

SMETS1 Pending Product Combinations Tests Security Fast Track

DCC Conclusions and Report to Secretary of State

Date:

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Classification:

DCC Public

1 Introduction and context

On 27 June 2019, DCC ran a consultation on our proposals for a Security fast track process for Pending Product Combinations Tests (PPCT). The consultation included proposed changes to the Enduring Testing Approach Document (ETAD) - Appendix J to the Smart Energy Code (SEC) and consequential amendments to the Service Request Processing Document (SRPD) - SEC Appendix AB. The consultation sought stakeholder views on DCC's proposal that a DMC could be prioritised in PPCT where a new DMC arises as a result of the need for an urgent firmware upgrade on security grounds. The consultation ended 11 July 2019

2 Regulatory requirements

This section details the regulatory requirements for production of the ETAD and SRPD. It is our understanding that any amendments will be made by the Secretary of State in accordance with Section X5 of the SEC.

As the ETAD and SRPD are subsidiary documents to the SEC, we – on behalf of the Secretary of State – also consulted on the date of re-designation of the ETAD and SRPD, which is the point that the proposed changes would formally take effect in the regulatory framework. However, the window which was consulted upon for that designation has now expired, therefore the Secretary of State is now consulting¹ upon revised designation dates, should they proceed with designating the changes. For completeness, we have reported in this document on the results of our consultation on the now passed designation window.

3 Consultation

On Thursday 27 June 2019, DCC published the consultation document titled '[Consultation on Enduring Testing Approach Document: SMETS1 Pending Product Combinations Tests Security Fast Track](#)' on the DCC Website and our Service Desk also emailed stakeholders to notify of the publication.

The key scope of the consultation was the following areas:

- SEC Appendix J - Enduring Testing Approach Document Version 1.4 (draft)
- SEC Appendix AB – Service Request Processing Document Version 1.3 (draft);
- a draft Secretary of State Direction for approval / re-designation of the documentation; and
- the envisaged approval / re-designation date for the Secretary of State.

Stakeholders were invited to respond by 17:00 on Thursday 11 July 2019.

3.1 Consultation Questions

The consultation asked 2 questions.

¹ <https://smartenergycodecompany.co.uk/latest-news/beis-consultation-on-re-designation-date-of-sec-subsiary-documents-to-support-the-dccs-smets1-service>.

Figure 1: ETAD V1.4 and SRPD V 1.3 Consultation Questions.

Question 1:	Do you agree with DCC's proposal and the associated drafting changes to the ETAD and the Service Request Processing Document? Please state the reasons for your view.
Question 2:	Do you agree with the proposed re-designation date of 28 July 2019 (or, if necessary, as soon as reasonably practicable within one month thereafter) for the ETAD & SEC Appendix AB using the draft direction in Annex A?

3.2 Responses

DCC received 8 responses to the consultation to the ETAD and SPRD. Respondent groups included Suppliers, Distribution Networks, an international oil and gas company and the Security Sub-Committee of the SEC Panel (SSC). We have analysed the comments provided by each respondent. This analysis is detailed in Section 4.

Each respondent's submission was provided to the Secretary of State once received by DCC in line with the requirements set out in Section X of the SEC.

4 Analysis of Responses

DCC has undertaken an analysis of the feedback provided by each respondent. Subject matter experts within DCC have reviewed every response. In relation to the 2 questions asked, the overall response was supportive of DCC's proposals. A number of respondents highlighted similar matters. These have been grouped in the sections below.

4.1 Question 1:

Do you agree with DCC's proposal and the associated drafting changes to the ETAD (for paragraphs 1 and 2 above) and the Service Request Processing Document (for paragraph 3 above) set out in Annex B & Annex C? Please state the reasons for your view.

4.1.1 Response

There was a total of 8 responses to Question 1. 2 respondents fully agreed with DCC's proposals and 6 respondents broadly agreed but noted the following points:

A number of respondents agreed with the introduction of a PPCT Fast Track process, the proposed SEC amendments to support it and that an SSC view should be sought on whether firmware should be fast-tracked to address security vulnerabilities. However, they do not consider it is appropriate for the SSC to be approached to advise on the fast-tracking of firmware for non-security purposes which is implied by the current wording "...the firmware upgrade is required on an urgent basis...". As such, they propose that the relevant clauses in the ETAD are amended to "...the firmware upgrade is required to address a material security vulnerability on an urgent basis...". One respondent also noted that Suppliers have SEC obligations in SEC Section G3.17 to G3.20 and a particular obligation in SEC Section G3.18(c) to "ensure that the Security Sub-Committee is promptly notified of the steps being taken to rectify the cause of the vulnerability or likely cause of the material adverse effect, or to mitigate its potential impact (as the case may be),

and the time within which those steps are intended to be completed.” In their view, it therefore follows that the SSC should already have been notified of any security vulnerability that has been discovered and should be aware of the mitigation being planned.

Respondents also noted that ETAD Clause 9.15 refers to a requirement for the Testing Participant to seek the view from the SSC on the prioritisation of the firmware upgrade and sought clarification on how this would work. One respondent considered that it will be a difficult and convoluted process for Users to approach the SSC directly and get a decision agreed at the next available SSC meeting and for that decision to be conveyed to the User. In their view, it would be more practical for the DCC to ask the SSC whether it is aware of a reported security vulnerability by the User, where a User has requested a fast-track firmware upgrade from the DCC. In practice, this information can be provided by SECAS during the working day without the need to hold an SSC meeting and be ratified at the next available SSC meeting.

Another respondent requested that the following is taken into account and that amendments are made to the ETAD drafting to reflect the following points before any decision to prioritise one DMC ahead of others:

- **Health and Safety issues** are still the highest priority. For example, if a DMC is under test for a Safety related alarm or alert, said device testing is not automatically de-prioritised in favour of a security related device test.
- **Volumes of devices** deployed and or about to be deployed is taken into account. For example, if the security related DMC accounted for a relatively small volume of devices, testing should not be automatically delayed for DMCs that have significant numbers in pre or post migration.
- **Mode of operation;** The impact on credit versus Pre-payment issues need to be taken into account for example if the security issue impacts security of supply versus a credit-based test then we would expect analysis of volumes and impacts to be taken into account.
- Where a security incident is serious enough to warrant fast-tracking post an SSC review, there needs to be a mechanism to notify all Energy Suppliers as soon as possible that may have this DMC within their estate rather than wait for a new entry to appear on the Eligible Product Combinations List (EPCL).

The rationale for this suggested approach is that DCC has the capability to suspend communication with any device. In their view, there needs to be further consideration as to the decision mechanism. For example, should the criteria be built into the SSC decision making process or should DCC with their view of DMC's in the testing pipeline. They sought clarification on who has the responsibility to carry out the impact analysis before the DMC is submitted for SSC consideration and who would be responsible for any wider industry notification mechanism.

Another respondent broadly agreed with the proposed changes. However, in their view where firmware upgrades are determined to be urgent by the SSC such upgrades are progressed through to completion in accordance with a timetable that reflects their urgency. Furthermore, the timetable should be set out in the SEC, along with appropriate DCC service levels that can help to ensure that the timetable is adhered to.

One respondent agreed with the introduction of a PPCT Fast Track process and the proposed SEC amendments but sought clarification on the scenarios and approach for this process being invoked. They noted that Clause 9.9 of the ETAD assumes that testing can only be undertaken following receipt of test DMC device sets from the Testing Participant. They noted that a number of the SMETS1 Installing Suppliers and meter manufacturers have supported the DCC in procuring SMETS1 DMCs for testing purposes ahead of SMETS1 SIT and as such believe that ETAD

Clause 9.9 could be updated to take account of the DCC's ability to install SMETS1 component devices they hold or own in the DCC test laboratory. In the case of a material security vulnerability, we believe that all parties should be looking at all options to expedite the testing and deployment of a resolution.

Service Request Processing Document (SRPD)

Two respondents felt that SRPD Clause 6.6 should be amended to "...an urgent firmware upgrade addressing a material security vulnerability, the need for which has been confirmed by the SSC..." in line with their comments regarding the role of the SSC.

With regards to the point around DCC processing service requests on a DMC that is not on the EPCL, one respondent assumed that this refers to a DCC enrolled SMETS1 DMC that has had an emergency firmware update applied and can continue to run using DCC service requests, prior to being re-submitted for PPCT. If this is the case, they stated they would not object providing due diligence is applied including an assessment from the submitting Energy Supplier that any changes made does not affect the relevant SMETS1 Supporting Requirements (S1SR) and Device Model Variations To Equivalent Steps (DMVES) requirements.

Another respondent thought that the proposed changes to the ETAD to allow PPCT to be fast tracked appear sensible and agreeable. However, the proposed changes to the Service Request Processing Document are less clear, specifically in relation to how this scenario can arise or will work in practice. They questioned how, in relation to SEC Section H5.9 if a DMC version is not listed on the EPCL a firmware upgrade to a "non-EPCL" version can be applied? Their understanding of the firmware upgrade process is that upon receipt of a firmware upgrade request, DSP will reference the EPCL to ensure that the upgrade version is listed on the EPCL. If not listed, then DSP will reject the Over The Air (OTA) upgrade request. The respondent asked for clarification on whether this DSP validation is being removed to allow upgrades to versions not listed on the EPCL and if so, what controls are in place to ensure this is only allowed in the scenario described where a SSC approved upgrade is required due to security concerns. If DSP validation is not being removed, they questioned the likelihood of this scenario ever arising in practice in either test or production systems and what controls are in place to ensure this is only allowed in the scenario as well as when and how system changes will be implemented.

A couple of respondents commented that the consultation was not issued to testing contacts as defined in our Nominated Contacts List. The respondent stated that DCC must ensure that all future consultations relating either entirely or in part to testing matters are copied to these individuals in addition to those who would otherwise be included.

4.1.2 DCC Conclusions

DCC welcomes the broad support to the proposed ETAD drafting and re-designation date. We recognise the pivotal role of the SSC in independently assessing security vulnerabilities and welcomes the SSC's support for the creation of a fast track PPCT process. DCC is keen to work with the SSC to create an efficient and effective process. The SSC is correct that the changes are only intended to address security vulnerabilities and are not to be used to address non-security related issues. **DCC therefore agrees to the clarification to the drafting proposed by the SSC.**

DCC has reflected on the SSC's proposed change to drafting around how the SSC's view on whether a security vulnerability has occurred. DCC accepts the SSC proposal that the information should be requested from SECAS (on behalf of the SSC Chair) by DCC rather than the notifying Party.

DCC has discussed this approach with the SSC chair and have agreed that as part of requesting the SSC's view, DCC will notify SECAS of when the testing could occur if it the DMC was not selected to be fast tracked and if it is fast tracked.

The drafting has therefore been revised to reflect that DCC will contact SECAS to:

- 1) Confirm whether SSC has been notified of the vulnerability; and**
- 2) Inform them, when the firmware upgrade would be tested in PPCT, if it is t fast tracked and when it would be tested if it is fast tracked.**

This comparison will support the SSC in establishing whether the vulnerability should be fast tracked through PPCT. **We have amended the drafting in ETAD clause 9.16.**

We will also amend the clause in the ETAD to reflect that the requests relate to addressing material security vulnerabilities. We accept that adding the terms *'to address a material security vulnerability'* reflects the specific purpose of the changes. **We therefore agree that this be added to ETAD clause 9.15 and 9.16.**

The proposed ETAD drafting is to cater for a situation where a Supplier is seeking urgent testing in PPCT of a fix for a potential security vulnerability. We believe that, where the materiality of the security vulnerability has been acknowledged by an independent SEC body (SSC), it is right that DCC support Parties in resolving the vulnerability as a matter of urgency.

The respondent has suggested 4 tests that could be applied when determining how DMCs are prioritised.

Health and Safety: Health and safety issues are a paramount concern. Judging whether a Health and Safety issue merits prioritisation is a broader issue which extends beyond the remit of our proposed changes. Points to address would include who can opine on such matters. In this context, it is important to note that Good Industry Practice dictates that it is vital to protect the health and safety of persons and thus DCC considers that further changes to these provisions in this area are unnecessary.

Volumes of devices: DCC will look to the SSC to give an independent view on whether the testing of a security vulnerability fix justifies being fast tracked. DCC does not expect a high number of fast track security vulnerability requests and therefore does not propose to introduce volume related rules. Should experience prove this wrong then this can be addressed through a SEC Modification.

Mode of operation: As is the case in respect of volumes of devices, DCC will look to the SSC for a view on whether PPCT needs to be fast tracked. Should this become a concern, this issue could be addressed through a SEC Modification.

Notification of Parties: The duty to notify Parties of any security related issues is with the SSC, DCC does not propose to introduce a parallel process. The primary route for notifying Parties of security vulnerabilities will remain the SSC. Where fast tracking is required, DCC will notify any Suppliers whose agreed PPCT schedules are impacted.

Following discussion with the SSC Chair, it was agreed that DCC will provide the SSC with information on when the DMC could be tested should it not be subjected to 'fast tracking' and when it could be tested if it was. This information will be assessed by the SSC to establish whether a fast track approach is required.

DCC acknowledge that requiring the Party (that is addressing the Security vulnerability) to provide an assessment that any fix does not affect the relevant S1SR and DMVES requirements would be useful information. **DCC has, accordingly, added drafting to give this effect.**

DCC agrees with the respondent that where a material security related firmware upgrade is approved, expediting and tracking its delivery is important. Our proposed amendments are designed to address whether the PPCT testing of the fix should be fast tracked or not. It does not address the timescales for the subsequent application of a fix. This information is already provided by the notifying Party to the SSC when informing them of the vulnerability and forms part of the SSC's wider considerations. Our amendments do not seek to amend or supplement this existing process. DCC will take the view of the SSC on whether a fast track testing of the fix is required and where this is recommended will give priority to the DMC in PPCT. However, it should be noted that successful completion of PPCT will be delayed if the firmware upgrade has resulted in regression in other areas.

PPCT is an enduring User driven service, that covers new DMCs that arise from changes to a DMC that is on the EPCL. ETAD Clause 9.9 is generic to PPCT and not specific to the testing of Security fixes. As PPCT is Supplier driven, DCC has concluded that it was appropriate for Suppliers to provide the devices they wish to have tested.

Whilst DCC may have stocks of the original pre fix DMC which has the security vulnerability, DCC will not have stocks of the new, post-fix, DMC that the Supplier has applied the firmware fix to and wants to test in PPCT. DCC will help where it can but **we believe that Clause 9.9 should not be amended, and that this should remain a Supplier responsibility.**

DCC notes the concerns raised around how Testing Participants communicate to the SSC and this comment was also reflected in the SSC response. In light of this, DCC has discussed the matter with the SSC Chair and we have amended the process to make notification of the SSC a DCC obligation.

With regards to H5.9 point and the draft Clause 6.6 in the SRPD, DCC acknowledges that given the current SEC rules, a Supplier would not be able to distribute firmware to a device forming part of an enrolled SMETS1 Smart Metering System prior to it having completed PPCT testing. The new firmware would create a new Device Model. A Device Model only gets added to the CPL once it forms part of an entry on the Eligible Product Combinations (EPCL) and it will not form part of an EPCL entry until testing of it in PPCT has successfully completed. A Supplier may only upgrade the firmware version of a Device Model to a firmware version that is a Central Products List (CPL) entry as the Data Service Provider (DSP) validates SRV 11.1 & 11.3 to check that firmware version matches an existing CPL entry (rather than checking against an EPCL entry). If the firmware version is not already on the CPL, the SRVs 11.1 & 11.3 receive an error "E110101". In response to the point made on H5.9, DCC has undertaken further analysis on this matter. DCC considers that it introduces operational risk to allows upgrades to firmware versions that have not completed PPCT and therefore the corresponding Device Model is not listed on the EPCL. Furthermore, it is DCC's view that it is not economic or efficient to implement these system changes to remove the DSP validation. This would result in the proposed addition to Clause 6.6 in the SRPD to be unnecessary. It is DCC's view that this does not materially impact the intent of our proposed amendments to introduce a fast track process for PPCT to address material security vulnerabilities. However, we acknowledge that this differs from the position proposed in the consultation, which was that firmware could be distributed to enrolled SMETS1 Smart Metering Systems (for example, to rectify a material security vulnerability) prior to it having been, or completed testing by the DCC

under the PPCT process We therefore plan to consult on this change in our next SMETS1 testing consultation and will engage with the Security Sub Committee on our proposals.

We also acknowledge the concern raised about notification of the consultation and that this was not communicated to testing contacts. However, notification of this consultation was sent to each SEC Party Nominated Contact and therefore DCC consider that this consultation is still fit for purpose. We acknowledge that the proposal impacts PPCT and, if approved, may trigger a need to reprioritise planned PPCT activities. In these circumstances, it would be helpful for the test contacts to have been alerted and we will amend our distribution lists to address this in future.

4.2 Question 2:

Do you agree with the proposed re-designation date of 28 July 2019 (or, if necessary, as soon as reasonably practicable within one month thereafter) for the ETAD & SEC Appendix AB using the draft direction in Annex A?

4.2.1 Response

There was a total of 8 responses to Question 2.

3 respondents agreed with the proposed designation date. 4 respondents conditionally agreed and one respondent did not agree.

Those respondents who conditionally agreed were of the view that provided DCC takes into account the comments to question 1 they would be content with the proposed designation date This included committing to aligning the PPCT Fast Track approach operationally with proposals by the SSC.

The respondent who was not in agreement felt that in light of the points outlined in 'Question 1', further consideration with regards to the proposed decision mechanism and drafting were required for both SEC Appendices J and AB before any designation date can be confirmed.

4.2.2 DCC Conclusions

DCC can confirm that all the points raised have been considered and our response is provided against Question 1.

We do not propose to add a fixed remediation timetable into the SEC for the reasons set out in our response to Question 1. Nevertheless, we note concerns over the achievability of the proposed implementation date which are married with the suggestion that it may be achievable within the following month.

DCC recognises that the proposed designation window that DCC consulted on has expired. DCC intends to submit the conclusions to this consultation and the revised draft SMETS1 ETAD to the Secretary of State. DCC notes that the Secretary of State is currently consulting on a revised designation date, should he be minded to make the changes.

5 Summary of Changes

The consultation process has given rise to a number of changes to the ETAD. These changes are presented in Figure 2 below:

Figure 2: Changes to the ETAD

Drafting change:	Description and rationale of the change
ETAD Clause 8.4	Minor amendment to reference correct Clause.
ETAD Clause 9	Minor amendment to abbreviate PPCT as per Clause 9.1. Minor amendments to delete incorrect references.
ETAD Clause 9.2	Clause amended to clarify that the fast track process would only be used to address a material security vulnerability and not to address non-security related issues.
ETAD Clause 9.15	<p>Clause amended to reflect that DCC will contact SECAS to:</p> <ul style="list-style-type: none"> confirm that the SSC has been notified of the vulnerability; and inform them, when the firmware upgrade would be tested in PPCT if it is fast tracked and treated as urgent and if it is not fast tracked and treated as urgent.
ETAD Clause 9.16	<p>Clause amended to reflect that SECAS, on behalf of SSC, will confirm to DCC:</p> <ul style="list-style-type: none"> whether SSC has been notified of the vulnerability and whether the SSC Chair considers the vulnerability to be material; and whether the SSC Chair considers the materiality of the vulnerability warrants the DMC to be fast tracked through PPCT.
ETAD Clause 9.17	<p>Minor change to what was Clause 9.16 in the consultation version of ETAD changes which reflect the new process for notification in Clause 9.16 above.</p> <p>Addition to Clause to obligate Testing Participant to notify DCC if they are aware of any aspects of the firmware upgrade that might impact interoperability.</p>

6 Conclusions and next steps

We are confident that the revised draft SMETS1 ETAD submitted to the Secretary of State reflects and addresses the relevant comments made by respondents in line with the purpose of the document.

It is our considered opinion that we have met our SEC obligation to consult with Parties and addressed the points raised and that the ETAD of the SEC are in line with the overall solution design for the SMETS1 Service and other relevant documents.

It is our view that the SMETS1 ETAD is defined to a sufficient level of detail for approval by the Secretary of State of the SEC are defined to a sufficient level to be re-incorporated into the SEC. Moreover, that the documents provide an overarching framework which sets out clearly and unambiguously Parties' rights and obligations which are consistent / and aligned with the rest of the SEC requirements, including those in draft, in relation to SMETS1 Services.

It is our opinion the documents are materially complete; and the content is technically accurate.

We therefore recommend to BEIS that they re-designate as proposed. This consultation, and copies of the changed marked ETAD have been submitted to BEIS to enable them to consider our recommendations.

7 Next Steps

Following the submission of the ETAD to the Secretary of State, DCC expects the Secretary of State to make a decision on whether and if so to re-consult on re-designation of the revised ETAD into the regulatory framework.

DCC plans to consult shortly on the proposal not to make the amendments to the SRPD with regards to processing Service Requests with respect to DMCs not on the EPCL. This text would only have been necessary were it desirable to permit firmware upgrades to be deployed to devices prior to completing testing under PPCT and it is now the DCC's view that this should not be permitted. This will be included in the next SMETS1 testing consultation.

8 Annexes

- **Annex A** - Appendix J Enduring Testing Approach Document V1.4 (clean)
- **Annex B** - Appendix J Enduring Testing Approach Document V1.4 (track changed -DELTA against V1.3)