

This document is classified as **White** in accordance with the Panel Information Policy. Information can be shared with the public, and any members may publish the information, subject to copyright.

# DP193 ‘Incorporation of Category 3 Issue Resolution Proposals into the SEC – Batch 6’

## Annex A

## Legal text – version 0.1

### About this document

---

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

## SEC Schedule 8 'Great Britain Companion Specification' (GBCS) version 4.x

---

These changes have been drafted against SEC Schedule 8 version 4.0.

These changes will be applied to the next version of the GBCS v4.x series at the time the modification is implemented. These will also be applied to the next version of any subsequent GBCS series introduced on or before the modification is implemented.

### Amend Section 10.2.2.2 as follows:

#### 10.2.2.2 GSME

When a GSME has successfully established a shared secret key using *CBKE* with a Communications Hub, the GSME shall:

- send a request to the *ZigBee Gas ESI Endpoint* requesting the creation of mirrored *Basic, Metering and Prepayment Clusters* using the *RequestMirror* command;
- configure, using the *ConfigureMirror* command, the *ZigBee Gas Mirror Endpoint* to use the two way mirroring notification scheme '*Predefined Notification Scheme B*'; and
- send a *RequestTunnel* command to the CHF to request a tunnel association with the CHF.

In line with ZSE, when a GPF sends a *RequestMirrorResponse* command in response to a *RequestMirror* command, the *RequestMirrorResponse* command shall contain the *EndPointID* to be used by the GSME regardless of whether the *RequestMirror* created the mirror.

A GPF shall only send a *RequestMirrorResponse* containing the *EndPointID* to the Device which caused the GPF to create the mirror.

Where a GPF receives a *ConfigureMirror* command to use the two way mirroring notification scheme '*Predefined Notification Scheme B*' which has the *Disable Default Response Sub-field* in its *Frame Control Field* set to zero, the GPF shall respond with a *Default Response* indicating *SUCCESS* if it has a mirror configured to use '*Predefined Notification Scheme B*', regardless of whether that was configured by the *ConfigureMirror* command.

Where the Communications Hub has successfully actioned a *ConfigureMirror* command, the GPF shall set the *Push All Static Data - Basic Cluster*, *Push All Static Data - Metering Cluster* and *Push All Static Data - Prepayment Cluster flags*.

Where a GSME reports a value for the *ManufacturerName* attribute or the *ModelIdentifier* attribute, the GPF shall accept that value. For clarity, there are no requirements for the GPF to subsequently process or make available any such value.

For clarity, the GSME:

- shall not action ZSE / ZCL commands received from the GPF in relation to any of the flags within *NotificationFlags2*, *NotificationFlags3* and *NotificationFlags5*;
- for *NotificationFlags4*, shall only action ZSE / ZCL commands received from the GPF in relation to the flags specified in Table 0a.

Bit Number	Waiting Command
6	<i>Get Prepay Snapshot</i>
7	<i>Get Top Up Log</i>
9	<i>Get Debt Repayment Log</i>

Table 0a: flags in *NotificationFlags4* to be actioned by the GSME

- for *FunctionalNotificationFlags*, shall only action ZSE / ZCL commands received from the GPF in relation to the flags specified in Table 0b:

Bit Number	Waiting Command
0	<i>New OTA Firmware</i>
1	<i>CBKE Update Request</i>
4	<i>Stay Awake Request HAN</i>
5	<i>Stay Awake Request WAN</i>
6-8	<i>Push Historical Metering Data Attribute Set</i>
9-11	<i>Push Historical Prepayment Data Attribute Set</i>
12	<i>Push All Static Data - Basic Cluster</i>
13	<i>Push All Static Data - Metering Cluster</i>
14	<i>Push All Static Data - Prepayment Cluster</i>
15	<i>NetworkKeyActive</i>
21	<i>Tunnel Message Pending</i>
22	<i>GetSnapshot</i>
23	<i>GetSampledData</i>
25	<i>Energy Scan Pending</i>
26	<i>Channel Change Pending</i>

Table 0b: flags in *FunctionalNotificationFlags* to be actioned by the GSME

- shall have access to the *Notification Flags* on the Communications Hub whenever it can communicate with the Communications Hub; and
- shall not provide any metering data to the *ZigBee Gas Mirror Endpoint* until and unless the GPF's Entity Identifier is recorded in the GSME Device Log.

The GSME shall send a *RequestTunnel* command to the CHF to request a tunnel association with the CHF whenever it does not have a currently valid tunnel association with the CHF, and one of the following is true:

- the GSME has created an Alert or Response that is to be sent; or
- the GSME has ascertained, via the *Tunnel Message Pending* flag, that there is a Command for it buffered on the Communications Hub.

Where the GSME receives a *RequestTunnelResponse* command from the CHF with a *TunnelStatus* of 0x01 (*Busy*), the GSME shall send another *RequestTunnel* command the next time it turns its HAN Interface on.

Where the GSME receives a *RequestTunnelResponse* command from the CHF with a *TunnelStatus* of 0x02 (*No More Tunnel IDs*), the GSME shall send a *CloseTunnel* command for any *TunnelID* that

may relate to an active tunnel association between it and the CHF and, after receiving responses to all such commands, send another *RequestTunnel* command.

Immediately following the first successful establishment of the a tunnel between the CHF and the SAPC / ESME / GSME, the SAPC / ESME / GSME shall send an Alert with Alert Code 0x8F69.

**Amend Section 10.6.4 as follows:**

#### **10.6.4 Sub GHz GSME - functional requirements**

Sub GHz GSME shall wait at least 2 hours from detecting SMHAN interference before indicating that the interference is continuing by way of sending a *Mgmt\_NWK\_Unsolicited\_Enhanced\_Update\_notify* command to the CH.

When operating on Sub GHz, GSME shall, on each wake up, check the *Functional Notification Flags* for bits 25 (*Energy Scan Pending*) and 26 (*Channel Change Pending*).

If either bit is set (so has a value 0b1) then the GSME shall attempt to retrieve any Commands buffered for it on the CH before turning off its SMHAN radio. For clarity and in line with Section **Error! Reference source not found.**, the GSME should attempt such retrieval before reading the CHF *Channel Change* attribute, if it is to maximise the likelihood of Command retrieval before it turns off its SMHAN radio.

If bit 25 is set, the GSME shall disable the SMETS User Interface Commands '4.5.2.4 Check for HAN Interface Commands' and '4.5.2.8 Find Smart Metering Home Area Network and Re-establish Communications Links' and shall not receive and execute '4.5.3.3 Add Credit' and '4.5.3.1 Activate Emergency Credit' Commands from a PPMID and a Gas Proxy Function (where those terms have their SMETS meanings), as required by SMETS 4.4.7.2, until it next turns on its SMHAN radio.

Note that CH may change Sub GHz Channel once every 24 hours to attempt to communicate with a lost GSME. On each such change, the CH will undertake a Sub GHz Channel Scan, meaning that it cannot communicate with a GSME for a period of time. GSME should factor both the 24 hour period and the associated Sub GHz Channel Scan in to their attempts to re-establish lost communications with the CH.

## SEC Schedule 9 'Electricity Smart Metering Equipment Technical Specifications' version 5.x

---

These changes have been drafted against ESMETS v5.1.

These changes will be applied to the next Sub-Version of the ESMETS v5.x series at the time the modification is implemented. These will also be applied to the next Sub-Version of any subsequent SMETS series introduced on or before the modification is implemented.

**Amend Section 5.29. as follows:**

### 5.29 Interface Requirements

#### 5.29.1 HAN Interface Commands

##### 5.29.1.1 Limit APC [n] Level

A Command to cause ESME to limit APC [n]'s maximum input or output level. The Command shall include a start date-time and an end date-time, defining the 'APC [n] Limit Period', and a maximum input or output level, which APC [n] shall not exceed at any time in the specified period, if the Command executes successfully. Where the Command specifies an input level, all resulting actions shall be in relation to input levels. Where the Command specifies an output level, all resulting actions shall be in relation to output levels.

ESME shall reject the Command where the specified APC [n] Limit Period has a duration of more than 24 hours.

In executing the Command, ESME shall be capable of:

- i. recording the Command and Outcome to the **Error! Reference source not found.(Error! Reference source not found.)**;
- ii. where relevant, updating the corresponding **Error! Reference source not found.(Error! Reference source not found.)** to indicate the resulting input or output level, immediately the Command has been executed; and
- iii. sending an Alert to that effect via its HAN Interface containing the current UTC date and time, the resulting input or output level and the start and end time of the APC [n] Limit Period.

Where the Command is successful and ESME's current time is within a previously set APC [n] Limit Period, ESME shall set the end date-time of that previously set APC [n] Limit Period to be now, and immediately take the actions required as a result of the end date-time of the APC [n] Limit Period being reached, before taking actions related to the APC [n] Limit Period in the Command.

Where the Command is successful, ESME shall:

- iv. immediately, if ESME's current time is within the APC [n] Limit Period; or
- v. if the APC [n] Limit Period is in the future according to ESME's current time, at the start date-time of the APC [n] Limit Period; and
- vi. at any time in the **Error! Reference source not found. [INFO](Error! Reference source not found.)** that is both within the APC [n] Limit Period and relates to the specified APC [n],

pause the timer for any active Boost Period, if the Command relates to output level and APC [n] is specified in **Error! Reference source not found.(Error! Reference source not found.)**, end any active APC [n] Setting Period and ensure that APC [n] is set to a maximum input or output level. If there is an active Boost Period and the Command relates to output level and APC [n] is specified in **Error! Reference source not found.(Error! Reference source not found.)**, then that maximum level shall be set to the level specified in the Command. Otherwise, that maximum level shall be the lesser of:

- vii. the input or output level specified in the Command, or
- viii. the input or output level defined in the **Error! Reference source not found. [INFO](Error! Reference source not found.)** for that date and time.

Should that result in a change to the maximum input or output level of APC [n], ESME shall be capable of recording that change in the **Error! Reference source not found.(Error! Reference source not found.)**.

When the end date-time of the APC [n] Limit Period is reached, or immediately where that date-time is in the past, ESME shall:

- ix. if it has paused the timer for any active Boost Period as a result of processing the Command, resume the timer and set the output level for APC [n] to its maximum;
- x. if ESME's current date-time is not within an active APC [n] Setting Period, be capable of:
  - a. ensuring the input or output level of the APC [n] is the level defined in the **Error! Reference source not found. [INFO](Error! Reference source not found.)** for that date and time, or the maximum possible corresponding level, if no corresponding level is defined in the calendar; and
  - b. sending an Alert to that effect via its HAN Interface containing the current UTC date and time and the resulting input or output level;
- xi. if ESME's current date-time is within an active APC [n] Setting Period, take no further action.

### 5.29.1.2 Set APC [n] Level

A Command to cause ESME to either (1) set APC [n]'s output level, where there is no Boost Period active, and no APC [n] Limit Period, which relates to the output level, active, for APC [n]; or (2) set APC [n]'s input level, where there is no APC [n] Limit Period, which relates to the input level, active, for APC [n]. Where the Command specifies an input level, all resulting actions shall be in relation to input levels. Where the Command specifies an output level, all resulting actions shall be in relation to output levels.

The Command shall include a start date-time and an end date-time, defining the 'APC [n] Setting Period' over which this setting is to apply, and the input or output level which is to be set.

ESME shall reject the Command where the specified APC [n] Limit-Setting Period has a duration of more than 24 hours.

In executing the Command, ESME shall be capable of:

- i. recording the Command and Outcome to the **Error! Reference source not found.(Error! Reference source not found.)**; and
- ii. updating the corresponding **Error! Reference source not found.(Error! Reference source not found.)** to indicate the resulting maximum input or output level.

Where a Boost Period or an APC [n] Limit Period is active for APC [n], ESME shall not change its output level in executing this Command and the Command shall not be successful.

Where the Command is successful and ESME's current time is within a previously set APC [n] Setting Period, ESME shall set the end date-time of that previously set APC [n] Setting Period to be now, and immediately take the actions required as a result of the end date-time of the APC [n] Setting Period being reached, before taking actions related to the APC [n] Setting Period in the Command.

Where the Command is successful, ESME shall immediately, if ESME's current time is within the APC [n] Setting Period, or at the start date-time of the APC [n] Setting Period, if the APC [n] Setting Period is in the future according to ESME's current time, set that APC [n] to the maximum input or output level specified in the Command.

When the end date-time of the APC [n] Setting Period is reached, or immediately where that date-time is in the past, ESME shall be capable of ensuring the input or output level of APC [n] is set to the maximum corresponding level defined in the **Error! Reference source not found. [INFO](Error! Reference source not found.)** for that date and time, or the maximum possible corresponding level, if no corresponding level is defined in the calendar.