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MP128A

‘Gas Network Operators SMKI Requirements’

Modification Report

Version 1.0

21 June 2022

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About this document

This document is a Modification Report. It sets out the background, issue, solution, impacts and progression timetable for this modification, along with any relevant discussions, views and conclusions.

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This document also has four annexes:

- **Annex A** contains the business requirements for the solution.
- **Annex B** contains the Data Communications Company's (DCC's) full Impact Assessment response.
- **Annex C** contains the redlined changes to the Smart Energy Code (SEC) required to deliver the Proposed Solution.
- **Annex D** contains the full responses to the Refinement Consultation.

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1. Summary

This proposal has been raised by Earl Richards from Cadent Gas.

MP128 was initially raised to remove the SEC obligations for Gas Network Parties (GNPs) who do not wish to be DCC Users to become Smart Metering Key Infrastructure (SMKI) Subscribers, to obtain SMKI Organisation Certificates, and to make these Certificates available in the SMKI Repository. In order to meet these obligations, GNPs are required to undertake SMKI & Repository Entry Process Tests (SREPT).

As the modification developed, associated and consequential issues were identified, so it has been split into two parts. This part, [MP128A 'Gas Network Operators SMKI Requirements'](#), seeks to address the issue whereby when there is a change in organisation for the Gas Network Party on a Device, the incoming GNP will be unable to communicate with the Device if the previous GNP's Organisation Certificates are present.

The other part, already implemented under [MP128B 'Incorrect Gas Network Operator Certificates'](#), has amended the Post-Commissioning Obligations so that Suppliers can leave the Access Control Broker (ACB) Certificate in the Gas Network Operator (GNO) slot of the Gas Proxy Function (GPF), unless a Certificate for a GNP that is a DCC User is available in the SMKI Repository. It has also mandated that GNPs should only become Subscribers for SMKI Organisation Certificates if they also intend to become DCC Users.

GNPs and the DCC will be impacted by this modification. There are no DCC System costs so cost to implement will be limited to Smart Energy Code Administrator and Secretariat (SECAS) time and effort. If approved, the changes will be implemented in the June 2023 SEC Release. This is a Self-Governance Modification.

2. Issue

What are the current arrangements?

Smart Devices have several Certificate slots which are populated with security credentials relating to the Device and the various Parties associated with it. These include GNP Organisation Certificates. These security credentials ensure that only the Party which holds the Certificates in place on a Device are able to send certain commands or retrieve certain information from that Device. Currently, there is no SEC requirement for a GNP to remove its Organisation Certificates from a Device if it intends to cease being a DCC User.

Following the implementation of MP128B, SEC Appendix AC 'Inventory, Enrolment and Decommissioning Procedures' allows Responsible Suppliers to leave the ACB Certificate in the GNP slot of a GPF Post Commissioning, unless an Organisation Certificate for a GNP that is a DCC User is available in the SMKI Repository. Prior to this implementation, the GNO slot would have to be populated with a GNP Organisation Certificate.

What is the issue?

Once a Network Operator Certificate is placed on a Device, it can only be changed by the Network Operator for the given Certificate and only if the Network Operator is a DCC User. An example of this issue occurred when National Grid transferred ownership to Cadent Gas. Cadent Gas, which wasn't a DCC User, became the Network Operator for a large number of Devices which still held National Grid Certificates. This meant that Cadent Gas had no access to or communications with those Devices, as it was not the registered Network Operator on the Certificate.

What is the impact this is having?

Where a GNP has placed Organisation Certificates in the SMKI Repository but then transfers ownership to another GNP without removing its Organisation Certificates, this can leave Devices with the incorrect GNP Organisation Certificate and no means of changing them through normal business processes. These instances may require site visits and even Device replacement to resolve. It could also prevent GNPs from receiving Critical and mandated Alerts from their Devices, which would subsequently impact business processes.

Impact on consumers

A consumer's experience could be negatively impacted if their GNP is unable to communicate with their Device or receive Alerts. Issue resolution timescales would be longer and more likely to require engineer visits and back-office communications, inconveniencing consumers.

3. Solution

Proposed Solution

The Proposed Solution is to introduce an obligation for GNPs which intend to cease being DCC Users to ensure that the GNP Organisation Certificates in each of their GPF Trust Anchor Cells are replaced with ACB Certificates.

MP128A will also add an obligation for GNPs to submit a Certificate Revocation Request and to not subscribe to any further Organisation Certificates if they no longer intend to be DCC Users.

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 Parties	✓	Gas Network Parties
	Other SEC Parties	✓	DCC

Gas Network Parties

If a GNP intends to cease being a DCC User, it will need to submit a Certificate Revocation Request to remove its Certificates from the SMKI Repository and must not subscribe to any further Organisation Certificates.

DCC

The DCC will be indirectly impacted as they will receive more requests to replace Organisation Certificates with ACB Certificates and more Certificate Revocation Requests in the event that a Gas Network Party ceases to be a DCC User.

DCC System

There will be no DCC System impacts to implement 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 only impact Gas Proxy Functions directly, as this is where the GNP Organisation certificates are held. However, there will be an indirect impact to Gas Smart Metering Equipment (GSME) as the modification will allow incoming GNPs to communicate with these Devices.

SEC and subsidiary documents

The following parts of the SEC will be impacted:

- Section L 'Subscriber Obligations'
- Appendix B 'Organisation Certificate Policy'

The redlined changes to these documents to deliver MP128A can be found in Annex C.

Consumers

This modification is expected to have a positive impact on consumers, as it will reduce issue resolution timescales and improve the likelihood of issues being resolved remotely. The reduced need for site visits should also contribute to reductions in service costs.

Other industry Codes

There are no impacts to other industry Codes from this modification.

Greenhouse gas emissions

There are no impacts on greenhouse gas emissions from this modification.

5. Costs

SECAS costs

The estimated SECAS 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 are no SEC Party costs to implement this modification. This is supported by the Refinement Consultation responses in Annex D, which cite only minor costs related to the implementation of MP128B.

6. Implementation approach

Approved implementation approach

The Change Sub-Committee (CSC) has approved an implementation date of:

- **29 June 2023** (June 2023 SEC Release) if a decision to approve is received on or before 29 November 2022; or
- **2 November 2023** (November 2023 SEC Release) if a decision to approve is received after 29 November 2022 but on or before 2 April 2023.

Respondents to the Refinement Consultation noted that their organisations would require little to no lead time to accommodate the changes.

7. Assessment of the proposal

Observations on the issue

The CSC agreed the issue was clearly defined. A CSC member had concerns on how the change would affect Suppliers moving forward. SECAS has confirmed that Suppliers will be required to ensure they place the GNP Organisation Certificates on Devices where a SMKI Certificate exists, and an ACB Certificate where no GNP Organisation Certificate exists.

The SMKI Policy Management Authority (PMA) agreed that the GNP obligations were initially included in the SEC as futureproofing, but the benefits expected may no longer be realised. Furthermore, another member outlined there could be increased risks if GNPs are required to have Certificates on Gas Smart Metering Equipment (GSME), as GNPs are unable to update Certificates if the Device moves to another Network Party after the sale of a Gas Network business, for example. This would result in the incoming organisation fulfilling the role of the GNP being unable to communicate with the Device.

The Security Sub-Committee (SSC) agreed with the SMKI PMA that the obligation was put in place initially as futureproofing. It was supportive of making the requirement optional rather than mandatory.

Solution development

Post-Commissioning Obligations

The solution to MP128B amended the obligation on Suppliers in SEC Appendix AC to clarify that where a SMKI Organisation Certificate for a GNP exists it should be placed on the Device Post Commissioning, and where no GNP Organisation Certificate exists the Supplier should use the ACB Certificate instead.

As part of its Preliminary Assessment, the DCC agreed that its Post-Commissioning Obligations reporting would require updating to reflect that Suppliers are allowed to leave the ACB Certificate in the GNO slot of a GPF. The Technical Architecture and Business Architecture Sub-Committee (TABASC) queried this requirement as under the current arrangements the presence of an ACB Certificate in the GNO slot of a GPF doesn't necessarily signify a failure of Post Commissioning. The

TABASC agreed that the wording of the business requirement was suitable, but that clarification should be included in the business requirements document.

Following its full Impact Assessment, the DCC suggested that the requirement to amend the Post-Commissioning Obligations reporting be removed from this modification and absorbed into the scope of [MP183 'Post Commissioning Obligations Reporting'](#), which seeks to improve the accuracy of the reporting suite. SECAS agreed this was the most sensible approach, as did the Proposers of both modifications.

Revoking GNP Organisation Certificates

Business requirement 1 (Annex A) places a requirement on GNPs that are DCC Users that intend to cease being a DCC User. Where this is the case, the GNP shall replace the GNP Organisation Certificates on the Devices with ACB Certificates prior to ceasing to be a DCC User.

SECAS noted this is trying to prevent the issue that arose with National Grid and Cadent Gas occurring again in the future. National Grid had not removed its Organisation Certificates before it had ceased to become an organisation and therefore no other Network Party was able to communicate with those Devices or change the Certificates.

A Network Party agreed with the intent of the requirement but questioned whether it is possible for GNPs to exchange their Certificates for ACB Certificates. It reported that two years ago when it was experiencing problems with its Certificates, it worked with the DCC to try and test sending ACB Certificates to a Device. This was unsuccessful and the DCC never confirmed if it should be possible. A Supplier also experienced the same issue in UIT when it was unsuccessful in using Service Reference Variant (SRV) 6.15.1 'Update Security Credentials (Known Remote Party (KRP))' to exchange GNP Certificates for ACB Certificates. The Supplier suggested it could have been because it was using a Supplier Role and not a Network Party Role.

The Supplier also advised that it would be more useful to Suppliers if they could exchange Network Operator Certificates for ACB Certificates in order to re-install them in different Network Operator areas. However, this was not investigated further as the TABASC representative for the SSC advised it would be contrary to the security model.

SECAS later discussed the business requirement at a requirements workshop attended by several Parties, including the DCC, the DSP, the Chairs of the SSC and the TABASC, and representatives from the Department for Business, Energy and Industrial Strategy (BEIS). The DSP confirmed that it should be possible for a GNP to exchange its Certificate for an ACB Certificate in the GPF. It confirmed that there is nothing in the Great Britain Companion Specification (GBCS) nor the DCC User Interface Specification (DUIS) that prohibits this. However, it was agreed that it should be tested within a SIT environment and this is included in the testing scope for MP128A.

The DSP noted that even if the GNP replaces its Organisation Certificate with an ACB, the Organisation Certificate still needs to be revoked from the SMKI Repository. It was confirmed that the SMKI PMA can revoke Certificates and that doing so gives the Organisation Certificate a status of 'revoked'.

An additional requirement was subsequently agreed to the effect of "A GNP shall submit a Certificate Revocation Request and shall not subscribe to any further Organisation Certificates if it no longer intends to be a DCC User". The SSC/SMKI PMA Chair advised that SEC Appendix B 'Organisation Certificate Policy' section 4.9.1(A) 'Circumstances for Revocation' would require an update to reflect the new requirement. This would be an additional sub-bullet to ensure a Subscriber requests its

Certificates be revoked if it no longer intends to be a DCC User, which has been included in the MP128A legal text (Annex C).

Replacing Certificates

The DCC's Preliminary Assessment concluded that Data Service Provider (DSP) System changes were required to support the solution, so that attempts to replace Organisation Certificates on the GPF with ACB Certificates are not rejected. To replace the GNP Certificate held within the Network Operator Trust Anchor Cell of a GPF Device, the GNP will need to send SRV 6.15.1 'Update Security Credentials (KRP)' with an ACB Certificate as the replacement Certificate. This is currently supported by the DCC Total System and therefore no changes are required to the DSP solution to meet this aspect of the requirement.

The GBCS also supports this scenario for the CS02b 'Update Security Credentials' Command on the GPF. However, in this scenario where an ACB Certificate has been placed on a GPF by a departing GNP, any subsequent SRV 6.21 'Request Handover of DCC Controlled Device (Update Supplier Certificates)' request to place an ACB Certificate on that Device will need to pass Device anti-replay checks for the Network Operator Trust Anchor Cell.

For this to be possible, the DSP would need to be aware of the Originator Counter that was used by the GNP when it submitted the SRV 6.15.1 that placed the ACB Certificate on the Device.

The original solution was that the northbound processing of SRV 6.15.1 would therefore be amended such that when the DCC Total System detects that the Security Credentials of a GNP in a GPF have been requested to be replaced with the ACB Security Credentials, the Originator Counter of the message will be recorded.

Southbound processing of SRV 6.21 would have also been amended to ensure that the Originator Counter generated by the DCC Total System is greater than the recorded number, thus ensuring that the Command will be accepted by the Device.

The DCC's Impact Assessment noted that if this tracking of the Originator Counter is not carried out by the DSP, then the DSP will be unable to guarantee the generated Command would pass Device anti-replay checks and it will no longer be possible to put a valid GNP Organisation Certificate on that Device at any point in the future. Further details can be found in the DCC's full Impact Assessment response (Annex B).

A TABASC member queried whether a further requirement would be needed to provide a solution in the event of a GNP ceasing to be a DCC User due to extreme or unforeseen circumstances, such as entering administration. The TABASC agreed that as a solution currently exists for this eventuality, in the form of a 'SMKI recovery event', it would be unnecessary to add a requirement to MP128A. However, it may be worth exploring alternative solutions in the future.

A Working Group member queried the solution, noting that while the DCC would record the SRV 6.15.1 Originator Counter so that this could be exceeded by the SRV 6.21, there would be no way for an incoming GNO to know what Originator Counter they would need to exceed in order to place their own Organisation Certificates on the Device. This is because the GBCS does not mandate that the sending of an SRV 6.15.1 by a Network Party automatically resets the Originator Counter. The TABASC Chair advised that currently no GNOs use the DCC System, and that even if they did SRV 6.15.1 is the only Critical Command they can send, so it is highly likely that the Originator Counter would only ever be a low number and could easily be exceeded by a 'best guess' if necessary. This issue would not be encountered in the more likely scenario that a Supplier Party updates the Network Operator Organisation Certificates on behalf of the GNO.

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The Working Group member suggested an alternative solution of amending the GBCS to mandate that the sending of an SRV 6.15.1 by a Network Party automatically resets the Originator Counter. However, the TABASC Chair advised that as this would only be applied to new Devices it wouldn't resolve the issue being addressed in MP128A, which is designed to allow GNO Organisation Certificates to be updated on existing Devices.

Following a challenge to the business case from the CSC, the solution was amended to remove the DCC System change. It was the view of the Proposer, SECAS and the SMKI PMA Chair, based on the above comments of the TABASC Chair, that the risk of SRV 6.21 Commands being rejected is sufficiently small so as not to warrant the additional changes to the DSP System. SECAS agreed to provide drafting of guidance for GNPs to the DCC, to be published on the DCC Website, to explain what is required of them in the event they decide to cease to be a DCC User. This will be published prior to implementation of MP128A.

8. Case for change

Business case

In the event of a Gas Network Organisation being sold or otherwise ceasing to be a DCC User, the Certificates held on Devices will no longer become obsolete, with no way to change them except a site visit and possible replacement of the Device. Site visits may require the presence of engineers from several Party types, such as Gas Suppliers and Meter Asset Managers (MAMs), further impacting the cost and resource required to resolve and causing more inconvenience to consumers.

However, the actual impact of these issues on SEC Parties and on consumers is likely to be low. This is due to the fact that GNOs currently make little use of the DCC System and therefore their inability to communicate with Devices has few material consequences at present. The CSC therefore agreed that this modification should proceed as a text-only change, limiting costs to standard SEC implementation costs only.

Views against the General SEC Objectives

Proposer's views

When this modification was first raised, the Proposer believed it better facilitated SEC Objective (d)¹ by providing optionality for GNPs to not undergo the SREPT, which the Proposer believed would be more cost-efficient.

Since the modification was split, the above benefit was realised in MP128B. The Proposer considers that MP128A better facilitates SEC Objective (a)² as it ensures remote communication with Devices isn't lost in the event of a change in GNP.

¹ Facilitate effective competition between persons engaged in, or in commercial activities connected with, the supply of energy.

² Facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers' premises within Great Britain.

Industry views

The Refinement Consultation was carried out before the modification was split. At the time, the Refinement Consultation respondents agreed that this better facilitated SEC Objective (d).

One respondent also believed the modification better facilitated SEC Objective (g)³ as the change would remove unnecessary costs and obligations.

The Working Group agreed that the modification better facilitated SEC Objective (d). Further industry views against the General SEC Objectives will be obtained through the Modification Report Consultation.

Views against the consumer areas

Improved safety and reliability

The Modification Proposal is expected to have a positive impact against this consumer benefit area. If GNOs are unable to communicate with their Devices they may not receive Critical or mandated Alerts, as well as Alerts relating to Safety and Security.

Lower bills than would otherwise be the case

The Modification Proposal is expected to have a positive impact against this consumer benefit area. If GNOs are unable to communicate with their Devices they may need to schedule engineer visits to correct the Certificates, which may in turn require replacing the Devices, or to investigate and resolve other issues which could otherwise be handled remotely. Increased frequency of site visits would likely be reflected in higher consumer bills.

Reduced environmental damage

The Modification Proposal is expected to have a positive impact against this consumer benefit area. Devices may require replacing to correct the Certificates, resulting in environmental waste through avoidable scrappage.

Improved quality of service

The Modification Proposal is expected to have a positive impact against this consumer benefit area. If GNOs are unable to communicate with their Devices remotely, issue resolution will require more back-office communication with the customer and more engineer site visits, causing inconvenience and disruption.

Benefits for society as a whole

The Modification Proposal is neutral against this consumer benefit area.

³ Facilitate the efficient and transparent administration and implementation of this Code.

Appendix 1: Progression timetable

On 21 June 2022 the CSC approved this modification for progression to the Report Phase. It will be issued for Modification Report Consultation ahead of the Change Board vote on 27 July 2022 under Self-Governance.

Timetable	
Event/Action	Date
Draft Proposal raised	11 May 2020
Presented to CSC for initial comment	26 May 2020
Panel converts Draft Proposal to Modification Proposal	19 Jun 2020
Solution Development with Proposer	21 Jun 2020
Modification discussed at SMKI PMA	21 Jul 2020
Modification discussed at SSC	22 Jul 2020
Modification discussed at Working Group	5 Aug 2020
Refinement Consultation	17 Aug – 7 Sep 2020
Modification discussed at SMKI PMA	18 May 2021
Modification discussed at Working Group	2 Jun 2021
Modification discussed at TABASC	3 Jun 2021
Preliminary Impact Assessment requested	6 Jul 2021
Preliminary Impact Assessment returned	10 Aug 2021
Modification discussed at Working Group	1 Sep 2021
Modification discussed at SMKI PMA	8 Sep 2021
Modification discussed at TABASC	2 Dec 2021
Impact Assessment costs approved by Change Board	13 Dec 2021
Full Impact Assessment requested	14 Dec 2021
Full Impact Assessment returned	28 Feb 2022
Modification discussed at SMKI PMA	9 Mar 2022
Modification discussed at Working Group	6 Apr 2022
Modification discussed with CSC	17 May 2022
Modification Report approved by CSC	21 Jun 2022
Modification Report Consultation	22 Jun – 13 Jul 2022
Change Board Vote	27 Jul 2022

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
ACB	Access Control Broker
BEIS	Department for Business, Energy and Industrial Strategy
CSC	Change Sub-Committee
DCC	Data Communications Company
DSP	Data Service Provider
DUIS	DCC User Interface Specification
GBCS	Great Britain Companion Specification
GNO	Gas Network Operator
GNP	Gas Network Party
GPF	Gas Proxy Function
GSME	Gas Smart Metering Equipment
KRP	Known Remote Party
MAM	Meter Asset Manager
OTA	Over The Air
PIT	Pre-Integration Testing
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SSC	Security Sub-Committee
SMKI	Smart Metering Key Infrastructure
SMKI PMA	Smart Metering Key Infrastructure Policy Management Authority
SREPT	SMKI & Repository Entry Process Tests
SRV	Service Reference Variant
TABASC	Technical Architecture and Business Architecture Sub-Committee
TTO	Transition to Operations
UIT	User Integration Testing