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MP155 'Communications Hub Re-Flash'

Modification Report

Version 0.4

18 March 2022



About this document

This document is a Modification Report. It currently sets out the background, issue, impacts and progression timetable for this modification, along with any relevant discussions, views and conclusions. This document will be updated as this modification progresses.

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Contact

If you have any questions on this modification, please contact:

Kev Duddy

020 3574 8863

kev.duddy@gemserv.com

1. Summary

This proposal has been raised by Tom Rothery from the Data Communications Company (DCC).

Currently, the Smart Energy Code (SEC) allows for the return of Communications Hubs in accordance with SEC Section F 'Smart Metering System Requirements' and Appendix I 'CH Installation and Maintenance Support Materials'.

However, the SEC does not currently accommodate the process of returning a Communications Hub to the DCC for the purpose of re-flashing the Device and then retaking delivery of that Device once the re-flashing process has been complete. Nor does it cater for re-flashing a Device whilst it is still in the supply chain. Furthermore, there is not an Explicit Charge that could be used for this service.

This modification is expected to impact the DCC, Supplier Parties and Other SEC Parties.

2. Issue

What are the current arrangements?

Communications Hub re-flashing

Manufacturers can develop Devices with non-operational interfaces to enable maintenance, diagnostics and refurbishment. The interfaces are designed to process instructions that are not defined in the Great Britain Companion Specification (GBCS). 'Re-flashing' is a process that delivers firmware upgrades to a Device using these interfaces. It means the Device can have its firmware upgraded without the Device first being installed in the field. The alternative is an Over The Air (OTA) upgrade which, when run at installation, can take a significant amount of time and increases the length of installation.

Guidance on re-flashing Devices has previously been developed and approved by the Security Sub-Committee (SSC) in conjunction with industry and any 'flashing' of Communications Hubs must comply with this guidance.

However, there is currently no mechanism in the SEC for the Communications Service Provider (CSP) to re-flash the Communications Hubs to uplift the firmware to the latest available before delivering to the User.

Communications Hub returns

The SEC does not currently specify that the DCC has to deliver Communications Hubs that support the latest firmware version available. Instead, the ordering and delivery processes as set out in SEC Section F only require the DCC to deliver the requested volume of the specified Home Area Network (HAN) Variant Communications Hubs.

Currently, the SEC allows for the return of Communications Hubs in accordance with SEC Section F and Appendix I. SEC Parties can return Communications Hubs to the DCC and will be charged either one of two Explicit Charges:

- K7.5(o) – CH returned and redeployed

- K7.5(p) – CH returned and not redeployed

These Explicit Charges are set at the beginning of each Regulatory Year and can be found in the DCC Charging Statement.

The SEC does not currently accommodate the process of returning a Communications Hub to the DCC for the purpose of re-flashing the Device and then retaking delivery of that Device once the re-flashing process has been complete. Furthermore, there is not currently an Explicit Charge that could be used for this service.

Release 1.3 Communications Hubs

Due to the transition from Release 1 Communications Hubs to Release 2.0 Communications Hubs, the DCC offered a reflash capability in the North Region to upgrade firmware. This re-flashing activity enabled SEC Parties to return Communications Hub supporting v1.38.3 and v1.37.7 firmware to the CSP North to be re-flashed to a Release 2.0 firmware at no additional cost.

Whilst the capability to reflash Communications Hubs in the North Region has been established, there will be associated charges going forward for all Regions and a process will need to be defined, which will require changes to the SEC.

What is the issue?

There are two issues associated with re-flashing Communications Hubs firmware:

1. Communications Hubs already in the Supply Chain i.e., with the CSPs ready for distribution to DCC Users may be on a previous firmware version to the latest of Communications Hub firmware. Currently there is no mechanism for the CSP to “re-flash the Communications Hubs to uplift the firmware to the latest available before delivering to the User.
2. Communications Hubs on older firmware versions are currently being held in volume by DCC Users, with Users tending to install the Communications Hubs on the latest versions first so these numbers are not reducing at speed. There are no current provisions that accommodates the process of returning a Communications Hub to the DCC for the purpose of re-flashing the Device and then retaking delivery of that Device once the re-flashing process has been complete. Furthermore, there is not currently an Explicit Charge that could be used for this service, meaning the costs for this would be spread across all Parties.

What is the impact this is having?

If this issue is not resolved, Communications Hubs supporting older versions of firmware will continue to be held in volume by CSPs and DCC Users. If these Communications Hubs are not installed by the relevant Installation Validity Periods (IVP) as set out in SEC Schedule 11 (Technical Specifications Applicability Tables (TSAT)), there is a risk that these Devices will need to be scrapped. Therefore, re-flashing Communications Hubs will have commercial benefits for Suppliers in ensuring their existing stock volumes are optimised and there will be minimal costs incurred from scrapped Communications Hubs. [MP191 'Extending CHTS v1.0 & v1.1 IVP and MVP end dates'](#) has been raised specifically to extend the current IVP for Communications Hubs that are compliant with Communications Hub Technical Specifications (CHTS) v1.0 and CHTS v1.1 within the TSAT; however this modification will provide an enduring solution by providing a service to upgrade the firmware in advance of installation.

Impact on consumers

Not resolving this issue could increase the chance of consumers being left with out-dated Communications Hubs which do not allow consumers to reap the full benefits of smart metering.

3. Impacts

This section summarises the **anticipated** impacts that would arise from the implementation of this modification. This will be updated as the solution is developed and assessed during the Refinement Process.

SEC Parties

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

Supplier Parties

This modification is expected to impact Suppliers as it seeks to make it easier for them to update firmware Communications Hubs efficiently and install these at consumer premises.

Other SEC Parties

This modification is expected to impact Other SEC Parties as it seeks to make it easier for them to update firmware to Communications Hubs efficiently and install these at consumer premises.

DCC

This modification is expected to impact the DCC as it seeks to better facilitate a mechanism for Suppliers to update to firmware to Communications Hubs efficiently. The DCC will also need to set an Explicit Charge and notify Ofgem of that charge.

DCC System

This modification is expected to impact the DCC Systems but this will be investigated during the Refinement Process.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- SEC Section F 'Smart Metering System Requirements'
- SEC Section K 'Charging Methodology'
- Appendix I 'CH Installation and Maintenance Support Materials' (CHIMSM)

The Smart Energy Code Administrator and Secretariat (SECAS) and the DCC will assess the full impacts on the SEC during the Refinement Process.

Consumers

This modification will aim to benefit consumers by ensuring they have the latest possible version of Communications Hubs installed and to provide a better consumer experience by preventing prolonged installation times.

It will also reduce disposal of out-of-date Communications Hubs which would be a cost to SEC Parties and ultimately be passed onto the consumer

Other industry Codes

This modification will not impact other Industry Codes.

Greenhouse gas emissions

This modification will reduce the impact on greenhouse gas emissions by minimising the number of Communications Hubs that would need to be disposed of.

4. Assessment of the proposal

Observations on the issue

Change Sub-Committee (CSC)

The CSC noted the benefits of this modification. However, it questioned:

- What the explicit charge for the proposed service would be;
- Whether the DCC has an idea of the volume of Communications Hubs impacted by this;
- Who will be responsible for the Communication Hubs that are in transit;
- How likely are people to use this; and
- What happens if the firmware version changed, and how this would be recorded in the Smart Metering Inventory (SMI)?

The CSC was cautious about implementing a change that would not be widely used and agreed that further development was required to understand the above points. The DCC confirmed that further analysis to produce up to date estimates of the number of Devices held will continue. The remaining points will be addressed as part of the Refinement Process.

Other Sub-Committee views

The SSC advised that it had previously issued guidance on how Communications Hubs may be re-furnished and any process as part of the solution must be compliant with this guidance.

The Operations Group (OPSG) questioned whether the issue was specific to the transition from Release 1 Communications Hubs to Release 2.0 Communications Hubs. The DCC highlighted that the Communications Hub returns process agreed with the CSP North is a separate entity and not dependant on this modification, noting that Users can only return v1.38.3 and v1.37.7 Communications Hub stock free of charge for them to be re-flashed. As part of further development of the issue, the DCC has since expanded the scope of the modification to include all Communications Hubs that could benefit from a firmware update prior to delivery to a DCC User.

An OPSG member also questioned how the business case would be affected by the availability of any new 4G Communications Hubs in the future. The Proposer has advised that the timescales for delivery of the solution would feed into the business case for the existing stocks of 3G Communications Hubs but this information would not be available until after a Preliminary Assessment had been completed. They continued that the new 4G Communications Hubs would still utilise this process going forwards.

Solution development

An OPSG member stated that they would require new Advanced Shipment Notifications (ASNs) with any re-delivery, as the initial ones would have been processed by their systems and any duplication would be rejected. This has subsequently been specified within the business requirements.

Re-flashing Communications Hubs

A Working Group member queried if there was an overlap between this modification and the proposals around recommissioning faulty Communications Hubs, and whether these were similar activities. SECAS noted this modification is setting out the process for returning Communications Hubs for reflashing. This approach will avoid security concerns as it reuses existing methodologies, following the guidance developed by the SSC, although the specifics of this would be clarified with the SSC as this modification develops.

Quantities for delivery and costs

A Working Group member questioned what the acceptable delivery sizes would be, querying whether they could use this process for individual Communications Hubs, or cartons, or if it had to be full pallets. The Proposer noted that they had initially explored this and thought it was likely that the process would be by the pallet load but asked the Working Group whether there was a preference.

A Working Group member suggested that the Working Group should determine the likely volume size they would want to return, whether that is by the unit, carton or pallet, for inclusion in the DCC Preliminary Assessment. As part of the Preliminary Assessment, the DCC will provide options.

Support for Change

One Working Group member noted that Suppliers may not be installing Communications Hubs on the latest firmware as there are some defects that prevent them from using this version, citing the implementation of CRP535 onto the latest firmware versions as an example. They noted that this will cause the number of affected Communications Hubs to increase until this defect is resolved. They supported this proposal as a long-term service.

Appendix 1: Progression timetable

SECAS has requested the DCC Preliminary Assessment. Once returned this will be discussed with the Working Group and Operations Group.

Timetable	
Event/Action	Date
Draft Proposal raised	18 Feb 2021
Presented to CSC for initial comment	30 Mar 2021
Presented to Operations Group for discussion	1 Jun 2021
Presented to CSC for final comment and recommendations	30 Nov 2021
Proposed Solution and business requirements developed with Proposer	Dec 2021
Business requirements discussed with Working Group	2 Mar 2022
Business requirements discussed with Operations Group	8 Mar 2022
DCC Preliminary Assessment requested	21 Mar 2022
DCC Preliminary Assessment discussed with Working Group	4 May 2022
DCC Preliminary Assessment discussed with Operations Group	10 May 2022
Refinement Consultation	16 May – 3 Jun 2022
Modification discussed with Working Group	6 Jul 2022
Impact Assessment costs approved by Change Board	27 Jul 2022
Impact Assessment requested	28 Jul 2022
Impact Assessment returned	23 Sep 2022
Impact Assessment discussed with Working Group	5 Oct 2022
Impact Assessment discussed with OPSG	11 Oct 2022
Modification Report approved by CSC	18 Oct 2022
Modification Report Consultation	19 Oct – 9 Nov 2022
Change Board vote	23 Nov 2022

Appendix 2: Glossary

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

Glossary	
Acronym	Full term
ASN	Advanced Shipment Notifications
CH	Communications Hub
CHIMSM	CH Installation and Maintenance Support Materials
CHTS	Communications Hub Technical Specifications
CSC	Change Sub-Committee
CSP	Communications Service Provider
DCC	Data Communications Company
GBCS	Great Britain Companion Specification
HAN	Home Area Network
IVP	Installation Validity Period
OPSG	Operations Group
OTA	Over-The-Air
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator & Secretariat
SSC	Security Sub-Committee
TSAT	Technical Specifications Applicability Tables