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MP085A 'Synchronisation of smart meter voltage measurement periods' Business requirements – version 1.2

About this document

Please note that these business requirements no longer meet the Proposed Solution and have been discarded. This document contains the business requirements that support the solution for this Modification Proposal. It sets out the requirements along with any assumptions and considerations. The DCC will use this information to provide an assessment of the requirements that help shape the complete solution.

1. Business requirements

This section contains the functional business requirements. Based on these requirements a full solution will be developed.

Business Requirements	
Ref.	**Requirement**
1	Electricity Smart Metering Equipment (ESME) to commence calculating the average Root Mean Square (RMS) voltage at 00:00 or 30:00 (whichever occurs first) of the first hour once the ESME has been first energised.
2	ESME to commence calculating the average RMS voltage at 00:00 or 30:00 (whichever occurs first) of the first hour after a command has been received to change the average RMS voltage measurement period.
3	ESME to continue to calculate the average RMS voltage at a frequency in accordance with the average RMS voltage measurement period, until a command is received to change the average RMS voltage measurement period.
4	Average RMS voltage measurement period is to be a ~~maximum~~ minimum duration of ~~1,800~~60 seconds with alternative periods being factors of 1,800 seconds.
5	ESME to retain any existing entries in the Average RMS Voltage Profile Data Log relating to the period before the ESME was energised or before a command to change the Average RMS Voltage Measurement Period**Error! Reference source not found.** has been received.
6	The MP085 solution shall not cause any changes to the current security access or rights.
7	The MP085 solution shall not cause any changes to the storage or network requirements.
8	The MP085 solution will not modify or create a new GBCS command/message.

2. Considerations and assumptions

This section contains the considerations and assumptions for each business requirement.

2.1 Requirement 1: Electricity Smart Metering Equipment (ESME) to commence calculating the average Root Mean Square (RMS) voltage at 00:00 or 30:00 (whichever occurs first) of the first hour once the ESME has been energised.

Regimenting the average RMS voltage calculation to commence at 00 or 30 of the hour will enable Distribution Network Operators to access data which can be used to analyse/monitor the performance of distribution networks and identify any problems that may occur more efficiently as it will align with half hourly consumption data.

2.2 Requirement 2: ESME to commence calculating the average RMS voltage at 00:00 or 30:00 (whichever occurs first) of the first hour after a command has been received to change the average RMS voltage measurement period.

Average RMS voltage calculations can be made across different measurement periods. It has been requested that when there is a command to change the measurement period, the ESME implements the new measurement period at 00 or 30 (whichever comes first) of the next hour after the receipt of the command.

2.3 Requirement 3: ESME to continue to calculate the average RMS voltage at a frequency in accordance with the average RMS voltage measurement period, until a command is received to change the average RMS voltage measurement period.

In order to ensure continuity and consistency of the data, the ESME should continue to calculate the average RMS voltage readings based on the same average RMS voltage measurement period until it receives a command to do otherwise.

2.4 Requirement 4: Average RMS voltage measurement period is be a maximum duration of 1,800 seconds with alternative periods being factors of 1,800 seconds.

In order to align average RMS voltage readings with half hourly consumption data, the default duration should be set to 1,800 seconds (30 minutes). Alternative periods will be configurable from a range of factors of 1,800. The full range of permissible average RMS voltage measurement periods can be found in the table below. The minimum measurement period shall be 60 seconds. This will allow more granular average RMS voltage data to be available to monitor and analyse network voltages in greater detail, where required, allowing for more efficient design and operation of distribution networks.

Average RMS voltage measurement period	
Seconds	Minutes
~~10~~	~~00:10~~
~~15~~	~~00:15~~
~~30~~	~~00:30~~

Average RMS voltage measurement period	
Seconds	**Minutes**
60	01:00
72	01:12
75	01:15
90	01:30
100	01:40
120	02:00
150	02:30
180	03:00
200	03:20
225	03:45
300	05:00
360	06:00
450	07:30
600	10:00
900	15:00
1,800	30:00

2.5 Requirement 5: ESME to retain any existing entries in the Average RMS Voltage Profile Data Log relating to the period before the ESME was energised or before a command to change the Average RMS Voltage Measurement Period Error! Reference source not found. has been received.

In order to ensure that all the potential 4320 entries are available to monitor and analyse network voltages allowing for more efficient design and operation of distribution networks.

2.6 Requirement 6: The MP085 solution shall not cause any changes to the current security access or rights.

The proposed solution of MP085 will not require any changes to what is currently in place regarding security access or rights. The security access and rights currently specified in the SEC will support this modification sufficiently.

2.7 Requirement 7: The MP085 solution shall not cause any changes to the storage or network requirements.

The proposed solution of MP085 will not require any changes to current storage and network requirements. The storage and network requirements currently specified in the SEC will support this modification sufficiently.

2.8 Requirement 8: The MP085 solution will not modify or create a new GBCS command/message.

The MP085 solution will restrict when an RMS voltage measurement period will take place. The solution will use existing commands without any change to transfer the value into the ESME. The ESME will receive the command and align it with its clock to commence at 00:00 or 00:30. To clarify there is no change to how the message is transferred after it has passed the new DCC User Interface Specification (DUIS) validation (as part of the MP085 solution).

3. Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	**Full term**
DCC	Data Communications Company
DUIS	DCC User Interface Specification
ESME	Electricity Smart Metering Equipment
RMS	Root Mean Square