SEC
Smart Energy Code

Stage 01: Modification Proposal

What stage is this document in the process?

SECMP0008:

Provision of a DCC Alert (formerly Service Request Error Response) for Quarantined Service Requests

Provide a new DUIS Service Request error response to give DCC Service Users visibility of quarantined Service Requests following a breach of the DCC's Anomaly Detection Threshold and / or the individual DCC Service User's Anomaly Detection Threshold.

The Proposer recommends that this Modification should be:

- progressed as a Path 2: Authority Determined Modification

This Modification Proposal should:

- be assessed by a Work Group

Medium Impact:
This Modification Proposal impacts the DCC User Interface Specification (DUIS) and Threshold Anomaly Detection Procedures (TADP).

It impacts Energy Suppliers, DCC, Registered Supplier Agents, Electricity Distributors, Gas Transporters, and Other Users.

MODIFICATION PROPOSAL FORM V1.0

1. Proposer's Contact Details

Details of Proposer		Representative as Point of Contact
Name:	Graham J Smith	Graham J Smith
Organisation:	ScottishPower Retail	ScottishPower Retail
Contact Number:	0141 614 2662	0141 614 2662
Email Address:	graham.smith@scottishPower.com	Graham.smith@scottishpower.com

Details of Representative's Alternate

Name:	Iain Matthews
Organisation:	ScottishPower Retail
Contact Number:	07753623198
Email Address:	Iain.matthews@scottishpower.com

2. Modification Proposal Details

Mod Submission Date:	1st March 2016
Title of Mod Proposal:	Provision of a Service Request error response for quarantined Service Requests

Description in Detail of the Proposed Modification:

Issue Description

The DCC design for its Anomaly Detection process (as defined in the Threshold Anomaly Detection Procedures) details that when a Service Request (SR) is quarantined due to an Anomaly Detection Threshold (ADT) breach, DCC Service Users will be notified of quarantined SRs via an email notification[1].

The process then assumes that DCC Service Users will extract a file of quarantined SRs (from the DCC's SharePoint site) to review individually and assign a specific action per SR before returning the file to the DCC to perform those actions.

The email notification approach means there will be no SR error response from the DCC to that impacted DCC Service User. There are a number of issues with this approach, including:

- The creation of a dependency on manual intervention for email monitoring both in and out of hours by DCC Services Users will involve developing and managing additional processes to deal with it (e.g. managing inbound notifications from the DCC by having additional notifications in internal systems that go to specialist on-call users). The process would also need to involve manual analysis. This increased manual activity will require an uplift in resourcing / skills, knowledge and DCC awareness across DCC Service Users' internal service management functions which will incur additional costs on DCC Service Users.
- The need for DCC Service Users' staff monitoring notification emails to have the capability to identify quarantined SRs that might be critical and therefore reacting in a timely and efficient manner. This would need specialist knowledge for staff both in and out of hours, including manually accessing the DCC's SharePoint site and extracting the data to aid with the resolution of the problem.
- The potential for DCC Service User systems to continue to resend SRs to the DCC whilst complex analysis is being undertaken up to the point at which either:
  a) the DCC User System sending the requests times out;
  b) the anomaly is identified and mitigations are implemented; or
  c) the anomaly is released within the DCC.

  Based on the current anomaly detection solution scenario ''a'' is most likely to occur. This will result in a significant increase in the number of anomalous events which occur within the DCC process, potentially requiring additional complex analysis to associate all events to a common incident.
- DCC Service Users' service desk agents and out of hours staff will need to be Authorised Responsible Officers. This extends the scope of the security clearance controls and the number of personnel requiring security clearance.
- The DCC's ability to determine / react to a central ADT breach which impacts all DCC Service Users and requires their timely intervention.

Discussions within Transitional Governance

The DCC has previously agreed to raise a change to allow for the provision of a SR error response for these SRs that breach the Anomaly Detection Threshold. Discussions at various DECC / DCC forums (SMDF and TSEG) agreed that this proposed solution should be delivered by the DCC and that it would require a change request to DUIS in order to provide the required SR error response. The action to develop the change request was initially going to be one for DCC to progress. It was understood the progression of the action to develop the change request was being delayed until June 2015 with a view from the DCC that it is only feasible for Release 2 (i.e. for post DCC Live).

This action to develop a change request was further discussed at TBDG on 17th May 2015. As the proposed solution was seeking a change to DUIS (a baselined document managed through the SMIP Transitional Governance), it therefore needed to be raised as a Request for Change (RFC). It has now been raised as a SEC Modification Proposal, since these have been activated, and new or changed functionality not already incorporated into DCC's R1.x Releases needs to be pursued under the SEC Modification process. Further details of the information gained

[1] It is expected that the process as documented in the TADP will change to an Incident being raised on the Self Service Interface (SSI) as per the DCC's update at TBDG 17th June 2015: ''*for any breach of a Warning threshold or a Quarantine threshold, the DCC will now raise an Incident and NOT a Service Request as currently documented. The document will be updated to reflect this but this does not have any impact on the process for notification to the user or resolution etc*''. The reference to SR in the DCC update relates to a SSI SR and not a DUIS SR.

during the TBDG discussions and RFC assessment are provided in Section 6 (Additional Information) of this Modification Proposal.

Solution

The following options are identified:

1. Amend DUIS to include a new SR error response that can be sent to DCC Service Users to provide SR level responses of quarantined SRs due to an ADT breach. This proposed new DUIS SR error response would give DCC Service Users details of any SR that has breached the ADT.
2. Keep the status quo, i.e. the information is provided via email notifications to DCC Service Users in line with current design as detailed in the DCC's Threshold Anomaly Detection Procedure.

This Modification Proposal recommends option 1.

The new SR error response as recommended by option 1, would need to provide the error type data (ADT breach) as a minimum. It is expected the structure of the SR error response message to be aligned to DCC alerts as defined DUIS:

- DCC Alert Header Format.
- DCC Alert Body Format – this would include:
  - The new DCC Alert Code for ADT breaches.
  - Granular detail of the quarantined SRs.
- DCC Alert Signature.

The rationale for option 1 is as follows:

- The DCC Service Users requirement for receiving and managing alerts already exists and therefore requires minimal change in terms of incorporating an additional alert type.
- The recommended change in solution is more secure in terms of meeting the SEC security obligations including those specified around the deployment and control of systems within the scope of 'User Systems'.
- Provision of a SR error response for quarantined SRs gives DCC Service Users a fit for purpose, more responsive level of notification compared to email notifications (which is a significant overhead for DCC Service Users' internal service management functions).
- It would allow the DCC Service User to develop much more intuitive systems that have the ability to monitor and alert at a granular SR level.
- It reduces the dependency on the use of email, mailboxes, auto-forwarding rules and the need for specific / detailed DCC service knowledge for both in and out of hours support staff. This is essential for DCC Service Users because there is a huge risk that DCC Service Users' internal systems will assume messages have been dropped and thus a DCC Service User will keep resending the original SR to the DCC. There would be no specific need for a significant number of in and out-of-hours staff to become Authorised Responsible Officers; however, a DCC Service User may develop an "on-call" process for the limited occasions when SRs go into quarantine. Thus only a small number of Authorised Responsible Officers may be required within Users' internal service management teams.
- It removes the requirement for manual intervention in systems that fall within the scope of DCC Service User systems and necessitate minimal manual intervention.

3. Path Type and Urgency Recommendation

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

Statement for recommended Path Type:
The proposal satisfies one or more of the criteria for a Path 2 Modification and a Path 2 is therefore recommended.

Statement of whether Proposal is intended to be Fast-Track Modification (only Panel may raise this type of modification):
This Modification Proposal is not a Fast-Track.

Is the Proposal Urgent? (delete as appropriate)	No

Statement of whether Proposal should be treated as an Urgent Proposal:
This Modification Proposal is not intended to be urgent.

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.	☐

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

This Modification Proposal would facilitate the achievement of the General SEC Objectives (a) because:

- It would allow the DCC Service User to develop much more intuitive systems that have the ability to monitor and alert at a granular SR level. It would provide for a proactive approach to throttling SR demand where necessary from internal systems – therefore minimising needless threshold breaches, overhead in manual resolution and general system / process inefficiencies. It would allow DCC Users to manage SR forecasts and processes around the ADT effectively.
- It reduces the dependency on the use of email, mailboxes, auto-forwarding rules and the need for specific / detailed DCC service knowledge for both in and out of hours support staff. This is essential for DCC Service Users as there is a huge risk that DCC Service Users' internal systems will assume messages have been dropped and thus a DCC Service User will keep resending the original SR to the DCC. There would be no specific need for a significant number of in and out of hours staff to become Authorised Responsible Officers. However, a DCC Service User may develop an "on-call" process for the limited occasions when SRs go into quarantine. Thus only a small number of Authorised Responsible Officers may be required within Users' internal service management teams.
- This Modification Proposal would allow DCC Service Users to better deliver their obligations by having a fit for purpose, efficient, and effective process in place for managing quarantined SRs. Provision of a SR error response for quarantined SRs gives DCC Service Users a more responsive level of notification compared to email notifications (which is a significant overhead for DCC Service Users' internal service management functions). It removes the requirement for manual intervention in systems that fall within the scope of DCC Service User systems and necessitate minimal manual intervention.

This Modification Proposal would facilitate the achievement of the General SEC Objectives (f) because:

- The recommended change in solution is more secure in terms of meeting the SEC security obligations including those specified around the deployment and control of systems within the scope of 'User Systems'. It would allow DCC Users to react to breaches of the ADT in a timely and efficient manner. This Modification Proposal will have a positive impact on the management of quarantined SRs – specifically relevant to the SMIP security requirements.
- It is also worth noting that the Transitional Security Expert Group (TSEG) under Transitional Governance has previously agreed with the approach proposed in this Modification Proposal.

4.2 Impacts

Statement of impact on Greenhouse Gas Emission:
Although it would be difficult to quantify whether there is a material impact on Greenhouse Gas Emissions, the proposal will have positive impact as it negates the need for additional people resource to deal with email notifications (especially out of hours) at DCC Users' offices, and therefore transport to and use of facilities at these offices.

Statement of impact on which parts of the SEC would need amending (e.g. proposed legal drafting):

DUIS (DCC User Interface Specification) would need to include a new SR error response message for quarantined SRs. The new SR error response message would then need to be aligned to DCC alerts as defined in DUIS:
• DCC Alert Header Format.
• DCC Alert Body Format. This would include:
  ○ The new DCC Alert Code for ADT breaches.
  ○ Granular detail of the quarantined SRs.
• DCC Alert Signature.
 	
The TADP (Threshold Anomaly Detection Procedures) would need to reflect the new SR error response process above. It currently covers the email notifications process.

Statement of impact on likely changes to other Energy Codes:
No impact

Statement of impact on likely Party Categories:			
Large Supplier Parties	☒	Small Supplier Parties	☒
Electricity Network Parties	☒	Gas Network Parties	☒
Other SEC Parties	☒		
The proposed change will impact all DCC Users that can send DUIS Service Requests and are therefore subject to the DCC's Anomaly Detection process. DCC Users covered by this are: Energy Suppliers, Registered Supplier Agents, Electricity Distributors, Gas Transporters, and Other Users.			

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)	☒
As the proposed change will impact DCC Users that can send DUIS Service Requests and are therefore be subject to the DCC's Anomaly Detection process, it will impact DCC systems and DCC Users' systems and the security provisions / obligations associated with these systems.			

5. Proposed Timetable

Proposed Timetable for Modification Proposal:

This Modification is aimed at the June 2017 "R2" Release.

The proposed progression timetable below has been put together built around a June 2017 implementation date, noting that the implementation date may need to be flexible to accommodate the necessary implementation (and testing lead times), if the Modification is approved.

The progression timetable includes some assumed timescales for the turnaround of DCC detailed Impact Assessments (40 Working Days) and Authority (SoS) determination (25 Working Days).

It does not currently capture the 3 month EC notification pause if the changes associated with this Modification require EC Notification as part of the Authority (SoS) approval process.

Stage	Start	Finish
Stage 1 - Modification Proposal Raised	Thu 18/02/16	Fri 04/03/16
Stage 2 - Panel reviews IMR	Mon 07/03/16	Fri 11/03/16
Stage 3 - Refinement process*	Mon 21/03/16	Fri 02/09/16
Working Group 1	March 2016	
Working Group 2	May 2016	
Working Group 3	July 2016	
WG Consultation	August 2016	
Working Group 4	August 2016	
Stage 4 - Modification Report stage**	Mon 05/09/16	Wed 12/10/16
Stage 5 - Change Board vote	Thu 13/10/16	Wed 19/10/16
Stage 6 - Authority Decision	Thu 20/10/16	Fri 25/11/16
Implementation	June 2017	

*The Refinement Process includes several additional steps, which will be outlined in more detail in the Initial Modification Report.

** Includes second consultation on the Modification Proposal, followed by Panel's review of the Draft Modification Report, and Panel's decision on whether to proceed to a Change Board vote on the Modification Proposal.

6. Additional Information

Additional information:

Our summary assessment of the likely impact of implementing this Modification Proposal across all SMIP parties is as follows:

- Costs (and benefits): we believe the costs will be minimal. They are likely to be mainly on the DCC as some DCC Service Users will have already anticipated the need for this process as part of their service management functions. It is important to note that any potential costs will be far outweighed by the benefits for DCC Service Users in having a fit for purpose, efficient and effective industry process that ensures industry (and ultimately the customer experience) realise the full benefits set out in the Government's Impact Assessment.
- Regulatory/legal: we believe implementation of this Modification Proposal will allow DCC Service Users to better deliver their obligations by having a fit for purpose, efficient and effective process in place for managing quarantined SRs.
- Risks/issues: we believe the implementation of this Modification Proposal will have a positive impact on the management of quarantined SRs – specifically relevant to the SMIP security requirements.
- Testing: we believe that this area requires the necessary testing covering both the existing email notifications and the proposed SR error response within this Modification Proposal. Consideration needs to be given if this forms part of the security requirements for mandated testing in Interface Testing.
- Environmental: we believe the implementation of the Modification Proposal will have a positive impact as it negates the need for additional people resource to deal with email notifications, especially out of hours.
- Impact on equipment timescales: there is no impact on this as the Modification Proposal does not relate to any additional requirements on the Communications Hub, ESME, GSME or other devices connected on the HAN.

Whilst this change is not being pursued as a Modification Proposal, some progress was initially made under RFC040 which was issued to TBDG. Extracts from the materials produced under TBDG, where this RFC was first raised, are provided below.

Extract from TBDG~26 (20th January 2016) Minutes:
RFC-040 Provision of a Service Request error response for quarantined Service Requests
MR [*Matt Roderick*] reported that this RFC was in the process of going through DCC's impact assessment process. He confirmed that TSEG had agreed the approach proposed [*it is assumed that this point can be confirmed with DECC or via the TSEG Minutes from DECC*]. It was considered likely that this would be included in Release 2.

DCC Response to RFC040

DCC has raised the paperwork for an internal CR associated with this RFC-040 and this will go through our internal Change Working Group (CWG) and get assigned a formal CR number in due course. This will start the PIA and FIA process with our Service Providers. The likelihood is that this will be considered for the DCC Release 2.0 as stated in the RFC but we can confirm this soon.

The only queries that DCC still have on this that would be worth checking are the security impacts on this one as DCC still need some guidance for the final solution and how this RFC relates to an existing change request from TSEG for increased AD for Payload inspection.

Issue 1 - We are concerned with the line in the requirement for "Granular detail of the quarantined SRs." This is a little too open ended as a requirement and needs some bounding. Within the DCC Alert. Initial expectations were that the payload detail for this Alert would be the identifier for the Service Request only (RequestID as defined in DUIS -Concatenation of BusinessOriginatorID, BusinessTargetID and OriginatorCounter as defined in GBCS, separated by ":".).. We do not feel that it is appropriate to inform the User of any other information for security reasons. Can we please confirm that this is sufficient as the DCC believes?

As part of this RFC request we would also like official confirmation from TBDG as the requestor that TSEG are in support of this change and that by proving information about ADT failures via DCC Alerts is acceptable and does not introduce any risk and the level of "Granular detail of the quarantined SRs." That is acceptable and where the line is for non-inclusion of data.

Issue 2 – DCC has CR062a - Anomaly Detection GBCS message value limit checking planned for built and release for R1.3. Can we confirm that the intention is that these new DCC Alerts are intended to cover the scope of the AD failures as well as the ADT failures identified in r1.2. Does this change any of the details. DCC assume that this RFC is intended to cover ALL Anomaly detections failures be in thresholds for SRs OR Payload values exceptions as described in CR062a but it would good to formally have this recorded as part of this RFC. This may change the "Granular detail of the quarantined SRs" for these type of failures to know which data item value limit has an issue as some SRs have multiple limits that are being checked.

Happy to discuss any of these points and provide this update direct at next week TBDG session to get the clarity we need to fully progress the DCC CR associated with this RFC. A

Extract from RFC040: DCC Response

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.