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Paper Reference:	SECCB_38_2201_01
Action:	For Decision

SECMP0062 Change Board vote

1. Purpose

[SECMP0062 'Northbound Application Traffic Management - Alert Storm Protection'](#) has undergone Modification Report Consultation and is now being presented to the Change Board for vote. The Change Board is invited to determine whether SECMP0062 should be approved or rejected under Self-Governance.

This paper provides a high-level summary of the key points. Full details can be found in the Modification Report in Appendix A and the responses received to the Modification Report Consultation in Appendix B.

2. Summary of the proposal

What is the issue?

Alert Storms occur when Devices repeatedly send Alerts to DCC Systems and Service Users. Although these Devices have gone through rigorous test assurance processes, it is inevitable that not every possible combination and scenario will have been accounted for. This means that many Devices pose a risk of entering a state whereby they repeatedly and rapidly generate the same Device Alert, adding unnecessary traffic to the Communication Service Provider (CSP) or Smart Metering Equipment Technical Specification (SMETS) 1 Service Provider (S1SP) Gateway between the DCC Systems and Service Users. Currently there is little protection against Alert Storms, meaning that multiple Alerts are being counted and entering the gateway, rather than being filtered out, even after recognising they are originating from the same single Device.

What is the Proposed Solution?

The proposed solution is to provide Alert Storm protection through a DCC designed mechanism which will count the number of Alerts originating from a specific, individual Device within a defined time window. If the Device sends the same Alert above a pre-determined threshold value, the mechanism will consolidate excess Alerts from the Device and only forward one copy of that Alert in a designated period agreed by the DCC on to the intended Users. Consolidated Alerts will be counted for Anomaly Detection purposes and Service Users will be notified ahead of time for the exact actions being taken. This solution will be implemented over two stages.

3. Modification Report Consultation responses

The second Modification Report Consultation for SECMP0062 had seven respondents. There were three respondents who elected to approve the Modification Proposal and four respondents who voted to reject.

The three positive respondents were all Large Suppliers who believe the SEC Objectives were better facilitated by the solution. One respondent acknowledged that although the solution does not solve the root cause, it provides a good means of mitigating and suppressing the impacts. The four negative respondents were all Network Parties who, whilst acknowledging the need for DCC System traffic management and safeguarding the system from an overload, didn't agree with the solution. Their main criticism was that, with the solution being expensive, they'd prefer to invest the resources into a solution that deals with the root causes of Alert Storms, rather than deal with their symptoms. They also raised concerns about the lack of detailed evidence to back up claims of how the solution would negate the worst impacts of Alert Storms.

There were multiple questions and clarifications responses which the DCC has provided answers too which are detailed below.

Multiple respondents enquired as to why the solution is Data Service Provider (DSP) only, which is seen as dealing with the symptoms of why Alert Storms are generated, rather than the root cause. The DCC has stated the Modification Proposal is intended for the consolidation of Alerts received by the DSP. It is working with the CSPs to address the root causes; however due to the nature of the changes needed, they are likely to take an extended time to be implemented. The DCC has expressed that due to the impacts of Alert Storms currently being experienced, the DSP solution should be used whilst a CSP solution is being explored.

One respondent had a concern that a significant number of incidents could be registered per device in the DCC Incident Management System. In turn, they believed this would increase both the DCC and User resource costs. The DCC believes that this concern will be covered by its "dead-banding" in the incident creation process. It explained that new incidents won't be created every time throttling is in progress; instead it will be covered in the same incident over a 24 hour period as it has suggested for a starting point. The incident will only first be created once the configured threshold is breached, and a new incident will only be created if it is still sending Alerts over that threshold after the 24-hour dead-band period ends.

The same respondent had concerns over the email system, asking whether building email functionality was the best choice of notification, considering that a large volume of email traffic would negatively impact both the DCC and Users. The DCC has stated that the email functionality would not be built from scratch, instead re-using the existing functionality in the DCC Service Management System (DSMS), making it cost-effective. It further believes the Impact Assessment covered the effects that would be had on the DCC Systems, DSMS and email systems.

Multiple respondents asked about the reporting of the solution and how it will operate. The DCC has confirmed that the reporting will be available via the DCC SharePoint, using its Technical Operations Centre (TOC) and through the Self-Service Interface (SSI). It has further confirmed that if Parties don't wish to receive email notification, these means of reporting will still provide the same information and will not lead to any loss of knowledge in the Alert management mechanisms' operations. The DCC has also advised Parties with a large number of Devices generating these Alerts to initially disable incident and email notification to prevent any potential administrative issues, and enable it once the number of Devices has reduced to a more manageable number.

One respondent asked whether the DCC User Interface Specification (DUIS) changes under Part 2 of the solution will be introduced to backdated versions of the DUIS. The DCC has stated that any DUIS changes will only be included in the new version of DUIS created in the November 2020 SEC Release.

Finally, multiple respondents enquired into any evidence the DCC could provide to back up the claims of its mechanism being able to consolidate approximately 90+% of Alerts. The DCC has provided a table to model outcomes where its mechanism is in effect against the four Alert Codes with the greatest volume. It has assessed the 1 in N where N=10 scenario, as is currently suggested, but also for consideration a 1 in N where N=500 scenario, versus the total with no active mechanism in place.

Alert	Total if no Consolidation	Total if N = 10	Total if N = 500
8F3E	37,176,005	3,767,340	75,346
8014	602,857	114,232	2,284
8015	604,485	114,190	2,283
8F12	2,525,257	277,464	5,549
Sum	40,908,604	4,273,226	85,465
Reduction	-	89.5%	99.8%

The DCC wishes to further emphasise that the DSP solution will have an enduring benefit, even after the current device issues are resolved. This would be due to the proposed DSP protection being able to mitigate future device issues which result in similar symptoms being experienced currently.

The full second Modification Report Consultation responses can be found in Appendix B.

In addition, the DCC has stated that if SECMP0062 is rejected, it will incur costs required to deliver a solution to its Alert Storm issues outside of the SEC Change process. A verbal update on these costs will be delivered at the Change Board meeting.

4. Next steps

Determination approach

The Panel has determined that SECMP0062 is a Self-Governance Modification. The Change Board's vote will therefore form a decision on the modification.

This decision will subject to a 10 Working Day objection period where Parties can refer the decision to the Panel. If no objection is received, the Change Board's decision will be final.

Implementation approach

The Panel has agreed a two-part implementation approach where:

- Part 1 of the solution will be implemented on **25 June 2020** (June 2020 SEC Release); and
- Part 2 of the solution will be implemented on **5 November 2020** (November 2020 SEC Release)

if a decision to approve is received on or before 22 January 2020.

5. Recommendations

The Change Board is requested to:

- **AGREE** that SECMP0062 should proceed to vote;
- **DETERMINE** whether SECMP0062 should be **APPROVED** or **REJECTED** under Self-Governance; and
- **PROVIDE** rationale for this decision against the General SEC Objectives.

Harry Jones

SECAS Team

15 January 2020

Attachments

- **Appendix A:** SECMP0062 Modification Report
 - **Annex A:** SECMP0062 business requirements
 - **Annex B:** SECMP0062 legal text
 - **Annex C:** SECMP0062 Traffic Management Mechanism Document
 - **Annex D:** SECMP0062 DCC Impact Assessment
 - **Annex E:** SECMP0062 Working Group Consultation responses
 - **Annex F:** SECMP0062 first Modification Report Consultation responses
- **Appendix B:** SECMP0062 second Modification Report Consultation responses