

This document is classified as **White** in accordance with the Panel Information Policy. Information can be shared with the public, and any members may publish the information, subject to copyright.



MP128A

‘Gas Network Operators SMKI Requirements’

Modification Report

Version 0.7

14 June 2022

Corporate member of
Plain English Campaign
Committed to clearer
communication

592



Managed by



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.

Contents

1. Summary.....	3
2. Issue.....	3
3. Solution	4
4. Impacts	5
5. Costs	6
6. Implementation approach	7
7. Assessment of the proposal	7
8. Case for change.....	10
Appendix 1: Progression timetable	12
Appendix 2: Glossary	13

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.

Contact

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

Mike Fenn

020 3314 1142

mike.fenn@gemserv.com

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 inability to correct Organisation Certificates following a change in GNP also causes Suppliers to fail their Post-Commissioning Obligations. To provide a more robust solution, further reducing the risk of incorrect SMKI Organisation Certificates being present on a Device, changes are needed to the DCC and Service Provider Systems.

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. The total cost to implement the DCC System changes is approximately £158,000 with a lead time of seven months. 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. When this occurs, the Responsible Supplier is unable to comply with the Post-Commissioning Obligations, which state that the Supplier must ensure the correct Security Credentials are present on the Device as they pertain to the Network Parties¹. 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. DCC System changes will be required to ensure that attempts to replace Organisation Certificates on the GPF with ACB Certificates are not rejected. This will be achieved by recording the Originator Counter of the initial request sent by the GNP so that this can be exceeded by the DCC-generated response. This will allow the Command to place ACB Certificates on the Device to pass anti-replay checks and therefore be accepted.

Further technical details can be found in Section 7 under the subheading 'Replacing 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.

¹ SEC Appendix AC 'Inventory, Enrolment and Decommissioning Procedures' section 5.3

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

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

DCC System

The DCC System will be impacted by this modification, as changes to the DSP's processing of certain Over The Air (OTA) messages are required. Full details can be found in Section 7 under the subheading 'Replacing Certificates'.

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

DCC costs

The DCC cost to implement this modification is £158,050. The breakdown of these costs are as follows:

Breakdown of DCC implementation costs	
Activity	Cost
Design, Build and Pre-Integration Testing (PIT)	£69,639
Systems Integration Testing (SIT) and Transition to Operations (TTO)	£88,411

No User Integration Testing (UIT) is anticipated for this modification. Full details can be found in the DCC Full Impact Assessment response in Annex B.

SECAS costs

The estimated Smart Energy Code Administrator and Secretariat (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

Recommended implementation approach

SECAS is recommending 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.

The DCC has assessed a lead time of seven months from the date of approval to implementation. 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 Change Sub-Committee (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 will 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 northbound processing of SRV 6.15.1 will 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 will then also be 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.

If this tracking of the Originator Counter is not carried out by the DSP, then the DSP will be unable to create a Command that passes 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.

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.

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. This will also help to prevent Suppliers from failing their Post-Commissioning Obligations and incurring any associated penalties. 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.

By nature, when these instances occur, they are likely to impact a significant number of Devices, meaning the cost of doing nothing could far exceed the cost to implement this modification.

Views against the General SEC Objectives

Proposer's views

When this modification was first raised, the Proposer believed it better facilitated SEC Objective (d)² 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)³ as it ensures remote communication with Devices isn't lost in the event of a change in GNP.

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)⁴ as the change would remove unnecessary costs and obligations.

² Facilitate effective competition between persons engaged in, or in commercial activities connected with, the supply of energy.

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

⁴ Facilitate the efficient and transparent administration and implementation of this Code.

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.

Appendix 1: Progression timetable

The Modification Report will be presented to the CSC on 21 June 2022 for approval to progress to the Report Phase. It will then 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	21 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

This document is classified as **White** in accordance with the Panel Information Policy. Information can be shared with the public, and any members may publish the information, subject to copyright.

MP128A ‘Gas Network Operators SMKI Requirements’

Annex A

Business requirements – version 0.5

About this document

This document contains the business requirements that support the solution for this Modification Proposal. It sets out the requirements along with any assumptions and considerations. The Data Communications Company (DCC) will use this information to provide an assessment of the requirements that help shape the complete solution.

Business requirements

This section contains the functional business requirements. Based on these requirements a full solution will be developed.

Business Requirements	
Ref.	Requirement
1	Where a Gas Network Operator (GNO) that is a DCC User intends to cease to be a DCC User, it must ensure that its Organisation Certificates on the Devices are replaced with an Access Control Broker (ACB) Certificate prior to ceasing to be a DCC User.
2	A GNO shall submit a Certificate Revocation Request and shall not subscribe to any further Organisation Certificates prior to ceasing to be a DCC User.

Considerations and assumptions

This section contains the considerations and assumptions for each business requirement.

1.1 General

This solution will be applied to Smart Metering Equipment Technical Specifications (SMETS)2 Gas Proxy Functions (GPFs) only.

[MP128B 'Gas Network Operators SMKI Requirements'](#) removed the Smart Energy Code (SEC) obligation on Gas Network Parties (GNPs) to become Smart Metering Key Infrastructure (SMKI) Subscribers unless the GNP is also 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 GNO 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 GNO Organisation Certificate. However, there is currently no SEC requirement for Organisation Certificates to be removed from a Device if the GNO ceases to be a DCC User.

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.

GPFs are manufactured with ACB Certificates already loaded in the GNO slot of the Device. If an ACB Certificate is in the GNO slot in the GPF, then it will be possible in the future to enable that to be replaced with a GNO Certificate, should a GNO wish to become a DCC User and to communicate with the Device.

1.2 Requirement 1: Where a GNO that is a DCC User intends to cease to be a DCC User, it must ensure that its Organisation Certificates on the Devices are replaced with an ACB Certificate prior to ceasing to be a DCC User.

This requirement will ensure that where a change in organisation of a GNO occurs, the incoming organisation will be able manage the GNO security credentials on its Devices, if that organisation is a DCC User and chooses to do so.

This will prevent the scenario in which a GNO has placed Organisation Certificates in the SMKI Repository but then transfers ownership to another GNO without removing its Organisation Certificates, which would leave a large number of Devices with the incorrect GNO Certificate on the Device with no means of changing them through normal business operations.

This will be a DCC System impacting requirement.

1.3 Requirement 2: A GNO shall submit a Certificate Revocation Request and shall not subscribe to any further Organisation Certificates prior to ceasing to be a DCC User.

This requirement shall ensure that GNO Organisation Certificates are only held on GPFs where the GNO is a DCC User. This requirement will need to be reflected in SEC Appendix B 'Organisation Certificate Policy', section 4.9.1 (A) 'Circumstances for Revocation'. This would require an additional third sub-bullet (iii) to ensure a Subscriber requests to revoke its Certificates if it no longer intends to be a DCC User. It will also require an addition to SEC Section L11 'Subscriber Obligations'.

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
DCC	Data Communications Company
GNO	Gas Network Operator
GNP	Gas Network Party
GPF	Gas Proxy Function
SEC	Smart Energy Code
SMETS	Smart Metering Equipment Technical Specifications
SMKI	Smart Metering Key Infrastructure

SEC Modification Proposal, SECMP0128A, DCC CR4382

Gas Network Operators SMKI Requirements Full Impact Assessment (FIA)

Version:

1.0

Date:

15th March, 2022

Author:

DCC

Classification:

Public

Contents

1	Executive Summary	3
2	Document History	4
2.1	Revision History	4
2.2	Associated Documents	4
2.3	Document Information.....	4
3	Solution Requirements and Overview	5
3.1	Problem Statement	5
3.2	Business Context.....	5
3.3	Business Requirements	6
3.3.1	Notes on the Requirements	6
3.4	Proposed Solution	8
4	Solution Overview	9
4.1	Requirement 4 and Subsequent DSP Changes	9
4.1.1	Request Management	9
4.1.2	Data Management	9
4.1.3	Technical Specifications and Documentation.....	9
4.1.4	Application Support.....	10
4.1.5	Security	10
4.2	DCC Technical Operations Centre Impact	10
5	Testing Considerations.....	11
5.1	Pre-Integration Testing	11
5.2	System Integration Testing (SIT)	11
5.3	User Integration Testing (UIT).....	11
6	Implementation Timescales and Releases	12
6.1	Change Lead Times and Timelines.....	12
6.2	SEC Release Allocation and Other Code Impacts	12
6.3	Costs and Charges	13
6.3.1	Application Support Costs.....	13
6.3.2	Changes to the DSP Contract.....	14
	Appendix A: Risks, Assumptions, Issues, and Dependencies	15
	Risks	15
	Appendix B: Glossary	16

1 Executive Summary

The Change Board are asked to approve:

- Total cost to implement SECMP0128 of £158,050 which comprises:
 - £69,639 in Design, Build and PIT costs
 - £88,411 in post-PIT Release costs (SIT and TTO)
- A timescale to complete the implementation of 7 months
- Include SECMP0128A in the June 2023 SEC Release

Problem Statement

The SEC does not require a Gas Network Operator (GNO) to become a DCC User. Several GNOs who do not wish to be DCC Users have experienced difficulty and disproportionate costs in obtaining Smart Meter Key Infrastructure (SMKI) Organisation Certificates.

The solution seeks to provide optionality to GNOs to place their Organisation Certificate in the SMKI Repository. The solution will also amend the obligation on Suppliers in SEC Appendix AC to make the requirement optional and to clarify that, where a SMKI Organisation Certificate for a GNO that is a DCC User exists, then the Supplier should put it onto the Device Post Commissioning. Where there is no Network Operator Organisation Certificate available in the SMKI Repository, the Supplier shall leave the Access Control Broker (ACB) Certificate on the Device. The solution also adds an obligation for GNOs to submit a Certificate Revocation Request and to not subscribe to any further Organisation Certificates if it no longer intends to be a DCC User.

To replace the GNO certificate, a GNO will continue to use SRV6.15.1 Update Security Credentials (KRP) with an ACB certificate as the replacement certificate. However in the case where an ACB certificate is placed on a Gas Proxy Function (GPF) by a departing GNO, any subsequent SRV6.21 request to place a new GNO certificate on that device will need to pass device anti-replay checks for the Network Operator Trust Anchor Cell. A change in the DSP will detect that the Security Credentials of a GNO in a GPF has been successfully replaced with the ACB Security Credentials, and the Originator Counter of the message will be recorded. A change in SRV6.21 will ensure the Originator Counter is greater than the recorded number, thus ensuring that the command will be accepted by the device.

Benefit Summary

The Modification intends to provide an enduring solution for all GNOs such that they do not need to become SEC Parties to obtain and maintain SMKI Organisation Certificates.

If the DSP change is not made, and the tracking of the Originator Counter is not carried out by the DSP then the DSP will be unable to create a command that passes device anti-replay checks and it will not be possible to put a valid GNO certificate on that device at any point in the future.

2 Document History

2.1 Revision History

Revision Date	Revision	Summary of Changes
1/02/2022	0.1	Initial compilation
25/02/2022	0.2	Updated following internal review

2.2 Associated Documents

This document is associated with the following documents:

#	Title and Originator's Reference	Source	Issue Date
1	MP128A Modification Report v0.5	SECAS	6/12/2021
2	MP128A Business Requirements v0.3	SECAS	14/12/2021
3	SECMPO128 CR4382 - PIA - Gas Network Operators SMKI Requirements v0.4	DCC	1/08/2021

2.3 Document Information

The Proposer for this Modification is Earl Richards of Cadent Gas, although it should be noted that the SMKI PMA have been closely engaged with this development. The original proposal was submitted on 24th August 2020.

The Preliminary Impact Assessment was requested of DCC on 13th July 2021 and completed on 1st August 2021. A Full Impact Assessment was requested on 21st December, 2021, although Service Providers did not start work on this Modification until 6th January, 2022.

Note that a separate Modification, MP128B, Incorrect Gas Network Operator Certificates, was implemented in November 2021.

Note that the terms Gas Network Party (GNP), Gas Network Operator (GNO), and Network Operator were used interchangeably in documents [1] and [2] supplied by SECAS. Gas Network Operators and Gas Transporters are collectively known as GNPs. This document aims to use the term GNO for consistency, but understands there may be cases where the other terms should be used.

3 Solution Requirements and Overview

In this section, the context of the Modification, assumptions, and the requirements are stated.

The problem statement and requirements have been provided by SECAS and the Proposer.

3.1 Problem Statement

Smart Energy Code (SEC) Section B 'Accession' (2.10) currently requires all Network Parties (which includes Gas Network Operators (GNOs) and Gas Transporters) to become SMKI Subscribers. Suppliers have an obligation in SEC Appendix AC 'Inventory, Enrolment and Decommissioning Procedures' to place Supplier and Network Operator SMKI Certificates on Devices Post Commissioning of Smart Metering Equipment Technical Specifications (SMETS) 2+ Devices.

The original policy intent was to include an obligation on GNOs, to ensure that the relevant SMKI Organisation Certificates can be placed by Suppliers and held on Devices. This allows:

- a Supplier to know the correct Network Operator
- future status changes should the GNP want to become a DCC User

The SEC does not require GNOs to become DCC Users. If a GNO who does not wish to be a DCC Users they would experience difficulty and disproportionate costs in obtaining SMKI Organisation Certificates and see no benefit to their organisations or wider smart metering by being compelled to make their SMKI Organisation Certificate available in the SMKI Repository.

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 systems are capable of doing so.

This is particularly relevant where National Grid transferred ownership to Cadent Gas. Cadent Gas are now the GNO but National Grid still has its Certificate held in those Devices. This means Cadent Gas has no access or communications with those Devices as it is not the registered GNO on the Certificate. Note this Modification will provide an enduring solution rather than a fix for one GNO.

GPFs are manufactured with ACB Certificates already loaded in the GNO slot of the Device. If an ACB Certificate is in the GNO slot in the GPF, then it will be possible in the future to enable that to be replaced with a GNO Certificate, should a GNO wish to become a DCC User and to communicate with the Device.

3.2 Business Context

Supplier and Network Operator credentials on the Comms Hub GPF relate to the supply of gas only. These Trust Anchor Cells on the Comms Hub are still required and valid where there is no Gas Meter (GSME) connected to the Smart Meter HAN (SMHAN), but the stores should be populated with ACB certificates so ensuring the Gas Proxy Function (GPF) functionality is inoperable, apart from Update Security Credentials. GPFs are manufactured with ACB Certificates already loaded in the GNO slot of the Device. Where an ACB Certificate is in the GNO slot in the GPF, in future it will be possible for that to be replaced with a GNO Certificate, should a GNO wish to become a DCC User and to communicate with the Device. As part of the GSME installation, the Supplier can then send Service Request 6.21 to the GPF to change from ACB certificates to the Network Operator certificates.

Once a Network Operator Certificate is placed on a Device, it can only be changed by the GNO for the given Certificate and only if the GNO is a DCC User.

3.3 Business Requirements

This section contains the considerations and assumptions for each business requirement.

Req.	Requirement
1	Suppliers will no longer be permitted to install Devices with Gas Network Operator (GNO) Certificates in the GNO slot of SMETS2 Gas Proxy Functions (GPFs) and they must ensure that within seven days of commissioning the GPF, the GNO slot contains an Access Control Broker (ACB) Certificate
2	A Responsible Supplier will place the GNO Certificate in a commissioned SMETS2 GPF only if the GNO is a DCC User and has its Certificate available in the SMKI Repository
3	The DCC will update its Post Commissioning reporting to reflect that Suppliers are able to leave the ACB Certificate in the GNO slot of a GPF
4	Where a GNO that is a DCC User intends to cease to be a DCC User, it must replace its Organisation Certificates on the Devices with an ACB Certificate prior to ceasing to be a DCC User
5	A GNO 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
6	It will be optional, not mandatory (as it is currently) for Gas Networks to become Subscribers for Organisation Certificates

Table 1: Business Requirements for SECMP0128, CR4382

The solution will be applied to SMETS2 GPFs only.

Note the above requirements will not resolve those Devices already experiencing the issue highlighted in section 3.2 above. However, the Smart Metering Key Infrastructure Policy Management Authority (SMKI PMA) has agreed to carry out a Recovery Event as defined in SEC Section L 'Smart Metering Key Infrastructure and DCC Key Infrastructure' which will resolve the Devices in the Cadent Gas area. The Recovery Event does not require a SEC Modification.

3.3.1 Notes on the Requirements

Requirement 1: Suppliers will no longer be permitted to install Devices with GNO Certificates in the GNO slot of SMETS2 GPFs and they must ensure that within seven days of commissioning the GPF, the GNO slot contains an ACB Certificate.

With it being optional for GNOs to become DCC Users, Suppliers shall leave the ACB Certificate in the GNO slot of the GPF. This will require amendments to SEC Appendix AC 'Inventory, Enrolment and Decommissioning Procedures' (IEDP). This is expected to be a non-DCC System impacting requirement.

Requirement 2: A Responsible Supplier shall place the GNO Certificate in a commissioned SMETS2 GPF only if the GNO is a DCC User and its Certificate is available in the SMKI Repository.

A GNO may choose to become a full DCC User and therefore hold Organisation Certificates. Only a Supplier Party can load the GNO Certificates onto the Device and

therefore, if the GNO Certificate is available in the SMKI Repository the Supplier place it on the Device.

Requirement 3: The DCC shall update its Post Commissioning reporting to reflect Suppliers being able to leave the ACB Certificate in the GNO slot of a GPF.

In accordance with IEDP 5.3, the Responsible Supplier must place the SMKI Certificates for the given Network Operator in the SMETS2 Device within seven days from being commissioned. If the Supplier were to leave the ACB Certificate in the GNO slot of the Device, this would count as a failure against the obligation.

If Requirement 1 is implemented, this obligation must be amended to allow Responsible Suppliers to leave the ACB Certificate in the GNO slot of the Device. The DCC would consequently need to update its reporting on post-commissioning obligations to reflect this.

Requirement 4: Where a GNO that is a DCC User intends to cease to be a DCC User, it shall replace its Organisation Certificates on the Devices with an ACB Certificate prior to ceasing to be a DCC User.

This requirement will ensure that where a change in organisation of a GNO occurs, the incoming organisation will be able manage the GNO security credentials on its Devices, if that organisation is a DCC User and chooses to do so.

This will prevent the scenario in which a GNO has placed Organisation Certificates in the SMKI Repository but then transfers ownership to another GNO but did not remove its Organisation certificates. Such an action would leave a large number of Devices with the incorrect GNO Certificate on the Device and no means of changing them through normal business operations.

Requirement 5: A GNO 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.

This requirement shall ensure that GNO Organisation Certificates are only held on GPFs where the GNO is a DCC User. This requirement will need to be reflected in SEC Appendix B 'Organisation Certificate Policy', section 4.9.1 (A) 'Circumstances for Revocation'. This would require an additional third sub-bullet (iii) to ensure a Subscriber requests to revoke its Certificates if it no longer intends to be a DCC User.

Requirement 6: It shall be optional instead of mandatory for Gas Networks to become Subscribers for Organisation Certificates.

As noted previously, SEC Section B 'Accession' (2.10) requires all Network Parties to become SMKI Subscribers for those Organisation Certificates which pertain to it. They must do this as soon as reasonably practicable after their accession to the SEC.

The Proposer believes this is a very expensive process for Gas Network Parties that do not have the infrastructure to create and maintain the SMKI Keys and to complete SMKI Repository Entry Process Testing (SREPT). They also consider this obligation provides no benefit to Gas Network Parties since they do not receive Alerts. Consequently, the Proposer feels that Gas Network Parties currently have no benefit in becoming DCC Users. Gas Network Parties that wish to become SMKI Subscribers must be DCC Users because otherwise they will be unable to replace their Organisation Certificates at the end

of life or if there is a SMKI Recovery Event since it requires a Critical Command to replace security credentials which can only be sent by DCC Users.

3.4 Proposed Solution

Based on current arrangements, there are no grounds for a GNO having a mandatory obligation to place their SMKI Organisation Certificates in the SMKI Repository. The solution seeks to provide optionality to GNOs to place their Organisation Certificate in the SMKI Repository. During discussions with the Working Group and the Security Sub-Committee (SSC) it was agreed that flexibility must be provided as there may be GNOs who do wish to become DCC Users either now or in the future. Additionally, there is a possibility that, GNOs may be required to become DCC Users in the future.

The solution will also amend the obligation on Suppliers in SEC Appendix AC to make the requirement optional and to clarify that, where a SMKI Organisation Certificate for a GNO that is a DCC User exists, then the Supplier should put it onto the Device Post Commissioning. Where there is no Network Operator Organisation Certificate available in the SMKI Repository, the Supplier shall leave the ACB Certificate on the Device.

The solution also adds an obligation for GNOs to submit a Certificate Revocation Request and to not subscribe to any further Organisation Certificates if it no longer intends to be a DCC User.

4 Solution Overview

Changes to the DSP and DCC Technical Operations Centre are required for this Modification solution.

4.1 Requirement 4 and Subsequent DSP Changes

To replace the GNO certificate held within the Network Operator Trust Anchor Cell of a GPF device, the GNO will need to use SRV6.15.1 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.

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 GNO, then any subsequent SRV6.21 request to place a new GNO certificate on that device at any point in the future will need to pass device anti-replay checks for the Network Operator Trust Anchor Cell.

For this to be possible, the DSP will need to be aware of the Originator Counter that was used by the GNO when it submitted the SRV6.15.1 that placed the ACB certificate on the device.

The northbound processing of SRV6.15.1 will therefore be amended such that when the DCC Total System detects that the Security Credentials of a GNO in a GPF has been successfully replaced with the ACB Security Credentials, the Originator Counter of the message will be recorded.

Southbound processing of SRV6.21 will then also be 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.

If this tracking of the Originator Counter is **not** carried out by the DSP then the DSP will be unable to create a command that passes device anti-replay checks and it will no longer be possible to put a valid GNO certificate on that device at any point in the future.

4.1.1 Request Management

Where a SRV6.15.1 response from a GPF shows that the certificate in the GNO slots now belongs to the ACB, changes to the Request Management component are needed to store the Originator Counter of the Update Security Credentials Response from the GPF Device.

Changes to Request Management requires changes to the way in which the Originator Counter of the GBCS Command for SRV6.21 is generated for a GPF so that, if there is a stored Originator Counter which is larger than the ACB generated counter, the stored counter should be incremented and used.

4.1.2 Data Management

Data Management will be modified to introduce a new table to store the highest Originator Counter of the Network Operator Trust Anchor Cell of a Device where it has had an ACB certificate placed in that Trust Anchor Cell.

4.1.3 Technical Specifications and Documentation

There are no changes to any of the Technical Specifications.

4.1.4 Application Support

There is no impact to infrastructure as part of this Modification.

4.1.5 Security

On the basis that there are no changes to infrastructure and no changes to interfaces, it will not be necessary to perform any security testing (e.g. penetration testing).

4.2 DCC Technical Operations Centre Impact

Development and testing for reporting at the TOC would take two months. However the TOC have suggested their preferred way forward is to implement SECMP183 for certificate-based checking and amend the reporting logic to accommodate the SECMP128A change. This would reduce the development and testing to roughly half the time and cost. This approach is seen as fundamentally a more robust approach as it is natively relying upon slot certificate inspection.

SECAS and the Business Proposer have agreed to this approach, so TOC reporting is now out of scope for this Modification.

5 Testing Considerations

This Full Impact Assessment includes the cost to develop, fully test and deliver this SEC Modification.

5.1 Pre-Integration Testing

The DSP PIT team will design and implement the functional updates required to the DSP for the change. PIT Testing will be carried out to prove that the functionality specified in the Design has been implemented against agreed acceptance criteria. Both manual and automated testing is in scope. The DSP PIT System Test team create manual tests (and data). Test execution covers manual testing and automated regression test packs.

Once PIT Complete status is achieved, the PIT team will support post PIT activities in the form of technical support and defect fixes to allow DSP to achieve its test exit obligations.

The updates to the DSP system and the timing of the PIT exit will be agreed with the DCC through updates, submission and review of the Solution Design documents.

5.2 System Integration Testing (SIT)

The expected integration activities are documented below. All testing is expected to be carried out as part of June 2023 SEC Release testing on the DSP “B Stream” environments, in accordance with existing practices for SEC releases.

SIT activities will include the creation of two new GNO Service Users with the relevant Organisation Certificates. SIT will make updates to the existing test scenarios and scripts as required for this change.

The functional testing scope will be executed against a single-band (SBCH) Comms Hub variant from each of the two SMETS2 CSPs. SIT is expected to last 22 days.

5.3 User Integration Testing (UIT)

No UIT is anticipated for this Modification.

6 Implementation Timescales and Releases

This Modification is expected to be included in a SEC Release in June 2023. Implementation timescales will be finalised as part of the relevant SEC Release Change Request.

6.1 Change Lead Times and Timelines

From the date of approval (in accordance with Section D9 of the SEC), to implement the changes proposed DCC requires a lead time of approximately **seven** months.

The broad breakdown of the testing regime is shown in the following table in months after an approval decision date (D).

Phase	Duration
SECAS agreement on scope of release	
CAN signature	D + 1 Month
Design, Build and PIT Phase	3 Months
SIT and UIT Phase, aligned with Release Dates	3 Months
Transition to Operations and Go Live	D + 7 Months

6.2 SEC Release Allocation and Other Code Impacts

This Modification is expected to be implemented as part of the June 2023 SEC Release, however the allocation to a release may be dependent on other Modification timings and the suitability of a release. No functionality overlap with other Modifications has been identified at the time of undertaking this Impact Assessment.

6.3 Costs and Charges

This section indicates the quote for all phases of application development stage for this Modification. Note these costs assume a release of just this SEC Modification without any other Modifications or Change Requests in the release, which is not truly reflective of what the post-PIT test costs or programme duration will look like. A calculation of those costs will be carried out when the contents of the future Release are finalised, and the post-PIT costs determined through a "Grouping CR" also referred to as a "Release CR".

£	Design, Build and PIT	SIT, UIT and TTO	Total
SECMP0128A	£69,639	£88,411	£158,050

Design	The production of detailed System and Service designs to deliver all new requirements.
Build	The development of the designed Systems and Services to create a solution (e.g. code, systems, or products) that can be tested and implemented.
Pre-Integration Testing (PIT)	Each Service Provider tests its own solution to agreed standards in isolation of other Service Providers. This is assured by DCC.
Systems Integration Testing (SIT)	All the Service Provider's PIT-complete solutions are brought together and tested as an integrated solution, ensuring all SP solutions align and operate as an end-to-end solution.
User Integration Testing (UIT)	Users are provided with an opportunity to run a range of pre-specified tests in relation to the relevant change.
Implementation to Live (TTO)	The solution is implemented into production environments and made ready for use by Users as part of a live service.

As part of the Release CR charges for June 2023, it is expected that the SIT and Implementation costs will be shared amongst other Modifications and CR in the same release, and consequently are expected to be lower.

6.3.1 Application Support Costs

Application Support costs have been calculated for a period of 16 months after the solution is implemented, additional four Low Complexity calls per month on average relating to additional functionality. The service will run from July 2023 for a period of 16 months.

SECMP0128A	£988 per month
------------	----------------

6.3.2 Changes to the DSP Contract

The contract updates will be detailed within the CAN and will impact the following schedules:

- Schedule 2.1 (DCC Requirements): update to reflect the addition of new Requirements to enable achievement of the activities and / or deliverables under this Modification
- Schedule 3 (DCC Responsibilities): update to reflect the addition of new DCC Responsibilities to enable achievement of the activities and / or deliverables under this Modification
- Schedule 4.1 (Contractor Solution): Solution Design documents will need to be updated as per section 4.1
- Schedule 6.1 (Implementation Planning): addition of new milestones
- Schedule 7.1 (Charges and Payment): revisions to incorporate the charges and payment applicable for Modification

Appendix A: Risks, Assumptions, Issues, and Dependencies

The tables below provide a summary of the Risks, Assumptions, Issues, and Dependencies (RAID) observed during the production of the Full Impact Assessment. DCC requests that the Working Group considers this section and considers any material matters that have been identified. Changes may impact the proposed solution, implementation costs and/or implementation timescales.

Risks

Ref	Description	Status/Mitigation
MP128-R1	There is no time contingency in the high-level plan and therefore, although reasonable efforts will be made to adhere to the plan, there is a risk to the planned dates.	Open

Appendix B: Glossary

The table below provides definitions of the terms used in this document.

Acronym	Definition
ACB	Access Control Broker
Comms Hub	Communications Hub
CR	DCC Change Request
DCC	Data Communications Company
DSP	Data Service Provider
FIA	Full Impact Assessment
GNO	Gas Network Operators
GNP	Gas Network Party
GPF	Gas Proxy Function
GSME	Gas Smart Meter Equipment
HAN	Home Area Network
I&C	Installation and Commissioning
PIA	Preliminary Impact Assessment
PIT	Pre-Integration Testing
ROM	Rough Order of Magnitude (cost)
RSA	Registered Supplier Agent
SAT	Service Audit Trail
SBCH	Single-band Comms Hub
SEC	Smart Energy Code
SECAS	Smart Energy Code Administrator and Secretariat
SIT	Systems Integration Testing
SMETS	Smart Metering Equipment Technical Specification
SMHAN, SM HAN	Smart Meter Home Area Network
SMKI	Smart Meter Key Infrastructure
SMKI PMA	Smart Meter Key Infrastructure Policy Management Authority
SREPT	SMKI Repository Entry Process Testing
SRV	Service Request Variant
SSI	Self Service Interface
TOC	Technical Operations Centre
UIT	User Integration Testing

MP128A ‘Gas Network Operators SMKI Requirements’

Annex C

Legal text – version 0.3

About this document

This document contains the redlined changes to the SEC that would be required to deliver this Modification Proposal.

Section L 'Smart Metering Key Infrastructure and DCC Key Infrastructure'

These changes have been redlined against Section L version 11.0.

Add Section 11.11 as follows:

Organisation Certificates: Gas Network Parties

L11.11 Where a Subscriber is a Gas Network Party and intends to cease to be a DCC User, it must:

- a) ensure that the Gas Network Operator (GNO) Certificates in each of its SMETS2+ Gas Proxy Function (GPF) Trust Anchor Cells are replaced with Access Control Broker (ACB) Certificates.
- b) not make any further Certificate Signing Requests until such time as it returns to being a DCC User.

Appendix B ‘Organisation Certificate Policy’

These changes have been redlined against Appendix B version 5.0.

Amend Section 4.9.1 as follows:

4.9.1 Circumstances for Revocation

(A) A Subscriber shall ensure that it submits a Certificate Revocation Request in relation to a Certificate:

- i) (subject to the provisions of the SMKI Recovery Procedure) immediately upon becoming aware that the Certificate has been Compromised, or is suspected of having been Compromised, due to the Compromise of the Private Key associated with the Public Key contained within that Certificate;~~or~~
- ii) immediately upon ceasing to be an Eligible Subscriber in respect of that Certificate; provided that, where a Supplier of Last Resort has been appointed in relation to premises supplied by the Subscriber, the Subscriber shall not submit a Certificate Revocation Request;~~or~~
- iii) (where the Subscriber is a Gas Network Party) immediately upon intending to cease to be a DCC User.

This document is classified as **White** in accordance with the Panel Information Policy. Information can be shared with the public, and any members may publish the information, subject to copyright.

MP128 ‘Gas Network Operators SMKI Requirements’

Annex D

Refinement Consultation responses

About this document

This document contains the full [non-confidential] collated responses received to the MP128 Refinement Consultation.

Question 1: Do you agree with the solution put forward?

Question 1			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	Yes	Cadent agrees that the proposed solution if once implemented will benefit not only the consumer experience but the obligation on Gas Networks and suppliers. This solution will benefit the smart programme overall.
Wales & West Utilities	Gas Network Party	Yes	Wales & West Utilities Limited agrees with the solution as it will remove the obligation on Suppliers to install GNO SMKI Organisation Certificates on any future Gas Smart Meter installs. It will also remove the obligation on GNOs to maintain their SMKI infrastructure along with the associated costs.
SGN	Gas Network Party	Yes	We agree that the obligation on Suppliers to install GNO SMKI Organisation Certificates on gas meters should be removed.
Northern Gas Networks	Gas Network Party	Yes	NGN understands the proposed solution and believes that it's implementation will be to the benefit of Gas Network Parties, Customers and the smart meter programme as a whole
ESP Utilities Group	Gas Network Party	Yes	We agree with the rationale provided by the proposer that implementing the proposed solution would seek to remove burdens on Gas Network Parties that do not contain an inherent benefit to any SEC parties and was initially implemented as a method to 'future-proof' rather than solve an underlying issue.

Question 2: Will there be any impact on your organisation to implement MP128?

Question 2			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	No	The only impact will be positive that Cadent will not be required to go through the SREPT process again.
Wales & West Utilities	Gas Network Party	No	The Smart Gas Meters are not owned by the GNOs and so we do not need to remotely connect to them. Furthermore, GNOs are not Full DCC Users and the data available, via the DCC, does not contain any useable data to economically enhance the management of our networks.
SGN	Gas Network Party	No	GNOs do not need to remotely connect to gas meters as they are not our assets and they do not hold any useable information that could be utilised to manage our networks. GNOs do not access any critical commands via DCC so our SMKI infrastructure is mainly redundant.
Northern Gas Networks	Gas Network Party	No	There will be no detrimental impact to NGN with the implementation of MP128.
ESP Utilities Group	Gas Network Party	No	We will not face any impacts to implement MP128.

Question 3: Will your organisation incur any costs in implementing MP128?

Question 3			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	No	There will be no costs to Cadent if implemented what again is another positive.
Wales & West Utilities	Gas Network Party	Yes	Any costs would be minimal to decommission our HSM (High Security Module) and dedicated LAN (Local Area Network) connections. Any redundant equipment will be reused within Wales & West Utilities Limited.
SGN	Gas Network Party	Yes	Only decommissioning costs around our HSM and dedicated LAN connections but we see this as minimal. All redundant kit will be reused within our organisation.
Northern Gas Networks	Gas Network Party	No	There will be minimal costs to decommission the HSM (The Hardware Security Module needed to generate and store the SMKI keys), however these are not considered to be material. There will also be cost savings achieved due to no longer having to maintain the HSM, though, again, these are not considered to be material. These costs would be ongoing should MP128 not be implemented.
ESP Utilities Group	Gas Network Party	No	-

Question 4: Do you believe that MP128 would better facilitate the General SEC Objectives?

Question 4			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	Yes	Cadent believes that the implementation of MP128 would simplify the overall installation process for smart meters whilst not impacting the operation of the smart meter itself. All SEC parties would benefit from this simplified process. It also removes an obligation on suppliers to apply the certificates meaning there will be less mistakes and error in applying the wrong network certificate.
Wales & West Utilities	Gas Network Party	Yes	By removing this obligation, it will eliminate the potential for Suppliers to install the wrong GNO SMKI Certificates on Smart Gas Meters. It should also make the Suppliers' installations more straightforward and save costs.
SGN	Gas Network Party	Yes	It removes the Supplier obligations to install GNO SMKI Certificates thus making the installation of a smart meter simpler as less tasks to do and less mistakes are possible.
Northern Gas Networks	Gas Network Party	Yes	NGN believes that the implementation of MP128 would simplify the installation and enrolment process for smart meters, whilst not detrimentally impacting the manufacture, operation or output of the meter itself. All parties would benefit from this simplified process. MP128 also removes an obligation on suppliers, negating any need for them to monitor/manage this obligation.
ESP Utilities Group	Gas Network Party	Yes	We believe SEC objectives D and G are better facilitated as this change removes unnecessary costs and obligations, from the code, thus improving on those objectives respectively

Question 5: Noting the costs and benefits of this modification, do you believe MP128 should be approved?

Question 5			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	Yes	Implementation of MP128 will benefit all SEC parties with little or no cost.
Wales & West Utilities	Gas Network Party	Yes	As mentioned in our answer to Question 5, it will be a task that Suppliers no longer need to do and should result in a cost saving. Also, it will remove the obligation for GNOs to hold and make SMKI Certificates available to Suppliers, as GNOs receive no benefits from this responsibility.
SGN	Gas Network Party	Yes	GNOs derive no benefits from having to hold and make SMKI Certificates available to Suppliers. It also removes a post completion obligation on Suppliers to check that the correct GNO SMKI Certificate has been installed. Suppliers incur additional cost if they have to revisit a meter to correct any GNO SMKI Certificate errors.
Northern Gas Networks	Gas Network Party	Yes	NGN believes that the implementation of MP128 is to the benefit of all SEC parties, with little or no cost or effort to implement.
ESP Utilities Group	Gas Network Party	Yes	Given the benefits of this modification, we believe MP128 should be approved.

Question 6: How long from the point of approval would your organisation need to implement MP128?

Question 6			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	0 Months	Cadent would implement MP128 immediately.
Wales & West Utilities	Gas Network Party	A few days to plan the activity into our maintenance schedule.	The only activity would be to decommission the HSM and LAN connections.
SGN	Gas Network Party	Immediate	SGN would decommission our HSM and dedicated LAN links. All the redundant kit would be repurposed for other SGN usage.
Northern Gas Networks	Gas Network Party	0-3 Months	NGN could implement MP128 almost immediately. The decommissioning of our HSM for SMKI purposes would be required.
ESP Utilities Group	Gas Network Party	-	-

Question 7: Do you agree with the proposed implementation approach?

Question 7			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	Yes	Cadent believes that the implementation of MP128 approach is the simplest and most effective.
Wales & West Utilities	Gas Network Party	Yes	The implementation of MP128 is simple and has minimal cost implications.
SGN	Gas Network Party	Yes	Simple and straight forward at minimal cost.
Northern Gas Networks	Gas Network Party	Yes	NGN believes that the implementation approach is the simplest and most effective way to achieve the desired outcome.
ESP Utilities Group	Gas Network Party	Yes	We support the implementation approach as proposed in the modification report.

Question 8: Do you agree that the legal text will deliver MP128?

Question 8			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	Yes	The text is clear in Section 5.3(a) and 6.2(b). However, we would like to see section 6.2(b) mirror 5.3(a) by removing the words Gas Transporter.
Wales & West Utilities	Gas Network Party	Yes	Generally, we agree with the legal text, as it removes the Gas Transporter from the Device Security Credential checks under Network Parties (Section 5.3(a)). However, this also needs to be replicated in Section 6.2(b) which can be achieved by removing the reference to Gas Transporter.
SGN	Gas Network Party	Yes	The legal text appears to remove the Gas Transporter (GNO) from the Device Security Credential checks under Network Parties. Section 5.3(a) and 6.2(b). However, we would like to see section 6.2(b) mirror 5.3(a) by removing the words 'Gas Transporter'.
Northern Gas Networks	Gas Network Party	Yes	The text provided appears to meet the intent of the modification proposal, with the following amendment: that section 6.2(b) mirror 5.3(a) by adding the 'Electricity' before 'Network Party' and removing 'Gas Transporter (as applicable)
ESP Utilities Group	Gas Network Party	Yes	We are satisfied that the legal text delivers the intent of MP128.

Question 9: Do you believe there will be any impacts on or benefits to consumers if MP128 is implemented?

Question 9			
Respondent	Category	Response	Rationale
Cadent Gas Ltd	Gas Network Party	Yes	Cadent believes that the installation process will be simpler by not having to install an unused SMKI Certificate.
Wales & West Utilities	Gas Network Party	Yes	The Gas Smart Meter installation will be more straight forward, as the unused SMKI Certificate will not have to be installed. Costs associated with this and the administration of ensuring the correct GNO SMKI Certificate has been applied should benefit the consumer.
SGN	Gas Network Party	Yes	Smart installations will be simpler by not having to install an unused SMKI Certificate. Supplier will have less administration to do as they no longer have to figure out which GNO SMKI Certificate is required for every postcode.
Northern Gas Networks	Gas Network Party	Yes	NGN do not believe that there will be any detrimental impact to consumers if MP128 is implemented, however consumers will benefit indirectly from the simplified installation process and suppliers no longer having the overhead of maintaining compliance with the obligation to install the correct GNP Organisation certificate on each meter.
ESP Utilities Group	Gas Network Party	No	We have not identified any impacts to consumers if MP128 is implemented.

Question 10: Please provide any further comments you may have

Question 10		
Respondent	Category	Comments
Cadent Gas Ltd		By implementing MP128 it will prove beneficial not just for the Gas Network Operators but the overall programme. Ranging from the consumer experience of having a smart meter installed to the installation end to end process. By removing the GNO SMKI Certificate on a meter you also remove a possible route for a cyber-attack on meters that could result in a GNO paying £millions to rectify even though GNOs never access a meter for reads. Ofgem have also highlighted in the GDN RIIO-2 draft determinations that they saw no evidence that GNOs would be obligated to join DCC, This is a further reason for implementing MP128.
		Evidence from DNOs has confirmed that many Smart Electricity Meters have been installed with an incorrect DNO SMKI Certificate. Meters with an incorrect certificate cannot be accessed by the DNO for that network. GDNs are not Full DCC Users and cannot check that the correct certificates have been applied in their respective networks. This can only be checked by the DCC, putting an extra burden on their resources. The recent RIIO-GD2 draft determinations published by Ofgem do not suggest that GDNs will be mandated to become Full DCC Users. Removing this obligation from GNOs would also eliminate a potential route for a cyber-attack on the Smart Meter infrastructure
SGN	Gas Network Party	Post commissioning checks by DNOs have shown that Suppliers regularly put the incorrect DNO SMKI Certificate on a meter making DNO access impossible. GNOs suspect that the same problem is happening with our SMKI Certificates.

Question 10		
Respondent	Category	Comments
		By removing the GNO SMKI Certificate on a meter you also remove a possible route for a cyber attack on meters that could result in a GNO paying £millions to rectify even though GNOs never access a meter for reads. Ofgem also highlighted in GDN RIIO-2 draft determinations that they saw no evidence that GDNs would be obligated to join DCC,
Northern Gas Networks	Gas Network Party	NGN do not anticipate any obligation being placed on GNPs to become full members of the DCC. This is a further reason for the implementation of MP128
ESP Utilities Group	Gas Network Party	No further comments.