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MP085 ‘Synchronisation of smart meter voltage measurement periods’

February 2021 Working Group – meeting summary

Attendees

Attendee	Organisation
Ali Beard	SECAS
Bradley Baker	SECAS
Joe Hehir	SECAS
Harry Jones	SECAS
Holly Burton	SECAS
Rainer Lischetzki	SECAS
Anik Abdullah	SECAS
David Walsh	DCC
Abjiht Pal	DCC
Remi Oluwabamise	DCC
Simon Trivella	British Gas
Alex Hurcombe	EDF Energy
Laurie Walker	Gilmond Consulting
John Noad	Npower
Ralph Baxter	Octopus Energy
Michael Snowden	Secure Meters
Elias Hanna	Smart ADSL
Mahfuzar Rahman	Scottish Power
Matthew Alexander	SSEN
Rachel Norberg	Utilita
Gemma Slaney	WPD

Overview

The Smart Energy Code Administrator and Secretariat (SECAS) provided an overview of the issue identified by [MP085 ‘Synchronisation of smart meter voltage measurement periods’](#), the Data Communications Company (DCC) Preliminary Assessment, British Electrotechnical and Allied Manufacturers' Association (BEAMA) consultation responses and Technical Specifications version control.

Issue:

- Average Root Mean Squared (RMS) voltage readings do not start at consistent times as per Half-Hourly consumption data. Some Electricity Smart Metering Equipment (ESME) does work in this fashion, others do not.
- Requirement not explicitly codified in the Technical Specifications and the requirement has been interpreted differently by different Manufacturers, resulting in different functionality.
- Synchronised data must be recreated via setting a more granular recording period (1 min), downloading the more granular data, then calculating the required synchronised data. This requires transmitting 30x more data.
- Conservative, less efficient network investment decisions due to lack of data alignment.

Proposed Solution:

- Electricity Smart Metering Equipment (ESME) to commence calculating average RMS voltage reading at 00:00 or 00:30.
- Measurement period to have a maximum duration of 1,800 seconds.
- ESME to retain any existing entries in the Average RMS Voltage Profile Data Log relating to the period before the ESME was energised or a change in measurement period.

DCC Preliminary Assessment:

- SEC Appendix AD 'DCC User Interface Specification' (DUIS) updated Extensible Markup Language (XML) schema to be provided in the DCC's Impact Assessment.
- Data Services Provider (DSP) change only.
- Anticipated lead time of 2-months up to the end of Pre-integration Testing (PIT).
- Design, build and PIT costed between £100,000 to £200,000.
- DCC Impact Assessment costed at £8,645.12.

BEAMA consultation responses

- ESME Manufacturers can implement the Proposed Solution via a firmware upgrade for existing ESMEs with the complexity classed as medium.
- Based on MP085 being a single change the firmware upgrade is estimated at £50,000 to £200,000 per Manufacturer. SECAS has since investigated further with BEAMA who have clarified that for all Manufacturers to align to the proposed legal text would have an estimated combined cost of £450,000 to £550,000.
- Shorter measurement periods will not impact ESME performance/lifespan although the data log will fill more quickly.
- Edge case scenarios have been identified which BEAMA members would like to have included in the legal text.

Technical Specification versioning:

- It was initially proposed that current versions of SEC Technical Specifications will not have their Maintenance Validity Period (MVP) end-dated.
- If approved, MP085 will be implemented as part of a ESME Technical Specification (ESMETS) Sub-Version. For example, ESMETS v4.x and v5.x, and GBCS v3.x and v4.x.

Working Group discussions

The Issue

SECAS summarised the issue identified by the Proposer and the Working Group agreed that the issue was clear.

A Network Party commented that they have recently discovered that the issue can also occur with mis-aligned Half-Hourly consumption data. It believed that if this is causing issues for Suppliers, it should be resolved under MP085 for efficiency. The Network Party believed that the same ESME Manufacturers causing the issue identified by MP085 are most likely causing the same issue for mis-aligned Half-Hourly consumption data. As the data received by Network Parties is aggregated per Meter Point Administration Number (MPAN) the DNOs highlighted that they could not monitor this.

It was discussed that although likely to be a new proposal, to rectify the issue with consumption data would likely cover the same ground as MP085 and thus incur further cost. SECAS took an action, that, if agreed with the Proposer, a Request for Information will be issued to better understand the impact of mis-aligned Half-Hourly consumption data. SECAS will further liaise with the Proposer to determine if this should be included in the scope of this modification or raised separately.

Proposed Solution

Part of the Proposed Solution is for the ESME to retain any existing entries in the Average RMS Voltage Profile Data Log relating to the period before the ESME was energised or a change in measurement period. SECAS informed members that while refining the legal text, SEC Schedule 9 'Smart Metering Technical Specifications 2' states that 'ESME shall be capable of retaining all information held in its Data Store at all times, including on loss of power.'. As a result, part of the Proposed Solution is already codified within the SEC.

Scale of the issue

SECAS informed the Working Group that in 2020, Network Parties had provided data which identified that two meter Manufacturers are producing hardware/firmware that are causing the issue. It noted that this data was taken from the Network Parties' estates and may not cover all meter Manufacturers. The Network Party leading the analysis informed members that they have run a second set of analysis recently that has returned the same results.

DCC Preliminary Assessment

SECAS provided a summary of the key points found in the DCC Preliminary Assessment. A Working Group member asked whether this modification would impact ESME that are already commencing average RMS voltage measurement periods already. SECAS stated that this would be the case, due

to edge case scenarios identified by meter Manufacturers in the BEAMA consultation being incorporated into the Proposed Solution. By addressing these edge cases, the proposed legal text has become more explicit. This means that all meter Manufacturers would have to build ESME or provide firmware updates to existing ESME to adhere to the new Technical Specifications. This raised concerns regarding costs as it would be more expensive across the industry as opposed to making sure the only two Manufacturers identified to be causing the issue to rectify the problem.

BEAMA consultation responses

SECAS had produced a consultation for BEAMA to distribute to its members to understand if ESME currently installed could commence average RMS voltage readings on the hour or half past the hour (whichever comes first) by performing a firmware upgrade. The response was this could be done and that it was classified as a medium change in terms of complexity.

SECAS provided a list of the edge case scenarios that were identified by the BEAMA consultation responses. While amending the latest version of the draft legal text, SECAS identified areas whereby defining a 'complete period' addresses several edge cases and thus keeps the legal text concise. SECAS confirmed that these scenarios will not trigger error messages being sent to DNOs.

Further concern was raised regarding how the Proposed Solution impacts ESME that are already commencing their RMS voltage measurement periods on the hour or half past the hour. One of the edge case scenarios requests that incomplete periods are not logged when there is a supply interruption, a firmware update takes place, or a ESME's clock is reset. A Working Group member stated that this would impact a Manufacturer whose ESMEs' RMS voltage measurement periods align to the hour, as they would then have to alter their functionality to facilitate this new obligation.

Including these edge cases in the Proposed Solution will impact all ESME Manufacturers and will likely increase implementation costs. For the two identified Manufacturers to make a new standalone firmware upgrade, the cost is estimated at £50,000 to £200,000 per Manufacturer. SECAS has since investigated further with BEAMA who have clarified that for all Manufacturers to align to the proposed legal text would have an estimated combined cost of £450,000 to £550,000 (due to several Manufacturers already utilising certain functionality). The Working Group sought clarity on who is liable to pay for the proposed changes. It is commonplace that when Manufacturers produce new firmware, Suppliers must purchase the firmware at a cost, but this firmware upgrade would only benefit Network Parties.

A meter Manufacturer summarised the Proposed Solution whereby the Network Party must have the data alignment, whereas all other functionalities borne out of the BEAMA consultation are 'nice to have changes'. This will be reviewed with the Proposer and BEAMA.

Technical Specification versioning

SECAS informed members that it has been agreed with the Proposer that this modification will not result in current versions of the Technical Specifications being end-dated, thereby not forcing compliance. If approved, the modification would be implemented into Sub-Versions of the specifications. This raised the question of how the desired functionality can be implemented across the estate.

Network Parties stated that the assumption was that this modification would have a more straightforward solution of aligning the RMS voltage measurement periods to the hour or half past the

hour for ESME currently not doing so. The added functionality will drive up costs, where the majority of the costs will be covered by Suppliers. The Working Group agreed that this was of a concern.

Modifications resulting in retrospective changes

A Working Group members raised concerns that this modification results in a retrospective change with some of the costs being incurred by Suppliers who receive no clear benefit. The Working Group were concerned that MP085 will set a precedent for retrospective changes and, due to there being no clear benefit for Suppliers, if the cost allocation is reasonable for such a change. It was noted that Suppliers pick up the cost of firmware updates and so it is vital to pinpoint the implementation approach and the Devices it will apply to. A Network Party stated that if this modification does not address ESME currently installed that are causing the issue, the modification's benefit case is minimal. The Working Group suggested that the modification should only be applicable to meter Manufacturers whose ESME do not commence RMS voltage measurement periods on the hour or half past the hour.

Comments received outside of the Working Group

SECAS noted that they had received email comments around concerns that there would be an expectation that Meter Asset Providers (MAPs) and Suppliers will have to pay for the change.

Next Steps

The following actions were recorded from the meeting:

- SECAS to clarify with the Proposer the position on Half-Hourly consumption data mis-alignment.
- SECAS to discuss with the Proposer details within the Proposed Solution.
- SECAS to update the TABASC on modification progress.