Minutes

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for energy consumers

Optional Design Advisory Board Meeting 14

From: Anna Stacey	Date: 25/02/2021 Time: 10:00 – 12:00	Location: Microsoft Teams

1. Welcome and Meeting and Overview (slides 1 – 2)   **Anna Stacey**

1.1. The Ofgem Chair, Anna Stacey (AS – Chair) opened the Design Advisory Board (DAB) meeting and set out the meeting objective to discuss the draft Architecture Working Group (AWG) recommendation. In particular to ask the board's advice on whether the proposal is consistent with the project aims of being future proof and enabling innovation.

1.2. AS introduced a member of the AWG who will present the draft recommendation, Mike Winter (MW), to the board.

2. AWG Business Context and Non-functional Scope (slides 3 – 4)   **Jasmine Killen**

2.1. Jasmine Killen (JK) set out the business context and the question the AWG recommendation is aiming to answer. This is that Market-wide Half-Hourly Settlement (MHHS) will enable faster access to more half-hourly meter readings, which will enable faster, more accurate settlement. The Design Working Group's (DWG) preferred target operating model (TOM) includes a large number of market participants who all need to exchange large volumes of data as part of the business processes needed for settlement. Exchanging this data is not just between one party and another, but instead multiple parties may consume data from a single party.

2.2. JK reminded the Board of the high-level goals for the TOM architecture that the AWG set out and have considered when assessing the suitability of the solution architecture. These are set out on slide 4.

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3. Event Driven Architecture (slides 5-17)   **Mike Winter**

3.1. MW explained that the reference architecture is a conceptual model, rather than a delivery methodology. This phase of work will be followed by a logical phase and then a physical implementation phase. He noted that AWG has provided views on data items and interfaces, which are more aligned with the logical phase of the design.

3.2. MW then went on to explain an Event Driven Architecture (EDA). An EDA is a different model than the current method of data transfer as it removes the handshaking (response) nature of transfer systems that require the sender to wait until they receive an acknowledgement before assuming data has been sent. An EDA allows for reliable messaging and delivery where data is transferred between loosely coupled systems, but where participants do not have to be coupled for an extended period. Publishers and subscribers of an EDA have no knowledge of each other and a single event can be consumed by many subscribers.

3.3. MW said the TOM architecture must enable data consistency, high volumes of data to be transferred on a more frequent basis, have low complexity and also be interoperable. All market participants have their own technology sets and systems and the EDA acknowledges this by allowing the use of adaptors. It is also compatible with cloud computing solutions which is where most of the market is moving in terms of IT infrastructure. Market participants would be able to subscribe to event data related to their market role and publish the data they need to, with the right identity and access management in place. The EDA would be auto-scalable and add in and take out participants as needed. This is also true of changing demand for data, as cloud computing can scale up for large bursts of data and then scale down again as needed.

3.4. AS opened the floor to questions from the board on the EDA. A board member asked for examples of existing EDA implementations. MW explained that Graphical User

Interfaces (GUIs) and web browsers are examples, and noted that his own organisation uses an EDA to approximate a data lake. Another board member asked how the EDA would interact with the industry performance management regimes. Matt Basoo (MB – Elexon) explained that the business processes would still dictate the length of service-level agreements (SLAs) that the industry uses, but that sending smaller events more frequently could potentially reduce the cost to participants and help them meet their business SLAs more effectively. A further board member asked whether there are any dependencies on other systems and if all participants have the right capability to interact with this model. MS noted the EDA can be adaptor enabled and therefore can be interoperable. If organisations continue to want to use the current file types then they could use an adaptor service. They would however lose the advantage of the EDA, but the benefit is that they could change and upgrade their own systems in their own time to fully realise the benefits of the EDA. It doesn't require organisations to make these changes upfront.

3.5. MW described the main components of the EDA which are:

- Data producers – parties who produce data for others to consume. They can connect to the EDA through an adaptor if they wish.

- Event backbone – immediately categorises the data into topics that are of interest to different parties.

- Event store – a history of the events that also acts as a recovery mechanism for example in a disaster recovery scenario.

- Governance and security – There will be identity and access management built into the system to authenticate that the user can access or submit the data. This also makes sure the data is in the expected format

- Event/Message broker – distributes the events. More detail on this element will be defined in the logical phase of the design.

- Data consumers – parties who subscribe to topics of data. There are existing interoperability standards that would allow participants to receive data from other integration standards like an API if they would prefer.

3.6. MW noted that the EDA is a paradigm shift for the industry with a move from a procedural system to eventing. He noted the need to make sure that participants understand the benefits of moving to an EDA. He then compared the EDA with other common integration architecture styles that the AWG had discussed.

- File transfer, which is like the DTN, when compared to an EDA has a lot of latency and requires participants to be coupled to exchange information.

- APIs require participants to be coupled to exchange data as part of validation. Messaging systems can be asynchronous, but can be slow when dealing with large volumes which creates latency.

- Event notification is the predecessor to an EDA, in this system participants are notified that data is available and must retrieve it, while in the EDA they receive it automatically when it is published.

3.7. AS opened the floor to questions from the board again. A board member asked how an EDA would interact with industry performance regimes and service level agreements (SLAs). JK said that the AWG have discussed SLAs and processing timescales, noting that the EDA would use closer to real time processing, but still allow participants to use batch processing if that was their preference. Overall, the maximum elapsed time scales for which data is sent would continue to be set by the business processes but if industry sees benefits in reducing SLAs, the EDA could accommodate this. JK noted that when further detail is developed as part of implementation, that it may be decided that parties could be mandated to subscribe to certain data topics based on their market role.

3.8. Another board member asked how the EDA model would facilitate third party access to data, for example for public policy purposes. MW explained that there is nothing preventing access to the data in the event store for these purposes, but noted that subsequent processing of the data to make it useful may be required. A further board member stated that under this model, another party could act as an event processor and provide a service of processing this data and making it available in a format that is useful to other parties, including for public policy purposes. MB said that there would need to be governance of the registry of data and topics so that if new services were to be created, other parties could be notified of this. A board member asked how the EDA would handle a situation where there could potentially be a much larger number of MPANs in the future. MB said that the solution could be scaled to accommodate much higher volumes than what the AWG are considering as part of the recommendation.

3.9. A board member asked whether suppliers were ready for the EDA and whether the full benefits of moving to an EDA would ever be realised as settlement is inherently carried out by batch processes. AS added to this question and asked how the cultural change required for business could be managed as part of the implementation. MW explained that the change would not be enforced as parties could use adaptors, this would allow the old paradigm and the EDA to coexist while the cultural shift happens. He noted that he expects it to be driven from within organisations. A board member expressed the view that suppliers do not drive innovation, and that in the business supply market customers are driving innovation. He speculated that it may be third parties that drive innovation, and therefore the cultural change to using real time data, rather than suppliers.

4. **Questions for the board (slides 18-22)**   **Anna Stacey**

4.1. AS asked the board members whether any of them felt that the EDA was not the right way forward. A board member stated that he could see the future potential, but was currently undecided as he did not have the expertise in IT systems to comment fully. He noted that the proposal sounded interesting and powerful. Another board member said the EDA sounds like a step forward but was unconvinced that the full benefit would be derived since so many settlement processes are based around the settlement timetable and there may be fundamentally batch based. MB stated that given the increased volumes of data required to enable MHHS, the AWG thought that the EDA was an appropriate recommendation to accommodate this, and that the real time capability presents a potential benefit that can be achieved in the future. A board member asked where the governance for the EDA would sit, to ensure that the benefits are leveraged. AS said that this was a good question, and noted that the reforms must leave the door open for the full range of benefits to be realised.

4.2. JK noted that the EDA would sit alongside the DTN, recognising that some DTN flows are not impacted by the target operating model. This means that they would sit side by side during the implementation of MHHS. She asked the board who they thought would be best placed to manage and govern the EDA. She said that the DNOs currently have an obligation in their license to provide a Data Transfer Service, which they discharge through the DTN, so it might make sense for the EDA to be part of the DNO license. Alternatively she noted an industry code could govern the EDA (for example the REC, BSC or a new industry code) and asked members if they had a view.

4.3. A board member commented that they believed the DNOs only provide the DTN because they were one of the only static parties at the time, and notes that the DNOs were not asked to provide the DTN. JK asked the board member whether they had a suggestion of a party it would make sense to make responsible for the EDA. He said that the party should be under license, and potentially shouldn't be a commercial

party, but suggested that it would be best to list out the options in a table so a clearer view could be provided. Another board member said that they struggled to see why the responsibility should move away from the DNOs, as this would represent the least change. A further board member agreed that something entirely new should not be created as this could risk undermining settlement.

4.4. A board member commented that the decision should be made based on what is best for consumers, and therefore the service should be independent and trusted. They noted that governance of this system will become more important in the future system so customers must remain at the heart of decision making. Another board member agreed, and asked whether the cost of the EDA should be kept low by limiting the use of the system, or whether innovation should be used to reduce the cost. They suggested a terms of reference for this service would make it clearer what kind of organisation could best facilitate the EDA. Another board member also agreed, and expressed the view that the EDA could attract new participants who aren't currently part of the energy market, for example tech companies looking to provide consumer insights. They suggested that factoring this in might help clarify who the correct owner and operator for the EDA might be. As the conversation drew to a close a board member reiterated their view that a table of pros and cons, or a set of principles and objectives would aid the decision on who should operate the service.

4.5. A board member added that they felt they would like to see more analysis of alternative architecture solutions, in particular the costs and the IT market context for this recommendation.

5. Next Steps (slide 23)   Jasmine Killen

5.1. JK set out the next steps for the AWG work, which is to publish a consultation on the AWG recommendation at the end of April, to consider the industry responses and

finalise the recommendation in June 2021. The programme will then move into the next phase, which is set out in the draft product description shared with the DAB before the meeting, so Ofgem welcomes the board's views on whether it is fit for purpose.

Attendees:

Anna Stacey (Ofgem – Chair)

Chris Allanson (Northern Powergrid)

David Crossman (Cornwall Energy)

Graham Oaks (Graham Oakes Ltd)

Ian Mitchell (AWG Ofgem Technical consultant)

Jasmine Killen (Ofgem)

Judith Ward (Sustainability First)

Justin Andrews (ELEXON)

Kevin Spencer (ELEXON)

Mark Bellman (Scottish Power)

Matt Basoo (ELEXON)

Mike Winter (SSE – AWG member)

Rick Hitchcock (Orsted)

Saskia Barker (Ofgem)