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MP178

‘Removing DSP validation against the SMI join status for SR8.8.x’

Modification Report

Version 0.6

24 Aug 2022



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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This document also has two annexes:

- **Annex A** contains the full responses received to the request for information (RFI).
- **Annex B** contains the business requirements for the solution.

Contact

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

Elizabeth Woods

020 4566 8335

elizabeth.woods@gemserv.com

1. Summary

This proposal has been raised by David Walsh on behalf of the Data Communications Company (DCC).

During the Install and Commissioning (I&C) process, an engineer is on site and installs the Devices, after which a Communications Hub is also installed. At this point, the engineer proceeds to commission the meter which is done by the Service User sending a series of Join Commands (SRVs 8.7.x) in order for the Devices to connect to the Communications Hub. Once they are successfully joined, the Devices are then commissioned and therefore completing the I&C process. There are occasions when the initial join was unsuccessful or there was an issue with the Devices being joined, and therefore the engineer will need to unjoin the Devices before attempting to re-join them again. Alternatively, when a Device is being exchanged and needs to be un-joined before the new Device can be joined.

An issue has been brought to the DCC's attention whereby the on-site Device Installation and Commission (I&C) process fails when the Data Service Provider (DSP) does not receive successful messages for joins of Service Reference Variants (SRVs) 8.7.x. This prevents the Service User from being able to send an Unjoin command as the business validation on the SRV 8.8.1 'Unjoin Service (Critical)' or 8.8.2 'Unjoin Service (Non-Critical)' commands check that a Device is joined to the Smart Metering Inventory (SMI) to allow it to be un-joined. This results in Devices failing the I&C process which must then be fixed by manually updating the SMI database.

The Proposed Solution aims to remove DSP validation of Join status in the SMI when sending an Unjoin Service Request. This will allow the sending of unjoin commands irrespective of the join status held in the SMI. This solution would prevent the Response Code E080801 from being created in association with an unjoin command.

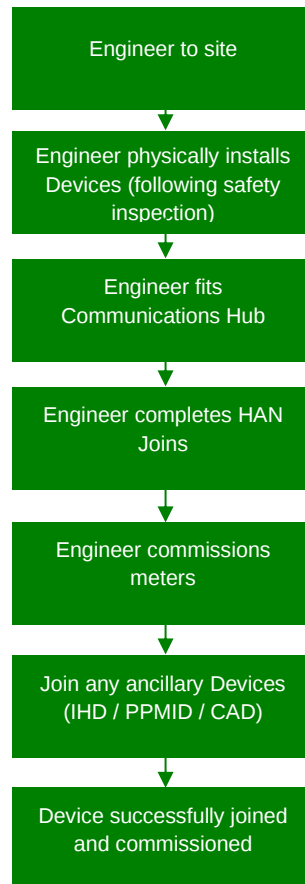
This modification does not intend to alter current Security elements of the process.

2. Issue

What are the current arrangements?

During the Install and Commissioning (I&C) process, an engineer is on site and installs the Devices, after which a Communications Hub is also installed. At this point, the engineer proceeds to commission the meter which is done by the Service User sending a series of Join Commands (SRVs 8.7.x) in order for the Devices to connect to the Communications Hub. Once they are successfully joined, the Devices are then commissioned and therefore completing the I&C process. There are occasions when the initial join was unsuccessful or there was an issue with the Devices being joined, and therefore the engineer will need to unjoin the Devices before attempting to re-join them again. Alternatively, when a Device is being exchanged and needs to be un-joined before the new Device can be joined.

The flow diagram below sets out the current step-by-step procedure of the on-site Device I&C process:



What is the issue?

It has been reported by Suppliers to the DCC that the on-site I&C process for Devices can fail where the DSP does not receive successful messages for joins of SRVs 8.7.x. For example, there may be problems joining a Consumer Access Device (CAD) to Electricity Smart Metering Equipment (ESME).

When this occurs, currently, the only way to complete the I&C process is a manual update of the SMI database. This is completed by the DCC at a cost of £2,000 per update. This is because:

- it is not possible to continue the I&C process by retrying the Join; and/or
- there have been instances where the Device will reject the retry of the Join command (SR8.7.x) if a previous Join was already successfully completed.

Since August 2020 there have been four cases (across different Suppliers) where the response to the SRV 8.7.2 'Join Service (Non-Critical)' is not received by the DSP despite the join working within the ESME. Hence, the Service User is unable to send an Unjoin command as the business validation on the SRV 8.8.1 'Unjoin Service (Critical)' or 8.8.2 'Unjoin Service (Non-Critical)' commands check that only Devices joined in the SMI may be un-joined. Note that SRV 8.8.1 is used with Critical commands, while SRV 8.8.2 is used with non-Critical commands.

There are instances where if the Service User sends SR 8.7.2 again to the ESME then this will pass through the DSP, but it is then rejected at the ESME as it is already joined.

Smart Energy Code (SEC) Schedule 8 ‘GB Companion Specification’ (GBCS) mandates that Devices should accept a re-send of the SR 8.7.x ‘Join Service’ command, even if the Device is already joined (for example, it is already in the Device Log).

The DSP currently updates the SMI and sets up the join relationship depending on the response to the Join command. As part of the Unjoin command, SRV 8.8.2 validates the SMI join relationship. For example, the system only allows the Unjoin command (SR 8.8.x) if Devices are already joined to each other, otherwise the DSP will reject the Service Request with the following error code:

DCC User Interface Specification	
Response Code	Response Code Description
E080801	According to the DCC Systems Smart Metering Inventory the ‘Other Device’ is not joined to the Business TargetID Device

It should be noted that there are no Smart Metering Technical Specifications (SMETS), GBCS, Security or any other SEC requirement mandating that the DSP must apply such validation other than what is defined in the DCC User Interface Specification (DUIS).

What is the impact this is having?

If the issue identified under this proposal is not addressed, there will be:

- Further I&C failures; and
- an ongoing cost to manually correct the SMI database to allow Users to reuse any Devices.

Each manual database correction is charged to the DCC at an average of £2,000. Any firmware fixes of meter defects normally take more than 12 months to deploy.

Up to July 2022 there has been five known incidences, and further incidents are expected.

Impact on consumers

If the issue is left unresolved, more Devices will not have been commissioned and will therefore not providing smart functionality and benefits of smart features to consumers.

3. Solution

Proposed Solution

The Proposed Solution aims to remove DSP validation of join status in the Smart Meter Inventory (SMI) when sending an Unjoin Service Request. This will allow the sending of unjoin commands irrespective of the join status held in the SMI. This solution would suppress the Response Code E080801 from being created in association with an unjoin command.

This modification does not intend to alter current Security elements of the process.

The full business requirements are in Annex B.

4. Assessment of the proposal

Observations on the issue

SECAS's views

During the Development Stage, the Smart Energy Code Administrator and Secretariat (SECAS) advised that removing any form of validation may cause potential security risks and the proposal should instead focus on the root cause of the issue and understand why the DSP has not received the response to the Join SRV.

SECAS investigated this with the Proposer during the Development Stage. The DCC commented that it is difficult to understand why the SRVs do not reach the DSP as the Suppliers are responsible for sending them rather than the DCC / DSP. The DCC further advised that if the DSP is not aware the SRV has or hasn't been sent, it will be extremely difficult for the DSP to investigate any further.

Views of the Change Sub-Committee

The proposal was presented to the Change Sub-Committee (CSC) for initial comment. SECAS informed the CSC that an RFI would be issued to better understand the scale of the issue and the impact it is having. The CSC approved of this approach and provided no further comments. SECAS provided an update to the CSC including a summary of the RFI responses. CSC members were happy for the modification to proceed to the Refinement Process. No further comments were received.

Views of the SEC Sub-Committees

No comments were provided by the SEC Sub-Committees during the Development Stage, however, once in the Refinement Process, SECAS will present the Proposed Solution to the Technical Architecture and Business Architecture Sub-Committee.

Request for information responses

During the Development Stage, SECAS issued an RFI consultation to better understand the impact the issue is having on SEC Parties. SECAS received three responses to the RFI (two Large Suppliers and one Other SEC Party). Two of the three respondents stated that the issue impacts their organisation.

The respondent that is not impacted (a Large Supplier) stated that their organisation's orchestration does not rely on the unjoin being successful when removing a Device. This is because the command could be failing because the Device is faulty. They advised that the cost of any Proposed Solution developed should be compared to the number of manual corrections being requested by Users.

The second Large Supplier stated that it was supportive of the need to address the issue, but is concerned as to why the DSP is not receiving the keys in the second 8F12 Alert. The DCC has since

responded to state that this issue is separate as it involves the CSPs and their Alert delivery success. The Large Supplier commented that a preferred solution would be to reduce the current £2,000 cost to amend the SMI. This would allow the security protocols to remain in place. Further comments were given where the respondent is not convinced that the cost benefits to the DCC will outweigh the security benefits. This will be investigated during the Refinement Process, but currently the DCC does not believe there is a security risk by removing the validation.

The Other SEC Party commented that successful SR 8.7.2s are not always registered within the DSP systems, which prevents, if required, the subsequent SR 8.8.2 from succeeding. It stated that it is directly impacted when it attempts to add or remove Type 2 In Home Displays (IHDs) or CADs. It felt the need for a SEC Modification to address the issue as it results in a negative customer experience as it can take a long time, possibly several weeks, for the SMI to be updated.

Solution development

Views of the Requirements Workshop

From the responses to the RFI consultation, the Proposer advised that there have been multiple requests to manually update the SMI status, which cost £2000 per request. Removing the unnecessary DSP validation rule, would be a low impacting DUIS change that could be implemented in a maintenance release and enable Users to update the SMI themselves. The Proposer also confirmed it is only proposing to remove the DSP validation rule for the Service Requests mentioned in the problem statement, not all Service Requests.

A member noted the second business requirement is about delivery of the first business requirement.

A member noted that the Devices would be in each other's Device logs, so they hold the ultimate truth, whereas the DSP holds a mirror of this. However, there are occasions DSP view of the Devices on the HAN is not a true reflection.

A member questioned if there was a reason this DSP validation was originally put in place which we are unaware of. Attendees could not identify why this DSP validation was in place but agreed it should be removed.

Views of the Working Group

A member stated the 'join' in the second Business Requirement v0.3 was not needed, as there is no validation for a join request. The Working Group was supportive for removing the unjoin validation as it would help with stranded Devices and Device reuse.

Working Group members stated that the tracking in the SMI needs to remain, as this is used for other business needs within industry although there are alternative ways to check the status via a Read Device Log.

The Working Group queried why within the GBCS there is no requirement for the validation of this SRV and why the current DCC implementation requires it. It was also noted that this aspect is worth investigating with the DSP, as there could be a genuine reason as to why this piece of architecture exists. The Proposer stated that initial discussion with DSP indicated that the removal of this validation isn't something that will cross impact other parts of the DSP solution. Working Group members agreed that this modification will need to be reviewed by Technical Architecture and Business Architecture Sub-Committee (TABASC) to provide their views and ensure the removal of the response code does not have any implications. It was also agreed the DCC needs to confirm if this modification progresses to the Preliminary Assessment stage.

Appendix 1: Progression timetable

The business requirements were amended following the Working Group discussion. This proposal will be discussed at the TABASC on 1 September 2022. Following this, SECAS will request a DCC Preliminary Assessment.

Timetable	
Event/Action	Date
Draft Proposal raised	15 Jul 2021
Presented to CSC for initial comment	27 Jul 2021
Problem Statement discussed with Sub-Committees	Aug 2021
Request for information issued to industry	Aug 2021
Presented to CSC for final comment and decision	28 Sep 2021
Modification placed on hold	Oct 2021 – May 2022
Business requirements developed with Proposer	Jun 2022
Business requirements discussed at the requirements workshop	11 Jul 2022
Business Requirements discussed with Working Group	3 Aug 2022
Rework business requirements with Proposer	Aug 2022
<i>Discuss Modification with TABASC</i>	<i>1 Sep 2022</i>
<i>DCC Preliminary Assessment requested</i>	<i>5 Sep 2022</i>
<i>DCC Preliminary Assessment returned (expected)</i>	<i>26 Sep 2022</i>
<i>Discuss DCC Preliminary Assessment with the Working Group</i>	<i>5 Oct 2022</i>
<i>Refinement Consultation</i>	<i>10 Oct – 28 Oct 2022</i>

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
CAD	Consumer Access Device
CSC	Change Sub-Committee
DCC	Data Communications Company
DSP	Data Service Provider
DUIS	DCC User Interface Specification
ESME	Electricity Smart Metering Equipment
GBCS	Great Britain Companion Specification
I&C	Installation & Commission
IHD	In Home Display
PPMID	Prepayment Meter Interface Device

Glossary	
Acronym	Full term
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specifications
SRV	Service Reference Variant
SR	Service Request
TABASC	Technical Architecture and Business Architecture Sub-Committee