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SECMP0024 ‘Enduring Approach to Communication Hub Firmware Management’

Business requirements – version 1.0

About this document

This document contains the business requirements and solution design specification for this Modification Proposal. It provides detailed information on the business requirements for the proposed solution agreed by the Proposer with input from the Data Communications Company (DCC), Sub-Committees and the Working Group, and the considerations and assumptions for each business requirement with respect to this Modification Proposal.

1. Business requirements

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

Business Requirements	
Ref.	Requirement
1	The DCC will notify all relevant Users of a Communications Hub firmware update being available
2	The DCC shall trigger the firmware update to a 'pilot group' of Communications Hub prior to mass deployment
3	The Supplier(s) can choose to trigger the firmware update at an earlier time than the DCC's specified deployment date
4	Any solution shall be able to accommodate split Supplier scenarios
5	The DCC will update Suppliers regularly at different stages of firmware processing
6	If issues are identified with deployed firmware, the DCC shall investigate and determine whether to proceed with the roll-out

The processes around testing firmware prior to the deployment of Communications Hub firmware updates are out of scope of SECMP0024.

There are two solution variants for this modification, one introducing new Service Request(s) on the DCC User Interface Specification (DUIS) and the other using a DCC operated Web Portal. More information on these solution options can be found in Section 3 of this document.

2. Considerations and assumptions

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

2.1 General

This mechanism for rolling out Communications Hub firmware updates will be applied to any firmware deployed as part of a SEC Release or a Planned or Unplanned DCC Maintenance Release.

The processes around testing firmware prior to deployment is out of scope of SECMP0024.

A 'pilot group' is defined as a subset of Communications Hubs targeted for firmware deployment, to prove the firmware image is functional and deployable in the production environment before a mass deployment of firmware to devices.

- The maximum size of that subset is to be agreed but assumed for the time being to be 200-300 Communications Hubs.

A 'safe launch group' is defined as the full set of Communications Hub Globally Unique Identifiers (GUIDs) identified to which a firmware image may be applied, less the set of Communications Hub GUIDs associated with the 'pilot group'.

These business requirements give Suppliers the capability to manage Communications Hub firmware updates by selecting deployment dates within a defined period set by the DCC. It is recognised that use of 'date' will become a 'period' used to describe a timespan during which an action will be completed. The precise definition of this term will be determined during design workshops with input from the Proposer, Working Group and the DCC. The reason for this is to allow the DCC to consult with stakeholders on the timeframe of firmware deployment with a view to allowing the DCC the ability to manage workload and demand on the DCC Total System.

Please note that:

- Design of the SLA structure that will govern this process will occur during design process and will be documented in the DCC Impact Assessment.
- Split Supplier scenarios will be fully addressed during the design process and will be documented in the DCC Impact Assessment

2.2 Requirement 1: The DCC will notify all relevant Users of a Communications Hub firmware update being available

The DCC shall notify relevant Service Users and Communications Service Providers (CSPs) of their intention to deploy replacement Manufacturer Images in relation to Communications Hubs.

The notification shall include:

- The Communications Hub Device Model and firmware version in accordance with the Central Product List (CPL) entry;
- A link or reference to the applicable firmware Release Note;
- Severity of the upgrade;
- Priority of the upgrade; and

- The date on which the firmware version will be automatically deployed by the DCC (which will normally be six months from the date of notification of availability).

Where necessary the DCC can set the date on which the firmware version will be automatically deployed earlier or later than the normal date of six months from the point of notification.

The DCC shall create and send a report to all Supplier Users associated with the targeted Communications Hub Device Model and firmware version, to:

- Inform that Supplier User of the Communications Hub GUIDs they are responsible for, that the Communications Hubs are eligible for the firmware update; and
- Advise whether that Supplier User is the Import and/or Gas Supplier.

The DCC have advised that Users will receive information on Communications Hub firmware updates via firmware Release Notes published on the DCC's operational SharePoint.

- In the case of SEC Releases, firmware Release Notes shall be published and updated throughout the testing cycle.
- For Maintenance Releases, firmware Release Notes shall be published at the earliest convenience.

The DCC shall have the capability to revoke notification of a new Communications Hub firmware image if circumstances require.

2.3 Requirement 2: The DCC shall trigger the firmware update to a 'pilot group' of Communications Hubs prior to mass deployment

The Import Supplier and/or the Gas Supplier (as applicable) shall be able to have a view or extract a list of Communications Hub GUIDs published by the DCC to which the new firmware image may be applied. From this list the Supplier shall be able to select which Communications Hub GUIDs should make up a 'pilot group' for this firmware update.

- The solution shall provide the Supplier User with a facility to select a 'pilot group' of Communications Hub GUIDs via configurable business rules.

The Supplier User shall submit the 'pilot group' list of Communications Hub GUIDs.

The DCC shall notify all relevant parties of the start of a 'pilot group' deployment and provide progress updates to all relevant parties during a 'pilot group' deployment. Progress updates should include:

- Success/fail status of deployment at the individual device level
- In the event of a failure, the failure reason and any other commentary should be provided

The DCC shall notify all relevant parties of the end of a 'pilot group' deployment including commentary on the success or failure of the deployment.

2.4 Requirement 3: The Supplier(s) can choose to trigger the firmware update at an earlier date than the DCC's specified deployment date

The Import Supplier and/or the Gas Supplier (as applicable) for a Communications Hub shall be required to instruct the 'pilot group' or 'safe launch' activation of the firmware updates for a time no

later than the time specified by the DCC in Requirement 1: The DCC will notify all relevant Users of a Communications Hub firmware update being available.

Where there is only one Supplier or where the Import Supplier and the Gas Supplier are the same Party, instruction needs only to be given by that Supplier.

Where the Import Supplier and the Gas Supplier are separate Parties, the DCC must receive instruction from both Suppliers before the firmware update is deployed. The DCC shall inform each Supplier that there is a second Supplier (but not who that Supplier is) and whether that Supplier has provided instruction to update the Communications Hub.

For split Supplier scenarios, please see 2.5.

Any instructions must be received by the DCC no later than one month before the DCC's automatic activation time and must specify an earlier time than the DCC automatic activation time.

Upon receipt of the instruction, the DCC shall distribute the Communications Hub firmware update to the specified Communications Hub GUIDs. The firmware activation will take place during the specified date and time.

If no instruction is received, the activation of the firmware update will take place at the time specified by the DCC in Requirement 1: The DCC will notify all relevant Users of a Communications Hub firmware update being available.

The DCC and Suppliers shall be able to instruct the 'safe launch group' of firmware updates to Communications Hub GUIDs in batches, should they choose to do so. See also 2.3 for the 'pilot group'.

The solution shall allow for the management of groups of Communications Hub GUIDs in batches of at least 50,000.

For clarity, a Supplier should be able to select all of the relevant Communications Hubs for which it is responsible, ahead of the DCC mass deployment date for firmware deployment. It may be beneficial for a Supplier to adopt this approach and to deploy a Communications Hub fix as soon as practical to either:

- Deploy a bug fix to solve an issue which is affecting live customers as soon as possible; and
- So that a planned deployment of a sequenced update can be managed by the Supplier.

2.5 Requirement 4: Any solution shall be able to accommodate split Supplier scenarios

In a split Supplier scenario, both the Import and Gas Suppliers need to coordinate Communications Hub firmware deployments. The solution shall provide for functionality that requires both Suppliers to agree in the event that one Supplier wishes to deploy earlier than the DCC's planned deployment date. Please see process shown in Figure 1: Communications Hub upgrade Responsible Suppliers below.

In the event that both Suppliers do not agree to an earlier deployment date, the DCC proposed deployment date shall be the planned deployment date.

In the event that both Suppliers wish to deploy earlier than the DCC proposed deployment date; and both Suppliers have proposed different deployment dates, the later of the two deployment dates shall be the planned deployment date.

2.6 Requirement 5: The DCC will update Suppliers regularly at different stages of firmware processing

Upon the receipt of the instruction to deploy, the DCC shall inform the requesting Supplier User(s).

If any of the Communications Hub GUIDs failed the DCC's message validation checks, the DCC shall inform the requesting Supplier(s), listing all the Communications Hub GUIDs that failed and the reason for the failure in each case.

Supplier Users shall be able to query or extract a report detailing the Communications Hub firmware status for their entire deployed estate.

The solution shall be capable of showing each actor in the process how long they have to complete tasks.

The solution shall be capable of presenting to each actor in the process a dashboard showing:

- Status of each firmware upgrade 'in flight';
- Outstanding actions; and
- Next action date for other actors in the process.

Upon the DCC receiving the confirmation of successful firmware activation in the Communications Hub, the DCC shall update the Smart Metering Inventory (SMI) if the firmware version has changed and notify the current Supplier(s) of that Communications Hub GUID.

2.7 Requirement 6: If issues are identified with deployed firmware, the DCC shall investigate and determine whether to proceed with the roll-out

The instruction mechanisms under Requirement 3: The Supplier(s) can choose to trigger the firmware update at an earlier date than the DCC's specified deployment, shall allow the DCC and Suppliers to roll out firmware updates in batches, should they choose to do so.

Following deployment of firmware updates to Communications Hubs, the Supplier(s) can assess the impact this is having on devices connected to the Home Area Network (HAN). If any issues are identified, the Supplier can raise an incident via the DCC Service Desk. The DCC shall establish a mechanism to identify and mark such incidents as a high priority. The incident raised by a Supplier may, in the case of major impact to live customer operations, request an emergency stop to deployments.

The DCC will carry out a triage of any issues raised by Suppliers¹. The DCC shall establish a process for reviewing the incidents raised and, based on the type and severity of the issue encountered which will produce one of the following outcomes:

- Proceed with the roll-out as planned;
- Pause the roll-out;
- Delay the end-date of the roll-out; or
- Stop the roll-out completely.

¹ The extent of this capability needs to be defined by the DCC

The confirmation of this decision will rest with the Panel or a nominated Sub-Committee. Where the DCC believes it is critical to halt the roll-out immediately, they may suspend the roll-out pending the outcome of the discussions with the Panel or the nominated Sub-Committee.

The DCC will inform all relevant Suppliers of the decision made as a result of any such review, including what this means for any pending update requests.

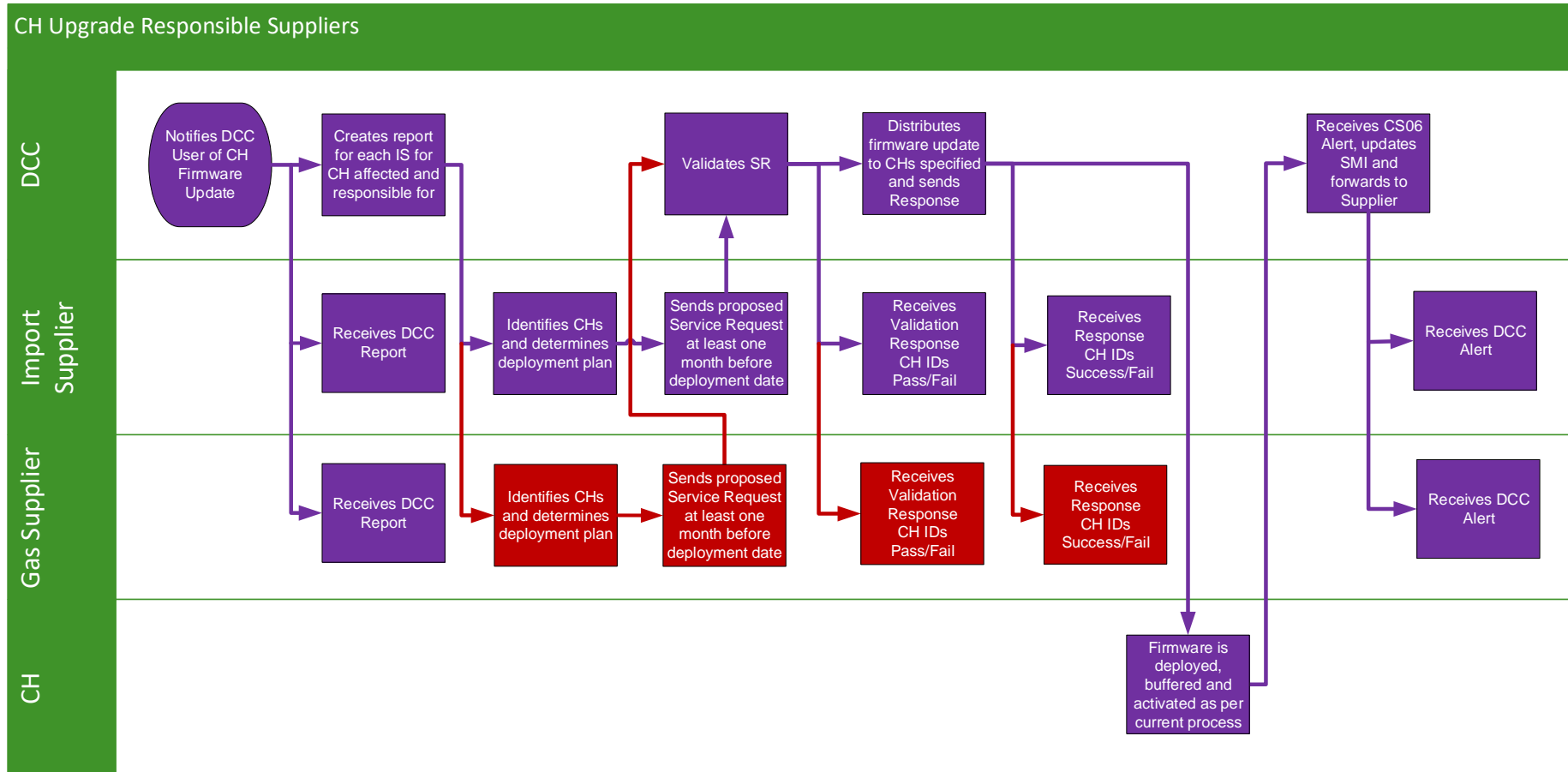


Figure 1: Communications Hub upgrade Responsible Suppliers

3. Solution option overview

This section outlines two approaches to providing a solution against the above business requirements. These have been reviewed by the Proposer with input from the DCC, Sub-Committees and the Working Group.

There are two solution variants for this modification: one introducing new DUIS Service Request(s) on; and the other using a DCC operated Web Portal.

For the avoidance of doubt, both solution options will be assessed against all of the business requirements specified in Business requirements of this document.

3.1 Instructing Firmware updates via Service Request on the DUIS Interface

This solution option will be substantially based on the introduction of a new Service Request (or an enhancement to an existing Service Request) and existing reporting components in the DCC.

3.2 Use of a DCC operated Web Portal

The DCC shall create a web portal where Suppliers can log in to see the list of available updates as notified under Requirement 1: The DCC will notify all relevant Users of a Communications Hub firmware update being available, and confirm which Communications Hubs are to be updated and when these are to take place.

Any web portal must be capable of machine-to-machine interfacing allowing Supplier systems to be connected to the web portal, to allow for real-time updates from the portal to be incorporated into any Customer Relationship Management (CRM) systems.

The requirements for the web portal will be contained in a document that will be referenced within the SEC. Any changes to this document will need to be consulted upon before approval is then given by the Panel or a nominated Sub-Committee.

4. Glossary

This table lists all the acronyms used in this document and the full term they are an abbreviation for.

Glossary	
Acronym	Full term
CPL	Central Products List
CRM	Customer Relationship Management
CSP	Communications Service Provider
DCC	Data Communications Company
DUIS	DCC User Interface Specification
GUID	Globally Unique Identifier
HAN	Home Area Network
SMI	Smart Metering Inventory