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Paper Reference:	TABASC_92_0308_08
Action:	For Discussion

Update on MP165 Proposed Solutions

1. Purpose

The Panel has requested that the Smart Energy Code Administrator and Secretariat (SECAS) progresses [MP165 'ESME Voltage Accuracy'](#) to decision. SECAS has worked with the Proposer to develop a Proposed Solution and seeks the Technical Architecture and Business Architecture Sub-Committee's (TABASC's) views on each option.

2. MP165 'ESME Voltage Accuracy'

2.1 Overview

Electricity Network Parties have a statutory obligation to ensure that the voltage supplied to consumers' premises from Low Voltage electricity networks is always between defined limits. They currently do this by making planning assumptions when Low Voltage networks are designed.

When the Smart Energy Code (SEC) was first drafted, the Technical Specifications were silent on the voltage accuracy from Electricity Smart Metering Equipment (ESME). Such a requirement is not currently codified in the Smart Metering Equipment Technical Specifications (SMETS) or the Great Britain Companion Specification (GBCS).

The uncertainty associated with the lack of a mandated accuracy level means that Electricity Network Parties must make conservative planning assumptions when designing and analysing performance of Low Voltage networks. This prevents them from realising the full benefits from the smart meter rollout.

2.2 Proposed Solution

Codifying an agreed level of voltage accuracy

The Proposed Solution is to mandate a level of voltage accuracy across all ESME. The Proposed Solution will result in the ESME voltage accuracy level being codified within the latest version of the Electricity Smart Metering Equipment Technical Specifications (ESMETS).

The Proposed level of ESME voltage accuracy is to be agreed. The Proposer will put forward this value following analysis of the feedback provided by ESME Manufacturers and discussions with other Network Parties.

2.3 Feedback from industry

SECAS has presented the Proposed Solution to British Electrotechnical and Allied Manufacturers Association (BEAMA) and the Working Group. BEAMA members were unsupportive of the proposed change as they did not believe that the SEC was the correct place for this requirement to be held.

The Working Group (in June 2022) queried whether the voltage accuracy level should be captured in the SMETS which has been initially proposed. A Device Manufacturer representative raised that the SMETS was the wrong document and advised that it may sit outside of the SEC. They also commented that the Measuring Instruments Directive (MID) is a European standard and so the UK energy industry will not be able to amend the document. They advised that there is a UK equivalent titled the 'Measuring Instruments Regulations (MIR)'.

The Energy and Utilities Alliance (EUA) Chair showed concern with amending SMETS as it would set a precedent and advised that it should not be placed in that document because it is unclear where it should be placed. They later agreed that the MIR is the most suitable document.

A Large Supplier representative commented that the SMETS delivers compliance and interoperability. They added that including additional requirements will increase the number of non-complaint Devices. They summarised stating that if the smart ecosystem can work with the current set of Devices, the accuracy levels should be suitable.

2.4 Request for information

SECAS issued a request for information to Device Manufacturers to obtain information regarding each individual Manufacturer's Device accuracy. Four out of seven Manufacturers responded, with an accuracy range between $\pm 1\%$ and $\pm 0.3\%$.

The Manufacturers stated that the accuracy level is validated as part of the ESME design, with several Manufacturers carrying out tests from the production line during quality assessment. One Manufacturer commented that ESME built to the SMETS are not power quality Devices, and as such are not capable of measuring to an accuracy greater than 0.2%. They advised that to do this would require a major redesign and would increase the price of the product considerably.

2.5 What does ESMETS currently state an ESME must contain?

ESMETS currently states:

5.4 Physical Requirements

ESME shall as a minimum include the following components:

- i. a Clock;
- ii. a Data Store;
- iii. an Electricity Meter containing one measuring element;
- iv. a HAN Interface;
- v. a Load Switch;
- vi. a Random Number Generator;

vii. a User Interface; and

viii. where installed with a Communications Hub provided by the Data and Communications Company, a Communications Hub Physical Interface (this may comprise a Communications Hub Physical Interface forming part of GSME where present at the time of installation in the Premises)."

If the Proposed Solution is implemented, this will be required to change. Point iii will have to be changed to state that an Electricity Meter must contain two measuring elements in order to measure voltage (unless it is a Twin Element ESME which will require an additional measuring element). SMETS will also have to set out how the accuracy will be tested and enforced.

2.6 Questions for the TABASC

- Does the TABASC approve of the Proposed Solution?
- Is the 'Do Nothing' option more reasonable?
- Is there anything else to consider?

3. Next steps

- SECAS will update the MP165 Modification Report.
- SECAS to issue the Refinement Consultation.

4. Recommendations

The TABASC is requested to:

- **NOTE** the contents of this paper;
- **CONSIDER** the Proposed Solution for MP165; and
- **AGREE** advise whether the Proposed Solution should be progressed.

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27 July 2023

Attachments:

Appendix A: MP165 Modification Report v0.4