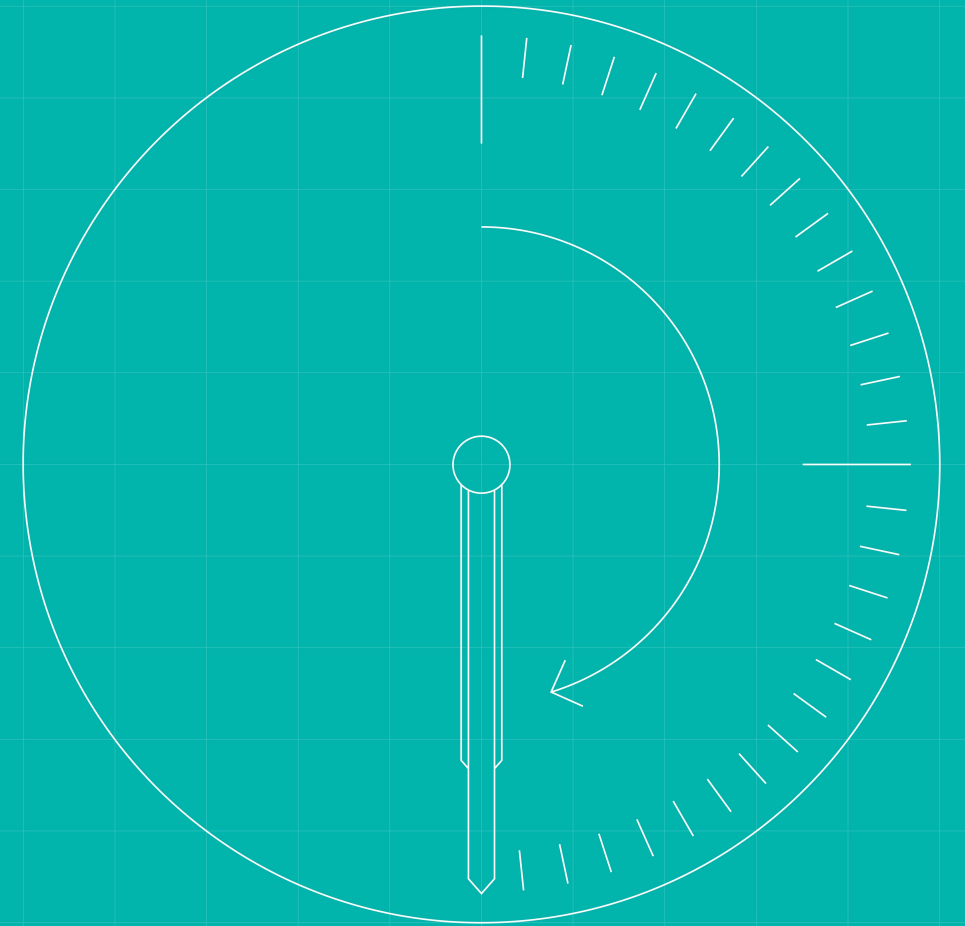
Technology/Architecture Characteristics

#	Characteristic	Description	Agree (y/n)
001	Platform Agnostic	Work with the AWG definition of Event Driven Architecture for the RFP that uses the Gartner Report definition, 3 basic type of events brokers are defined: <ul style="list-style-type: none"> • Queue-oriented (like Solace PubSub+, RabbitMQ, Azure Service Bus, etc.) • Log-oriented (like Apache Kafka, Amazon Kinesis) • Subscription-oriented (such as Amazon EventBridge and Azure Event Grid). 	Yes
002	Cloud Architecture	Single Cloud Provider <ul style="list-style-type: none"> • at least 2 availability zones/regions • backup 	Yes
003	Availability	Percentage of Uptime 99.95% (unplanned) Mean Time to Recovery (MTTR) 60 mins Mean Time between Failures (MTBR) - Recovery Time Objective (RTO) 60 mins Recovery Point Objective (RPO) 0	Yes
004	Performance	Near real-time message delivery with 90% delivered within 3 seconds of receipt, and 100% of messages within 30 seconds.	Yes
005	Message Retention	On-line broker, i.e. routine processing – 14 days; archive replay – 2 years	Yes

Report from L4 Working Groups

Claire Silk

30 mins



MHHS BPRWG - Business Design Artefact Status Report

Business Process Artefacts	Current Status						Forecast BPRWG Review			Forecast DAG Review		
	No. of Docs.	First Draft Not Complete	First Draft Complete	In Flight Sub-Group Review	Blocked	In Flight BPRWG Review	Feb	Mar	Apr	Feb	Mar	Apr
Business Process Maps	20	5	15	12	3	0	12	2	6	12	2	6
Interface Specifications	38	4	34	34	32	0	2	9	27	2	9	27
Business Requirements / Business Process Descriptions	10	7	3	3	0	0	2	2	6	2	2	6
Global Artefacts	5	3	2	2	0	0	1	3	1	1	3	1
Total	73	19	54	51	35	0	17	16	40	17	16	40

Key Blocking Issues	No. of Artefacts Blocked
Change of Agent- Forecast DAG discussion Feb	17
Interface Approach- Forecast DAG discussion Feb	7
Supplier Interaction- Linked to both above issues	11

See additional slide pack shared alongside meeting papers on design artefact status and progression timetable.

Document titled *MHHS-DEL199 Design Artefact Status Report - Feb-22*

MHHS TDWG & SDWG - Technical Design Artefact Status Report

	Current Status						Forecast Level 4 Review			Forecast DAG Review		
Technical Design Artefacts	No. of Docs	First Draft Not Complete	First Draft Complete	In Flight Sub-Group Review	Blocked	In Flight Level 4 Review	Feb	Mar	Apr	Mar	Apr	May
DIP Non Functional Requirements	1	0	1	1	0	1	1			1		
DIP Functional Specification	1	0	1	1	0	1	1			1		
End to End Architecture	1	1	0	0	0	0		1			1	
End to End Non Functional Requirements	1	1	0	0	0	0		1			1	
Security Specifications and Impact assessments	4	1	3	3	0	3			3			3
Total	8	3	5	5	0	5	2	2	3	2	2	3

MHHS Business Process & Requirements Working Group Schedule – February 2022

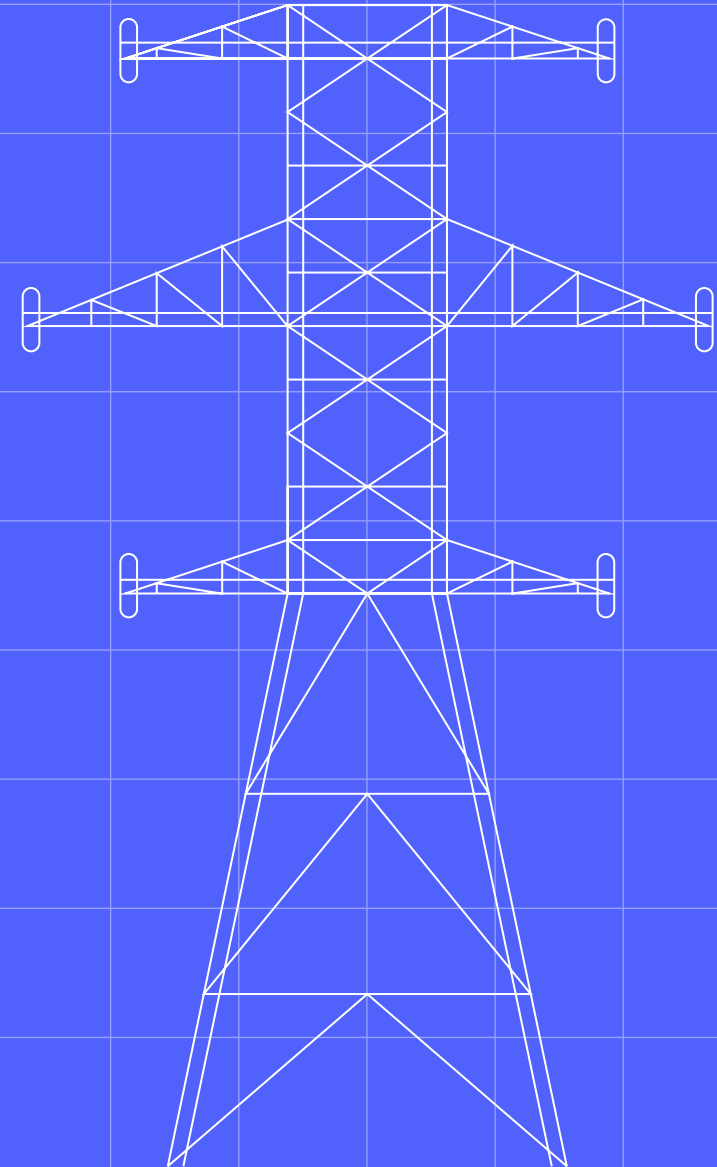
February 2022				
	Tue 1st	Wed 2nd	Thu 3rd	Fri 4th
	Pre-read: • DNO Session	DAG Papers • BPRWG	Pre-read • Smart • Advanced	Pre-read: • ECS • ECS
Mon 7th	Tue 8th	Wed 9th	Thu 10th	Fri 11th
MHHS Design Planning	Pre-read: • Registration • DNO Session	• Design Advisory Group (DAG)	Pre-read: • Settlement Timetable • Smart • Advanced	Pre-read: • ECS • ECS
Mon 14th	Tue 15th	Wed 16th	Thu 17th	Fri 18th
MHHS Design Planning	Pre-read: • Registration • Registration		Pre-read: • Unmetered • Settlement Timetable	Pre-read: • ECS • ECS
Mon 21 st	Tue 22nd	Wed 23rd	Thu 24th	Fri 25 th
MHHS Design Planning	• Registration	Pre-read: • BPRWG	• Unmetered	Pre-read: • ECS • ECS
Mon 28 th				
MHHS Design Planning				

BPRWG Sub-Group	Agenda Item	Pre-read issued	Meeting
Registration	• Update- Interface Approach • Review- Validation Rules	Tue 8 th Feb	Tue 15th Feb
	• Update- Change of Agent	Tue 15 th	Tue 22nd Feb
Smart Market Segment	• Final Review- Validation & Estimation Method Statement	Thu 3 rd	Thu 10th Feb
Elexon Central Systems	• Agree- Marketwide Data Service (MDS) • 1 st Review- Volume Allocation Service (VAS)	Fri 28 th Jan	Fri 4th Feb
	• 2 nd Review- Volume Allocation Service (VAS)	Fri 4 th Feb	Fri 11th Feb
	• 3 rd Review- Volume Allocation Service (VAS)	Fri 11 th Feb	Fri 18th Feb
	• Agree- Volume Allocation Service	Fri 18 th Feb	Fri 25th Feb
Advanced Market Segment	• Update- Segment Specific Business Processes	Thu 3 rd Feb	Thu 10th Feb
Unmetered Market Segment	• Update- Segment Specific Business Processes	Thu 17 th Feb	Thu 24th Feb
Cross Sub-Group	• Settlement Timetable	Thu 10 th Feb	Thu 17th Feb
Participant Engagement	• DNO Interactions	Tue 1 st Feb	Tue 8th Feb

Summary and Actions

Justin Andrews

5 mins



Next Steps

- Confirm Actions from meeting
- Dates of next DAGs (additional DAGs have been added to the schedule)

Week commencing	31/01	07/02	14/02	21/02	28/02	07/03	14/03	21/03	28/03	04/04	11/04	18/04	25/04	02/05
Monthly DAG		Weds 9th				Weds 9th					Weds 13th			Weds 4th
Additional DAG			Weds 16th					Weds 23rd					Weds 27th	

↑
*DAG meeting in
 May brought
 forward by a
 week*