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# **SECMP0018**

## **‘Standard Electricity Distributor Configuration Settings’**

### **Modification Report**

#### **Version 2.0**

Administered by



## About this document

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This document is the Modification Report for [SECMP0018 'Standard Electricity Distributor Configuration Settings'](#). It provides detailed information on the background, issue, solution, costs, impacts and implementation approach. It also summarises the discussions that have been held and the conclusions reached with respect to this Modification Proposal.

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This document also has three annexes:

- **Annex A** contains the draft legal text changes to support this modification;
- **Annex B** contains the solution design document to support this modification; and
- **Annex C** contains the full Working Group Consultation responses.

## 1. Summary

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Currently, Electricity Network Parties (ENPs) are required to configure new Electricity Smart Metering Equipment (ESMEs) with appropriate settings through relevant Service Requests as soon as the meter has been installed and commissioned. The configuration of ESMEs needs to occur for every new meter installation to set thresholds for voltage events on the ESP's network. This process is expected to be a burden to the ENPs because these settings only have minor differences from one ESME to the next.

The proposed solution is to require Manufacturers to populate ESMEs with standard configuration settings. ENPs have agreed a common set of configurations that should be set at installation. These settings would be captured in the GB Companion Specification (GBCS), thereby mandating Suppliers to ensure that procured ESMEs from Manufacturers contain the default settings. SECMP0018 will add a plain English table of the Standard Electricity Distributor Configuration Settings to GBCS.

The modification will impact all Supplier Parties, Electricity Network Parties and Other SEC Parties. There are no system changes required. The total estimated implementation cost to deliver SECMP0018 is approximately £1,200 which consists of SEC Administration effort.

The Panel agreed an implementation date of:

- 27 June 2019, if a decision to approve is made by 30 May 2019.

## 2. Background

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### Background

The Smart Metering Equipment Technical Specifications (SMETS) require that ESMEs can record a range of voltage related information and send a range of voltage related Alerts. The SMETS also outline several Configuration Data Items that ESME must use to control such voltage related recording.

Currently, ENPs update a newly installed and commissioned ESME's configuration settings as they see fit. However, a lot of the time, an ESME is set to the same standard set of configurations. ENPs have therefore requested that a set of default configurable data items be made available to manufacturers to be applied to all ESMEs pre-commissioning.

### What is the issue?

GBCS specifies Use Cases which allow manufacturers to set the values of the configuration data items on ESMEs. GBCS does not specify any default values for voltage related Alerts and events that would be configured before an ESME is installed. Only when configured by an Electricity Distributor will an ESME report voltage related data on the basis of potentially varying configuration values.

The British Electrotechnical and Allied Manufacturers Association (BEAMA) noted that if meter manufacturers had knowledge of the requested configurations then they could pre-populate the relevant fields in the Smart Meter data structure in order to facilitate the manufacturing and testing process. Through the Energy Networks Association (ENA), ENPs have agreed a common set of default configuration settings. Both BEAMA and the Technical Specification Issue Resolution Subgroup (TSIRS) were comfortable with the proposed settings.

With all ESMEs containing these settings at the point of manufacture, ENPs will only need to update these fields when a change is required to the existing default data, on a case-by-case basis; therefore, fewer Service Requests will need to be sent. This would result in a reduction in DCC traffic, or enable the traffic to be scheduled to reduce the impact on the DCC systems, thus increasing the efficiency of the Smart Meter installation.

### 3. Solution

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#### Proposed Solution

SECMP0018 aims to mandate meter Manufacturers, through the GBCS, to populate all ESMEs with a set of default configuration settings. ENPs would then only need to use Service Request SR 6.5 (Update Device Configuration (Voltage)) if they require specific settings for a particular ESME upon installation.

ENPs will still be able to configure individual or multiple ESMEs with more stringent or lax configurations, if needed, through the relevant Service Requests.

To deliver the Functional Requirements the following changes are required to GBCS:

- The voltage related Alert and event default configurations in GBCS section 16.2 would be amended; and
- The other voltage related configuration data items' default values would be added to GBCS Annex 7 'Data Item Values to be set prior to installation of Devices'.

The changes in this Modification would not affect the structure of any of the existing Use Cases, and so do not require changes to the DCC User Interface Specification (DUIS), Message Mapping Catalogue (MMC) or Data Service Provider (DSP) systems.

The agreed standard ENP Configuration Settings as well as more detailed solution requirements can be found in Annex B.

#### Legal text

The agreed legal text changes to SEC Schedule 8 'GB Companion Specification' version 3.1 are provided in Annex A. We will develop the changes to Schedule 11 'TS Applicability Tables' in conjunction with the Technical Architecture and Business Architecture Sub-Committee (TABASC) as part of this modification's implementation.

## 4. Impacts

This section summarises the impacts that would arise from the implementation of this modification.

### SEC Parties

| SEC Party Categories impacted |                               |   |                       |
|-------------------------------|-------------------------------|---|-----------------------|
| ✓                             | Large Suppliers               | ✓ | Small Suppliers       |
| ✓                             | Electricity Network Operators |   | Gas Network Operators |
| ✓                             | Other SEC Parties             |   | DCC                   |

SECMP0018 seeks to mandate that all ESMEs are prepopulated with standard default ENP settings; Suppliers would need to arrange this with their meter manufacturers, to ensure this takes place.

The standard configurations would apply immediately upon the installation and commissioning of the meter is completed. Consequently, ENPs will be able to focus on meters that require a non-default configuration on a case by case basis.

Meter manufacturers will need to test and configure smart meters with the ENPs' standard configuration settings.

There are no further impacts on Parties anticipated.

### DCC Systems

There are no impacts on DCC Central Systems.

### SEC and subsidiary documents

The following parts of the SEC will be impacted:

- SEC Schedule 8 'GB Companion Specification'
- SEC Schedule 11 'TS Applicability Tables'

### Other industry Codes

There are no other industry codes impacted by this change.

### Greenhouse gas emissions

There are no Greenhouse Gas Emission impacts anticipated.

## 5. Costs

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### DCC costs

The DCC has confirmed that SECMP0018 will not incur any costs or impact on its central systems irrespective of whether the modification is implemented as part of a SEC Release or as a standalone change. However, it would be beneficial to implement this change alongside other GBCS changes for efficiency around version uplifts, although this is not essential.

### SECAS costs

The estimated SECAS implementation costs to implement this modification is two days of effort, amounting to approximately £1,200. The activities needed to be undertaken for this are:

- Updating the SEC and releasing the new version to the industry.

### SEC Party costs

One meter manufacturer stated that they would incur costs as a result of this modification, but otherwise there were no other SEC Party costs associated with the modification.

## 6. Implementation approach

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### Recommended implementation approach

The Panel has agreed an implementation date for SECMP0018 of:

- **27 June 2019** (June 2019 SEC Release), if a decision to approve is made by **30 May 2019**.

The DCC has confirmed this modification will not impact DCC Systems. It will generate a new version of GBCS, but the changes are text-only. Due to there being no systems impacts, this modification can be implemented with a short lead time and does not need to be implemented alongside other GBCS changes. We recommend that the June 2019 SEC Systems Release is the earliest scheduled SEC Release to include this modification in. This will allow time for any SEC Parties who need to account for this change to prepare for this, while not unduly delaying implementation. This will also allow time for the relevant changes to Schedule 11 to be developed and agreed.



## 7. Discussions and development

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### BEIS Change Request Proposal 412

There were concerns regarding a potential conflict between BEIS's Change Request Proposal (CRP) 412: 'Events and Alerts (consolidated) PART 2' and SECMP0018. CRP412 sought to update Alert Codes in the GBCS in time for Release 2.0. The period between the implementation of CRP412 and SECMP0018 will mean that there will be some ESME that are not configured to the ENPs' requirements upon installation. BEIS confirmed in February 2018 that the ENPs' configurable data items had been partially designated in Release 2.0.

### Retrospective amendments to ESMEs already installed

The Working Group agreed that SECMP0018 will not mandate any parties to update this information on meters that have already been installed. It will only apply to meters that are installed after this date. From the implementation of SECMP0018 onwards, ESMEs will be required to be pre-configured with these default settings prior to installation.

### Frequency of changes to the default values

The Working Group raised a concern that the default values may change in the future, causing Manufacturers to constantly need to update the required firmware, and queried how frequently this might happen. However, ENPs have noted that this list is not expected to change in the short to medium term, and that any changes would likely be in the long term.

### Impact on DCC

DCC initially noted that the solution agreed for SECMP0018 is unlikely to have any DCC impact as it is only proposing to add text into the GBCS. It later confirmed that there would be no DCC impact or cost associated with implementing SECMP0018, even as a standalone change.

However, as SECMP0018 is impacting the GBCS document, it would result in a GBCS version uplift. DCC suggested that SECMP0018 should be included into a Release with other changes being made to the GBCS, which would avoid any further testing costs being incurred.

BEIS initially advised that SECMP0018 would need to be subject to EC notification as it proposes a change to functionality already notified. It was later confirmed by BEIS that this notification would not be needed.

### The interim approach

During the assessment of this modification, SECAS discovered that SEC Appendix AC 'Inventory Enrolment and Withdrawal Procedures' clause 3.3 states that it is the Responsible Supplier's obligation to take all reasonable steps to ensure that data items are configured in accordance to the Electricity Distributor's requirements. Therefore, Suppliers should be informing Manufacturers about the ENPs' standard configuration settings. To facilitate this the ENA developed an engineering recommendation document that specifies the default values for the relevant configurable data items that ENPs require to be configured on each ESME. SECAS developed a guidance document to

accompany this, which is available on the SEC website. This interim solution will help reduce the number of ESMEs developed without the ENPs' default configuration settings.

### **Progression of this modification**

The Panel originally determined that SECMP0018 to be progressed as a Path 2 'Authority-Determination' modification (SEC Section D2.6(b)) as SECMP0018 was considered to have a material impact on ESMEs. BEIS had initially advised that SECMP0018 would need to be subject to EC notification as it proposes a change to functionality already notified. It was later confirmed by BEIS that this notification would not be needed given the revision to the solution with it not being materially impacting, therefore it was approved to be changed from a Path 2 'Authority-Determination' to a Path 3 'Self-Governance' modification.

This modification was Sent Back by the Change Board on 22nd August 2018 due to not clarifying the full costs of implementation as a standalone change, which the SEC Panel agreed to and subsequently sent back to the Working Group to await the full implementation costs. Following this, SECAS received the full implementation costs from DCC on 15th November 2018, confirming there would be no impact or cost on DCC to implement SECMP0018 as a standalone change.

### **Comments on the legal text**

One Working Group Consultation respondent queried whether the legal text had been validated by the ENA. SECAS responded that this had been confirmed by the ENA.

Another respondent was neutral to the legal text, specifying that they do not use GBCS in detail so therefore they felt other respondents were better positioned to comment.

All other respondents agreed with the legal text.

## 8. Conclusions

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### Benefits and drawbacks

The Proposer and the Working Group have identified the following benefits and drawbacks in implementing this modification:

#### Benefits

- This change will improve efficiency for ENPs. Currently, they are required to check every new meter that is installed to make sure these settings are correct. Following SECMP0018, they will only need to configure ESMEs that need a configuration different from the default settings.
- The number of alerts that ENPs and Suppliers will receive due to incorrect information on the ESME is expected to be reduced, reducing their workload in responding to these. This will also mitigate the risk of errors or issues from arising that could negatively impact the consumer.
- The modification will reduce Service Request traffic in the DCC's systems, as the ENPs will only need to update the settings when a different setting is required to the default data. This will result in fewer Service Requests needing to be sent.
- Additionally, the solution being proposed delivers no alterations to the structure of any of the existing Use Cases, and so does not require changes to DUIS, MMC or DSP systems. This is beneficial due to only requiring legal text changes to the GBCS. Furthermore, placing the values within the GBCS document will ensure that these values are taken as part of the baseline for future modifications and will not be overlooked.

#### Drawbacks

- The Working Group identified one drawback with the modification where ENPs may have to complete a back-filling exercise in order to calibrate their internal systems as a result of the selected solution for SECMP0018. However, they felt the long-term benefits outweighed the impacts of this one-off activity.

### General SEC Objectives

#### Objective (a)

The Working Group believes that SECMP0018 will better facilitate the efficient provision, installation, operation and interoperability of ESMEs as it will better enable the ENPs to define network events to provide operational and planning related information. This is due to parameters, particularly the voltage thresholds and measurement periods, being pre-configured to the default settings sought by ENPs. It will also reduce the traffic in DCC systems and allow the traffic to be scheduled to reduce the overall impact on the DCC systems.

### **Objective (e)**

The Working Group believes that SECMP0018 will better facilitate innovation in the design and operation of Energy Networks due to the provision of information to the ENPs on the performance of distribution networks. This information could be utilised to help develop improvements economically, in efficiency and in co-ordination for Network Providers by allowing ENPs to better explore innovative design and operational approaches.

### **Working Group members' views**

The Working Group's unanimous view is that SECMP0018 better facilitates General SEC Objectives (a) and (e) and should be approved.

### **Consultation respondents' views**

All Working Group Consultation respondents agreed that the modification should be approved and that it better facilitates the General SEC Objectives.

One respondent believed that the modification's solution only better facilitates General SEC Objective (a) <sup>1</sup> and not (e) <sup>2</sup>. They believed (a) is improved by increasing the efficiency with which standardised default values are set on electricity Smart Meters prior to installation. They stated they didn't believe that the modification better facilitates objective (e) due to seeing no benefit to the delivery of a secure and sustainable Supply of Energy via the design and operation of Energy Networks, as a result of removing the requirement for Network Operators to update the default values on electricity Smart Meters post-installation.

### **Panel's conclusions**

The Panel agreed at its December 2018 meeting that this report should proceed to Modification Report Consultation.

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<sup>1</sup> Facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers' premises within Great Britain.

<sup>2</sup> Facilitate such innovation in the design and operation of Energy Networks (as defined in the DCC Licence) as will best contribute to the delivery of a secure and sustainable Supply of Energy.

## Appendix 1: Glossary

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

| Glossary |   |
|----------|---|
| Acronym  | Full term   |
| ALT HAN  | Alternative Home Area Network                                 |
| BEAMA    | British Electrotechnical and Allied Manufacturers Association |
| BEIS     | Department for Business Energy and Industrial Strategy        |
| DCC      | Data Communications Company                                   |
| DUIS     | DCC User Interface Specification                              |
| DSP      | Data Service Provider   |
| EC       | European Commission   |
| ENA      | Energy Networks Association                                   |
| ENP      | Energy Network Parties (SEC term)                             |
| ESME     | Electricity Smart Metering Equipment                          |
| GBCS     | Great Britain Companion Specification                         |
| IRP      | Issue Resolution Proposal                                     |
| MMC      | Message Mapping Catalogue                                     |
| SMETS    | Smart Metering Equipment Technical Specifications             |
| TSIRS    | Technical Specification Issue Resolution Subgroup             |
| SEC      | Smart Energy Code   |
| SMKI PMA | Smart Metering Key Infrastructure Policy Management Authority |
| SR       | Service Request   |



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# SECMP0018 ‘Standard Electricity Distributor Configuration Settings’

## Annex A

### Legal text – Version 1.0

#### About this document

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This document contains the redlined changes to the SEC that would be required to deliver this Modification Proposal.

We have redlined these changes against SEC Version 6.2.

## Schedule 8 'GB Companion Specification' Version 3.0

### Amend tables 28a and 28b in Annex 7 as follows:

Tables 28a and 28b lists data items and values that shall be configured in Devices prior to installation.

| Device                     | Data Item   | Reference             | Value                  | Notes   |
|----------------------------|---|-----------------------|------------------------|---|
| ESME (all variants)        | Maximum Meter Balance Threshold                     | SMETS 5.7.4.27        | 300,000,000 millipence | NA  |
| ESME (all variants)        | Randomised Offset Limit                             | SMETS 5.7.4.33        | 600 seconds            | The Randomised Offset Is the product of the Randomised Offset Limit(5.7.4.33) and the Randomised Offset Number(5.7.1.5) rounded to the nearest second. This value is used to delay the Tariff Switching Table times, the Auxiliary Load Control Switch switching times, and HAN Connected Auxiliary Load Control Switch switching times |
| <u>ESME (all variants)</u> | <u>RMS Extreme Over Voltage Threshold</u>           | <u>SMETS 5.7.4.35</u> | <u>265.0 volts</u>     | <u>GBCS Use Cases specify a resolution to tenths of volts</u>   |
| <u>ESME (all variants)</u> | <u>RMS Extreme Over Voltage Measurement Period</u>  | <u>SMETS 5.7.4.34</u> | <u>180 seconds</u>     | <u>NA</u>   |
| <u>ESME (all variants)</u> | <u>RMS Extreme Under Voltage Threshold</u>          | <u>SMETS 5.7.4.37</u> | <u>190.0 volts</u>     | <u>NA</u>   |
| <u>ESME (all variants)</u> | <u>RMS Extreme Under Voltage Measurement Period</u> | <u>SMETS 5.7.4.36</u> | <u>180 seconds</u>     | <u>NA</u>   |
| <u>ESME (all variants)</u> | <u>RMS Voltage Sag Threshold</u>                    | <u>SMETS 5.7.4.40</u> | <u>190.0 volts</u>     | <u>NA</u>   |
| <u>ESME (all variants)</u> | <u>RMS Voltage Sag Measurement Period</u>           | <u>SMETS 5.7.4.38</u> | <u>180 seconds</u>     | <u>NA</u>   |
| <u>ESME (all variants)</u> | <u>RMS Voltage Swell Threshold</u>                  | <u>SMETS 5.7.4.41</u> | <u>265.0 volts</u>     | <u>NA</u>   |
| <u>ESME (all variants)</u> | <u>RMS Voltage Swell Measurement Period</u>         | <u>SMETS 5.7.4.39</u> | <u>180 seconds</u>     | <u>NA</u>   |



| Device                              | Data Item   | Reference                                | Value                          | Notes              |
|-------------------------------------|---|--|--------------------------------|--------------------|
| <a href="#">ESME (all variants)</a> | <a href="#">(Phase[1]) Average RMS Voltage Measurement Period</a>     | <a href="#">SMETS 5.7.4.6 (5.19.1.3)</a> | <a href="#">1800 seconds</a>   | <a href="#">NA</a> |
| <a href="#">ESME (all variants)</a> | <a href="#">(Phase[1]) Average RMS Under Voltage Threshold</a>        | <a href="#">SMETS 5.7.4.5 (5.19.1.2)</a> | <a href="#">212.0 volts</a>    | <a href="#">NA</a> |
| <a href="#">ESME (all variants)</a> | <a href="#">(Phase[1]) Average RMS Over Voltage Threshold</a>         | <a href="#">SMETS 5.7.4.4 (5.19.1.1)</a> | <a href="#">258.0 volts</a>    | <a href="#">NA</a> |
| <a href="#">Polyphase ESME</a>      | <a href="#">Phase[2] Average RMS Voltage Measurement Period</a>       | <a href="#">SMETS 5.19.1.3</a>           | <a href="#">1800 seconds</a>   | <a href="#">NA</a> |
| <a href="#">Polyphase ESME</a>      | <a href="#">Phase[2] Average RMS Under Voltage Threshold</a>          | <a href="#">SMETS 5.19.1.2</a>           | <a href="#">212.0 volts</a>    | <a href="#">NA</a> |
| <a href="#">Polyphase ESME</a>      | <a href="#">Phase[2] Average RMS Over Voltage Threshold</a>           | <a href="#">SMETS 5.19.1.1</a>           | <a href="#">258.0 volts</a>    | <a href="#">NA</a> |
| <a href="#">Polyphase ESME</a>      | <a href="#">Phase[3] Average RMS Voltage Measurement Period</a>       | <a href="#">SMETS 5.19.1.3</a>           | <a href="#">1800 seconds</a>   | <a href="#">NA</a> |
| <a href="#">Polyphase ESME</a>      | <a href="#">Phase[3] Average RMS Under Voltage Threshold</a>          | <a href="#">SMETS 5.19.1.2</a>           | <a href="#">212.0 volts</a>    | <a href="#">NA</a> |
| <a href="#">Polyphase ESME</a>      | <a href="#">Phase[3] Average RMS Over Voltage Threshold</a>           | <a href="#">SMETS 5.19.1.1</a>           | <a href="#">258.0 volts</a>    | <a href="#">NA</a> |
| <a href="#">ESME (all variants)</a> | <a href="#">Maximum Demand Configurable Time Period: - start time</a> | <a href="#">SMETS 5.7.4.26</a>           | <a href="#">16:00 in hh:mm</a> |                    |
| <a href="#">ESME (all variants)</a> | <a href="#">Maximum Demand Configurable Time Period:- end time</a>    | <a href="#">SMETS 5.7.4.26</a>           | <a href="#">20:00 in hh:mm</a> |                    |

Table 28a: Data items and values to be configured prior to installation of Devices

| Data Item  | Reference                      | COSEM class ID     | OBIS Code                      | Attribute ID      | Attribute Name                              | COSEM datatype                       | Encoded value              | Decoded value        |
|--|--------------------------------|--------------------|--------------------------------|-------------------|---|--------------------------------------|----------------------------|----------------------|
| Maximum Meter Balance Threshold                              | SMETS 5.7.4.27                 | 9000               | 0-0:94.44.2.20                 | 4                 | value_passive                               | double-long                          | 0x11E1A300                 | 300,000,000          |
| Randomised Offset Limit                                      | SMETS 5.7.4.33                 | 1                  | 0-0:94.44.0.1                  | 2                 | value                                       | long-unsigned                        | 0x0258                     | 600                  |
| <a href="#">RMS Extreme Over Voltage Threshold</a>           | <a href="#">SMETS 5.7.4.35</a> | <a href="#">71</a> | <a href="#">0-0:17.0.1.255</a> | <a href="#">4</a> | <a href="#">threshold_normal</a>            | <a href="#">double-long-unsigned</a> | <a href="#">0x00000A5A</a> | <a href="#">2650</a> |
| <a href="#">RMS Extreme Over Voltage Measurement Period</a>  | <a href="#">SMETS 5.7.4.34</a> | <a href="#">71</a> | <a href="#">0-0:17.0.1.255</a> | <a href="#">6</a> | <a href="#">min_over_threshold_duration</a> | <a href="#">double-long-unsigned</a> | <a href="#">0x000000B4</a> | <a href="#">180</a>  |
| <a href="#">RMS Extreme Under Voltage Threshold</a>          | <a href="#">SMETS 5.7.4.37</a> | <a href="#">71</a> | <a href="#">0-0:17.0.2.255</a> | <a href="#">4</a> | <a href="#">threshold_normal</a>            | <a href="#">double-long-unsigned</a> | <a href="#">0x0000076C</a> | <a href="#">1900</a> |
| <a href="#">RMS Extreme Under Voltage Measurement Period</a> | <a href="#">SMETS 5.7.4.36</a> | <a href="#">71</a> | <a href="#">0-0:17.0.2.255</a> | <a href="#">6</a> | <a href="#">min_over_threshold_duration</a> | <a href="#">double-long-unsigned</a> | <a href="#">0x000000B4</a> | <a href="#">180</a>  |
| <a href="#">RMS Voltage Sag Threshold</a>                    | <a href="#">SMETS 5.7.4.40</a> | <a href="#">71</a> | <a href="#">0-0:17.0.3.255</a> | <a href="#">4</a> | <a href="#">threshold_normal</a>            | <a href="#">double-long-unsigned</a> | <a href="#">0x0000076C</a> | <a href="#">1900</a> |
| <a href="#">RMS Voltage Sag Measurement Period</a>           | <a href="#">SMETS 5.7.4.38</a> | <a href="#">71</a> | <a href="#">0-0:17.0.3.255</a> | <a href="#">6</a> | <a href="#">min_over_threshold_duration</a> | <a href="#">double-long-unsigned</a> | <a href="#">0x000000B4</a> | <a href="#">180</a>  |
| <a href="#">RMS Voltage Swell Threshold</a>                  | <a href="#">SMETS 5.7.4.41</a> | <a href="#">71</a> | <a href="#">0-0:17.0.4.255</a> | <a href="#">4</a> | <a href="#">threshold_normal</a>            | <a href="#">double-long-unsigned</a> | <a href="#">0x00000A5A</a> | <a href="#">2650</a> |
| <a href="#">RMS Voltage Swell</a>                            | <a href="#">SMETS 5.7.4.39</a> | <a href="#">71</a> | <a href="#">0-0:17.0.4.255</a> | <a href="#">6</a> | <a href="#">min_over_threshold</a>          | <a href="#">double-long-</a>         | <a href="#">0x000000B4</a> | <a href="#">180</a>  |

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| Data Item   | Reference                                | COSEM class ID    | OBIS Code                       | Attribute ID      | Attribute Name                 | COSEM datatype                       | Encoded value              | Decoded value        |
|---|--|-------------------|---------------------------------|-------------------|--------------------------------|--------------------------------------|----------------------------|----------------------|
| <a href="#">Measurement Period</a>                                |  |                   |                                 |                   | <a href="#">old_duration</a>   | <a href="#">unsigned</a>             |                            |                      |
| <a href="#">(Phase[1]) Average RMS Voltage Measurement Period</a> | <a href="#">SMETS 5.7.4.6 (5.19.1.3)</a> | <a href="#">7</a> | <a href="#">1-0:32.24.0.255</a> | <a href="#">4</a> | <a href="#">capture_period</a> | <a href="#">double-long-unsigned</a> | <a href="#">0x00000708</a> | <a href="#">1800</a> |
| <a href="#">(Phase[1]) Average RMS Under Voltage Threshold</a>    | <a href="#">SMETS 5.7.4.5 (5.19.1.2)</a> | <a href="#">1</a> | <a href="#">1-0:32.31.0.4</a>   | <a href="#">2</a> | <a href="#">value</a>          | <a href="#">double-long-unsigned</a> | <a href="#">0x00000848</a> | <a href="#">2120</a> |
| <a href="#">(Phase[1]) Average RMS Over Voltage Threshold</a>     | <a href="#">SMETS 5.7.4.4 (5.19.1.1)</a> | <a href="#">1</a> | <a href="#">1-0:32.35.0.4</a>   | <a href="#">2</a> | <a href="#">value</a>          | <a href="#">double-long-unsigned</a> | <a href="#">0x00000A14</a> | <a href="#">2580</a> |
| <a href="#">Phase[2] Average RMS Voltage Measurement Period</a>   | <a href="#">SMETS 5.19.1.3</a>           | <a href="#">7</a> | <a href="#">1-0:52.24.0.255</a> | <a href="#">4</a> | <a href="#">capture_period</a> | <a href="#">double-long-unsigned</a> | <a href="#">0x00000708</a> | <a href="#">1800</a> |
| <a href="#">Phase[2] Average RMS Under Voltage Threshold</a>      | <a href="#">SMETS 5.19.1.2</a>           | <a href="#">1</a> | <a href="#">1-0:52.31.0.4</a>   | <a href="#">2</a> | <a href="#">value</a>          | <a href="#">double-long-unsigned</a> | <a href="#">0x00000848</a> | <a href="#">2120</a> |
| <a href="#">Phase[2] Average RMS Over Voltage Threshold</a>       | <a href="#">SMETS 5.19.1.1</a>           | <a href="#">1</a> | <a href="#">1-0:52.35.0.4</a>   | <a href="#">2</a> | <a href="#">value</a>          | <a href="#">double-long-unsigned</a> | <a href="#">0x00000A14</a> | <a href="#">2580</a> |
| <a href="#">Phase[3] Average RMS Voltage Measurement Period</a>   | <a href="#">SMETS 5.19.1.3</a>           | <a href="#">7</a> | <a href="#">1-0:72.24.0.255</a> | <a href="#">4</a> | <a href="#">capture_period</a> | <a href="#">double-long-unsigned</a> | <a href="#">0x00000708</a> | <a href="#">1800</a> |

| Data Item  | Reference                      | COSEM class ID    | OBIS Code                     | Attribute ID      | Attribute Name        | COSEM datatype                       | Encoded value              | Decoded value        |
|--|--------------------------------|-------------------|-------------------------------|-------------------|-----------------------|--------------------------------------|----------------------------|----------------------|
| <a href="#">Phase[3] Average RMS Under Voltage Threshold</a> | <a href="#">SMETS 5.19.1.2</a> | <a href="#">1</a> | <a href="#">1-0:72.31.0.4</a> | <a href="#">2</a> | <a href="#">value</a> | <a href="#">double-long-unsigned</a> | <a href="#">0x00000848</a> | <a href="#">2120</a> |
| <a href="#">Phase[3] Average RMS Over Voltage Threshold</a>  | <a href="#">SMETS 5.19.1.1</a> | <a href="#">1</a> | <a href="#">1-0:72.35.0.4</a> | <a href="#">2</a> | <a href="#">value</a> | <a href="#">double-long-unsigned</a> | <a href="#">0x00000A14</a> | <a href="#">2580</a> |

Table 28b: DLMS COSEM values to be configured in Devices at manufacture.

Add tables 28c and 28d as follows:

| <a href="#">Event / Alert Code</a> | <a href="#">Event / Alert Code Meaning</a>   | <a href="#">Default Configuration - Send WAN Alert</a><br><a href="#">Y = Send Alert</a><br><a href="#">N = Do not send Alert</a> | <a href="#">Default Configuration - Store Alert in Power Event Log</a><br><a href="#">Y = Store in log</a><br><a href="#">N = Do not store in log</a> |
|------------------------------------|--|---|---|
| <a href="#">0x8002</a>             | <a href="#">Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)</a>             | <a href="#">Y</a>   | <a href="#">Y</a>   |
| <a href="#">0x8003</a>             | <a href="#">Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)</a>  | <a href="#">Y</a>   | <a href="#">Y</a>   |
| <a href="#">0x8004</a>             | <a href="#">Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 2 (current value above threshold; previous value below threshold)</a>  | <a href="#">Y</a>   | <a href="#">Y</a>   |
| <a href="#">0x8005</a>             | <a href="#">Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 3 (current value above threshold; previous value below threshold)</a>  | <a href="#">Y</a>   | <a href="#">Y</a>   |
| <a href="#">0x8006</a>             | <a href="#">Average RMS Voltage below Average RMS Under Voltage Threshold (current value below threshold; previous value above threshold)</a>            | <a href="#">Y</a>   | <a href="#">Y</a>   |
| <a href="#">0x8007</a>             | <a href="#">Average RMS Voltage below Average RMS Under Voltage Threshold on Phase 1 (current value below threshold; previous value above threshold)</a> | <a href="#">Y</a>   | <a href="#">Y</a>   |
| <a href="#">0x8008</a>             | <a href="#">Average RMS Voltage below Average RMS Under Voltage Threshold on Phase 2 (current value below threshold; previous value above threshold)</a> | <a href="#">Y</a>   | <a href="#">Y</a>   |

| <u>Event / Alert Code</u> | <u>Event / Alert Code Meaning</u>   | <u>Default Configuration - Send WAN Alert</u><br><u>Y = Send Alert</u><br><u>N = Do not send Alert</u> | <u>Default Configuration - Store Alert in Power Event Log</u><br><u>Y = Store in log</u><br><u>N = Do not store in log</u> |
|---------------------------|---|--|--|
| <u>0x8002</u>             | <u>Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)</u>             | <u>Y</u>   | <u>Y</u>   |
| <u>0x8003</u>             | <u>Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)</u>  | <u>Y</u>   | <u>Y</u>   |
| <u>0x8009</u>             | <u>Average RMS Voltage below Average RMS Under Voltage Threshold on Phase 3 (current value below threshold; previous value above threshold)</u> | <u>Y</u>   | <u>Y</u>   |
| <u>0x8020</u>             | <u>RMS Voltage above Extreme Over Voltage Threshold (voltage rises above for longer than the configurable period)</u>                           | <u>Y</u>   | <u>Y</u>   |
| <u>0x8021</u>             | <u>RMS Voltage above Extreme Over Voltage Threshold on Phase 1 (voltage rises above for longer than the configurable period)</u>                | <u>Y</u>   | <u>Y</u>   |
| <u>0x8022</u>             | <u>RMS Voltage above Extreme Over Voltage Threshold on Phase 2 (voltage rises above for longer than the configurable period)</u>                | <u>Y</u>   | <u>Y</u>   |
| <u>0x8023</u>             | <u>RMS Voltage above Extreme Over Voltage Threshold on Phase 3 (voltage rises above for longer than the configurable period)</u>                | <u>Y</u>   | <u>Y</u>   |
| <u>0x8024</u>             | <u>RMS Voltage above Voltage Swell Threshold (voltage rises above for longer than the configurable period)</u>                                  | <u>N</u>   | <u>N</u>   |
| <u>0x8025</u>             | <u>RMS Voltage above Voltage Swell Threshold on Phase 1 (voltage rises above for longer than the configurable period)</u>                       | <u>N</u>   | <u>N</u>   |
| <u>0x8026</u>             | <u>RMS Voltage above Voltage Swell Threshold on Phase 2 (voltage rises above for longer than the configurable period)</u>                       | <u>N</u>   | <u>N</u>   |
| <u>0x8027</u>             | <u>RMS Voltage above Voltage Swell Threshold on Phase 3 (voltage rises above for longer than the configurable period)</u>                       | <u>N</u>   | <u>N</u>   |
| <u>0x8028</u>             | <u>RMS Voltage below Extreme Under Voltage Threshold (voltage falls below for longer than the configurable period)</u>                          | <u>Y</u>   | <u>Y</u>   |
| <u>0x8029</u>             | <u>RMS Voltage below Extreme Under Voltage Threshold on Phase 1 (voltage falls below for longer than the configurable period)</u>               | <u>Y</u>   | <u>Y</u>   |
| <u>0x802A</u>             | <u>RMS Voltage below Extreme Under Voltage Threshold on Phase 2 (voltage falls below for longer than the configurable period)</u>               | <u>Y</u>   | <u>Y</u>   |

| <u>Event / Alert Code</u> | <u>Event / Alert Code Meaning</u>   | <u>Default Configuration - Send WAN Alert</u><br><u>Y = Send Alert</u><br><u>N = Do not send Alert</u> | <u>Default Configuration - Store Alert in Power Event Log</u><br><u>Y = Store in log</u><br><u>N = Do not store in log</u> |
|---------------------------|---|--|--|
| <u>0x8002</u>             | <u>Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)</u>             | <u>Y</u>   | <u>Y</u>   |
| <u>0x8003</u>             | <u>Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)</u>  | <u>Y</u>   | <u>Y</u>   |
| <u>0x802B</u>             | <u>RMS Voltage below Extreme Under Voltage Threshold on Phase 3 (voltage falls below for longer than the configurable period)</u>               | <u>Y</u>   | <u>Y</u>   |
| <u>0x802C</u>             | <u>RMS Voltage below Voltage Sag Threshold (voltage falls below for longer than the configurable period)</u>                                    | <u>N</u>   | <u>N</u>   |
| <u>0x802D</u>             | <u>RMS Voltage below Voltage Sag Threshold on Phase 1 (voltage falls below for longer than the configurable period)</u>                         | <u>N</u>   | <u>N</u>   |
| <u>0x802E</u>             | <u>RMS Voltage below Voltage Sag Threshold on Phase 2 (voltage falls below for longer than the configurable period)</u>                         | <u>N</u>   | <u>N</u>   |
| <u>0x802F</u>             | <u>RMS Voltage below Voltage Sag Threshold on Phase 3 (voltage falls below for longer than the configurable period)</u>                         | <u>N</u>   | <u>N</u>   |
| <u>0x8085</u>             | <u>Average RMS Voltage below Average RMS Over Voltage Threshold (current value below threshold; previous value above threshold)</u>             | <u>Y</u>   | <u>Y</u>   |
| <u>0x8086</u>             | <u>Average RMS Voltage below Average RMS Over Voltage Threshold on Phase 1 (current value below threshold; previous value above threshold)</u>  | <u>Y</u>   | <u>Y</u>   |
| <u>0x8087</u>             | <u>Average RMS Voltage below Average RMS Over Voltage Threshold on Phase 2 (current value below threshold; previous value above threshold)</u>  | <u>Y</u>   | <u>Y</u>   |
| <u>0x8088</u>             | <u>Average RMS Voltage below Average RMS Over Voltage Threshold on Phase 3 (current value below threshold; previous value above threshold)</u>  | <u>Y</u>   | <u>Y</u>   |
| <u>0x8089</u>             | <u>Average RMS Voltage above Average RMS Under Voltage Threshold (current value above threshold; previous value below threshold)</u>            | <u>Y</u>   | <u>Y</u>   |
| <u>0x808A</u>             | <u>Average RMS Voltage above Average RMS Under Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)</u> | <u>Y</u>   | <u>Y</u>   |
| <u>0x808B</u>             | <u>Average RMS Voltage above Average RMS Under Voltage Threshold on Phase 2 (current value above threshold; previous value below threshold)</u> | <u>Y</u>   | <u>Y</u>   |

| <u>Event / Alert Code</u> | <u>Event / Alert Code Meaning</u>   | <u>Default Configuration - Send WAN Alert</u><br><u>Y = Send Alert</u><br><u>N = Do not send Alert</u> | <u>Default Configuration - Store Alert in Power Event Log</u><br><u>Y = Store in log</u><br><u>N = Do not store in log</u> |
|---------------------------|---|--|--|
| <u>0x8002</u>             | <u>Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)</u>             | <u>Y</u>   | <u>Y</u>   |
| <u>0x8003</u>             | <u>Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)</u>  | <u>Y</u>   | <u>Y</u>   |
| <u>0x808C</u>             | <u>Average RMS Voltage above Average RMS Under Voltage Threshold on Phase 3 (current value above threshold; previous value below threshold)</u> | <u>Y</u>   | <u>Y</u>   |
| <u>0x808D</u>             | <u>RMS Voltage above Extreme Over Voltage Threshold (voltage returns below for longer than the configurable period)</u>                         | <u>Y</u>   | <u>Y</u>   |
| <u>0x808E</u>             | <u>RMS Voltage above Extreme Over Voltage Threshold on Phase 1 (voltage returns below for longer than the configurable period)</u>              | <u>Y</u>   | <u>Y</u>   |
| <u>0x808F</u>             | <u>RMS Voltage above Extreme Over Voltage Threshold on Phase 2 (voltage returns below for longer than the configurable period)</u>              | <u>Y</u>   | <u>Y</u>   |
| <u>0x8090</u>             | <u>RMS Voltage above Extreme Over Voltage Threshold on Phase 3 (voltage returns below for longer than the configurable period)</u>              | <u>Y</u>   | <u>Y</u>   |
| <u>0x8091</u>             | <u>RMS Voltage above Voltage Swell Threshold (voltage returns below for longer than the configurable period)</u>                                | <u>N</u>   | <u>N</u>   |
| <u>0x8092</u>             | <u>RMS Voltage above Voltage Swell Threshold on Phase 1 (voltage returns below for longer than the configurable period)</u>                     | <u>N</u>   | <u>N</u>   |
| <u>0x8093</u>             | <u>RMS Voltage above Voltage Swell Threshold on Phase 2 (voltage returns below for longer than the configurable period)</u>                     | <u>N</u>   | <u>N</u>   |
| <u>0x8094</u>             | <u>RMS Voltage above Voltage Swell Threshold on Phase 3 (voltage returns below for longer than the configurable period)</u>                     | <u>N</u>   | <u>N</u>   |
| <u>0x8095</u>             | <u>RMS Voltage below Extreme Under Voltage Threshold (voltage returns above for longer than the configurable period)</u>                        | <u>Y</u>   | <u>Y</u>   |
| <u>0x8096</u>             | <u>RMS Voltage below Extreme Under Voltage Threshold on Phase 1 (voltage returns above for longer than the configurable period)</u>             | <u>Y</u>   | <u>Y</u>   |
| <u>0x8097</u>             | <u>RMS Voltage below Extreme Under Voltage Threshold on Phase 2 (voltage returns above for longer than the configurable period)</u>             | <u>Y</u>   | <u>Y</u>   |

| <u>Event / Alert Code</u> | <u>Event / Alert Code Meaning</u>  | <u>Default Configuration - Send WAN Alert</u><br><u>Y = Send Alert</u><br><u>N = Do not send Alert</u> | <u>Default Configuration - Store Alert in Power Event Log</u><br><u>Y = Store in log</u><br><u>N = Do not store in log</u> |
|---------------------------|--|--|--|
| <u>0x8002</u>             | <u>Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)</u>            | <u>Y</u>   | <u>Y</u>   |
| <u>0x8003</u>             | <u>Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)</u> | <u>Y</u>   | <u>Y</u>   |
| <u>0x8098</u>             | <u>RMS Voltage below Extreme Under Voltage Threshold on Phase 3 (voltage returns above for longer than the configurable period)</u>            | <u>Y</u>   | <u>Y</u>   |
| <u>0x8099</u>             | <u>RMS Voltage below Voltage Sag Threshold (voltage returns above for longer than the configurable period)</u>                                 | <u>N</u>   | <u>N</u>   |
| <u>0x809A</u>             | <u>RMS Voltage below Voltage Sag Threshold on Phase 1 (voltage returns above for longer than the configurable period)</u>                      | <u>N</u>   | <u>N</u>   |
| <u>0x809B</u>             | <u>RMS Voltage below Voltage Sag Threshold on Phase 2 (voltage returns above for longer than the configurable period)</u>                      | <u>N</u>   | <u>N</u>   |
| <u>0x809C</u>             | <u>RMS Voltage below Voltage Sag Threshold on Phase 3 (voltage returns above for longer than the configurable period)</u>                      | <u>N</u>   | <u>N</u>   |
| <u>0x8010</u>             | <u>Over Current</u>  | <u>N</u>   | <u>N</u>   |
| <u>0x8011</u>             | <u>Over Current L1</u>   | <u>N</u>   | <u>N</u>   |
| <u>0x8016</u>             | <u>Over Current L2</u>   | <u>N</u>   | <u>N</u>   |
| <u>0x8013</u>             | <u>Over Current L3</u>   | <u>N</u>   | <u>N</u>   |
| <u>0x8014</u>             | <u>Power Factor Threshold Below</u>  | <u>N</u>   | <u>N</u>   |
| <u>0x8015</u>             | <u>Power Factor Threshold Ok</u>   | <u>N</u>   | <u>N</u>   |

Table 28c: WAN Alert and Power Event Log settings to be configured prior to installation of Devices



| Attribute  | COSEM datatype         | Tag         | Length      | Value                 | Meaning   |
|--|------------------------|-------------|-------------|-----------------------|---|
| <u>entries:entries[1..2]</u>                                       | <u>array</u>           | <u>0x01</u> | <u>0x02</u> |                       | <u>An array with two entries, the first turns on monitoring and the second turns it off</u>                                     |
| <u>entries:entries[1].schedule_table_entry.index</u>               | <u>long-unsigned</u>   | <u>0x12</u> |             | <u>0x0001</u>         | <u>The first entry which turns monitoring on</u>  |
| <u>entries:entries[1].schedule_table_entry.enable</u>              | <u>boolean</u>         | <u>0x03</u> |             | <u>0x01</u>           | <u>True, so the entry always executes</u>   |
| <u>entries:entries[1].schedule_table_entry.script_logical_name</u> | <u>octet-string(6)</u> | <u>0x09</u> | <u>0x06</u> | <u>0x00000A8064FF</u> | <u>0-0:10.128.100.255 which, as per Table 7.3.8, is the script table controlling monitoring</u>                                 |
| <u>entries:entries[1].schedule_table_entry.script_selector</u>     | <u>long-unsigned</u>   | <u>0x12</u> |             | <u>0x0001</u>         | <u>Meaning start monitoring at the time in this entry</u>   |
| <u>entries:entries[1].schedule_table_entry.switch_time</u>         | <u>octet-string(4)</u> | <u>0x09</u> | <u>0x04</u> | <u>0x10000000</u>     | <u>16:00:00:00 - the time at which monitoring is to turn on</u>   |
| <u>entries:entries[1].schedule_table_entry.validity_window</u>     | <u>long-unsigned</u>   | <u>0x12</u> |             | <u>0xFFFF</u>         | <u>The script is processed at any time after power failure</u>  |
| <u>entries:entries[1].schedule_table_entry.exec_weekdays</u>       | <u>bit-string(7)</u>   | <u>0x04</u> | <u>0x07</u> | <u>0xF8</u>           | <u>0xF8 = 0b11111000, which means execute this script on Monday to Friday inclusive</u>   |
| <u>entries:entries[1].schedule_table_entry.exec_specdays</u>       | <u>bit-string(0)</u>   | <u>0x04</u> | <u>0x00</u> |                       | <u>No special day processing</u>  |
| <u>entries:entries[1].schedule_table_entry.begin_date</u>          | <u>octet-string(5)</u> | <u>0x09</u> | <u>0x05</u> | <u>0xFFFF0A1FFF</u>   | <u>0xFFFF (means any year), 0x0A (means tenth month, so October), 0x1F (means 31st), and 0xFF (means any day of the week)</u>   |
| <u>entries:entries[1].schedule_table_entry.end_date</u>            | <u>octet-string(5)</u> | <u>0x09</u> | <u>0x05</u> | <u>0xFFFF021CFF</u>   | <u>0xFFFF (means any year), 0x02 (means second month, so February), 0x1C (means 28th), and 0xFF (means any day of the week)</u> |
| <u>entries:entries[2].schedule_table_entry.index</u>               | <u>long-unsigned</u>   | <u>0x12</u> |             | <u>0x0002</u>         | <u>The second entry which turns monitoring off</u>  |
| <u>entries:entries[2].schedule_table_entry.enable</u>              | <u>boolean</u>         | <u>0x03</u> |             | <u>0x01</u>           | <u>True, so the entry always executes</u>   |
| <u>entries:entries[2].schedule_table_entry.script_logical_name</u> | <u>octet-string(6)</u> | <u>0x09</u> | <u>0x06</u> | <u>0x00000A8064FF</u> | <u>0-0:10.128.100.255 which, as per Table 7.3.8, is the script table controlling monitoring</u>                                 |
| <u>entries:entries[2].schedule_table_entry.script_selector</u>     | <u>long-unsigned</u>   | <u>0x12</u> |             | <u>0x0002</u>         | <u>Meaning stop monitoring at the time in this entry</u>  |

| Attribute  | COSEM datatype         | Tag         | Length      | Value               | Meaning   |
|--|------------------------|-------------|-------------|---------------------|---|
| <u>entries:entries[2].<br/>schedule_table_entry.<br/>switch_time</u>     | <u>octet-string(4)</u> | <u>0x09</u> | <u>0x04</u> | <u>0x14000000</u>   | <u>20:00:00:00 - the time at which<br/>monitoring is to turn off</u>    |
| <u>entries:entries[2].<br/>schedule_table_entry.<br/>validity_window</u> | <u>long-unsigned</u>   | <u>0x12</u> |             | <u>0xFFFF</u>       | <u>The script is processed at any time<br/>after power failure</u>      |
| <u>entries:entries[2].<br/>schedule_table_entry.<br/>exec_weekdays</u>   | <u>bit-string(7)</u>   | <u>0x04</u> | <u>0x07</u> | <u>0xFE</u>         | <u>0xFE = 0b11111110, which means<br/>execute this script every day</u> |
| <u>entries:entries[2].<br/>schedule_table_entry.<br/>exec_specdays</u>   | <u>bit-string(0)</u>   | <u>0x04</u> | <u>0x00</u> |                     | <u>No special day processing</u>  |
| <u>entries:entries[2].<br/>schedule_table_entry.<br/>begin_date</u>      | <u>octet-string(5)</u> | <u>0x09</u> | <u>0x05</u> | <u>0x000001FFFF</u> | <u>From the start of time</u>   |
| <u>entries:entries[2].<br/>schedule_table_entry.<br/>end_date</u>        | <u>octet-string(5)</u> | <u>0x09</u> | <u>0x05</u> | <u>0xFFFFFFFF</u>   | <u>For all time</u>   |

Table 28d: Tag, length and values to be populated in attribute 2 of OBIS code 0-0:12.0.0.255 (which relates to the SMETS 'Maximum Demand Configurable Time Period ') to be configured prior to installation of ESME.

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# SECMP0018 ‘Standard Electricity Distributor Configuration Settings’ Annex B Business Requirements – Version 1.0

## About this document

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This document contains the detailed context, Business Requirements and Proposed Solution to deliver SECMP0018.

## Context

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This section sets out the context for SECMP0018

### Context

SMETS requires that ESME are able to record a range of voltage related information and send a range of voltage related Alerts. SMETS also lays out a number of Configuration Data Items that ESME must use to control such voltage related recording.

GBCS specifies Use Cases which allow Electricity Distributors to set the values of the Configuration Data Items. However, GBCS does not specify 'default values', to be configured before ESME installation, for these Configuration Data Items, except for the configuration of voltage related Alerts and events. Thus, until configured by an Electricity Distributor, an ESME will report voltage related data on the basis of potentially varying configuration values.

## Business Requirements

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This section sets out the detailed business requirements for the SECMP0018 Proposed Solution.

### Functional Requirements

This modification is to require in GBCS that ESME:

- Are configured with specified default values for all voltage related and Maximum Demand Configurable Period Configuration Data Items and so have default values for:

Detecting voltage related events; and

Establishing the time period within which the value to be recorded as the Maximum Demand (Configurable Time) Active Power Import value is recorded as there are no current default values specified in GBCS 2.0 draft 2.

- Have default values for sending voltage related Alerts and logging events than those currently specified in GBCS 2.0 draft 2.

Note that this Modification would be applied to GBCS after BEIS's CRP 412 and that CRP 412 sets out default values relating to the recording of Events in the Power Event Log and the sending of Alerts via the WAN. Thus, if both this Modification and CRP 412 were to be applied to GBCS at the same TSG Version, the Alert and event default values in this Modification would be reflected in GBCS at that TSG Version. This is the proposers preferred implementation approach.

Note that these default values are different than the equivalent values currently in GBCS and so are not those that will be configured in ESME being built for go-live.

### Implementation Obligations

Supplier licences require the installation of ESME that comply with SMETS; SMETS requires that ESME comply with GBCS. Therefore, the GBCS requirement for ESME to have the default configuration values specified in this Modification would be a requirement on Suppliers in relation to ESME they install, which complies with the version of GBCS in to which these changes have been incorporated.

### Changes

To deliver the Functional Requirements:

- The voltage related Alert and event default configurations in GBCS section 16.2 would be amended; and
- The other voltage related configuration data items' default values would be added to GBCS Annex 7 – 'Data Item Values to be set prior to installation of Devices'

The changes in this Modification would not affect the structure of any of the existing Use Cases, and so do not require changes to DUIS, MMC or DSP systems.

## Compatibility

The default configuration values are allowable values at TSG1.0 and so do not give rise to any compatibility issues.

Configuration of events and Alerts as required here will only be fully possible once BEIS CRP412 is incorporated. However, the events in question can be recorded on TSG1.0 Devices and the Alerts in question can be generated by TSG1.0 Devices. Thus, again no compatibility issues arise.

## Dependencies

This document is drafted on the basis that CRP412 has been incorporated in to the TSG version in which this Modification is included.

## Proposed Solution

This section details the required changes to SEC and wider documents that are proposed to implement the requirement for this SEC Modification. Please note that all numbering, message codes, alert codes and so on GBCS 2.0 Draft 2 and related document versions.

### SEC main body change

None

### SMETS changes

None

### CHTS changes

None

### GBCS changes – ESME Default Configuration: Voltage Parameters and Thresholds

To add the remaining voltage related default configurations, amend GBCS Annex 7 by adding the green highlighted text, rows and table, data items and values that shall be configured in Devices prior to installation as per the following tables:

- Table 28a for the required values; and
- Table 28b listing the DLMS/COSEM data elements and content.

Note that the item “Maximum Demand Configurable Time Period” contained in table 28a is not related to voltage default values; it implements a subset of requirements raised as part of the now withdrawn SECMP0003.

| Device              | Data Item                       | Reference      | Value                  | Notes   |
|---------------------|---------------------------------|----------------|------------------------|---|
| ESME (all variants) | Maximum Meter Balance Threshold | SMETS 5.7.4.27 | 300,000,000 millipence | NA  |
| ESME (all variants) | Randomised Offset Limit         | SMETS 5.7.4.33 | 600 seconds            | The Randomised Offset [INFO]<br>Is the product of the Randomised Offset Limit(5.7.4.33) and the Randomised Offset Number(5.7.1.5) |

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| Device              | Data Item   | Reference                | Value        | Notes   |
|---------------------|---|--------------------------|--------------|---|
|                     |   |                          |              | rounded to the nearest second. This value is used to delay the Tariff Switching Table times, the Auxiliary Load Control Switch switching times, and HAN Connected Auxiliary Load Control Switch switching times |
| ESME (all variants) | RMS Extreme Over Voltage Threshold                | SMETS 5.7.4.35           | 265.0 volts  | GBCS Use Cases specify a resolution to tenths of volts  |
| ESME (all variants) | RMS Extreme Over Voltage Measurement Period       | SMETS 5.7.4.34           | 180 seconds  | NA  |
| ESME (all variants) | RMS Extreme Under Voltage Threshold               | SMETS 5.7.4.37           | 190.0 volts  | NA  |
| ESME (all variants) | RMS Extreme Under Voltage Measurement Period      | SMETS 5.7.4.36           | 180 seconds  | NA  |
| ESME (all variants) | RMS Voltage Sag Threshold                         | SMETS 5.7.4.40           | 190.0 volts  | NA  |
| ESME (all variants) | RMS Voltage Sag Measurement Period                | SMETS 5.7.4.38           | 180 seconds  | NA  |
| ESME (all variants) | RMS Voltage Swell Threshold                       | SMETS 5.7.4.41           | 265.0 volts  | NA  |
| ESME (all variants) | RMS Voltage Swell Measurement Period              | SMETS 5.7.4.39           | 180 seconds  | NA  |
| ESME (all variants) | (Phase[1]) Average RMS Voltage Measurement Period | SMETS 5.7.4.6 (5.19.1.3) | 1800 seconds | NA  |
| ESME (all variants) | (Phase[1]) Average RMS Under Voltage Threshold    | SMETS 5.7.4.5 (5.19.1.2) | 212.0 volts  | NA  |
| ESME (all variants) | (Phase[1]) Average RMS Over Voltage Threshold     | SMETS 5.7.4.4 (5.19.1.1) | 258.0 volts  | NA  |

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| Device              | Data Item                                       | Reference      | Value          | Notes |
|---------------------|---|----------------|----------------|-------|
| Polyphase ESME      | Phase[2] Average RMS Voltage Measurement Period | SMETS 5.19.1.3 | 1800 seconds   | NA    |
| Polyphase ESME      | Phase[2] Average RMS Under Voltage Threshold    | SMETS 5.19.1.2 | 212.0 volts    | NA    |
| Polyphase ESME      | Phase[2] Average RMS Over Voltage Threshold     | SMETS 5.19.1.1 | 258.0 volts    | NA    |
| Polyphase ESME      | Phase[3] Average RMS Voltage Measurement Period | SMETS 5.19.1.3 | 1800 seconds   | NA    |
| Polyphase ESME      | Phase[3] Average RMS Under Voltage Threshold    | SMETS 5.19.1.2 | 212.0 volts    | NA    |
| Polyphase ESME      | Phase[3] Average RMS Over Voltage Threshold     | SMETS 5.19.1.1 | 258.0 volts    | NA    |
| ESME (all variants) | Maximum Demand Configurable Time Period         | SMETS 5.7.4.26 |                |       |
|                     | - start time                                    |                | 16:00 in hh:mm |       |
|                     | - end time                                      |                | 20:00 in hh:mm |       |

Table 28a: Data items and values to be configured prior to installation of Devices

| Data Item                          | Reference      | COSE M class ID | OBIS Code      | Attribute ID | Attribute Name     | COSE M datatype      | Encoded value | Decoded value |
|------------------------------------|----------------|-----------------|----------------|--------------|--------------------|----------------------|---------------|---------------|
| Maximum Meter Balance Threshold    | SMETS 5.7.4.27 | 9000            | 0-0:94.44.2.20 | 4            | value_passive      | double-long          | 0x11E1A300    | 300,000,000   |
| Randomised Offset Limit            | SMETS 5.7.4.33 | 1               | 0-0:94.44.0.1  | 2            | value              | long-unsigned        | 0x0258        | 600           |
| RMS Extreme Over Voltage Threshold | SMETS 5.7.4.35 | 71              | 0-0:17.0.1.255 | 4            | threshold_normal   | double-long-unsigned | 0x00000A5A    | 2650          |
| RMS Extreme Over Voltage           | SMETS          | 71              | 0-0:17.0.1.255 | 6            | min_over_threshold | double-long          | 0x000000B4    | 180           |

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| Data Item   | Reference                | COSE M class ID | OBIS Code       | Attribute ID | Attribute Name              | COSE M datatype      | Encoded value | Decoded value |
|---|--------------------------|-----------------|-----------------|--------------|-----------------------------|----------------------|---------------|---------------|
| Measurement Period                                | 5.7.4.34                 |                 |                 |              | duration                    | unsigned             |               |               |
| RMS Extreme Under Voltage Threshold               | SMETS 5.7.4.37           | 71              | 0-0:17.0.2.255  | 4            | threshold_normal            | double-long-unsigned | 0x0000076C    | 1900          |
| RMS Extreme Under Voltage Measurement Period      | SMETS 5.7.4.36           | 71              | 0-0:17.0.2.255  | 6            | min_over_threshold_duration | double-long-unsigned | 0x000000B4    | 180           |
| RMS Voltage Sag Threshold                         | SMETS 5.7.4.40           | 71              | 0-0:17.0.3.255  | 4            | threshold_normal            | double-long-unsigned | 0x0000076C    | 1900          |
| RMS Voltage Sag Measurement Period                | SMETS 5.7.4.38           | 71              | 0-0:17.0.3.255  | 6            | min_over_threshold_duration | double-long-unsigned | 0x000000B4    | 180           |
| RMS Voltage Swell Threshold                       | SMETS 5.7.4.41           | 71              | 0-0:17.0.4.255  | 4            | threshold_normal            | double-long-unsigned | 0x00000A5A    | 2650          |
| RMS Voltage Swell Measurement Period              | SMETS 5.7.4.39           | 71              | 0-0:17.0.4.255  | 6            | min_over_threshold_duration | double-long-unsigned | 0x000000B4    | 180           |
| (Phase[1]) Average RMS Voltage Measurement Period | SMETS 5.7.4.6 (5.19.1.3) | 7               | 1-0:32.24.0.255 | 4            | capture_period              | double-long-unsigned | 0x00000708    | 1800          |
| (Phase[1]) Average RMS Under Voltage Threshold    | SMETS 5.7.4.5 (5.19.1.2) | 1               | 1-0:32.31.0.4   | 2            | value                       | double-long-unsigned | 0x00000848    | 2120          |
| (Phase[1]) Average RMS Over Voltage Threshold     | SMETS 5.7.4.4 (5.19.1.1) | 1               | 1-0:32.35.0.4   | 2            | value                       | double-long-unsigned | 0x00000A14    | 2580          |
| Phase[2] Average RMS Voltage                      | SMETS                    | 7               | 1-0:52.24.0.255 | 4            | capture_period              | double-long-         | 0x00000708    | 1800          |

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| Data Item                                       | Reference      | COSEM class ID | OBIS Code       | Attribute ID | Attribute Name | COSEM datatype       | Encoded value | Decoded value |
|---|----------------|----------------|-----------------|--------------|----------------|----------------------|---------------|---------------|
| Measurement Period                              | 5.19.1.3       |                |                 |              |                | unsigned             |               |               |
| Phase[2] Average RMS Under Voltage Threshold    | SMETS 5.19.1.2 | 1              | 1-0:52.31.0.4   | 2            | value          | double-long-unsigned | 0x00000848    | 2120          |
| Phase[2] Average RMS Over Voltage Threshold     | SMETS 5.19.1.1 | 1              | 1-0:52.35.0.4   | 2            | value          | double-long-unsigned | 0x00000A14    | 2580          |
| Phase[3] Average RMS Voltage Measurement Period | SMETS 5.19.1.3 | 7              | 1-0:72.24.0.255 | 4            | capture_period | double-long-unsigned | 0x00000708    | 1800          |
| Phase[3] Average RMS Under Voltage Threshold    | SMETS 5.19.1.2 | 1              | 1-0:72.31.0.4   | 2            | value          | double-long-unsigned | 0x00000848    | 2120          |
| Phase[3] Average RMS Over Voltage Threshold     | SMETS 5.19.1.1 | 1              | 1-0:72.35.0.4   | 2            | value          | double-long-unsigned | 0x00000A14    | 2580          |

Table 28b: DLMS COSEM values to be configured in Devices at manufacture.

## GBCS Changes – ESME Default Configuration: WAN Alert and Power Event Log

SMETS and GBCS define the Alerts which are generated by the ESME when the measurement values for voltage related parameters either exceed or fall below set thresholds. These Alerts are recorded in the Power Event Log and sent to the Distribution Network Operator.

CRP412 introduces the ability for Distribution Network Operators to send Service Requests to the ESME and configure whether these Alerts should be stored in the Power Event Log and whether they should be sent via the WAN.

DNO require that all ESME have the same default configuration with regards to the sending and storing of Alerts prior to installation. This configuration must be set by the ESME manufacturer during the manufacturing process.

The following table lists all DNO related Alerts as defined in GBCS, table 16.2. For each Alert the default configuration required by the DNO for sending the WAN Alert and storing the Alert in the Power Event Log is given. This table needs to be added to GBCS, Annex 7 as new table 28c.

| Event / Alert Code | Event / Alert Code Meaning   | Default Configuration - Send WAN Alert<br>Y = Send Alert<br>N = Do not send Alert | Default Configuration - Store Alert in Power Event Log<br>Y = Store in log<br>N = Do not store in log |
|--------------------|--|---|---|
| 0x8002             | Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)             | Y   | Y   |
| 0x8003             | Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)  | Y   | Y   |
| 0x8004             | Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 2 (current value above threshold; previous value below threshold)  | Y   | Y   |
| 0x8005             | Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 3 (current value above threshold; previous value below threshold)  | Y   | Y   |
| 0x8006             | Average RMS Voltage below Average RMS Under Voltage Threshold (current value below threshold; previous value above threshold)            | Y   | Y   |
| 0x8007             | Average RMS Voltage below Average RMS Under Voltage Threshold on Phase 1 (current value below threshold; previous value above threshold) | Y   | Y   |
| 0x8008             | Average RMS Voltage below Average RMS Under Voltage Threshold on Phase 2 (current value below threshold; previous value above threshold) | Y   | Y   |
| 0x8009             | Average RMS Voltage below Average RMS Under Voltage Threshold on Phase 3 (current value below threshold; previous value above threshold) | Y   | Y   |
| 0x8020             | RMS Voltage above Extreme Over Voltage Threshold (voltage rises above for longer than the configurable period)                           | Y   | Y   |
| 0x8021             | RMS Voltage above Extreme Over Voltage Threshold on Phase 1 (voltage rises above for longer than the configurable period)                | Y   | Y   |
| 0x8022             | RMS Voltage above Extreme Over Voltage Threshold on Phase 2 (voltage rises above for longer than the configurable period)                | Y   | Y   |

| Event / Alert Code | Event / Alert Code Meaning  | Default Configuration - Send WAN Alert<br>Y = Send Alert<br>N = Do not send Alert | Default Configuration - Store Alert in Power Event Log<br>Y = Store in log<br>N = Do not store in log |
|--------------------|---|---|---|
| 0x8002             | Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)            | Y   | Y   |
| 0x8003             | Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold) | Y   | Y   |
| 0x8023             | RMS Voltage above Extreme Over Voltage Threshold on Phase 3 (voltage rises above for longer than the configurable period)               | Y   | Y   |
| 0x8024             | RMS Voltage above Voltage Swell Threshold (voltage rises above for longer than the configurable period)                                 | N   | N   |
| 0x8025             | RMS Voltage above Voltage Swell Threshold on Phase 1 (voltage rises above for longer than the configurable period)                      | N   | N   |
| 0x8026             | RMS Voltage above Voltage Swell Threshold on Phase 2 (voltage rises above for longer than the configurable period)                      | N   | N   |
| 0x8027             | RMS Voltage above Voltage Swell Threshold on Phase 3 (voltage rises above for longer than the configurable period)                      | N   | N   |
| 0x8028             | RMS Voltage below Extreme Under Voltage Threshold (voltage falls below for longer than the configurable period)                         | Y   | Y   |
| 0x8029             | RMS Voltage below Extreme Under Voltage Threshold on Phase 1 (voltage falls below for longer than the configurable period)              | Y   | Y   |
| 0x802A             | RMS Voltage below Extreme Under Voltage Threshold on Phase 2 (voltage falls below for longer than the configurable period)              | Y   | Y   |
| 0x802B             | RMS Voltage below Extreme Under Voltage Threshold on Phase 3 (voltage falls below for longer than the configurable period)              | Y   | Y   |
| 0x802C             | RMS Voltage below Voltage Sag Threshold (voltage falls below for longer than the configurable period)                                   | N   | N   |

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| Event / Alert Code | Event / Alert Code Meaning   | Default Configuration - Send WAN Alert<br>Y = Send Alert<br>N = Do not send Alert | Default Configuration - Store Alert in Power Event Log<br>Y = Store in log<br>N = Do not store in log |
|--------------------|--|---|---|
| 0x8002             | Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)             | Y   | Y   |
| 0x8003             | Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)  | Y   | Y   |
| 0x802D             | RMS Voltage below Voltage Sag Threshold on Phase 1 (voltage falls below for longer than the configurable period)                         | N   | N   |
| 0x802E             | RMS Voltage below Voltage Sag Threshold on Phase 2 (voltage falls below for longer than the configurable period)                         | N   | N   |
| 0x802F             | RMS Voltage below Voltage Sag Threshold on Phase 3 (voltage falls below for longer than the configurable period)                         | N   | N   |
| 0x8085             | Average RMS Voltage below Average RMS Over Voltage Threshold (current value below threshold; previous value above threshold)             | Y   | Y   |
| 0x8086             | Average RMS Voltage below Average RMS Over Voltage Threshold on Phase 1 (current value below threshold; previous value above threshold)  | Y   | Y   |
| 0x8087             | Average RMS Voltage below Average RMS Over Voltage Threshold on Phase 2 (current value below threshold; previous value above threshold)  | Y   | Y   |
| 0x8088             | Average RMS Voltage below Average RMS Over Voltage Threshold on Phase 3 (current value below threshold; previous value above threshold)  | Y   | Y   |
| 0x8089             | Average RMS Voltage above Average RMS Under Voltage Threshold (current value above threshold; previous value below threshold)            | Y   | Y   |
| 0x808A             | Average RMS Voltage above Average RMS Under Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold) | Y   | Y   |

| Event / Alert Code | Event / Alert Code Meaning   | Default Configuration - Send WAN Alert<br>Y = Send Alert<br>N = Do not send Alert | Default Configuration - Store Alert in Power Event Log<br>Y = Store in log<br>N = Do not store in log |
|--------------------|--|---|---|
| 0x8002             | Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)             | Y   | Y   |
| 0x8003             | Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold)  | Y   | Y   |
| 0x808B             | Average RMS Voltage above Average RMS Under Voltage Threshold on Phase 2 (current value above threshold; previous value below threshold) | Y   | Y   |
| 0x808C             | Average RMS Voltage above Average RMS Under Voltage Threshold on Phase 3 (current value above threshold; previous value below threshold) | Y   | Y   |
| 0x808D             | RMS Voltage above Extreme Over Voltage Threshold (voltage returns below for longer than the configurable period)                         | Y   | Y   |
| 0x808E             | RMS Voltage above Extreme Over Voltage Threshold on Phase 1 (voltage returns below for longer than the configurable period)              | Y   | Y   |
| 0x808F             | RMS Voltage above Extreme Over Voltage Threshold on Phase 2 (voltage returns below for longer than the configurable period)              | Y   | Y   |
| 0x8090             | RMS Voltage above Extreme Over Voltage Threshold on Phase 3 (voltage returns below for longer than the configurable period)              | Y   | Y   |
| 0x8091             | RMS Voltage above Voltage Swell Threshold (voltage returns below for longer than the configurable period)                                | N   | N   |
| 0x8092             | RMS Voltage above Voltage Swell Threshold on Phase 1 (voltage returns below for longer than the configurable period)                     | N   | N   |
| 0x8093             | RMS Voltage above Voltage Swell Threshold on Phase 2 (voltage returns below for longer than the configurable period)                     | N   | N   |

| Event / Alert Code | Event / Alert Code Meaning  | Default Configuration - Send WAN Alert<br>Y = Send Alert<br>N = Do not send Alert | Default Configuration - Store Alert in Power Event Log<br>Y = Store in log<br>N = Do not store in log |
|--------------------|---|---|---|
| 0x8002             | Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)            | Y   | Y   |
| 0x8003             | Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold) | Y   | Y   |
| 0x8094             | RMS Voltage above Voltage Swell Threshold on Phase 3 (voltage returns below for longer than the configurable period)                    | N   | N   |
| 0x8095             | RMS Voltage below Extreme Under Voltage Threshold (voltage returns above for longer than the configurable period)                       | Y   | Y   |
| 0x8096             | RMS Voltage below Extreme Under Voltage Threshold on Phase 1 (voltage returns above for longer than the configurable period)            | Y   | Y   |
| 0x8097             | RMS Voltage below Extreme Under Voltage Threshold on Phase 2 (voltage returns above for longer than the configurable period)            | Y   | Y   |
| 0x8098             | RMS Voltage below Extreme Under Voltage Threshold on Phase 3 (voltage returns above for longer than the configurable period)            | Y   | Y   |
| 0x8099             | RMS Voltage below Voltage Sag Threshold (voltage returns above for longer than the configurable period)                                 | N   | N   |
| 0x809A             | RMS Voltage below Voltage Sag Threshold on Phase 1 (voltage returns above for longer than the configurable period)                      | N   | N   |
| 0x809B             | RMS Voltage below Voltage Sag Threshold on Phase 2 (voltage returns above for longer than the configurable period)                      | N   | N   |
| 0x809C             | RMS Voltage below Voltage Sag Threshold on Phase 3 (voltage returns above for longer than the configurable period)                      | N   | N   |



| Event / Alert Code | Event / Alert Code Meaning  | Default Configuration - Send WAN Alert<br>Y = Send Alert<br>N = Do not send Alert | Default Configuration - Store Alert in Power Event Log<br>Y = Store in log<br>N = Do not store in log |
|--------------------|---|---|---|
| 0x8002             | Average RMS Voltage above Average RMS Over Voltage Threshold (current value above threshold; previous value below threshold)            | Y   | Y   |
| 0x8003             | Average RMS Voltage above Average RMS Over Voltage Threshold on Phase 1 (current value above threshold; previous value below threshold) | Y   | Y   |
| 0x8010             | Over Current  | N   | N   |
| 0x8011             | Over Current L1   | N   | N   |
| 0x8016             | Over Current L2   | N   | N   |
| 0x8013             | Over Current L3   | N   | N   |
| 0x8014             | Power Factor Threshold Below  | N   | N   |
| 0x8015             | Power Factor Threshold Ok   | N   | N   |

Table 28c: WAN Alert and Power Event Log settings to be configured prior to installation of Devices

## GBCS changes – ESME Default Configuration: Maximum Demand Configurable Time Period

The ESME supports the Maximum Demand Configurable Time Period as per SMETS requirements. The DUIS Service Request Variant 6.18.1 allows Service Users to set the start time and the end time; but all other items listed in GBCS Use Case ECS37 cannot be set by the DNO as part of the Service Request.

In order to establish the same default behaviour in all ESME with regards to the Maximum Demand Configuration Time Period, OBIS code 0-0:12.0.0.255 must be configured accordingly during the ESME manufacturing process using the details listed in the below table. It is proposed to add this table to GBCS, Annex 7 as new Table 28d.

Note that SRV 6.18.1 results in Use Case ECS37 being send to the meter with all fields populated using the values given in the GBCS Use Case except for start time and end time. Upon reception the meter will overwrite the default values configured at manufacturing with those sent in ECS37. Once this has occurred the default values set at manufacturing cannot be re-instated.

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This behaviour has been shared with DNOs and has been found to satisfy the needs. Further actions were not deemed necessary, e.g. the creation of a new Service Request which allows DNOs to fully configure the details contained in ECS37 using the DUIS interface (as proposed earlier in SECMP0003).

| Attribute   | COSEM datatype  | Tag  | Length | Value          | Meaning  |
|---|-----------------|------|--------|----------------|--|
| entries:entries[1..2]                                       | Array           | 0x01 | 0x02   |                | An array with two entries, the first turns on monitoring and the second turns it off                                   |
| entries:entries[1].schedule_table_entry.index               | long-unsigned   | 0x12 |        | 0x0001         | The first entry which turns monitoring on  |
| entries:entries[1].schedule_table_entry.enable              | Boolean         | 0x03 |        | 0x01           | True, so the entry always executes   |
| entries:entries[1].schedule_table_entry.script_logical_name | octet-string(6) | 0x09 | 0x06   | 0x00000A8064FF | 0-0:10.128.100.255 which, as per Table 7.3.8, is the script table controlling monitoring                               |
| entries:entries[1].schedule_table_entry.script_selector     | long-unsigned   | 0x12 |        | 0x0001         | Meaning start monitoring at the time in this entry   |
| entries:entries[1].schedule_table_entry.switch_time         | octet-string(4) | 0x09 | 0x04   | 0x10000000     | 16:00:00:00 - the time at which monitoring is to turn on   |
| entries:entries[1].schedule_table_entry.validity_window     | long-unsigned   | 0x12 |        | 0xFFFF         | The script is processed at any time after power failure  |
| entries:entries[1].schedule_table_entry.exec_weekdays       | bit-string(7)   | 0x04 | 0x07   | 0xF8           | 0xF8 = 0b11111000, which means execute this script on Monday to Friday inclusive                                       |
| entries:entries[1].schedule_table_entry.exec_specdays       | bit-string(0)   | 0x04 | 0x00   |                | No special day processing  |
| entries:entries[1].schedule_table_entry.begin_date          | octet-string(5) | 0x09 | 0x05   | 0xFFFF0A1FFF   | 0xFFFF (means any year), 0x0A (means tenth month, so October), 0x1F (means 31st), and 0xFF (means any day of the week) |
| entries:entries[1].schedule_table_entry.end_date            | octet-string(5) | 0x09 | 0x05   | 0xFFFF021CFF   | 0xFFFF (means any year), 0x02 (means second month, so  |

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| Attribute   | COSEM datatype  | Tag  | Length | Value          | Meaning  |
|---|-----------------|------|--------|----------------|--|
|   |                 |      |        |                | February), 0x1C (means 28th), and 0xFF (means any day of the week)                       |
| entries:entries[2].schedule_table_entry.index               | long-unsigned   | 0x12 |        | 0x0002         | The second entry which turns monitoring off  |
| entries:entries[2].schedule_table_entry.enable              | Boolean         | 0x03 |        | 0x01           | True, so the entry always executes   |
| entries:entries[2].schedule_table_entry.script_logical_name | octet-string(6) | 0x09 | 0x06   | 0x00000A8064FF | 0-0:10.128.100.255 which, as per Table 7.3.8, is the script table controlling monitoring |
| entries:entries[2].schedule_table_entry.script_selector     | long-unsigned   | 0x12 |        | 0x0002         | Meaning stop monitoring at the time in this entry  |
| entries:entries[2].schedule_table_entry.switch_time         | octet-string(4) | 0x09 | 0x04   | 0x14000000     | 20:00:00:00 - the time at which monitoring is to turn off                                |
| entries:entries[2].schedule_table_entry.validity_window     | long-unsigned   | 0x12 |        | 0xFFFF         | The script is processed at any time after power failure                                  |
| entries:entries[2].schedule_table_entry.exec_weekdays       | bit-string(7)   | 0x04 | 0x07   | 0xFE           | 0xFE = 0b1111110, which means execute this script every day                              |
| entries:entries[2].schedule_table_entry.exec_specdays       | bit-string(0)   | 0x04 | 0x00   |                | No special day processing  |
| entries:entries[2].schedule_table_entry.begin_date          | octet-string(5) | 0x09 | 0x05   | 0x000001FFFF   | From the start of time   |
| entries:entries[2].schedule_table_entry.end_date            | octet-string(5) | 0x09 | 0x05   | 0xFFFFFFFF     | For all time   |

Table 28d: Tag, length and values to be populated in attribute 2 of OBIS code 0-0:12.0.0.255 (which relates to the SMETS 'Maximum Demand Configurable Time Period ') to be configured prior to installation of ESME.

## SEC Appendix E changes

None

**DUIS changes**

None

**MMC changes**

None

**Other SEC document changes**

None

**Changes to documents outside of SEC**

None

## Appendix 1: Glossary

The table below provides definitions of the terms used in this document.

| Acronym | Definition                                       |
|---------|--|
| BEIS    | Business, Energy and Industrial Strategy         |
| CRP     | Change Resolution Proposal                       |
| DCC     | Data Communications Company                      |
| DNO     | Distribution Network Operator                    |
| DSP     | Data Service Provider                            |
| DUIS    | DCC User Interface Specification                 |
| ENP     | Electricity Network Party                        |
| ESME    | Electrical Smart Metering Equipment              |
| GBCS    | Great Britain Companion Scheme                   |
| MMC     | Meter Mapping Catalogue                          |
| SMETS   | Smart Metering Equipment Technical Specification |
| WAN     | Wide Area Network                                |

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# SECMP0018 ‘Standard Electricity Distributor Configuration Settings’

## Annex C

### Working Group Consultation responses

#### About this document

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This document contains the full non-confidential collated responses received to the SECMP0018 Working Group Consultation.

## Question 1: Do you agree that the proposed solution better facilitates the SEC Objectives ?

| Question 1                 |                   |          |   |
|----------------------------|-------------------|----------|---|
| Respondent                 | Category          | Response | Rationale   |
| Landis+Gyr                 | Other Sec Parties | Yes      | It better facilitates SEC Objective a & e   |
| Npower                     | Large Supplier    | Yes      | We feel this modification would provide better information at smart installation and therefore improve the process  |
| Scottish Power             | Large Supplier    | Yes      | The proposed solution facilitates objectives a) and e)  |
| SSEN                       | Network Operator  | Yes      | SSEN supports the statement made within SECMP0018.  |
| E.ON                       | Large Supplier    | Yes      | We believe that this Modification better facilitates objective a via increasing the efficiency with which standardised default values are set on electricity Smart Meters prior to installation.<br><br>However, we do not believe that this Modification better facilitates objective e: we see no benefit to the delivery of a secure and sustainable Supply of Energy via the design and operation of Energy Networks, as a result of removing the requirement for Network Operators to update the default values on electricity Smart Meters post-installation. |
| Western Power Distribution | Network Operator  | Yes      | We believe that this proposal better facilitates SEC Objective (a) as it will facilitate the efficient installation and operation of ESMEs. It will reduce traffic in the DCC systems as DNOs will not need to send the Service Requests to configure the EMSEs at install.   |

## Question 2: Will there be any impact on your organisation to implement SECMP0018?

| Question 2                        |                   |          |  |
|-----------------------------------|-------------------|----------|--|
| Respondent                        | Category          | Response | Rationale  |
| <b>Landis+Gyr</b>                 | Other SEC Parties | Yes      | Mainly due to the inclusion of this data as part of the device configuration, though the benefits far exceeds this impact.   |
| <b>Npower</b>                     | Large Supplier    | No       |  |
| <b>Scottish Power</b>             | Large Supplier    | Yes      | Factory configuration update required for all ScottishPower procured Electricity S2 meters.  |
| <b>SSEN</b>                       | Network Operator  | Yes      | SSEN will see a lowering of back office activities related to monitoring alerts that will indicate that standard settings were now configured correctly.   |
| <b>E.ON</b>                       | Large Supplier    | No       |  |
| <b>Western Power Distribution</b> | Network Operator  | Yes      | As a Distribution Network Operator, Western Power Distribution will have assurance that the appropriate configuration settings will be placed on the meter prior to installation. As a result we will no longer need to send Service Requests ourselves at installation to configure these devices, and will have reassurance that there are consistent values being used. |



### Question 3: Will your organisation incur any costs in implementing SECMP0018?

| Question 3                 |                   |          |  |
|----------------------------|-------------------|----------|--|
| Respondent                 | Category          | Response | Rationale  |
| Landis+Gyr                 | Other SEC Parties | Yes      | As this configuration data will trigger some extra device testing, though the benefits far exceeds this minor extra cost,  |
| Npower                     | Large Supplier    | No       |  |
| Scottish Power             | Large Supplier    | Yes      | We will incur minor costs for the update to the factory configuration.<br>Larger costs may be incurred in testing depending on the approach agreed at an industry level for the testing of each electricity meter model and DCC comms hub variant in live operation. |
| SSEN                       | Network Operator  | No       | Saving in manpower will be used to deal with smart meter system overall issues.  |
| E.ON                       | Large Supplier    | Yes      | Our share of the implementation fee; otherwise there will be no costs incurred following the implementation of this Modification   |
| Western Power Distribution | Network Operator  | Yes      | Our share of the implementation costs.   |

## Question 4: Having considered the potential impacts and costs to your organisation, as well as the cost to deliver the modification, do you agreed that SECMP0018 should be approved?

| Question 4                 |                   |          |  |
|----------------------------|-------------------|----------|--|
| Respondent                 | Category          | Response | Rationale  |
| Landis+Gyr                 | Other SEC Parties | Yes      |  |
| Npower                     | Large Supplier    | Yes      | It will improve the smart installation process and make It more efficient.   |
| Scottish Power             | Large Supplier    | Yes      |  |
| SSEN                       | Network Operator  | Yes      | Manpower saving outweigh modification costs.   |
| E.ON                       | Large Supplier    | Yes      | Mandating the requirement for Network Operators' preferred default values to be present in electricity Smart Meters prior to their installation will increase the efficiency of the DCC's Total System via a reduction in Service Request (SR) processing, and it will facilitate robust governance of any changes required to these default values. |
| Western Power Distribution | Network Operator  | Yes      | We believe that this modification should be improved as the costs are purely administration fees and the benefit of reducing network traffic and having assurance that all new installations will have consistent configurations far outweighs the associated costs.   |

## Question 5: Do you believe that the draft legal text changes deliver the intention of the modification?

| Question 5                 |                   |          |  |
|----------------------------|-------------------|----------|--|
| Respondent                 | Category          | Response | Rationale  |
| Landis+Gyr                 | Other SEC Parties | Yes      |  |
| Npower                     | Large Supplier    | Yes      |  |
| Scottish Power             | Large Supplier    | Yes      | Yes  |
| SSEN                       | Network Operator  | No       | <p>SSEN assume these settings have been confirmed by the ENA particularly the inclusion within the GBCS Annex 7 (Table 28c: WAN Alert and Power Event Log settings to be configured prior to installation of Devices) as some of the alerts have a N against both columns. Was this validated by the ENA?</p> <p>When you read the description found in the SMETS2 under</p> <p>RMS voltage sag detection</p> <p>0x8024,0x8025, 0x8026 and 0x8027 all display a N in both columns</p> <p>RMS voltage sell detection</p> <p>0x8028, 0x8029, 0x802A and 0x802B all display a Y in both columns</p> <p>but the reading indicates that in all cases an alert or an entry is generated!</p> |
| E.ON                       | Large Supplier    | Yes      |  |
| Western Power Distribution | Network Operator  | Neutral  | With regards to the draft legal text, we have reviewed and agree with the data items and values, however, as we do not use the GBCS in detail we feel that others will be better positioned to comment.  |

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## Question 6: Do you agree with the recommended implementation date?

| Question 6                 |                   |          |   |
|----------------------------|-------------------|----------|---|
| Respondent                 | Category          | Response | Rationale   |
| Landis+Gyr                 | Other SEC Parties | Yes      |   |
| Npower                     | Large Supplier    | Yes      |   |
| Scottish Power             | Large Supplier    | Yes      |   |
| SSEN                       | Network Operator  | No       | <p>SSEN is disappointed that it took so long for this modification to reach its implementation date considering all the lead time meter manufacturers need to incorporate these requirements in their meter built program.</p> <p>The delay between approval and implementation could be reduced to minimise meters not receiving the standard settings.</p>  |
| E.ON                       | Large Supplier    | Yes      | <p>We agree that this Modification should be implemented with the next GBSC-containing Release, and where the June 2019 Release is the next GBSC-containing Release that accords with the Release Implementation Policy we support the proposed implementation date. Otherwise we do not support the June 2019 implementation date, instead we are happy to await the decision of Panel with regard to which Release this should be implemented in.</p> |
| Western power Distribution | Network Operator  | Yes      |   |

## Question 7: How long will Electricity Network Parties (ENPs) need to resolve any backlog of smart meters that will not have the requested configuration settings following the implementation of SECMP0018?

| Question 7                 |                   |                  |   |
|----------------------------|-------------------|------------------|---|
| Respondent                 | Category          | Response         | Rationale   |
| Landis+Gyr                 | Other SEC Parties | Don't know       | I'll leave it to the ENPs to estimate,  |
| Npower                     | Large Supplier    | N/A              | N/A   |
| Scottish Power             | Large Supplier    | N/A              | N/A   |
| SSEN                       | Network Operator  | 10 minutes/meter | This will depend of the interaction between this modification being publicised to relevant meter manufacturers. Some could already incorporate these future requirements ahead of the need.                             |
| E.ON                       | Large Supplier    | N/A              |   |
| Western Power Distribution | Network Operator  | Unknown          | Western Power Distribution are unable to provide a timescale as there are a lot of variables. We currently try and configure at the time of installations, however there are some instances where this is not possible. |

## Question 8: Please provide any further comments you may have.

| Question 8                 |                   |   |
|----------------------------|-------------------|---|
| Respondent                 | Category          | Comments  |
| Landis+Gyr                 | Other SEC Parties |   |
| Npower                     | Large Supplier    |   |
| Scottish Power             | Large Supplier    | We would welcome further information about the testing approach for this change, including for any SMETS2 devices impacted by Q7 which may have churned away from the installing supplier to a third party supplier.. |
| SSEN                       | Network Operator  | SECAS need to be on top of modification progress to minimise delay in implementation outcome.   |
| E.ON                       | Large Supplier    |   |
| Western Power Distribution | Network Operator  |   |