Smart Energy Code

SEC
Smart Energy Code

Stage 01: Modification Proposal

What stage is this document in the process?

01 Modification Proposal
02 Initial Modification Report
03 Draft Modification Report
04 Final Modification Report

SECMP0024:

Enduring Approach to Communication Hub Firmware Management

This modification seeks to develop requirements for an enduring solution for a Supplier controlled release of firmware to Communication Hubs (CHs). The solution proposed is to develop and implement a CH Firmware Deployment and Activation 'Safe Launch' Plan supported by new DUIS Service Requests.

This is necessary to ensure that energy supplier operations, necessary to maintain smart metering performance obligations, can be controlled, and any impact minimised from issues related to CH firmware upgrade and activation.

The Proposer recommends that this Modification Proposal should be:

- Path 2: Authority Determination

This Modification Proposal should be:

- progressed through the Refinement Process (Non-urgent)

Potential Impact on:
DCC Systems
User Systems
DUIS

Gemserv
Administered by Gemserv
8 Fenchurch Place, London EC3M 4AJ

MODIFICATION PROPOSAL FORM V1.0

1. Proposer's Contact Details

Details of Proposer		Representative as Point of Contact	
Name:	Rob Williams		
Organisation:	E.ON UK		
Contact Number:	07890 563 585		
Email Address:	robert.williams@eonenergy.com		

Details of Representative's Alternate

Name:	Tim Newton
Organisation:	E.ON UK
Contact Number:	07879 802148
Email Address:	tim.newton@eonenergy.com

2. Modification Proposal Details

Mod Submission Date:	27th October 2016
Title of Mod Proposal:	Enduring Approach to Comms Hub Firmware Management

Description in Detail of the Proposed Modification:

There is ongoing work (outside of this Modification Proposal) to produce an approach to the Hypercare for R1.3 Comms Hub Firmware Upgrades. It is expected that this will be a short term solution. This SEC modification proposes to adapt the above Hypercare approach to cater for enduring operations.

This will ensure that all concerned Parties have the clarity and control required to minimise any foreseeable issues to energy supplier smart metering obligations and operations that could be caused by firmware deployment and activation to installed Comms Hubs, as the number of Smart Metering Implementation Programme (SMIP) Smart Meter installations increases in number from thousands to millions.

Without a controlled and managed “Safe Launch” process for Comms Hub firmware deployment and activation, there is a significant risk that an issue would be deployed and activated to significant numbers of Comms Hubs which could impact performance. These issues could be defects in the firmware itself or issues in relation to device interoperability. Those issues could go undetected or be stumbled on at a later date allowing further tranches of defective firmware to be deployed and activated – thus amplifying the problem.

The proposed approach will also provide the mechanism to gain information necessary to allow energy Suppliers to identify other operational issues related to the cessation of, or performance impact to, Comms Hub operations whilst firmware upgrades are being deployed and activated. Such issues include:

- Conflict with a programmed configuration change (e.g. Change of Supplier (CoS) event, price change, tariff change, etc…) to a Supplier’s smart metering device that is scheduled at the same time as Comms Hub firmware is being deployed and activated by DCC;
- A supplier schedules firmware deployment to a smart metering device at the same time that DCC is doing the same for a Comms Hub;
- Historical consumption data is being uploaded to energy Supplier systems, on behalf of the consumer at the same time Comms Hub firmware is being deployed by DCC;
- Erosion of the consumer relationship as they are attempting to interface with the smart metering system (e.g. Prepayment top-up) at the same time a Comms Hub firmware upgrade is scheduled by DCC.

This is a non-exhaustive list of issues that this proposal seeks to mitigate. The DCC Comms Hub & SM-WAN Forum has clearly established that Suppliers require DCC to provide a degree of flexibility around the firmware upgrade of Comms Hubs. This SEC modification would gather and consolidate consensus and facilitate a formal means to refine the requirements and propose an enduring process.

In particular, this proposal seeks an agreed “Safe Launch” process for the deployment and activation of a comms hub firmware upgrade. This would recognise the severity and priority of each individual upgrade by utilising the below requirements:

1. In advance of any firmware deployment to the Comms Hubs but no later than when a new Communications Hub Device Model is added to the CPL because of a firmware upgrade, the DCC will formally notify Suppliers on the requirement for a firmware upgrade to Comms Hubs. This should include:
    - The Comms Hub Device Model, type and version subject to the firmware upgrade
    - Information nominally included in the release note for the relevant version of firmware to be deployed;
    - The severity of the upgrade – i.e. Critical, High, Medium or Low
    - The priority of the upgrade – i.e. Immediate, High, Medium or Low
    - Timescales for deployment – dates by which the firmware deployment and activation needs to be deployed

2. The ability for a Supplier to identify the number of affected Comms Hubs requiring firmware upgrades across its smart metering portfolio. This could be through a Self Service Interface (SSI) report to enable.
3. Then the ability for the Supplier to provide lists to DCC of affected Comms Hubs (e.g. from pre-selected "friendly" customers) via a new non-Device Service Requests, under the "Safe Launch" process for initial deployment.
    - The Service Request should enable the Supplier to include up to a specified number of Device IDs, for example 50,000. This is intended to allow Suppliers to monitor performance of smart metering systems (where the firmware upgrade has been targeted) as the Comms Hub firmware is deployed and activated.
    - If the DCC receives the Service Request within a predetermined number of working days from the initial notification, then the firmware shall only be deployed to the Comms Hubs who Device ID has been specified within the Service Request.
    - If the DCC does not receive the Service Request within the agreed timescale, the DCC shall deploy the firmware as per its deployment plan.
4. A mechanism for DCC and energy Suppliers to provide and share results of each Comms Hub Firmware Upgrades specified in the Service Request (within an agreed SLA). This will allow DCC and energy Suppliers to validate whether the new Comms Hub Firmware has produced any issues or not;
5. Formal communication from DCC when:
    - a "Safe Launch" gate has been achieved and progressed to the next deployment level; or
    - a "Safe Launch" gate has not been achieved, a description of the failure mechanism and mitigating actions proposed by DCC
6. Allow provision of information to Suppliers on Comms Hub firmware deployment and activation for each subsequent tranche of mass deployed firmware once the "Safe Launch" has successfully completed (and deployment/activation should be unhindered). This could be by:
    - Reports being provided to a responsible forum/the SEC Panel after a predetermined number of days from receiving the communication from the DCC
    - If it is agreed that the firmware should continue to be deployed, the Supplier could choose to continue notify the DCC of which CH should be upgraded using the Service Request.
7. Provide Suppliers with the opportunity to defer a Comms Hub firmware upgrade where deployment and activation could compromise a Supplier's ability to conform to regulatory obligations. For example, if Device could no longer transmit Half Hourly data.
    - If it is believed that the firmware should not be deployed, a report setting out any material vulnerabilities with the firmware and providing a justification for why the firmware should not be deployed, could be presented to the responsible forum/SEC Panel.
8. Provide Suppliers with an "Emergency Stop/Pause" process should a major issue be encountered by Suppliers. For example, if the Devices forming part of the Smart Metering Systems are not interoperable with the DCC System and cannot respond to commands.
    - If a Supplier encounters such issue it should report to the DCC and the responsible forum/SEC Panel immediately. The DCC should pause the deployment until the responsible forum/SEC Panel directs the DCC to continue.

It is recognised that an emergency Comms Hub firmware upgrade may be required to be deployed and activated. It is proposed that this should be included in the "Safe Launch" process. This would provide certainty on the approach to be used by DCC, the role of Suppliers and the mechanisms to be employed to mitigate the risks set out in this note in an emergency situation.

This proposal acknowledges DCC responsibility (and recognised by existing DSP/DCC services and commercial framework) for deployment and activation of Comms Hub firmware. This proposal does not suggest that this responsibility is transferred to Suppliers – it is intended to enhance the firmware deployment and activation process to mitigate the identified risks to the benefit of DCC, Suppliers and consumers.

3. Path Type and Urgency Recommendation

Proposer's recommendations on Path Type (delete as appropriate)	Path 2

Statement for recommended Path Type:
It is recommended Path 2 because the modification has high impact on the DCC and introduces additional responsibilities on the Panel. These could be considered as material changes.

Statement of whether Proposal is intended to be Fast-Track Modification (only Panel may raise this type of modification):
N/A – this Proposal is not intended to be a fast track modification.

Is the Proposal Urgent? (delete as appropriate)	No

Statement of whether Proposal should be treated as an Urgent Proposal:
N/A

4. Modification Impact Assessment

4.1 SEC Objectives

Facilitation of SEC Objectives	Tick
General SEC Objectives (C1.1)	
(a) the first General SEC Objective is to facilitate the efficient provision, installation, and operation, as well as interoperability, of Smart Metering Systems at Energy Consumers' premises within Great Britain;	☒
(b) the second General SEC Objective is to enable the DCC to comply at all times with the General Objectives of the DCC (as defined in the DCC Licence), and to efficiently discharge the other obligations imposed upon it by the DCC Licence;	☒
(c) the third General SEC Objective is to facilitate Energy Consumers' management of their use of electricity and gas through the provision to them of appropriate information by means of Smart Metering Systems;	☐
(d) the fourth General SEC Objective is to facilitate effective competition between persons engaged in, or in Commercial Activities connected with, the Supply of Energy;	☐
(e) the fifth General SEC Objective is to facilitate such innovation in the design and operation of Energy Networks (as defined in the DCC Licence) as will best contribute to the delivery of a secure and sustainable Supply of Energy;	☐
(f) the sixth General SEC Objective is to ensure the protection of Data and the security of Data and Systems in the operation of this Code;	☐
(g) the seventh General SEC Objective is to facilitate the efficient and transparent administration and implementation of this Code.	☐
Transition Objective (X1.2)	
X1.2 The objective to be achieved pursuant to Section X: Transition is the efficient, economical, co-ordinated, timely, and secure process of transition to the Completion of Implementation.	☐
Charging Objectives (C1.3) (in respect of the Charging Methodology)	
C1.4 The First Relevant Policy Objective: (a) applies in relation to Smart Metering Systems installed (or to be installed) at Domestic Premises; and (b) requires the Charging Methodology to ensure that Charges (other than Charges for Elective Communication Services) in respect of such Smart Metering Systems do not distinguish (whether directly or indirectly) between Energy Consumers at Domestic Premises in different parts of Great Britain.	☐

C1.5 The Second Relevant Policy Objective is that, subject to compliance with the First Relevant Policy Objective, the Charging Methodology must result in Charges that: (c) facilitate effective competition in the Supply of Energy (or its use) under the Electricity Act and the Gas Act; (d) do not restrict, distort, or prevent competition in Commercial Activities that are connected with the Supply of Energy under the Electricity Act and the Gas Act; (e) do not deter the full and timely installation by Energy Suppliers of Smart Metering Systems at Energy Consumers' premises in accordance with their obligations under the Energy Supply Licence; and (f) do not unduly discriminate in their application and are reflective of the costs incurred by the DCC, as far as is reasonably practicable in all of the circumstances of the case, having regard to the costs of implementing the Charging Methodology.	☐
C1.6 The Third Relevant Policy Objective is that, subject to the Compliance with the First and Second Relevant Policy Objectives, the Charging Methodology must result in Charges that: a) facilitate effective competition in the Supply of Energy (or its use) under the Electricity Act and the Gas Act; b) do not restrict, distort, or prevent competition in Commercial Activities that are connected with the Supply of Energy under the Electricity Act and the Gas Act; c) do not deter the full and timely installation by Energy Suppliers of Smart Metering Systems at Energy Consumers' premises in accordance with their obligations under the Energy Supply Licence; and d) (d) do not unduly discriminate in their application and are reflective of the costs incurred by the DCC, as far as is reasonably practicable in all of the circumstances of the case, having regard to the costs of implementing the Charging Methodology.	☐

Statement of how the proposed variation would better facilitate the achievement of the SEC Objectives:

Please outline your reason for raising this Modification and how implementation of the variation would better facilitate the achievement of one or more of the SEC Objectives, than if the variation were not made.

The Smart Metering Implementation Programme (SMIP) relies on the coordinated involvement of many different parties. The provision of a Comms Hub Firmware Upgrade framework that is coordinated, controlled and transparent to the relevant parties will facilitate the efficient provision, installation, and operation and interoperability of Smart Metering Systems at Energy Consumers' premises within Great Britain.

This proposal would reduce the risk of Comms Hub Firmware Updates causing issues with Supplier installations of Metering Equipment in terms of both Financial measurements and Customer Experience (within the premises and in billing/settlements).

The ability of a Supplier to provide input into the Scheduling of Comms Hub Firmware updates would:

1. Reduce the risk of large scale corrective action and remediation following inappropriate deployment and activation of firmware to significant numbers of Comms hubs;
2. Reduce the risk of impact to consumers through issues related to Comms Hub firmware performance issues
3. Reduce the risk of large scale interoperability issues
4. Allow DCC and Suppliers to monitor and provide feedback on successes and failures
5. Reduce financial expenditure on Meter Technician visits to resolve interoperability issues
6. Assist the journey to technical excellence in the SMIP program
7. Reduce the risk of reputational damage to the SMIP

Customers would benefit from :

- A more reliable customer journey with minimal disruption caused by Meter Technician visits to resolve interoperability issues.
- Increased customer confidence in the SMIP program

The DCC licence conditions state the following:

5.4 The Interim General Objective of the Licensee is to contribute (taking all reasonable steps for that purpose) to the achievement of a full, timely, efficient, economical, and secure Completion of Implementation in accordance with such requirements as may be imposed on the Licensee under or by virtue of Parts D to F of Condition 13.

5.5 For the purposes of paragraph 5.4, the Interim General Objective includes a duty:
(a) to co-ordinate the activities, systems, and procedures of SEC Parties and, if applicable, SECCo Ltd in such manner and to such extent as may be necessary with respect to the requirements to which that paragraph refers;

5.9 The First Enduring General Objective of the Licensee is to carry on the Mandatory Business in the manner that is most likely to ensure the development, operation, and maintenance of an efficient, economical, co-ordinated, and secure system for the provision of Mandatory Business Services under the Smart Energy Code.

Based on the above three paragraphs, the ability to co-operate, agree schedules and monitor firmware updates to Comms Hubs under a “Safe Launch” process is necessary to improve the efficiency and timeliness of the smart meter rollout and its operation. This will reduce the likelihood of issues relating to interoperability of Comms Hub firmware updates, and thus the likelihood of asset replacements or other subsequent firmware updates being required.

4.2 Impacts

Statement of impact on Greenhouse Gas Emission:
No increase to Greenhouse Gas Emissions. This proposed modification has the capability to decrease Greenhouse Gas Emissions if visits by Meter Technicians to customer properties can be avoided, due to a coordinated industry approach to Comms Hub Firmware Upgrades.

Statement of impact on which parts of the SEC would need amending (e.g. proposed legal drafting):
New Service Request(s) would need to be defined in DUIS to allow a Supplier to request DCC to deploy/activate firmware to a target list of Comms Hubs with the results of that deployment being provided back to the requesting Supplier.

Statement of impact on likely changes to other Energy Codes:
N/A

Statement of impact on likely Party Categories:			
Large Supplier Parties	☒	Small Supplier Parties	☒
Electricity Network Parties	☐	Gas Network Parties	☐
Other SEC Parties	☒		
A coordinated approach to Comms Hub Firmware Upgrades would impact on all Suppliers plus the DCC/CSPs.			

Statement of impact on Consumers:
No direct impact. There is a potential improvement to the end user experience if this SEC Mod is progressed to conclusion and interoperability issues are reduced in number.

Statement of impact on Central Systems:			
DCC Systems	☒	User Systems	☒
Smart Metering Systems and/or Communications Hubs	☐	Other (i.e. on Smart Metering Key Infrastructure, or security)	☐
A new Service Request would be needed impacting both DCC and User Systems			

5. Proposed Timetable

Proposed Timetable for Modification Proposal:
Please state your recommendation for the timetable of implementation for the proposed variation, including the proposed implementation date. *If this modification involves changes to the SEC Technical Specification documents, EC notification may be required, which requires an additional three months.* The recommended implementation of the proposed variation would be as soon as possible.

6. Additional Information

Additional information:

APPENDIX 1: Glossary of Terms

The table below illustrates useful definitions of the terms used in this form. If you require any further information please contact the SECAS Helpdesk.

Term	Definition
DCC Systems	Means the Systems used by the DCC and/or the DCC Service Providers in relation to the Services and/or this Code (Section A1, SEC Stage 3.0). The Proposer may wish to consider anticipated impacts on the DCC Licensee's enterprise systems (e.g. billing) or the Data Service Provider or Communications Service Providers.
Fast-Track Modifications	Means Modification Proposals (Path 4 Modifications) to correct typographical or other minor errors or inconsistencies to the Code (Section D2.8, SEC Stage 3.0).
General SEC Objectives	Has the meaning given to that expression in Section C1 (SEC Objectives) (Section C1, SEC Stage 3.0). The SEC Objectives are those objectives that the SEC has been designed to achieve.
Greenhouse Gas Emission	Means emissions of Greenhouse Gases, as defined in section 92 of the Climate Change Act 2008 (Section A1, SEC Stage 3.0).
Other Systems	Other systems identified in the section Statement of Impact on Central Systems. The Proposer may wish to consider Prepayment vendors, Electricity Central Online Enquire Service (ECOES), Single Centralised Online Gas Enquiry Service (SCOGES), BSC Settlement Systems, etc.
Path Type	Means the Modification Path to be followed in respect of a Modification Proposal. The type of Path will depend upon the nature of the variation proposed in the Modification Proposal (D2.1, SEC Stage 3.0). The four Modification Paths under the SEC are: • ***Path 1 Modifications: Authority-led*** (Section D2.4/D2.5, SEC Stage 3.0) • ***Path 2 Modifications: Authority Determination*** (Section D2.6, SEC Stage 3.0) • ***Path 3 Modifications: Self-Governance*** (Section D2.7, SEC Stage 3.0) • ***Path 4 Modifications: Fast-Track Modifications*** (Section D2.8, SEC Stage 3.0)

Party Category	Means one of the following categories: (a) the Large Supplier Parties collectively; (b) the Small Supplier Parties collectively; (c) the Electricity Network Parties collectively; (d) the Gas Network Parties collectively; or (e) the Other Sec Parties collectively. (Section A1, SEC Stage 3.0).
Smart Metering Systems	Means a system installed at premises for the purposes of the Supply of Energy to the premises that, on the date it is installed, as a minimum; (a) consists of the apparatus identified in; (b) has the functional capability specified by; and (c) compiles with the other requirements of, the Smart Metering Equipment Technical Specification that is applicable at the date (Section A1, SEC Stage 3.0). In summary, this includes: • Gas Smart Metering Equipment; • Electricity Smart Metering Equipment; • In Home Display; • Prepayment Interface Device; and • HAN Connected Auxiliary Load Control Switch.
Urgent Proposal	Means a Modification Proposal deemed an Urgent Proposal where the Authority directs the Panel to treat the Modification Proposal as an urgent Proposal (whether following a referral by the Panel pursuant to Section D4.5, or at the Authority's own initiation) (Section D4.5/D4.6, SEC Stage 3.0).
User Systems	Means, in respect of each User (DCC User), the Systems of that User (including, where relevant, those of its Supplier Nominated Agent) used in relation to the Services and/or Smart Metering Systems (Section A1, SEC Stage 3.0). The Proposer may wish to consider Suppliers; Network Operators; Registration Data Providers; Other DCC Users (e.g. Authorised Third Parties / Switching Sites); Supplier Nominated Agents.