**Smart Metering Implementation Programme**

**Great Britain Companion Specification (GBCS)**

**Version 4.0 Draft 2: Release Note**

31 January 2020

Release Note

This release note accompanies the GBCS v4.0 Draft 2. It describes the principal changes and updates made against the GBCS v3.2 designated on 4 July 2019.

***Summary of main changes***

The GBCS v3.2 has been updated to incorporate the changes arising from CRP612 – ‘Changes to GBCS & CHTS to Support APC & SAPC’, note also that: IRP554, IRP582, IRP589, IRP591, IRP596, IRP605, IRP606, IRP607 and IRP611 have also been included. A summary of the changes by Section is provided in the table below.

***Table of Section Changes***

| **Section** | **Changes** |
| --- | --- |
| *General applies to all Sections* | Statements to the effect of ‘Where the SAPC has functionality of ESME it can be treated as if it were ESME’, appear throughout. This approach is used to minimise drafting changes compared to the alternative of adding ‘SAPC’ within many more sections and Tables in GBCS;  Typographical errors have been corrected throughout the document;  The use of the term ‘SMETS and CHTS’ has been replaced with the term ‘Technical Specifications’ to align to wider SEC terminology. Also, the term ‘Device Specifications’ has been replaced with ‘Technical Specifications’;  ‘Auxiliary Load Control Switch’ has been replaced with Auxiliary Controller’; and  There are instances where the original resolutions in IRPs have been further modified by CRP612 |
| Documentation Alignment Section | No changes made |
| 1: Introduction | Introducing the Standalone Auxiliary Proportional Controller (SAPC) and supporting Technical Specification (SAPCTS). Also aligning previous referencing of the other Technical Specifications. Addition of the version number of GBCS that was notified under European Commission Directive 2015/1535/EU |
| 2: Structure of the GB Companion Specification (GBCS) | Adding SAPCTS |
| 3: Scope and Terminology | No additional changes made |
| 4: Security | At Section:  4.3.1.5 stating that SAPC is not required to store Execution Counters for ESME Use Cases that is does not support;  4.3.2.5 adding loadController Trust Anchor Cells and defining ASN.1 deviceType to be used for SAPC as that for ESME;  4.3.2.6 adding loadController Trust Anchor Cell explanations; and  4.3.2.8.2: adding update of load controller security credentials to the list of Update Security Credentials Commands |
| 5: Remote Party Message construction, protection and verification – informative | No changes made |
| 6: Message Categories | At Section:  6.2.4 and sub-sections thereof, adding SAPC verification processing to deal optional ESME functionality on SAPC; and  6.2.4.1 change from IRP589, adding referencing text supporting the removal of the unnecessary constraint on sequencing |
| 7: Message structure and DLMS COSEM / ZSE / ASN.1 requirements | Throughout Section, adding ‘SAPC’ to existing ESME text and using the term ‘Device’ where appropriate.  At Sections:  7.2.9: correcting referencing errors;  7.2.9.1 new Section - ‘DLMS COSEM Alert population’. Detailing four new Alert Use Cases (ECS100, ECS101, ESC102 and ECS200);  7.2.9.2 new Section - ‘JavaScript Object Notation (JSON) in DLMS COSEM utf8-strings’. Specifying the use of JSON to provide operational information about Auxiliary Controllers;  7.3.2 & 7.3.3: laying out which DLMS COSEM requirements detailed in Section 7 apply to SAPC;  7.3.4 removing the duplication of a statement made previously in Section 7;  7.3.6 replacement of the word ‘meter’ with ESME / SAPC in the Section title;  7.3.6.1 new Section – ‘Auxiliary Controller related scripts’, specifying DLMS script related processing in relation to Auxiliary Controller;  7.3.8, at Table 7.3.8: changes in the embedded table. With reference to the mark-up versions published (as part of the consultation) the following can be noted:  Changes made from IRP605 and IRP607 and are shown with ‘light green’ shading in GBCS 4.0 Draft 1 along with subsequent changes arising from TS1228 in GBCS v4.0 Draft 2. Changes from CRP612 are shown with ‘dark green’ shading in GBCS v4.0 Draft 1;  7.3.9 inclusion of ‘SAPC’ in title of Section;  7.3.10 including ‘SAPC’ in title of Section and text detailing the applicability to SAPC;  7.4 adding requirements for SAPC supporting relevant entries in Table 7.4. Adding requirement for use of a value for *Calendar Type* in relation to the Auxiliary Controller Calendar. Adding text to clarify processing for ‘Delivered Calendar’ and ‘Friendly Credit Calendar’. Finally, adding additional text 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, changes made. With reference to the mark-up versions published (as part of the consultation) the following can be noted:  Changes from CRP612 and are shown by ‘dark green’ shading in GBCS v4.0 Draft and subsequently further changes made are shown shaded in GBCS v4.0 Draft 2 |
| 8: Encryption of Attributes in Remote Party Messages | At Section 8.5: replacing term ESME with Device, so that it includes SAPC |
| 9: Time Synchronisation and Future Dated Remote Party Messages | Throughout whole Section adding ‘SAPC’ to existing ESME text and using the term Device where appropriate.  Where appropriate, there is a statement at the beginning of several Sections that that where SAPC supports the SMETS functionality then ESME requirements shall apply to SAPC as if it where ESME.  At Section:  9.2.2.6, adding the IRP554 text and modifying it with the inclusion of the reference to the new Use Case CS02g; and  9.2.2.7 explaining how the requirements apply to SAPC |
| 10: ZSE Implementation | Removing the term ‘Type 1’ replacing it with ‘PPMID’ here, and PPMID / HCALCS elsewhere (see also 21 Glossary, ‘Type 1’ term removed);  Adding ‘SAPC’ to existing ESME text using the term ‘Device’ where appropriate; and for several Sections explaining how the requirements apply to SAPC.  At Sections:  10.4.2.11 requiring that the SAPC states that, over the HAN, it is the same type of device as a Single Element ESME; and  10.6 ‘Sub GHz Requirements’ – Introduction at 10.6.1, changing the introduction so that it is no longer marked as ‘informative’ as it contains ‘requirements’. Also, adding a statement that the whole Section 10.6 applies to SAPC where SAPC is capable of supporting Sub GHz |
| 11: Downloading firmware images to Devices | At Sections:  11.1 correcting ‘CPL’ to be ‘Central Products List’ as per SEC; and  11.5.2.2 from IRP554, clarifying processing of Future Dated Commands, where the date is in the past |
| 12: Requirements for Certificates | No changes made |
| 13: Managing Security Credentials on Devices | General changes:   * stating that the Use Cases: CS02b, CS02c, CS02d and CS02e shall apply to SAPC as if it were an ESME; and * Including new Sections at 13.9 and 13.10, for new Use Cases: CS02f, for reading security credentials from ESME and SAPC, and CS02g, for processing Updates of Load Controller Security Credentials; and * Adding update of Load Controller security credentials to the list of Update Security Credentials Commands.   At Sections:   * 13.2.1 and subsequently in Sections at 13.2, adding ‘CS02a’ to distinguish from CS02f; * 13.2.2, removing ESME, since ESME must support CS02f instead (given that they have Load Controller credentials; * 13.2.3 from IRP596, using the new term ‘Execution Counter’ as opposed to ‘Protection Against Replay counter’, also at Section 13.2.3.3; * 13.2.3.3, in ASN.1 script, as above, using the term ‘Execution Counter’ (IRP596) and removing the word ‘full’ from remote Party Role, which was incorrect; * 13.2.4.4, Table 13.2.4.4, using the term ‘Execution Counter’ as above and stating that Execution Counter for supplierBy Supplier (rather than loadControllerBySupplier) must be returned when supplier credentials are read; * 13.3.1 addition of reference to Section 13.10 (as well as 13.3) for clarity; * 13.3.3.1 removed ‘either’ from description; * 13.3.3.4 correcting reference which is now to Section 18.3.1; * 13.3.4.3 using the new term ‘Execution Counter’ as opposed to ‘Highest Prior Sequence Number’ (from IRP596). Also,   adding of processing rule for Future Dated Command processing if the date is in the past (from IRP554);   * 13.3.4.6, Table 13.3.4.6, using the new term ‘Execution Counter’ (from IRP596); * 13.3.5.1, 13.3.5.8, 13.5.4 and 13.7.4.2.2, adding text supporting the removal of the unnecessary constraint on sequencing (from IRP589); * 13.3.5.1, Table 13.3.5.1, document only change (from IRP611), making it clearer, with the addition of two explicit checks, that if the Command is well-formed, the element will be absent in the encoded Command, where it has its default value. Same change made to Table 13.3.10.1; * 13.3.5.3 using the new term ‘Execution Counter’ as opposed to ‘Highest Prior Sequence Number’ (from IRP596); * 13.3.5.7 making explicit that the stated requirement applies only to CS02b (and so not to CS02g); * 13.3.5.10 clarifying application of the new Use Case ‘CS02g’ for LoadController. Also, additional text to Clear all Aux Controller overrides on change of supplier i.e. cancel: Boost Period, Setting Period or Limit Period; * 13.3.5.11, in ASN.1 script, using the term ‘Execution Counter’ as opposed to ‘sequence counters’ (from IRP596) and removal of word ‘full’ from remote Party Role, which is incorrect; * 13.3.5.12, Table 13.3.5.12, using the term ‘Execution Counter’ as opposed to ‘Protection Against Replay counter’ (from IRP596); * 13.7.1.1, adding SAPC and replacing ‘Type 1’ with ‘PPMID and HCALCS’; * 13.7.2, adding requirements for SAPC applicability; * 13.7.3 adding requirements for SAPC applicability; * 13.7.4, adding requirements for SAPC applicability; * 13.7.4.2.2, adding IRP589 text; * 13.7.4.3.2, adding requirements for the processing in relation to Auxiliary Controllers; * 13.7.4.5.4, adding requirements for the processing in relation to Auxiliary Controllers; * 13.9 & 13.10, new Sections added for new Use Cases CS02f and CS02g, respectively; * 13.10.5.1 addition of rows to table 13.10.5.1 relating to ‘ABSENT’; and * 13.10.5.3 corrected reference to Section |
| 14: Apply Prepayment Top Up to an ESME or GSME | Statement that where SAPC supports the SMETS functionality then ESME requirements shall apply to SAPC as if it were an ESME. Also, replaced use of ‘SMETS and CHTS’ with ‘Technical Specifications’ |
| 15: Message Codes | No changes made |
| 16: Event / Alert Codes and related requirements | At Sections:   * 16.1.1 addition of clarification of Device Type applicability, including the use of a new column ‘SAPC support’ within the Table 16.2 for SAPC; * 16.2, changes made to cells in the embedded Table 16.2. With reference to the mark-up versions published (as part of the consultation) the following can be noted:   Changes made from IRP590 and IRP591, are shown with ‘light green’ shading within GBCS v4.0 Draft 1. Changes from CRP612 are shown with ‘dark green’ shading in GBCS v4.0 Draft1. Subsequent additional changes are shown in the light green shading in GBCS v4.0 Draft 2;   * 16.3 addition of SAPC and replacement of ‘ALCS’ with ‘Auxiliary Controller’; and * 16.4 addition of SAPC and replacement of ‘ALCS’ with ‘Auxiliary Controller’. Also addition of SAPC and associated Event / Alert required configuration. At Table 16.4, replaced SMETS User Interface Command ‘Test Auxiliary Load Control Switch *n*…’ with ‘ALCS [*n*…]’ |
| 17: Remote Party Usage Rights | No changes made |
| 18: Message Templates | Throughout Section, replaced ‘Auxiliary Control Switch’ with ‘Auxiliary Controller’.  At Sections:   * 18.1.1, and sub-Sections thereof, amending the requirements to align to the changes in the corresponding SMETS2 v5.0 sections and incorporating IRP591 and IRP582 changes. Also, additional text to enhance and clarify the *ZSE Load Control Event* command; * 18.2, Changing DLMS COSEM Message Templates supporting the changes made to Mapping Table, Table 20; * 18.2.1, statement that where SAPC supports the SMETS functionality, then ESME requirements shall apply to SAPC as if it were an ESME; * 18.2.1.1, Table 18.2.1.1, object name ‘entry\_alcsLogEntry’ changed to ‘entry\_auxiliaryControllerLogEntry’; and * 18.3.1 and 18.3.2 from IRP596, use of term ‘Execution Counter’ as opposed to ‘Protection Against Replay counters’ |
| 19: Use Cases | Changes made at Section:  19.1.1, Table 19.1.1, adding ‘Load Controller’ to Use Case Access Permissions;  19.1.2 explain the use of ‘Target’ Device types and their applicability to SPAC; and  19.3 changing Use Cases supporting those changes made to the Mapping Table, Table 20 |
| 20: Mapping Table | Changes have been made to cells in the embedded table. With reference to the mark-up versions published (as part of the consultation) the following can be noted:  Changes from IRP582 are shown with ‘light green’ shading in GBCS v4.0 Draft 1. Changes to the table from CRP612 are indicated using ‘dark green’ shading in GBCS v4.0 Draft 1. Subsequent changes added are shown in ‘light green’ shading in GBCS v4.0 Draft 2 |
| 21: Glossary | New definitions added to the Glossary include:   * Auxiliary Controller; * Auxiliary Controller Calendar; * ESMETS; * GSMETS; * Network Operator; * Provide Security Credentials Command; * SAPC; * SAPCTS; * Technical Specifications; and * Updated Security Credentials Command.   Changes to the definitions in the Glossary include, for:   * Auxiliary Load Control Switch; * Boost Function; * Consumer Access Device (CAD) * Device; * Encryption Remote Party (from IRP606); * Event Log; * Event Code; * Execution Counter (from IRP596); * Force Replace; * IHD * HAN Connected Auxiliary Load Control Switch (HCALCS); * Prepayment Top Up; * Security Log; * Smart Metering Equipment Technical Specifications (SMETS); * Type 2 Device; and * Unique Transaction Reference Number (UTRN).   Definitions deleted from the Glossary include:   * Device Specifications; * HCALCS (note: as duplicate); * Highest Prior Sequence Number (from IRP596); and * Type 1 Device (Note: Type 1’ has been discontinued in this GBCS and replaced by PPMID / HCALCS) |
| 22: Annex 1 – Additional DLMS Class | Adding 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 |

GBCS Document Revision History

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| Version | Rev | Date of Issue | Change Summary |
| 1.0 | Final | 08/11/2016 | Version Incorporated into the Smart Energy Code (SEC) for DCC Release 1.2 |
| 1.1 | Final | 06/11/2017 | Modified to address TBDG RFC-059 and mismatch between the decimal and hexadecimal encoded values for OBIS codes. Resulting in changes in tables in Section 18.2.1.2 and 18.2.1.3.  Version Incorporated into SEC |
| 2.0 | Final | 01/02/2018 | Version Incorporated into SEC for DCC Release 2 (was previously GBCS v2.0 Draft 7) |
| 2.1 | Final | 05/06/2018 | Updated Version modified to address TBDG RFC-066 incorporated into SEC for DCC Release 2 |
| 3.0 |  | 01/04/2018 | Version incorporated into SEC, but not activated in preparation for a future DCC Release beyond Release 2, as proposed by TBDG RFC-063  (was previously GBCS V3.0 Draft 1)  Superseded by V3.1 on 5/6/18 |
| 3.1 | Final | 05/06/2018 | Updated to reflect the same changes made as in V2.1. Incorporated into SEC, but not activated in preparation for future DCC Release  Superseded by V3.2 |
| 3.2 | Final | 04/07/2019 | Incorporated into SEC for future DCC Release. |
| 4.0 | Draft | 25/10/2019 | Draft of GBCS supporting proposed changes arising from the SMETS2 v5.0 Draft 2 consulted on as CRP612 |
| 4.0 | Draft 2 | 31/01/2020 | Following response to Technical Consultation (CRP612) version Baselined.  (the GBCS version that this release note refers to) |

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