SEC
Smart Energy Code

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Smart Energy Code

DP119
'CH Alert Storm Consolidation'

Modification Report

Version 0.1

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 Graeme Liggett from the Data Communications Company (DCC).

This proposal identifies the need to address impending Device Alert Storms at the Home Area Network (HAN) and Communications Hub (CH) level. With the increasing number of Devices connected to the DCC System, and with these Devices creating more Alerts than originally envisaged, Device Alert Storms are on the rise. As a result, protection is needed by the Communication Service Providers (CSPs) to ensure an efficient service is delivered.

2. Issue

What are the current arrangements?

The number of Devices connected to the DCC System is increasing on a daily basis. The DCC has found that Devices can generate the same Alert at a higher rate than initially intended. This is referred to as a Device Alert Storm.

To mitigate against Device Alert Storms an Alert Storm Protection mechanism was proposed for implementation within the Data Service Provider (DSP) solution that would detect these Device Alert Storms. The identified alerts would be subject to consolidation resulting in a substantial reduction in the number of alerts being processed and delivered to Service Users. This is being progressed under SECMP0062 'Northbound Application Traffic – Alert Storm Protection'.

What is the issue?

Device Alert Storms are already generating large numbers of Alerts which are impacting network, DSP and Service User capacity, and with the Smart Meter Roll-out, the number of Alert Storms is set to increase.

The CSP North (Arqiva) has presented this issue and have proposed changes to HAN Devices and CHs at the appropriate industry forums, with changes to both required to provide full protection. The proposed changes would "localise" the impact of Alerts to the HAN and CHs. Changes to the behaviour of HAN Devices are anticipated to require additional investigation and would take an extended period to be implemented. Changes to CHs is thought to be a quicker path, providing protection whilst Device manufacturers implement a mechanism and would continue to provide protection against Alert Storms.

This proposal would look to solve the problem for the DSP, Smart Metering Technical Specification (SMETS) 2 Communication Service Providers (CSPs), and SMETS2 CHs.

What is the impact this is having?

As the number of Devices connected to the DCC System has increased, it has become apparent that Devices can enter a state whereby they repeatedly generate the same Alert at a higher rate than intended.

Supporting information regarding Device Alert Storm Volumes

- In December 2019 Device Alerts accounted for approximately 90% of service traffic. Device Alerts totalled 43 million per day and Service Requests reached four million.
- 8F3E Alerts accounted for 80% of the total service traffic in December 2019.
- On 31 December 2019, 43 million Device Alerts were carried from approximately four million meters. ISFT[1] contracted volumes are for 60 million Devices Alerts a month across 52 million meters.

[1] As part of ISFT (Invitation to Submit Final Tender), the Department of Energy and Climate Change (DECC) provided message volume profiles to allow respondents to size their systems.

- Month-on-Month Device Alerts:

Device Alert Storm Volumes		
	November 2019	**December 2019**
Device Alerts	Approx. 1 billion	1.3 billion (30% increase)

  This implies a doubling of service traffic every three months, if the current rate of increase continues.

- Once at scale, approximately 10 billion Device Alerts will need to be supported if the current rate of generation continues on a per meter basis. This compares to three billion Service Requests at scale.

*This information has been presented by the DCC to the Operations Group (OPSG) during a meeting relating to Alert volumes and potential and is based on analysis of the latest data from December 2019.

Appendix 1: Progression timetable

This Draft Proposal will be presented at the next Change Sub-Committee (CSC) for recommendation to be converted into a Modification Proposal. It will then be taken to the next Panel meeting on 17 April 2020 for conversion to a Modification Proposal and to enter the Refinement Process. The Smart Energy Code Administrator and Secretariat (SECAS) will then work with the DCC to develop and assess a straw man solution for discussion at the Working Group. SECAS will update Panel on progress in August 2020.

Timetable	
Action	**Date**
Draft Proposal raised	10 March 2020
Presented to CSC for comment and recommendations	31 March 2020
Panel converts Draft Proposal to Modification Proposal	17 April 2020
Business requirements developed with DCC	20 April - 29 May 2020
Preliminary Assessment requested	1 June 2020
Preliminary Assessment returned	17 July 2020
Modification discussed with Working Group	5 August 2020
Update Panel	14 August 2020

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**
CH	Communications Hub
CSP	Communication Service Provider
DCC	Data Communications Company
DECC	Department of Energy and Climate Change
DSP	Data Service Provider
GBCS	Great Britain Companion Specification
HAN	Home Area Network
ISFT	Invitation to Submit Final Tender
OPSG	Operations Group
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specification