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# MP208 ‘Northbound Prioritisation of N56 Alerts’

## Modification Report

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Corporate member of  
Plain English Campaign  
Committed to clearer  
communication

592



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## About this document

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This document is a 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 DCC Preliminary Assessment response.

## Contact

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## 1. Summary

This proposal has been raised by Emslie Law from OVO Energy.

When a consumer requests a Prepayment top up at a shop, the request is sent via the Responsible Supplier to the Data Communications Company (DCC). The DCC responds by sending an N56 Alert, which contains the Unique Transaction Reference Number (UTRN) required to process the consumer's payment. Simultaneously, the consumer's funds are 'held' by the Payment Service Provider (PSP), ready to transfer to the Supplier's bank account.

If the UTRN is not returned to the shop within 30 seconds of the initial request, the transaction will time out. When the consumer sees that their transaction has failed, they will likely make further attempts to request a top up, resulting in further funds being held by the PSP and thereby making them unavailable for use by the consumer until such time as the PSP refunds them. This can take between three to ten days.

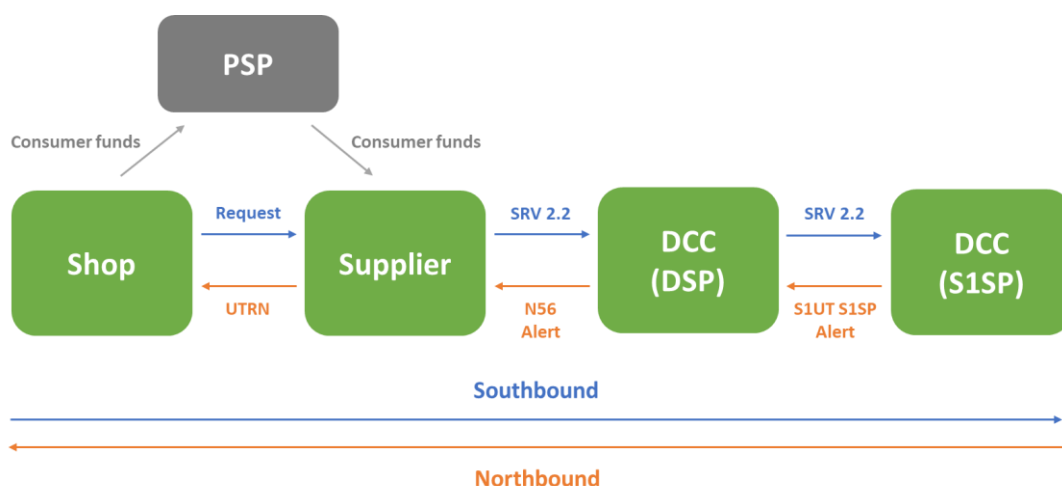
The DCC is aware that while the majority of Prepayment top up requests are processed and N56 Alerts returned to the Supplier within the necessary timeframe of 16 seconds, there are instances where this part of the process is taking too long. The Proposer seeks to introduce a method of prioritising N56 Alerts within the DCC System to ensure that they are returned with enough time for the other parts of the process to be completed before the 30 second time limit, thereby preventing consumer funds from being withheld.

This modification will be DCC System-impacting and is expected to be progressed as a Self-Governance Modification.

## 2. Issue

### What are the current arrangements?

When a consumer attempts to purchase a Prepayment Smart Metering Equipment Technical Specification (SMETS) 1 Meter top up from a shop, the process follows the below pathway:



When Service Reference Variant (SRV) 2.2 'Top Up Device' is generated, the PSP, which is not a Smart Energy Code (SEC) Party, 'holds' the consumer funds in preparation to transfer to the Supplier's bank account. The N56 Alert contains the UTRN. Receipt of the UTRN by the shop till is the endpoint of the process and allows the PSP to transfer the consumer funds to the Supplier's bank account. If the entire process is not completed within 30 seconds, the transaction times out. The top up will not be successful and the funds used by the consumer in the attempt will be released back to the consumer by the PSP. However, this release may take several days to clear.

### What is the issue?

SEC Appendix E 'DCC User Interface Services Schedule' gives the Target Response Time (TRT) for SRV 2.2 'Top Up Device' as 16 seconds. If this TRT is met for the part of the process which takes place within the DCC System, the overall process should be completed within the 30 seconds necessary to succeed. However, this is only an indicative time and there is currently no mechanism within the DCC System to ensure that SRV 2.2 is processed and the N56 Alert returned to the Supplier ahead of other, less urgent, system messages.

### What is the impact this is having?

The Proposer has encountered instances where the process is failing to complete in the necessary timescales. The DCC has found that while the majority of SRV 2.2 messages it receives result in the N56 Alert being sent to the Supplier within the 16 second TRT, there are instances where this stage of the process (which takes place within the DCC System) is taking longer than it should due to system constraints.

As the UTRN is not returned to the Supplier via the N56 Alert, the PSP is unable to release the consumer funds and the Supplier is unable to vend to the consumer. This issue could potentially affect any Prepayment consumer attempting top ups at a shop, and any Supplier to Prepayment consumers.

### Impact on consumers

When the SRV 2.2 is generated, the PSP 'holds' the consumer's funds in preparation to send to the Supplier's bank account. If the top up is not successful, the funds are still in a 'locked' state within the consumer's bank account, meaning they have no access to this money until the PSP releases it. As this can take several days to be processed, the consumer is not only unable to access their own money but have also not succeeded in topping up the energy allowance on their Prepayment Meter. The consumer will likely re-attempt the top up, meaning more money leaves their account.

Prepayment consumers are statistically more likely to be those on low or unreliable incomes. In April 2022, Citizens Advice Bureau stated that approximately 1,300 people were going without Prepayment supply that month, up from 162 people in April 2021<sup>1</sup>. In May 2022, the Chief Executive Officer (CEO) of E.ON estimated that by October of the same year as many as 40% of E.ON's eight million customers could descend into 'fuel poverty'<sup>2</sup>, meaning that over 10% of their income would be spent on energy bills. For energy consumers at risk of fuel poverty, a failed Prepayment top up attempt

<sup>1</sup> <https://www.bbc.co.uk/news/business-61270970>

<sup>2</sup> <https://www.bloomberg.com/news/articles/2022-05-22/fuel-poverty-looms-for-many-as-uk-wavers-on-windfall-tax-plan>

which results in funds being withheld for several days could have enormous consequences on their ability to make ends meet.

### 3. Solution

#### Proposed Solution

The Proposed Solution is to introduce a method of prioritisation in the Northbound message pathway (from the Data Service Provider (DSP) to the Supplier) so that N56 Alerts are processed ahead of other, less urgent, System messages.

The proposed changes to the SEC drafting will not mandate which messages should be 'high priority', but will set out the process by which priority levels should be decided and implemented. This is to future-proof the solution in case other messages are identified as requiring prioritisation.

### 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 |

All SEC Parties which send messages over the DCC System will be potentially impacted by this modification, as it will affect the order in which the messages are processed in the Northbound pathway. The DCC will conduct testing to ensure that the performance of the system will allow the DSP to maintain Service Level Agreements (SLAs) for delivery of business-as-usual (BAU) messages.

## DCC System

This modification involves additional work for the DSP System in prioritising messages and the resultant queuing and dispatching of those messages. The impact of these changes will be performance tested to ensure that the additional processing required to implement this prioritisation, queuing and dequeuing functionality is as efficient as possible and has no material impact on the DSP System. Any traffic queued and bypassed by higher priority traffic will spend longer 'inside' the DSP System than it would have, had it not been queued. Performance testing during Pre-Integration Testing (PIT) is required to both ensure that the performance of the system will allow the DSP to maintain SLAs and to establish where there is a material impact on the underlying infrastructure.

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

## SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section H 'DCC Services'

## Consumers

Prepayment consumers will see a positive impact as the modification will help to ensure that Prepayment top-up requests are successful. There is a possibility that other consumers may see delays to requests assigned lower priorities, however the DCC will conduct testing to ensure that BAU system traffic is not materially impacted.

## Other industry Codes

There will be no impact on other industry Codes from this modification.

## Greenhouse gas emissions

There will be no impact on greenhouse gas emissions from this modification.

# 5. Costs

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## DCC costs

The estimated DCC costs to complete Design, Build and PIT for this modification are £350,000 - £750,000. The full costs will be determined as part of the DCC's Full Impact Assessment.

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

## SECAS costs

The estimated Smart Energy Code Administrator and Secretariat (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

There will be no additional costs to SEC Parties as a result of this modification.

# 6. Implementation approach

## Recommended implementation approach

SECAS is recommending an implementation date of:

- **27 June 2024** (June 2024 SEC Release) if a decision to approve is received on or before 27 December 2023; or
- **7 November 2024** (November 2024 SEC Release) if a decision to approve is received after 27 December 2023 but on or before 7 May 2024.

This approach is based on the DCC requiring six months from the point of approval to complete the necessary updates and testing. Due to the urgency of the modification, SECAS will work with the DCC to investigate if this can be delivered sooner.

# 7. Assessment of the proposal

## Areas for assessment

### Sub-Committee input

SECAS engaged with the Chairs from the OPSG, the 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                | Whether the benefits of the modification could be better delivered by changes to the DCC or Supplier processes, without the need for a technical solution. |
| SMKI PMA            | No input required.                                                                                                                                         |

| Sub-Committee input |                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------|
| SSC                 | Whether introducing prioritisation of the relevant system messages has any security implications. |
| TABASC              | The potential challenges to changing the technical architecture of the Prepayment top up process. |

The Sub-Committee Chairs expressed the opinion that this issue should be treated as a DCC defect, not a SEC modification. The OPSG investigated the SLAs and advised that the DCC was reporting levels of failure which fall within the agreed tolerance, however questioned the accuracy of this reporting. During an initial review of the issue, the DCC identified that it does not have a full set of the associated timing information, and the DSP will need to report to the DCC the additional timing points for the processing of top-up requests (SRV 2.2) and SMETS1 Service Provider (S1SP) Alerts within the DCC System. The DCC raised a Change Request (CR4630) to record the necessary timing points and help identify delays in the process pathway.

### Observations on the issue

During initial discussions of the issue, SECAS queried whether this could be resolved without the need for a SEC modification, either by changes to Supplier and PSP processes or by lengthening the time-out limit on the transaction. The Proposer advised that they had engaged the PSP in discussions to this end, but that as the transaction timeframe is applied to all financial transactions, not just those pertaining to the energy industry, any changes were unfeasible.

SECAS suggested that in the event that the transaction times out, the PSP could send notification to the Supplier so that credit can be applied to the meter and the consumer funds taken at a later date. The Proposer advised that the PSP would not be able to complete this process without receipt of the UTRN, so it would not address this issue.

The DCC noted that Suppliers can send different Command Variants of SRV 2.2:

1. Request UTRN only;
2. Send Top Up to Device only;
3. Request UTRN and Send Top Up to Device.

SECAS suggested that a Supplier may be able to bypass the identified issue by using different Command Variants. For example, if Command Variant 2 is used, credit will be applied to the Device and the Supplier would need to subsequently retrieve funds from the consumer. The Proposer advised that this would not resolve the issue for the consumer in the shop who would still receive 'transaction failed' notifications and would still have their funds held by the PSP.

### Solution development

#### Working Group

The Working Group queried whether there is an overlap with [SECMP0028 'Prioritising System Messages'](#). SECAS advised that SECMP0028 is tackling a more general issue and has faced challenges to its business case, whereas the specific issue identified in MP208 has a clear and urgent business case and so the two shouldn't be conflated. However, if MP208 is successful it may provide a 'proof of concept' for SECMP0028. SECAS is working with the DCC to ensure that any overlap

between SECMP0028, MP208 and other prioritisation workstreams is investigated to ensure there is no duplication of work or costs.

The Working Group also noted that other modifications relating to prioritisation have faced challenges around the fact that prioritising one message effectively de-prioritises others. SECAS requested that the DCC investigate whether the solution can include a mechanism to ensure that messages with a lower priority are not required to wait for an indefinite amount of time to be processed. The DCC will carry out performance testing during PIT to ensure that the DSP can maintain SLAs without an impact to the DCC System infrastructure. Further details can be found in the DCC Preliminary Assessment response in Annex B.

The Working Group queried whether the reporting being delivered on DCC System processing times under CR4630 may show that there are delays occurring within the DCC System and therefore reduce the benefits case for the Proposed Solution. SECAS agreed that this may be the case but noted that there are known instances of delays to N56 Alert delivery occurring between the DSP and the Supplier, so the Proposed Solution would deliver an improvement on delivery timescales, although it may not address all the issues.

The Working Group queried whether MP208 was the correct vehicle for delivering the prioritisation functionality, as other workstreams exist which would achieve the same result. The DCC confirmed that the MP208 Proposed Solution would be configurable to meet the needs of the other workstreams and that industry would not have to pay twice for the same work to be completed. SECAS advised that any cross-functionality would be a consideration of the delivery strategy but that this modification should not be delayed due to the severity of the issue which it seeks to address.

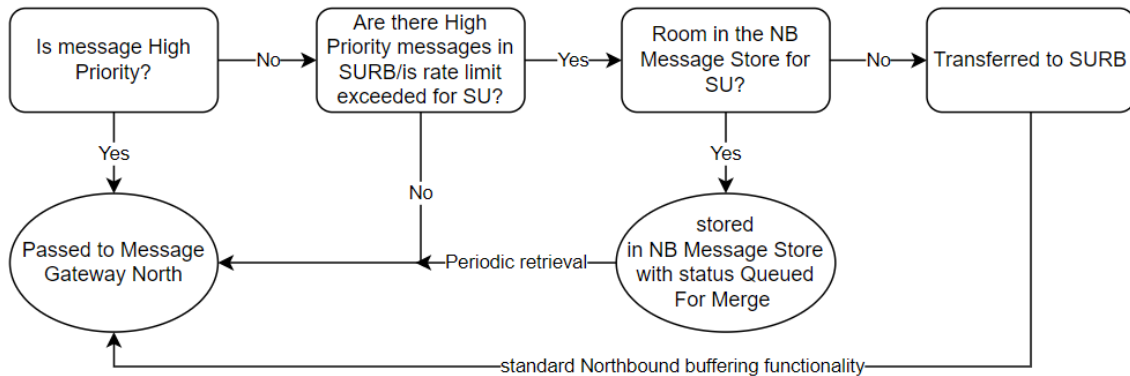
### **DCC Preliminary Assessment**

The solution architecture provided in the DCC Preliminary Assessment response is that the DSP Northbound processing shall be changed to prioritise selected High Priority messages over Low Priority messages. The configuration shall be such that Northbound Prioritisation is always applied.

The prioritisation categories are outlined below:

1. High priority alerts – a list of Northbound High Priority Alerts. For MP208, the N56 Alert shall be the only Alert configured in the list. Other Alerts could be added to the list in future.
2. Service Responses other than Scheduled Service Request responses.
3. Other Alerts – Device Alerts and DCC Alerts other than high priority Alerts.
4. Scheduled Service Request responses – i.e. responses to Commands sent out as a result of a scheduled operation.

This would allow On-Demand Service Responses and high priority Alerts to be prioritised over Scheduled Responses and other Alerts. For delivery to Service Users, the Northbound prioritisation approach is that any Service Responses or Alerts with lower priorities may be queued within the DSP to ensure that the Higher Priorities are not subject to processing delays. This is illustrated in the diagram below.



Further details can be found in the DCC Preliminary Assessment response in Annex B.

## 8. Case for change

### Business case

Prepayment consumers are statistically more likely to be those on low or unreliable incomes. For energy consumers at risk of fuel poverty, a failed Prepayment top up attempt which results in funds being withheld for several days could have enormous consequences for their wellbeing. As known instances of these failures are occurring, it is vital to introduce measures to ensure that the process is successful first time. Failures in the Prepayment top up process are not only financially damaging for consumers, but also result in reputational damage to the entire energy industry.

### Views against the General SEC Objectives

#### Proposer's views

The Proposer believes this modification better facilitates SEC Objectives (a)<sup>3</sup> and (b)<sup>4</sup>.

#### SEC Objective (a)

This modification would help to ensure that the Prepayment top up process is completed successfully on the first attempt.

#### SEC Objective (b)

The DCC has a TRT for delivering the N56 Alerts to Service Users. This modification will help to ensure that this TRT is met.

<sup>3</sup> Facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers' premises within Great Britain.

<sup>4</sup> Enable the DCC to comply at all times with the General Objectives of the DCC (as defined in the DCC Licence), and to efficiently discharge the other obligations imposed upon it by the DCC Licence.

## Industry views

The Working Group has acknowledged the severity of the identified issue. Further industry views on this modification and the Proposed Solution will be provided following the Refinement Consultation.

## Views against the consumer areas

### Improved safety and reliability

This modification will have a positive impact on this consumer area, as it will help to ensure continuity of supply for Prepayment consumers.

### Lower bills than would otherwise be the case

This modification will have a neutral impact on this consumer area. However, it will have a positive financial impact on Prepayment consumers as it will prevent top-up attempts failing and consumer funds being withheld while the PSP processes a refund.

### Reduced environmental damage

This modification will have a neutral impact on this consumer area.

### Improved quality of service

This modification will have a positive impact on this consumer area, as it will help to ensure that a consumer-driven process is completed effectively.

### Benefits for society as a whole

This modification will have a positive impact on this consumer area, as the ramifications for consumers' wellbeing when Prepayment top ups fail can be severe.

## Appendix 1: Progression timetable

On 19 January 2023 the DCC returned the Preliminary Assessment response. SECAS will discuss the Proposed Solution with the Working Group, the OPSG and the TABASC before issuing a Refinement Consultation.

| Timetable                                             |             |
|-------------------------------------------------------|-------------|
| Event/Action                                          | Date        |
| Draft Proposal raised                                 | 9 Jun 2022  |
| Business requirements developed with Proposer and DCC | 13 Jun 2022 |
| Presented to CSC for initial comment                  | 21 Jun 2022 |

| Timetable                                            |                                  |
|------------------------------------------------------|----------------------------------|
| Event/Action                                         | Date                             |
| CSC converts Draft Proposal to Modification Proposal | 21 Jun 2022                      |
| Modification developed further with Proposer and DCC | Late Jun – early Jul 2022        |
| Business requirements discussed with OPSG            | 12 Jul 2022                      |
| Business requirements discussed with Working Group   | 5 Oct 2022                       |
| Business requirements discussed with TABASC          | 6 Oct 2022                       |
| Update provided to CSC                               | 18 Oct 2022                      |
| Modification discussed with Working Group            | 2 Nov 2022                       |
| Preliminary Assessment requested                     | 8 Dec 2022                       |
| Preliminary Assessment returned                      | 19 Jan 2023                      |
| Modification discussed with Working Group            | 1 Feb 2023                       |
| <i>Modification discussed with OPSG</i>              | <i>14 Feb 2023</i>               |
| <i>Modification discussed with TABASC</i>            | <i>16 Feb 2023</i>               |
| <i>Refinement Consultation</i>                       | <i>16 Feb 2023 – 7 Mar 2023</i>  |
| <i>Impact Assessment requested</i>                   | <i>28 Mar 2023</i>               |
| <i>Impact Assessment returned</i>                    | <i>6 Jun 2023</i>                |
| <i>Modification Report approved by CSC</i>           | <i>20 Jun 2023</i>               |
| <i>Modification Report Consultation</i>              | <i>20 Jun 2023 – 11 Jul 2023</i> |
| <i>Change Board Vote</i>                             | <i>26 Jul 2023</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                          |
| BAU      | Business as usual                  |
| CEO      | Chief Executive Officer            |
| CSC      | Change Sub-Committee               |
| DCC      | Data Communications Company        |
| DSP      | Data Service Provider              |
| MHHS     | Market-wide half hourly settlement |
| OPSG     | Operations Group                   |
| PIT      | Pre-Integration Testing            |
| PSP      | Payment Service Provider           |
| S1SP     | SMETS1 Service Provider            |
| SEC      | Smart Energy Code                  |

| Glossary |                                                                |
|----------|----------------------------------------------------------------|
| Acronym  | Full term                                                      |
| SECAS    | Smart Energy Code Administrator and Secretariat                |
| SLA      | Service Level Agreement                                        |
| SMETS    | Smart Metering Equipment Technical Specification               |
| SMKI PMA | Smart Metering Key Infrastructure Policy Management Authority  |
| SRV      | Service Reference Variant                                      |
| SSC      | Security Sub-Committee                                         |
| TABASC   | Technical Architecture and Business Architecture Sub-Committee |
| TRT      | Target Response Time                                           |
| UTRN     | Unique Transaction Reference Number                            |