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MP244

‘Device Alerts for Smart Meter Credit Replenishment’

Modification Report

Version 0.5

8 May 2024



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 three annexes:

- **Annex A** contains the business requirements for the solution.
- **Annex B** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.
- **Annex C** contains the full DCC Preliminary Assessment response.

Contact

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

Georgiana Severin

0207 770 6921

Georgiana.Severin@gemserv.com

1. Summary

This proposal has been raised by Kevin Clark on behalf of Utilita Energy Ltd.

When a Smart Meter has been installed successfully, a Supplier can configure the Device to perform in Prepayment mode, as well as triggering specific Alerts and notifications depending on a variety of scenarios. When a Supplier receives a particular Alert or notification, they can take remedial actions to rectify issues if required.

The Proposer has identified scenarios where a Supply could be cut off through reaching certain credit limits. If this scenario were to happen frequently, it may identify a trend where a prepayment energy consumer may be self-disconnecting or rationing their credit.

If a Supplier wishes to retrieve an update on the status of the Device following the receipt of a credit exhaustion alert, they will need to send Service Reference Variant (SRV) 7.4 '*Read Supply Status*'. This SRV may be sent multiple times over the course of a scenario where loss of supply is caused by credit exhaustion, adding potentially unnecessary traffic to the Data Communications Company (DCC) System.

If the supply remains off, there may be a need to visit the site of Supply to investigate the issue, as well as take behind the scenes remedial actions.

The Proposed Solution for this issue is therefore the introduction of a new Device Alert that would notify Suppliers of Supply re-enablement, following this period of disconnection.

The DCC Preliminary Assessment shows costs to implement a new Alert will be between £60,000 - £200,000, with Manufacturers indicating costs of £1.7 – £2m. This modification is targeted for the November 2025 SEC Release. It will impact Suppliers, the DCC and Manufacturers and is progressing as a Self-Governance modification.

2. Issue

What are the current arrangements?

Once a Smart Meter has been successfully installed and is operating as expected, a Supplier can take steps to configure the Device to perform certain actions dependant on a specific scenario. For example, a Supplier may send SRV 3.8.6 '*Update Payment Mode*' should they wish to set the credit mode of the Device, alongside establishing a Disablement Threshold for the Device. The Disablement Threshold is specified by the Smart Energy Code (SEC) Appendix AD '*DCC User Interface Specification*' (DUIS) Section 3.8.6.2 '*UpdatePaymentMode Definition*' as 'the threshold in Currency Units (CU) for controlling when to disable the Supply'.

The Great Britain Companion Specification (GBCS) Section 16.2 '*Event and Alert Codes*' states if the Disablement Threshold of a Device is exceeded, a Supplier will receive an Alert called '*Credit Below Disablement Threshold (prepayment mode)*' along with the matching Alert code '*0x8F0F*'. This informs the Supplier some form of action is required to re-establish supply. There is an alternative scenario that can return a similar Alert to a Supplier, called '*Emergency Credit Exhausted*' which is accompanied by Alert code '*0x81AA*'.

There are multiple actions a Supplier can take, such as sending SRV 7.4 'Read Supply Status' to ascertain the status of the Device, contact the consumer to inform them of the issue and encourage them to top up the Device, or potentially reach out to third parties who may attend the site to investigate if the issue persists.

What is the issue?

The Proposer has identified that although an Alert is sent to the Supplier to inform them of an issue, for example Alert 0x8F0F 'Credit Below Disablement Threshold (prepayment mode)', the Device will not automatically inform the Supplier that the Supply has been enabled through some form of remedial action. A Supplier will not receive an update or Alert on the Disablement Threshold issue in relation to Supply re-enablement until they manually take some form of action such as sending SRV 7.4 'Read Supply Status' to the Device.

What is the impact this is having?

The Proposer has advised that SRV 7.4 'Read Supply Status' may need to be triggered multiple times over the course of an event. This means the Supplier is attributing time & resource to retrieving the status of the Supply, in conjunction to taking remedial action to resolve any outstanding issues. A direct consequence of submitting an increased volume of Service Requests (SR) is the potential of increasing traffic within the DCC System, possibly leading to increased response times, as well as adversely affecting DCC messaging limits.

Impact on consumers

A Supplier will be unable to provide accurate information to the consumer about the state of their supply unless they manually initiate SRV 7.4 when questioned about the Supply. This may have an impact on services offered by Suppliers to consumers experiencing difficulties with their Supply, such as offering welfare checks, providing discretionary or emergency credit, or accurately responding to Supply faults and/or concerns.

3. Solution

Proposed Solution

The Proposer would like to implement a new Device Alert called 'Supply Enabled'. This Alert would be triggered following the restoration of power to a Supply, and in combination with the Device being fully functional. The Proposer has requested the Alert be applicable to SMETS2 Devices. This Alert would be passed on to Suppliers by the DCC. Suppliers would need to build internal processes to then enable them to take appropriate action when these were received if they choose to.

The Alert would be triggered in a specific scenario, included below:

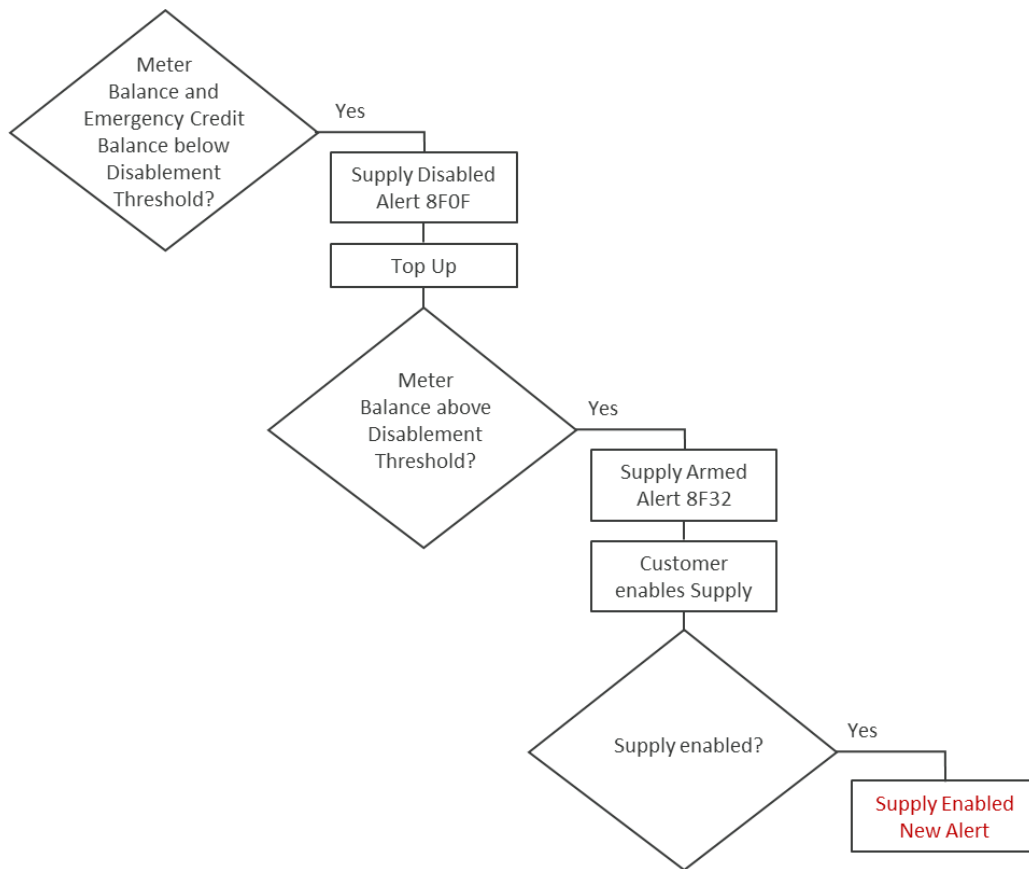


Figure 1: Process Flow for Supply Enabled New Alert

4. Impacts

This section summarises the impacts that would arise from the implementation of this modification.

SEC Parties

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

Breakdown of Other SEC Party types impacted			
	Shared Resource Providers		Meter Installers
✓	Device Manufacturers		Flexibility Providers
	DCC Other Users		MAPs/ MAMs

This modification would positively impact Suppliers as it would allow a single Device Alert to be received once Supply has been established, eliminating the need to send multiple SRV 7.4 'Read Supply Status' to the DCC System, causing avoidable traffic. This would then positively impact the DCC, as traffic would be reduced.

The modification does have a significant impact on Manufacturers as there would be a requirement to introduce a new Alert to Devices, at a cost that would not generally be required when manufacturing Devices.

DCC Systems

DCC System changes

The implementation of a new Device Alert would require System changes to the DCC, including changes to the Data Service Provider (DSP) to include the new Device Alert in accordance with GBCS, DCC User Interface Specification (DUIS) and the Message Mapping Catalogue (MMC).

It would also require changes to Parse and Correlate to support the MMC schema definition.

While there is no specific requirement relating to reporting, a new Alert is likely to impact the current DCC Data Science and Analytics reporting of SRVs and Alerts.

The full impacts on DCC Systems and DCC's proposed testing approach can be found in the DCC Preliminary Assessment response in Annex C.

DCC System traffic

The DCC System traffic would be positively impacted by this modification as it would reduce the number of SRV 7.4 'Read Supply Status' that are sent to the System when a consumer is off supply.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Schedule 8 'Great Britain Companion Specification'
- Schedule 9 'Smart Metering Equipment Technical Specifications 2'
- Appendix AD 'DCC User Interface Specification'
- Appendix AF 'Message Mapping Catalogue'

The changes to the SEC required to deliver the proposed solution can be found in Annex B.

Technical specification versions

The affected documents will have minor uplifts as a result of this modification.

Devices

Devices impacted			
✓	Electricity Smart Metering Equipment	✓	Gas Smart Metering Equipment
✓	Communications Hubs	✓	Gas Proxy Functions
✓	In-Home Displays	✓	Prepayment Meter Interface Devices
✓	Standalone Auxiliary Proportional Controllers	✓	Home Area Network Connected Auxiliary Load Control Switches
✓	Consumer Access Devices	✓	Alternative Home Area Network Devices

This modification will impact Electricity Smart Metering Equipment (ESME) and Gas Smart Metering Equipment (GSME) that are operating in Prepayment mode. The configurable Alert is designed to be sent by Devices operating in Prepayment mode only.

Consumers

This modification will not impact Consumers.

Other industry Codes

This modification will not impact other industry Codes.

Greenhouse gas emissions

This modification will not impact greenhouse gas emissions.

5. Costs

DCC costs

The estimated DCC implementation costs to implement this modification will be determined in the Full Impact Assessment. The breakdown of these costs are as follows:

Breakdown of DCC implementation costs	
Activity	Cost
Design, Build and Pre-Integration Testing (PIT)	£60,000 – 200,000
Systems Integration Testing (SIT)	TBC
User Integration Testing (UIT)	TBC
Implement to Live	TBC
Application Support	TBC

More information can be found in the DCC Preliminary Assessment response in Annex C.

SECAS costs

The estimated SECAS implementation cost to implement this as a stand-alone modification is one day of effort, amounting to approximately £600. This cost will be reassessed when combining this modification in a scheduled SEC Release. The activities needed to be undertaken for this are:

- Updating the SEC and releasing the new version to the industry.

SEC Party costs

Manufacturers will incur costs of £1.7-2m associated with introducing a new Alert to Devices. Costs from other Parties will be gained via the Refinement Consultation.

6. Implementation approach

Recommended implementation approach

SECAS is recommending an implementation date of:

- **25 June 2026** (June 2026 SEC Release) if a decision to approve is received on or before 25 June 2025; or
- **24 June 2027** (June 2027 SEC Release) if a decision to approve is received after 25 June 2025 but on or before 24 June 2026.

The modification impacts documents which are only uplifted once per year:

- DUIS (June)
- SMETS and GBCS (November)

As there are currently no other planned uplifts to the GBCS or SMETS, SECAS recommends moving the SMETS/GBCS schedule to June for a year and uplifting all three documents in one Release as opposed to implementing in two parts.

7. Assessment of the proposal

Areas for assessment

How will SEC Parties be impacted by this change?

There is a high potential that many SEC Parties could be directly impacted by any prospective changes. View will be gained via the Refinement Consultation to understand the scale of impact on all Parties.

Sub-Committee input

The Smart Energy Code Administrator and Secretariat (SECAS) has engaged 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 Policy

Management Authority (SMKI 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	Do you think the proposed solution is operationally appropriate?
SMKI PMA	We do not believe this has any SMKI impacts
SSC	We do not believe this has any security impacts
TABASC	How complex would these changes be to implement across the industry?

Observations on the Issue

Business Case from the Proposer

The Proposer has provided some information to support their reasoning for the requirement of this change, which is outlined below:

The Electricity Supply License and Gas Supplier License Condition 27A.1 requires Suppliers to identify and offer additional support to prepay customers that Self-Disconnect or Self-Ration. In order to do this an accurate understanding of the customers Supply status is a necessity. A “Supply Restored” notification would enable Suppliers to identify customers who may be Self-Disconnecting based not only on the duration off Supply, but also frequency of disconnect events. This would additionally allow Suppliers to build an accurate history of these events and begin to identify patterns in Self-Disconnecting customers.

The increased confidence in Supply status that this Alert would bring would allow Suppliers to take a proactive approach to protecting vulnerable customers from being without basic needs of energy and heating as we will be able to contact the customer at the right time and have the right information to discuss what support that customer needs, preventing future occurrences of Self-Rationing or Self-Disconnecting and keeping these customers on Supply. This is the primary benefit of this proposal and one which we believe Ofgem should take active interest in.

In addition, there are occasions where the initial Off-Supply Alert is not generated, due to occurring within a Non-Disconnect Window, and this Alert would potentially be able to notify Suppliers of disconnects that would otherwise be hidden, potentially masking Self-Disconnecting Customers that require support but cannot be identified at this point in time.

There are significant reputational advantages for the Smart Metering Implementation Programme (SMIP) in being able to proactively manage and support vulnerable customers Self-Disconnect behaviours, especially with the increased focus on this specific customer group. If Industry is able to consistently offer the right level of support to these customers, when it is needed, the perceived benefit of the SMIP will be improved alongside the reputation of pre-pay as a payment method. This proposed new Alert is a key foundation in enabling Suppliers to begin building this proactive approach.

An automated Alert would have a positive impact on the traffic across DCC network, as the Alert would be a singular message trip as opposed to the call and receipt trip that utilising a SR would generate. This Alert would also drastically reduce the need to use the 7.4 ‘Read Supply Status’ SR, as Suppliers would have an accurate status of their Supplies at any given moment, thus removing the need to query Supply points in their portfolio in order to check if they are on or off Supply.

Views of the Change Sub-Committee

Change Sub-Committee (CSC) members noted concerns of cost, impact to systems across the industry, and a minimal benefit the change would yield. It was noted that changes to the SMETS, DUIS and GBCS documents would be needed as part of implementing a new Device Alert. This would be accompanied by long timescales to implement the changes, as well as the cost of implementation across the industry.

The CSC highlighted that a significant business case would be required to support the cause of the Proposal should this move on through the modification process. The CSC agreed that the proposal should remain within the development stage to continue building the relevant case needed to move forwards.

Following the meeting, SECAS re-visited the business processes utilised by the Proposer and their organisation to better understand why the proposed changes are required. As a result of this review, the proposal has been re-scoped to better represent the issue raised.

SECAS presented the re-scoped proposal to CSC. The CSC noted that this issue had been raised before but the expected costs would likely outweigh any benefit. The CSC discussed the need to obtain estimated costs of the modification to draw a conclusion on this matter, and as such the modification was approved to move to the Refinement Process.

Device Manufacturer feedback

SECAS presented this to Gas Smart Metering Equipment (GSME) Manufacturers via an Energy and Utilities Alliance (EUA) meeting. Manufacturers were concerned about the financial aspect of this proposal. The shared opinion was this proposal would be expensive to implement across the industry, and members were curious as to whether other Suppliers were supportive of the proposal.

A member was concerned about the potential of causing 'Alert Storms' within the DCC System. Members noted that an automated Alert could be triggered more frequently than the current sending of a SR 7.4, possibly overloading DCC System capacity.

In relation to supporting consumers with the management of their credit value, one member commented that it should be up to the consumer how they wish to manage the credit value of their Device.

Solution development

Implementing New SMETS1 Alerts

The initial business requirements included functionality for both SMETS1 and SMETS2 Devices. It was noted during the EUA meeting that there will be no certification for new SMETS1 Devices moving forward, so whilst existing Devices technically could support this change, any new versions would likely not be supported. It was noted that the re-certification of Devices was still a possibility. Therefore, the solution would be suitable for SMETS2 Devices, but more difficult to implement with SMETS1 Devices.

This argument was echoed by a member of the Working Group, who noted the need for the proposed Device Alert, but shared concerns over the Alert being mandated for SMETS1 Devices as there is no robust mechanism in place for SMETS1 firmware versions. At present, SMETS1 firmware is subject to contractual relationships between Suppliers and Manufacturers.

As a result of this feedback, the Proposer de-scoped SMETS1 Devices from the Business Requirements of the Proposed Solution.

Non-GBCS Non-Mandated Alert Pathway

As part of developing the business requirements, the argument of following a Non-Mandated GBCS Device Alert pathway was highlighted by members of different forums.

At Working Group, a member noted that the preferred pathway for Manufacturers would be a Non-GBCS Non-Mandated Alert. This allows Manufacturers to individually decide whether or not to adopt this Alert, but without an obligation to do so. If the Alert was included within the GBCS, all Manufacturers would be required to adopt this Alert, and there is a likelihood of high implementation costs as a result.

This view was echoed by the TABASC.

The Proposer noted that they will seek to explore the Non-GBCS Non-Mandated Alert pathway if the modification proves unsuccessful.

Configurable or Non-Configurable Alert

During the SECAS workshop with the Proposer and the DCC, the DCC advised the impacts would be different, depending on which route the solution would be developed. If the Alert was to be mandatory all Suppliers would receive the Alert in relation to 'Supply Re-Enablement'. There would be no option to switch the Alert off. This option would be a 'text-only' change to DUIS requiring minor amendments.

If the Alert was to be designated as configurable, a DCC User could choose whether they receive the Alert, and in which scenarios it applies to. However, if this route is pursued, there would be a more significant impact to DUIS, including a DUIS Schema amendment.

Working Group members recommended the proposed Device Alert should be mandatory to reduce DCC costs.

The same information was presented to TABASC, and the Sub-Committee's views differed from the Working Group's recommendation. TABASC members noted that, if implemented, they would recommend the Alert be configurable, so Users have choice in relation to receiving it.

Based on this feedback, the Proposer decided to progress with a configurable Device Alert, in line with the recommendation from TABASC.

8. Case for change

Business case

The new Device Alert will benefit Suppliers as it would provide an improvement on identifying self-disconnecting and self-rationing Consumers, enabling them to act proactively in supporting them. It would also benefit DCC System traffic, as the Alert would replace having to send multiple SRV 7.4 'Read Supply Status', which is the current workaround.

The implementation of the modification would be in June 2026 at the earliest, and Devices that contain this Alert may take some time before they are rolled out by Manufacturers. The costs of the

modification are significant, and the current workaround does provide Suppliers with the same information, albeit at the expense of an increase in DCC System traffic.

Views against the General SEC Objectives

Proposer's views

The Proposer believes this modification better facilitates SEC objective (c)¹ as it would provide Suppliers with a way of identifying self-rationing and self-disconnecting Consumers, which would then facilitate their ability to provide appropriate support.

Industry views

The Industry views will be collated and summarised after the Refinement Consultation.

Views against the consumer areas

Improved safety and reliability

This modification will have a neutral impact on this area.

Lower bills than would otherwise be the case

This modification will have a neutral impact on this area.

Reduced environmental damage

This modification will have a neutral impact on this area.

Improved quality of service

This modification will have a positive impact on this area.

Benefits for society as a whole

This modification will have a positive impact on this area.

¹ facilitate energy consumers' management of their use of electricity and gas through the provision of appropriate information via smart metering systems.

Appendix 1: Progression timetable

Timetable	
Event/Action	Date
Draft Proposal raised	8 Aug 2023
Presented to CSC for initial comment	15 Aug 2023
CSC converts Draft Proposal to Modification Proposal	17 Oct 2023
Business Requirements discussed with DCC & The Proposer	13 Nov 2023
Modification discussed with Working Group	6 Dec 2023
Modification discussed with TABASC	4 Jan 2024
DCC Preliminary Assessment Requested	2 Feb 2024
DCC Preliminary Assessment Received	27 Feb 2024
Modification discussed with Working Group	3 Apr 2024
Modification discussed with OPSG	22 Apr 2024
Modification discussed with TABASC	2 May 2024
Refinement Consultation	8 May – 30 May 2024
<i>Modification discussed with Working Group</i>	<i>Jul 2024</i>
<i>Impact Assessment costs approved by Change Board</i>	<i>Jul 2024</i>
<i>Impact Assessment Requested</i>	<i>Jul 2024</i>
<i>Impact Assessment Received</i>	<i>Oct 2024</i>
<i>Modification discussed with Working Group</i>	<i>Nov 2024</i>
<i>Modification Report approved by CSC</i>	<i>Dec 2024</i>
<i>Modification Report Consultation</i>	<i>Dec 2024</i>
<i>Change Board Vote</i>	<i>Jan 2025</i>

Italics denote planned events that could 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
CU	Currency Units
DCC	Data Communications Company
DSP	Data Service Provider
DUIS	DCC User Interface Specification
EUA	Energy and Utilities Alliance
GBCS	Great Britian Companion Specification
GSME	Gas Smart Metering Equipment
MMC	Message Mapping Catalogue
OPSG	Operations Group
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SMETS	Smart Metering Equipment Technical Specification
SMIP	Smart Metering Implementation Programme
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SR	Service Request
SRV	Service Reference Variant
SSC	Security Sub-Committee
TABASC	Technical Architecture and Business Architecture Sub-Committee