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DP230

‘Review the SLA for delivery and completion for SMETS1 firmware’

Modification Report

Version 0.2

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Corporate member of
Plain English Campaign
Committed to clearer
communication

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About this document

This document is a draft Modification Report. It currently sets out the background, issue, 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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1. Summary

This proposal has been raised by Nick Rodgers from the Data Communications Company (DCC).

The Smart Metering Equipment Technical Specification (SMETS) 1 firmware updates must be processed by both the SMETS1 Service Provider (S1SP) and the Dual Control Organisation (DCO). Firmware images for some SMETS1 Devices are significantly larger than the 750kB which is what the DCC System has been designed. These larger images need to be broken down to send in multiple images. The DCC system is able to process 12,000 images a day. The SEC currently states that the Service Level Agreement (SLA) for processing of firmware upgrades is five days, which cannot be achieved on a large scale with these larger firmware images.

This proposal has been raised to review the firmware delivery SLA for larger images.

2. Issue

What are the current arrangements?

The DCC Systems have a limit to the amount of firmware images that can be processed meaning that if a significant volume of large firmware images needs to be processed, they must be spread over several days. Where a firmware image for a SMETS1 Device is larger than 750kB, it is broken down into blocks for transmission across the network between the S1SP and the DCO in both directions. Each block is encrypted by the DCO on the way down to the Device and decrypted by the DCO on the way back from the Device. There is some parallelism designed into both the S1SP and the DCO and this can be increased up to a limit to improve the speed of processing. The current SLA for the DCC to complete this process is five days end to end, and the SLA currently applies whether there is one Firmware image to process or many.

Some Electricity Smart Metering Equipment (ESMEs) have a very large firmware image, in excess of 750kB that requires being broken down into multiple images. The current processing of these images is possible at maximum capacity of 12,000 images a day. Since no further SMETS1 Devices are being installed it was believed unlikely that the whole of this Device estate would require further firmware updates. However, there have been instances where firmware upgrades have been required, for instance with the introduction of the Energy Price Cap.

What is the issue?

Smart Energy Code (SEC) Appendix E 'DCC User Interface Services Schedule' (DUIS) states that the Target Response Time (TRT) for Activating Firmware for SMETS1 Devices is five days. Some ESME firmware image is a particularly large image size, and the DCC Systems cannot currently process the total population of ESME within the SLA. The DCC system can process a maximum of 12,000 images a day, which means it would not be able to process an entire Device Type within the SLA.

There is an estimate of 600,000 of these SMETS1 Devices and they have a lifespan of approximately 10-15 years, during which time they may require further firmware updates.

What is the impact this is having?

The DCC Services, as per its licence, are managed under the Price Control arrangements, which are overseen by Ofgem and measured by the Ofgem Operational Performance Regime (OPR). If the DCC fails to meet System performance, Ofgem may determine a reduction in the baseline margin that the DCC may retain for the Regulatory Year.

Impact on consumers

Slow firmware upgrades will impact on the efficiency of services provided by Devices within the consumer premises.

3. Assessment of the proposal

Areas for assessment

Solution options for investigation

This issue has been discussed at the Operations Group (OPSG). One solution highlighted was that the DCC would raise a Change Request to investigate the costs of amending the DCC Systems to be able to process these large firmware images more efficiently. Another solution option was to raise a modification to the SEC to allow these firmware images to be processed in an extended SLA. The OPSG recommended both options be raised and assessed in parallel to determine which would be the more effective to implement. The DCC has since confirmed that amending the DCC Systems would not be feasible due to the expected rarity of this issue arising compared with the anticipated costs.

Any solution would need to ensure the process can be monitored for performance but not require large investment in infrastructure for an event that is infrequent. The Smart Energy Code Administrator and Secretariat (SECAS) recommends a further SLA is set for SMETS1 firmware downloads rather than just an exemption.

Sub-Committee input

SECAS will engage with the Chairs from the Operations Group (OPSG), the Technical Architecture and Business Architecture Sub-Committee (TABASC), the Security Sub-Committee (SSC) and the Smart Metering Key Infrastructure (SMKI) Policy Management Authority (PMA) to confirm what input is required from these forums. SECAS believes the following Sub-Committees will need to provide the following input to this modification:

Sub-Committee input	
Sub-Committee	Input sought
OPSG	Input into solution options and impact on operational function and reporting?
SSC	Are there any security concerns with the issue or the solution options?
SMKI PMA	Are there any SMKI concerns with the issue or the solution options?
TABASC	Is a DCC System change the most cost-effective way to resolve this issue?

Observations on the issue

Views of the Change Sub-Committee

A Change Sub-Committee (CSC) member considered that the problem had not been clearly defined. They considered the impact this issue is currently having is that the DCC is unable to allow Users to roll out firmware in the volumes Users would like to be able to. They considered the DCC was stopping firmware from being rolled out as its systems couldn't handle the volume and size of the updates. They believed the issue was that the DCC is not accepting firmware delivery requests from Suppliers, rather than the impact arising from the DCC missing an SLA.

The DCC has advised the infrastructure costs associated to be able to complete the firmware upgrades within the current SLA will be an estimated ten times more than what the cost currently is. Therefore, the intent of the modification is not to address the root cause, but to prevent the DCC being penalised.

Appendix 1: Progression timetable

This modification will be presented to the CSC on 21 March 2023 with the recommendation this becomes a Modification Proposal. Following this SECAS will present this to the May Working Group meeting and the May SSC meeting for discussion. It will then be issued for Refinement Consultation between 15 May and 5 June 2023.

Timetable	
Event/Action	Date
Draft Proposal raised	9 Feb 2023
Presented to CSC for initial comment	21 Feb 2023
<i>CSC converts Draft Proposal to Modification Proposal</i>	<i>21 Mar 2023</i>
<i>Modification discussed with Working Group</i>	<i>3 Apr 2023</i>
<i>Refinement Consultation</i>	<i>10 Apr - 24 Apr 2023</i>
<i>Modification discussed with OPSG</i>	<i>9 May 2023</i>
<i>Modification discussed with Working Group</i>	<i>7 Jun 2023</i>
<i>Modification Report approved by CSC</i>	<i>20 Jun 2023</i>
<i>Modification Report Consultation</i>	<i>26 Jun – 10 Jul 2023</i>
<i>Change Board Vote</i>	<i>26 July 2023</i>

Italics denote future events that may be subject to change

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
CSC	Change Sub-Committee
DCC	Data Communications Company
DCO	Dual Control Organisation
ESME	Electricity Smart Metering Equipment
OPR	Operational Performance Regime
OPSG	Operations Group
S1SP	SMETS 1 Service Providers
SEC	Smart Energy Code
SECAS	The Smart Energy Code Administrator and Secretariat
SLA	Service Level Agreement
SMETS	Smart Metering Equipment Technical Specifications
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee
TRT	Target Response Time
UISS	User Interface Services Schedule'