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**Department for Business,**

**Energy & Industrial Strategy**

1 Victoria Street,

London SW1H 0ET

[www.gov.uk/beis](file:///C:/Users/dstone/Downloads/www.gov.uk/beis)

3 February 2020

The Authority (Ofgem), the SEC Panel, SEC Parties, and other interested parties

Dear Colleague,

**Smart Metering Implementation Programme: Consultation Response on Technical Specification changes to support proportional load control functionality**

The response to BEIS’s consultation of 28 October 2019 on Technical Specification changes to support proportional load control functionality can be found in Annex A to this letter. The consultation followed an earlier one that ran from 2 August 2019 to 28 October 2019 on the policy of introducing proportional load control functionality into the smart metering infrastructure (as well as associated SMETS2 specification changes).

BEIS has decided to proceed with the implementation of proportional load control functionality, supported by a Final Impact Assessment provided by DCC for its implementation in the already planned November 2020 Release. BEIS therefore hereby requests DCC to proceed to implement it (for use on single band 2.4GHz Comms Hubs) in the November 2020 Release, and to consult on associated changes to DUIS and MMC by Q2 2020.

BEIS is hereby incorporating SMETS2 v5.0 Draft 3, GBCS v4.0 Draft 2 and CHTS v1.4 Draft 1 (previously known as CHTS v1.p Draft 1 in the consultation document) into the design baseline managed by the Technical and Business Design Group (TBDG) for implementation in the November 2020 Release. BEIS is also hereby baselining CHTS v1.n Draft 2, which is associated with supporting proportional load control on a Dual Band Comms Hub in due course. Marked-up versions of these documents are provided in Annex C.

In terms of next steps, BEIS will liaise with SECAS regarding the SEC Panel’s overall management of the November 2020 Release, which is also expected to implement various SEC Modification Proposals. BEIS will continue to liaise with DCC, to establish the costs of implementing system changes necessary to support proportional load control on Dual Band Comms Hubs.

Yours faithfully,



**Duncan Stone**

Deputy Director & Head of Delivery,

Smart Metering Implementation Programme

**Annexes:**

Annex A – Consultation Response and Next Steps

Annex B – Summary of Changes to GBCS, CHTS and SMETS2

Annex C – Technical Specifications being baselined alongside this consultation response

**Annex A – Consultation Response and Next Steps**

**The consultation closed on 25 November 2019 and we received a total of 14 responses from the following organisations:**

|  |  |  |
| --- | --- | --- |
| *Category* | *Respondents* |  |
| Manufacturers / Software Companies (6) | Aclara  Critical  EDMI | L+G  Toshiba  WNC |
| Energy suppliers (2) | EDF Energy | SSE |
| Communications Service Providers (2) | Arqiva | Telefónica |
| Associations (2) | Energy UK | ENA |
| Manufacturers (1) | Chameleon |  |
| Other (1) | Gemserv |  |

**Summary**

We received 14 responses suggesting 6 changes to the specifications that went beyond minor drafting suggestions as well as wider questions on costs and timescales. Below, in this Annex A, we have summarised the principal technical changes we have accepted and rejected, as well as addressed the points raised about costs and timescales. This is followed by a table listing all the comments made by respondents and our response to these comments. Then, in Annex B, we have provided a table describing the detailed technical changes to the specifications that we have made as a result of the comments listed in the table in Annex A. Finally, marked-up versions of the baselined technical specifications are provided in Annex C.

**Summary of proposed changes accepted**

1. **Proportional load control of Export**: One respondent proposed changes to the Smart Metering Equipment Technical Specifications 2 (SMETS2) drafting to allow proportionate control of Export as well as Import and to establish whether specific controlled equipment is importing or exporting. We agree that making changes to the technical specifications to enable proportional control of Export in addition to Import would be beneficial, and have made additions to the SMETS2 and Great Britain Companion Specifications (GBCS) drafting to allow that. This appears sensible given that the changes necessary to support Export are minimal and do not add costs to the DCC solution.
2. **Output level reverting to Boost at end of Limit**: One respondent suggested that the APC Limit Function should take into account any active APC Setting Period, for instance when the load limiting function is used during a period when the consumer has used the Boost function. In response to this, we have decided to make changes meaning that after a load limiting event, the level reverts to the Boost level for the remaining amount of Boost time.

**Summary of proposed changes not accepted**

1. **Output level reverting to Set at end of Limit**: One respondent proposed that at the end of the APC Limit Period, the meter should revert back to any previously active Set APC level where there is one rather than to the Calendar. We have decided to maintain APC Set Level functionality as proposed in the first draft of GBCS published, which means that at the end of a limit period, levels routinely revert to calendar unless the boost function is still active (in which case the level reverts to the Boost level). Making changes to this functionality would add significant complexity with what seems to be limited benefit, based on the evidence presented. Energy suppliers will receive a notification of the limit and can reset the level to any desired once the limit period expires.
2. **Output level reverting to previous state at end of Test**: One respondent also suggested that at the end of the Test Function, the device should revert back to the normal state considering any Boost or Setting Period activated before the test. After some consideration, we have decided not to progress this suggestion since we are not prescribing the Test Function in the specification. However, we note that there is scope for developers to build in such functionality and still be consistent with the specification.
3. **Demand Response / Load Control (DRLC) server for sending information on Boost, Override and Limit**: One respondent raised a concern around the lack of information on Boost state, Override status and Limit status, and suggested that the DRLC server should be used for communicating this information. They also suggested that BEIS speaks to the ZigBee Alliance Smart Energy Working Group to determine how these data items could be delivered to other Devices on the Home Area Network (HAN). BEIS’ view is that to use DRLC appears complex and burdensome, so consideration needs to be given to whether there are any other options that need wider discussion with industry. This is something we will take forward separately for possible inclusion in a future iteration of the specifications.
4. **Device Type and Commodity Type**: One respondent suggested that Standalone Auxiliary Proportional Controller (SAPC) Devices fitted in addition to a standard Electricity Smart Metering Equipment (ESME) should have a Metering Device Type and Commodity Type of 7 – End Use Measurement Device (EUMD) rather than 0 – Electric Metering. Giving SAPC a Commodity Type of 7 – EUMD (as per the ZigBee specifications) would create a new device type and subsequently require the Data & Communications Company (DCC) to make processing and system changes, e.g. for Comms Hubs, that would otherwise not need to be made. Therefore, we have decided not to make any changes to the SAPC Device Type and Commodity Type in SMETS.

**Wider comments received by some respondents**

**Timing of changes**:

1. One respondent suggested that it is not the right time to implement new functionality since DCC is in a critical period of delivery, and that implementation of proportional load control functionality via the November 2020 Smart Energy Code (SEC) Release is not realistic. DCC has confirmed that the proposed functionality can be delivered via the November 2020 SEC Release alongside other commitments for that Release. There are strategic reasons for wanting this functionality to be delivered as a priority, in part linked to the timetable for decisions points set out in the Electric Vehicle Smart Charging consultation[[1]](#footnote-2). Supporting APC functionality will remain optional for energy suppliers until further decisions are taken.
2. A respondent requested clarification in relation to the BEIS decision-making process and implementation timeline once DCC provides the Final Impact Assessment. BEIS is baselining SMETS, GBCS and Communications Hub Technical Specifications (CHTS) on publication of this consultation response. The provision of the Final DCC Impact Assessment – which shows costs which are not significantly different from the draft Impact Assessment published as part of the summer consultation – was a key consideration for BEIS making this decision. Following baselining of SMETS, GBCS and CHTS, DCC needs to make changes to DCC User Interface Specifications (DUIS) and the Message Mapping Catalogue (MMC) and consult on those changes, expected in Q2 2020. This consultation process will be carried out and lead by DCC.
3. **DCC charges**: Another respondent requested clarification on how DCC charges will be shared across DCC Users, and whether this may happen via Elective Services. As specified in Government’s response to the consultation on Smart Metering System Proportional Load Control, there are no changes to the charging methodology as part of this proposal. BEIS considers it relevant that the proposed proportional load control functionality is an enhancement to Auxiliary Load Controller Switch (ALCS) / HAN Connected Auxiliary Load Controller Switch (HCALCS) functionality. ALCS and HCALCS were funded by all energy suppliers (as well as other parties subject to the DCC charging methodology) on the basis that they all had potential to use it, whilst the functionality was focused on by certain energy suppliers with a particular customer base. It is also envisaged that, whilst proportional load control might be initially more relevant to some suppliers, it will become relevant to most energy suppliers in the medium term, as deployment of low carbon technologies and half-hourly settlement increases across the consumer base. Furthermore, this is a relatively small cost in the scheme of system changes.

**Version control and Technical Specifications Applicability Tables (TSAT)**:

1. A respondent raised a concern around having multiple versions of SMETS running concurrently and associated additional DCC costs, IT requirements and Device management complexity. The concern around challenges and costs for DCC is noted, however as specified in Government’s response to the consultation on Smart Metering System Proportional Load Control, the DCC system is designed to operate with multiple versions of technical code specifications simultaneously. Also, specification changes will be designed to minimise variation in functions between Devices and as such limit the extent of testing required and will thereby minimise any additional costs.
2. One respondent asked BEIS to provide the TSAT, given the complexity around having multiple versions of technical specifications. Changes to TSAT will be considered and consulted upon once development timescales are more fully understood.
3. One comment suggested that other associated changes to the DCC system should be considered collectively as these may also impact energy suppliers’ systems, e.g. Parse & Correlate, Threshold Anomaly Detection Procedures, etc. Associated changes to the DCC system are already being considered.

**Conclusion and Next steps**

1. BEIS has decided to proceed with the implementation of the proposed functionality. This is supported by a Final Impact Assessment provided by DCC, for changes to the DSP and Parse & Correlate, including design, build, Pre-Integration Testing, System Integration Testing and User Integration Testing, at a deployment cost of approximately £1.2m. This cost is based on a standalone release, and so costs may reduce when incorporated into the wider November 2020 Release. This is within the range of the Preliminary Impact Assessment reported as part of the previous SMETS2 consultation. The costs are associated with proportional load control using a single band 2.4GHz Comms Hub. Costs to enable support of proportional load control on a Dual Band Comms Hub are still being ascertained.
2. BEIS hereby requests DCC to implement the changes to support proportional load control on single band 2.4GHz Comms Hubs in the November 2020 Release, and to consult on associated changes to DUIS and MMC by Q2 2020.
3. BEIS is hereby baselining SMETS2 v5.0 Draft 3, GBCS v4.0 Draft 2 and CHTS v1.4 Draft 1 (previously known as CHTS v1.p Draft 1 in the consultation document) for implementation in the November 2020 Release. BEIS is also baselining CHTS v1.n Draft 2, which is associated with supporting proportional load control on a Dual Band Comms Hub in due course. Marked-up versions of these documents are provided in Annex C.
4. Next steps will include:
   * BEIS will continue to liaise with DCC to establish the costs of implementing system changes necessary to support Dual Band Comms Hubs.
   * BEIS will also continue to coordinate with SECAS regarding the SEC Panel’s overall management of the November 2020 Release, which is also expected to implement various SEC Modification Proposals.

***Summary of comments made by respondents and BEIS response***

| **No** | **Respondent** | **Comment** | **Section/Topic** | **Response: Accept, Reject, Noted, Explain** |
| --- | --- | --- | --- | --- |
| 1 | A | SMETS 2 Sec 5 Part F describes the functionality of the APC should an ESME support it. Unlike the ON/OFF control of the ALCS, APC requires defining the approach to communicate the limiting proportional control value, to the charging device. Does it imply that it is left to the two device manufacturers (i.e. ESME & the charging device) to decide the communication protocol for the APC signal (wired or wireless or optionally both)? Is this currently out of the scope of SMETS 2? | Control between APC & Charging Device | Explain - The APC signalling to an attached device is outside of scope of SMETS |
| 2 | A | What type of device is the SAPC? – Is it a Type 1 device like a HCALCS?  or is it a router device like an ESME?  If it is a router like an ESME, what devices are expected to be connected to it? – Should the current definition of what a Type 1 device change on account of SAPC? | SAPC Definition | Accept - Type 1 definition changed |
| 3 | A | For the S2 meters already installed, it appears that the ESME that meets S2v4.2 & GBCS v3.2 cannot be OTA upgraded to support the optional APC functionality in S2v5 & GBCS v4.  Further, the SAPC appears to be a unique stand-alone device different from the existing SMETS 2 ESME. Is this understanding correct? | Existing ESME Devices | Explain - Yes, correct |
| 4 | A | What other SMETS 2 functionalities are supported by a SAPC?  Would it include everything that an ESME supports today? | SAPC Functions | Accept - Section 9 in SMETS changed to clarify which ESME functions are supported |
| 5 | A | What is the purpose of defining the SAPC as a router with overlapping functionalities with the ESME? Are there any known limitations with the approach where the SAPC is configured as a Type 1 device (like a HCALCS) that communicates with the ESME over Zigbee, perhaps over the Load Control Attributes of a DRLC (to receive the APC limit % data) with no interaction with the WAN / DCC? | SAPC Configuration | Explain - Making the SAPC a router allows it to include ESME functionality, which allows us to include the functionality as proposed, whilst minimising communications hub changes and other system and specification changes |
| 6 | A | Should the SAPC support all the mandatory and optional functionalities defined in the specification, how would the ZigBee device endpoints distinguish the data from a SAPC and from an ESME? Could a HCALCS device be controlled by both the SAPC and ESME at the same time? | SAPC Supported SMHAN Devices | Accept - SMETS HCALCS drafting changed to clarify SAPC communications.  Explain - see Comment number 5 above |
| 7 | A | How would the commands from DCC distinguish the intended recipients (i.e. SAPC vs ESME)?  How would the KRP know the current capability of a SAPC (i.e. whether it supports only the mandatory functions or optional or limited to how much an ESME can support), therefore direct the command to that device in lieu of or in addition to the ESME? | SAPC Specific WAN Commands | Explain - All Devices have a unique Device ID and that is the Business Target ID that DCC uses to identify the recipient Device (see GBCS Section 4).  All SAPC must support the mandated functionality. If a supplier wants one with additional functionality, they can buy such Devices, and so use optional functionality. If the Supplier sends a Command the SAPC doesn't support, they will get an Alert saying so (see GBCS section 7) |
| 8 | B | In Table 20 - Mapping Table, Column AT (SAPC support) refers that CS02a is mandatory to SAPC.  Is this correct?  According to GCS main document: In Section 13.2.2 (CS02a) - ESME was removed. And I believe CS02f was added for this purpose. | Table 20 | Accept - corrected in Table 20 |
| 9 | B | In Table 20 - Mapping Table, Column AT (SAPC support) refers that GCS28 is mandatory to SAPC.  It should be N/A. | Table 20 | Accept - corrected in Table 20 |
| 10 | B | Still in Table 20. This is more of a question:  Since SAPC is supposed to be like a single element ESME, should the use cases for twin/polyphase ESME (ECS01c, ECS01d, ECS24b, ECS23b, ECS26k, ECS29b, ECS29d, ECS29f, etc.) be identified as Optional to SAPC? | Table 20 | Accept - corrected in Table 20 |
| 11 | B | In Section 13.10.5.3:  The Protection Against Replay mechanisms for the Update Security Credentials Command shall be that specified in this Section 13.10.5.2 (which is different than that for other GBCS Commands).  The reference highlighted should be to 13.10.5.3 | 13.10.5.3 | Accept - reference corrected |
| 12 | B | For consistency, in Table 13.3.10.1, add the same notes that were added to Table 13.3.5.1, from IRP611:  …  2.1 | The trustAnchorCellUsage in the authorisingRemotePartyTACellIdentifier must be ABSENT  ---  The TrustAnchorCellUsage in the targetTrustAnchorCell in each entry in replacements must be ABSENT | 13.10.5.1  13.3.10.1 | Accept - Table 13.10.5.1 corrected |
| 13 | B | In section 13.3.5.10  If:  • remotePartyRole of  targetTrustAnchorCell and that of authorisingRemotePartyControl is supplier; and  • keyUsage of targetTrustAnchorCell is digitalSignature  then the Device shall set all Relevant Execution Counters to the value in newRemotePartyFloorSeqNumber. For clarity, this applies to the Execution Counter for the loadControllerBySupplier CS02g Update Security Credentials Command.  The new sentence doesn’t seem to match the condition.  On a loadControllerBySupplier replacement, the targetTrustAnchorCell would be loadController and the authorisingRemotePartyControl would be supplier, right? | 13.3.5.10 | Reject - 13.3 relates to cs02b command processing;  the condition above could only be met when the supplier digital signature credentials are being changed e.g. supplierbysupplier  so all execution counters that are for commands that a supplier can send need to be set to the newRemotePartyFloorSeqNumber  this includes the execution counter for loadControllerBySupplier since the supplier can send that |
| 14 | C | The Test Function (which is done locally) ends definitely any active Boost or Setting Period.  Our view is that at the end of the test, the devices should revert back to the normal state, considering any Boost or Setting Period activated before the test. | SMETS  Test Function(?) | Covered in Annex A of response document |
| 15 | C | The APC Limit Period activation definitely cancels any active Boost, or any active Setting Period, even when the APC limit level is above the Set APC Level.  In that situation, the APC Limit command should not impact the level set. It should be possible to combine all these functions in order to manage expectations from all the stakeholders (Load controller and Network Operator) when compatible. | SMETS  APC Limit Period | Explain - The APC Limit command will not impact the Set APC Level if the latter is lower than the Limit level, as specified in SMETS2 v5.0 Draft 2.  What happens at the end of the APC Limit Period is covered in Annex A of the response document. |
| 16 | C | At the end of an APC Limit Period, the meter reverts back to the Calendar, whereas we believe it should revert back to the active set APC Level (if any). | SMETS  APC Limit Period | Covered in Annex A of response document |
| 17 | D | We confirm for Single band CH assuming the DeviceLog(CHF): methodInput: entryToBeAdded.deviceType is the same as the ESME there is no impact. | CHTS v1.n | Noted |
| 18 | A | Notes from Call with [Respondent A} on 8 Nov:  • Change  o Table 7.4 – correct ALCS xref  o SAPC -ESI – mandatory cluster check  • Actions:  o IW to check with Silabs wrt multimac  o IW to chase L+G ESME look at DLMS stuff | Table 7.4 | Accept - Table 7.4 changed |
| 19 | E | Proposal – Import & Export  Following discussion with BEIS at the DNO Smart Metering Steering Group, the ENA would like to raise the changes in the attached version of SMETS2 V5.0 draft 2 with the intention of:  • Clarifying that the APC could be used to manage the import to or export from controlled equipment;  • Recognising the flexibility for the maximum magnitude of the import to or export from controlled equipment to be defined more prescriptively in the GBCS; and  • Proposing a new requirement for Users to be able to establish the instantaneous power consumption / production of the controlled equipment (in a similar way to SMETS2 5.7.5.4: Active Power Import [INFO] The import of Active Power measured by ESME.) This is considered to be easier to deliver than the proposal for four quadrant measurement and logging that was proposed in the ENA response (although we remain of the view that such measurement / logging would facilitate the implementation of DSR).  The proposed changes to SMETS are identified in the attached version of SMETS2 V5.0 draft 2 by yellow highlighted comments.  These proposed changes would facilitate the application of the APC to V2G and other exporting equipment, by being able to set maximum import / export limits and to establish whether specific controlled equipment is importing or exporting, thus facilitating the application of DSR / DNO emergency ‘override’ without exposing network to the risks of inadvertently modulating an exporting device, or affecting customers more than necessary when managing a network issue.  If agreed these proposed changes would need to be codified in the GBCS. | Export | Covered in Annex A of response document |
| 20 | D | Our only comments are the use of JSON in the alerts would be considered poor design for a limited bandwidth system, especially as these deceives can be on SubGhz will low capacity and duty cycle restrictions.  I am a big JSON fan but do not believe this is the right place to use it. | JSON | Noted |
| 21 | F | I’d also like to re-emphases that I’m against the use of JSON in the alert payload. It’s not efficient for an embedded system to generate human readable ASCII payloads, nor is it efficient from a network bandwidth perspective to be delivering several hundred bytes of information with ~10% actual data vs ~90% ASCII text. | JSON | Noted |
| 22 | G | There will be an impact on REDACTED in respect of PIT system testing with the expansion of test scope to include APC and SAPC. This will require Emulator development from REDACTED.  We would also need to IA this with our vendors REDACTED irrespective if deemed no functional CH changes, so they can provide a GBCS 4.0 and CHTS 1.n compliance assessment and crucially submit a SECAS CPL to that effect for a release. | CHTS v1.n | Noted |
| 23 | H | We confirm and agree with the BEIS view that there will be no impact to us from our Single band CH perspective. | CHTS v1.n | Noted |
| 24 | I | The SAPC is single band (Sub-GHz) only, it will not impact the SBCH. Since it shares the device type of ESME which doesn’t have much interactions with the CH, the impact shall be minimal | CHTS v1.n | Noted |
| 25 | J | Following on from TSIRS and subsequent release of slides in relation to CRP612, REDACTED would propose a possible alternative approach in respect of support for proportional controllers.  We very much agree with the need to support EV and battery charge type applications, however, our view is that support of proportional controllers should have minimal, if any, impact on the ESME’s available for procurement today. Impact on support of mechanical changes to an ESME can run into many hundreds of thousands of pounds for hard tooling which should be considered in any cost analysis. Our view is that the ESME and CSP hub should act as a gateway to controlling the EV /battery devices by means of sending messages over the existing HAN (almost like a HCALC type device) and in this way the ESME could potentially control the charge rate with only firmware changes. | SMETS & GBCS | Reject - SAPC needs to be independent of ESME to facilitate future business models |
| 26 | K | Our other major concern is the large number of functions marked as ‘optional’ within the SAPC specification and in GBCS Table 20. This makes it unclear which specific GBCS Use Cases each SAPC can support. Whilst the DCC User which originally installed the SAPC Device will have a clear understanding of what functions the Device can perform and how it should be used, there doesn’t seem to be a way for a gaining Import Supplier to know this following a Change of Supplier (CoS) event. | GBCS T20 | Explain - There would be no obligations on any party (including a gaining supplier) to use such optional SAPC functionality. If a gaining supplier wishes to use additional SAPC functionality (over and above the mandated minimum) they may contact the SAPC provider to understand those capabilities. Additionally, the Device will, in response to a Command it does not support, report the fact it does not support it. |
| 27 | K | It is not clear from the draft text how the Prepayment Payment Mode would work in relation to the SAPC. The support of prepayment and billing requirements have been included for the SAPC in the GBCS. Whilst this is not formally excluded in the SMETS2 v5.0, we did not anticipate the SAPC being required to handle prepayment and billing information when reviewing the draft version of the SMETS2 v5.0 document provided as part of the September consultation. We consider that this makes it unclear how a meter in Prepayment mode and a SAPC will interact. We request further clarification on this point. | SMETS | Explain - There is no requirement for an SAPC to include prepayment functionality (although optionally it may do so). There is no requirement (nor any technical mechanism) by which an ESME and SAPC would interact, be that in relation to prepayment or any other functionality |
| 28 | K | In relation to an ECS 200 Operational update as set out in Table 7.2.9.1d (line 1342), the ‘value’ field data content and structure is not specified, which could result in gaining Import Suppliers not knowing what information they should expect to receive. We also consider that it would be advisable to state the maximum length of the concatenation in the Use Case to clearly distinguish between the DLMS/COSEM utf8-string used for this Alert and the definition of the DLMS/COSEM utf8-string in section 7.2.9.2 where the use of GBT is possible for longer files. | GBCS 7.2.9 | Accept - GBCS drafting has been corrected to align 7.2.9.1 and 7.2.9.2. |
| 29 | K | In section 7.2.9.2 Line 1364 there is no definition of the format and content of the ‘other-data’ element and Table 20 contains as only information ‘stateAndAssociatedInformation’, which could make it difficult for DCC Users to understand what it is and how it should be used. This may lead to interoperability issues following a CoS event or when firmware updates to the SAPC changes the format or adds/deletes data items from the ‘other-data’ field. | GBCS 7.2.9 | Explain - There is no requirement for DCC or DCC Users to use or understand any additional information that the Device provides in the 'other-data' element. If DCC Users wish to use and understand such information, they are able to do so, contacting the providers of such Devices where additional understanding is needed. |
| 30 | K | We would like to highlight that the proposed approach does not seem to provide the Load Controller with visibility of the status of devices ‘behind the meter’ (e.g. an electric vehicle charging point) or, critically, any control algorithm embedded within such devices, along with any features which are programmable by consumers. | GBCS | Explain - Devices could use ECS 2000 to report to DCC Users |
| 31 | C | Within GBCS a PPMID is no longer referenced as a Type 1 device, but a “device”; a new glossary entry describes this. However, within CHTS, Type 1 devices are still referenced in various areas. This is more a question of consistency and clarification as to why this would be the case. | GBCS | Explain - Changing GBCS simplified drafting, changing CHTS would have added little additional benefit. |
| 32 | C | Within the security credentials use cases starting on 13.2.2 of GBCS, it is not clear why the ESME has been removed from the generic use cases. | GBCS 13.2.2 | Explain - This is because the Use Case in 13.2 does not deal with Load Controller credentials. An ESME is required to support such Credentials, and so report upon them. Therefore, it is required to support the next 'Provide Security Credentials' Command instead |

**Annex B – Summary of Changes to GBCS, CHTS and SMETS2**

As mentioned in Annex A, following the CRP612 consultation responses, some consequential additional changes have been made to specifications embedded in the CRP612, so: GBCS v4.0 Draft 1, SMETS2 v5.0 Draft 2, CHTS v1.n (Sub-GHz SAPC support) and CHTS v1.p (SAPC 2.4GHz Only). This annex seeks to identify those changes made.

A small number of text format and grammatical errors have been corrected where identified in text throughout the documents (noting, this was not just in the ‘new’ sections relating to APC).

The following tables list the Sections of each document where all substantial text changes have been made as a result of the consultation responses received.

***Summary of changes to GBCS v4.0 (Draft 1)***

| **Section** | **Changes** |
| --- | --- |
| 1: Introduction | Footnote ‘2’ - amended with the addition of the version number of GBCS that was notified under European Commission Directive 2015/1535/EU |
| 7: Message structure and DLMS COSEM / ZSE / ASN.1 requirements | 7.2.9.1, table 7.2.9.1b & 7.2.9.1c – clarifying the ‘this Alert’ with reference to Table 16.2;  7.2.9.1, table 7.2.9.1d – aligning the notation for the use of the term ‘utf8 string’ across the document. Also, adding reference to compliance with Section 7.2.9.2.  7.2.9.2 - additional text to support the proportional control of Export energy output;  7.3.6.1 - clarification and amendment to the DLMS script processing for an Auxiliary Controller. Change the ‘most significant nibble’ in the ‘*switchNumberAndAction*’ type fields, so that they are never 0x0. Ensuring that existing HCALCS processing can run in parallel with the new APC;  7.3.8, Table 7.3.8 – additional changes made are shown by ‘green’ shading in GBCS v4.0 Draft 2;  7.4 - additional text added explaining how Aux Calendar details are shared over the HAN (and so the limitations as to what can be shared). This means that settings related to commanded input states are not shared and commanded output settings of 99 or less on an APC are all represented as zero to other HAN Devices; and  7.4, Table 7.4 – additional changes made are shown by ‘green’ shading in GBCS v4.0 Draft 2 |
| 13: Managing Security Credentials on Devices | 13.3.5.10 – text to Clear all Aux Controller overrides on change of supplier cancel i.e. Boost Period, Setting Period or Limit Period;  13.10.5.1 - additional rolls added to table 13.10.5.1 relating to ‘ABSENT’; and  13.10.5.3 - corrected reference to Section |
| 16: Event / Alert Codes and related requirements | 16.1.1 addition of clarification on ‘mandatory’ support for Alerts using ‘ECS100 Command not supported by Device’ as referenced in Table 16.2; and  16.2 - changes made to cells in the embedded Table 16.2 made are shown with ‘green’ shading in GBCS v4.0 Draft 2 |
| 18: Message Templates | 18.1.1.1 – additional text to enhance and clarify the *ZSE Load Control Event* command; and  18.2, Table 18.2 – Message Templates changes supporting those changes made to the Mapping Table, Table 20 |
| 19: Use Cases | 19.3 Use Cases supporting those changes made to the Mapping Table, Table 20 |
| 20: Mapping Table | Changes made to cells in the embedded table are shown in ‘green’ shading in GBCS v4.0 Draft 2 |
| 21: Glossary | Changes to the definitions in the Glossary, for:   * Consumer Access Device (CAD); * Event Code; * IHD; and * Type 2 Device |
| 22: Annex 1 – Additional DLMS Class | Adding a statement of SAPC applicability |
| 25: Informative Annex 4 | No changes made |
| 26: Informative Annex 5 | Addition of clarifying text stating that where SAPC supports the SMETS functionality then ESME statements shall apply to SAPC as if it were an ESME. Also, that statements that do not apply to an ESME also do not apply to an SAPC |
| 27: Annex 6 | No changes made |
| 28: Annex 7 - Data Item Values to be set prior to installation of Devices | Addition of clarifying text making clear, which the values apply to an ESME and those that apply to an SAPC, where appropriate |

***Summary of changes to CHTS v1.n (Draft 1) and CHTS v1.p (Draft 1)***

| **Section** | **Changes** |
| --- | --- |
| 3. Introduction | Footnote ‘2’ - amended with the addition of the version number of CHTS that was notified under European Commission Directive 2015/1535/EU |
| 5. Glossary | Amended definitions for:   * Type 1 Device - to be the same as SEC Section A definition; and * Type 2 Device - to align to the GBCS definition |

***Summary of changes to SMETS2 v5.0 Draft 2***

| **Section** | **Changes** |
| --- | --- |
| 3. Introduction | Footnote ‘2’ - correction of footnote to show the version and the correct EU reference for the last time SMETS2 was notified under European Commission Directive 2015/1535/EU |
| 4. Gas Smart Metering Equipment Technical Specifications | 4.5.2.2, bullet point xiv - correction made, replacing ‘increase’ with ‘increasing’ as per agreed CRP602 (May 2019) |
| 5. Part A - Single Element Electricity Metering Equipment | 5.6.4.1 - addition of text to clarify requirements for Command processing as per GBCS; and  5.7.5.37 – addition of text to include input and output |
| 5. Part D - Auxiliary Load Control Switch | 5.22.2.4 – text limiting the ALCS [n] Setting Period |
| 5. Part E - Boost Function | 5.25.1.1 – addition of ‘output’ to clarify that Boost with APC relates to output level only;  extending the period of use to eight hours and text to make precedence / default behaviour explicit; and  5.25.3 – as above addition of word ‘output’ |
| 5. Part F – Auxiliary Proportional Control | 5.28.1, 5.29.1.1 and 5.29.1.2 – addition of text to support proportional control of ‘input’ and ‘output’ states. Also limiting the ALCS [n] Setting Period |
| 8. HAN Connected Auxiliary Load Control Switch Technical Specifications | 8.4.2.1 - addition of SAPC to title and text to clarify that HCALCS can communicate with both ESME and with one SAPC over the HAN;  8.5, 8.5.1.1, 8.5.1.2, 8.5.1.4 - addition of ‘SAPC’ as well as ESME, as per above point;  8.5.2 - inclusion of ‘or SAPC’ to title; and  8.6.2.1 - inclusion of ‘or SAPC’ |
| 9. Standalone Auxiliary Proportional Controller Technical Specifications | 9.1 – addition of ‘Part A’ to the reference to Section 5. Also, addition of text to clarify that intended requirements relating for SAPC that relate to Section 5 Part A are more clearly presented; and  9.6.2.1 – addition of *‘[INFO]’* to ‘Auxiliary Controller Calendar’ data item |
| 10. Glossary | Amended definitions for:   * ‘APC [n] Limit Period’ and ‘APC [n] Setting Period’ – with the addition of ‘input or output’; * Type 1 Device – to align to definition at SEC Section A; and * Type 2 Device – to align to definition in the GBCS |

**Annex C – Technical Specifications being baselined alongside this consultation response**

This Annex C provides marked-up versions of the baselined technical specifications which reflect the changes made as a result of comments received in consultation responses.



1. <https://www.gov.uk/government/consultations/electric-vehicle-smart-charging> [↑](#footnote-ref-2)