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Conclusion on the Migration Error Handling and Retry Strategy Document

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# Introduction and Context

A number of energy suppliers are installing first generation smart devices (known as SMETS1 devices) in consumers’ premises across Great Britain. The Data Communications Company (DCC) has designed a solution for the delivery and incorporation of SMETS1 devices into its national network. Part of DCC’s plan to deliver SMETS1 services involves a detailed approach for migrating SMETS1 Installations into DCC’s systems which covers HAN connected devices within each premises. The detailed technical and procedural requirements of this approach are set out in the Transition and Migration Approach Document (TMAD).

On 14 February 2019, BEIS designated TMAD into the Smart Energy Code (SEC) using the powers that are set out in Section X of the SEC. TMAD requires that DCC develop and consult on four ‘child’ documents (which provide further operational and technical details) as follows:

* Migration Scaling Methodology;
* Migration Authorisation Mechanism;
* Migration Reporting Regime; and
* Migration Error Handling and Retry Strategy.

On 11 June 2019, DCC consulted on the Migration Error Handling and Retry Strategy (MEHRS) which consultation concluded on 02 July 2019.

The consultation on the MEHRS asked four questions as follows:

* Whether there were any detailed comments on Migration Error Handling;
* Seeking any detailed comments on the types of exceptions/errors that could occur;
* Whether there were any detailed comments on the Retry and Timeout Strategy; and
* Anything else that was deemed important.

# DCC Response to Comments Received

DCC received seven responses to the consultation, which provided a variety of feedback. DCC welcomes the valuable input provided in these responses to help develop the content of the MEHRS.

A number of comments raised queries that were specific to devices that do not form part of the IOC devices. This version of the MEHRS has been drafted specifically for IOC as further analysis and consideration of later cohorts needs to take place before this content can be included in the MEHRS. DCC will accordingly provide a further iteration of the MEHRS which will address specific requirements for MOC and FOC and will address the comments related to MOC and FOC. Accordingly, these comments will not be addressed in this document unless specifically applicable.

## General Comments

DCC received comments that were not addressed to specific questions, the comments received and DCC response is set out below:

**Comment**

Some Respondents indicated the need for the MEHRS and the need for it to be a comprehensive document that has been given ample consideration as there are multiple potential failure points and errors identified which underline the complexity of the exercise. One respondent further noted that it is critical to ensure that the DCC solution is thoroughly tested and proven before high-volume migrations are attempted.

**Response**

DCC's Migration solution has been tested through a series of test phases which include Pre-Integration Testing, Early Integration testing and Migration Solution Testing for the enduring service. Specifically, the functional aspects of the Migration Solution has been thoroughly tested as part of the Migration Solution Testing phase. Business Acceptance Testing has been undertaken on the procedural aspects of the Migration Solution. DCC has discussed at various meetings (such as IOC multilaterals and Quarterly Migration Forums) the migration pacing strategy which declares how DCC will prove migrations at incremental volume before migrating at high volume. DCC endeavoured to provide clarity on error and exception handling of migration process steps in the MEHRS document. Where Responsible Suppliers or interested parties have concerns or require further clarifications, DCC is open to the possibility of convening bilateral sessions to resolve these additional queries.

**Comment**

A respondent commented on the fact that there was no mention of Network Operators in the MEHRS.

**Response**

DCC has updated Section 2.1.1 and Section 2.1.2 to include Interested/Impacted parties which includes both suppliers and DNOs.

**Comment**

A respondent queried the reports that would be provided to DNOs.

**Response**

Reports 1, 2 and 3 of the Migration Reporting Regime will be distributed to DNOs as per the frequency described in the Migration Reporting Regime. These reports will notify the DNOs of the migration status of the installations.

**Comment**

A respondent sought clarification on whether a DNO would be notified whether an Installation is going to be resubmitted in another week or whether it will be replaced with a SMETS2+ system.

**Response**

In addition to the N16 alert, DNOs will receive reports as set out in the Migration Reporting Regime that will notify them of the installations that have failed or progressed or are currently in process. DCC is unable to provide information on whether a SMETS1 Installation will be replaced by a SMETS2+ installation as this a decision for suppliers.

**Comment**

A respondent queried Section 2.7.4 which will be notified using the SSI. If due to an incident, DSP is unable to process any installations, the respondent indicated that it would expect this to be a SEV1/2 incident and follow the normal SEV1/2 path with emails being sent to all parties.

**Response**

As documented in the MEHRS document, the Incident will be raised on the DSP to resolve the system outage and DSP will follow the Incident severity levels as defined in the TMAD.

**Comment**

A respondent sought clarification of 2.7.5, the N42 alert.

**Response**

The N42 alert is received by the DNO only once the NO certificates have been successfully applied.

## Question 1

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| **Q1** | *Do you have any detailed comments on Migration Error Handling? Please provide a rationale for your views.* |

The comments received to the above question and DCC response is set out below:

**Comment**

A respondent indicated that it was desirable to have a single report that details all migration and commissioning related errors as the absence of one would require Users to develop their own systems.

**Response**

We have endeavoured to keep the number of steps that must be followed by a supplier in order to Migrate a SMETS1 Installation to a minimum. If suppliers wish to track progress of SMETS1 Installations, they can do so by using the relevant data received in corresponding status reports specified within the Migration Reporting Regime (MRR).

We have designed the reporting regime to align with the respective phases of Migration process i.e. Authorisation Period and Migration which includes the Commissioning steps. This is to distinguish not only the steps where the installation has failed during the migration process but also to outline responsibilities for various parties participating in the process i.e. suppliers may not have any actions during the latter part of the Migration process.

We have added more clarity in the document in terms of the information the suppliers would receive via each MRR report.

**Comment**

A respondent requested clarification on scheduling of failed migrations in a subsequent migration week and asked whether the MEHRS could state that all installations encountering these errors will be still operational with the original SMSO before the supplier is notified.

**Response**

The supplier can re-submit the SMETS1 Installations for migration once they have received the failure notification when the Migration Authorisation validity period for these installations has run out. For failure steps covered within section 2.5 of the document, DCC cannot confirm what state the Installation will be in as this will depend upon the result of triage by the SMSO.

**Comment**

A respondent indicated that Sections 2.5.6, 2.5.7, 2.5.9 and 2.5.10 did not have a reference to the MRR.

**Response**

The MEHRS document sections 2.5.6, 2.5.7, 2.5.9 and 2.5.10 have been updated to ensure that suppliers are notified via MRR6 if any installations have failed due to Migration Authorisation no longer being valid.

**Comment**

A respondent indicated that due to the impact of rescheduling a migration, DCC should consider resubmitting failed migrations in the same week and not during a subsequent week. Doing so could minimise the impact on a customer with a prepayment meter.

**Response**

The MCC is currently modelled on the previously established process that failed installations can only be resubmitted by suppliers in the subsequent migration week. In the future DCC may consider allowing suppliers the opportunity to resubmit during the same migration week. If a SMETS1 Installation has been rejected by the Requesting Party based on SMSO data and the Responsible Supplier disagrees with this, it is suggested the Responsible Supplier liaises with the SMSO to correct the data before re-submitting a Migration Authorisation for the SMETS1 Installation in question. For Prepayment customers, suppliers from the IOC cohort have been advised to configure their prepayment meters either on non-disconnect period or on credit-mode for the duration of migration process to avoid customers losing supply.

**Comment**

A respondent raised a concern that the MEHRS only covers incidents involving small numbers of devices and that it should include incidents that might require the suspension of some or all SMETS1 meter cohorts.

**Response**

The MEHRS covers error handling of SMETS1 Installations through the Migration process. Suspension of Migration activity is an outlying scenario and communication of such an Incident will be managed by the MCC via DCC's incident management process.

**Comment**

Confirmation was sought as to which Nominated Contact lists will be used to contact suppliers and how it could be ensured that the right person is contacted. The migration window would be a 12 to 18-month window across different cohorts which would require ongoing updating. Additionally, the DCC may wish to consider how Responsible Suppliers can effectively validate the identity of a caller or E-Mail purporting to be from the DCC.

**Response**

DCC will be utilising the Nominated Contact List and it is the supplier’s responsibility to maintain the information that is contained in the list. Email contact from the MCC will come from a centralised mailbox.

DCC has an established relationship management process between DCC and interested parties. DCC will ensure that any phone conversations taking place between parties is covered within this established relationship framework. The conversation would comprise legitimate information regarding the nature of the migration related query.

DCC will publish a group phone number prior to commencement of migrations where suppliers/DNOs can contact the MCC directly if they believe they have received an unsolicited call.

## Question 2

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| **Q2** | *Do you have any detailed comments on the types of exceptions/errors that could occur? Please provide a rationale for your views.* |

The comments received to the above question and DCC response is set out below:

Section 2.7.5 was updated to indicate that target resolution time for Commissioning Party to resolve the incident.

**Comment**

Various clarifications were sought from respondents:

**Response**

As a result of a comment, DCC wishes to clarify that the report 'Migration Authorisation Outcomes for the Previous Migration Day' from the Migration Reporting Regime covers status of Migration Authorisation outcomes for SMETS1 Installations from the previous migration day.

For Section 2.6.5, there is no action on suppliers:

1) If the DCO/S1SP can't delete the keys/information stored, it doesn't impede the rollback from happening or from supplier resubmitting the MA for that SMETS1 Installation; and

2) DCC has updated section 2.6.5 to explicitly state that for situations where the SMSO is unable to establish WAN communication with the SMETS1 Installation, the supplier will need to liaise with SMSO/S1SP to establish if the SMETS1 Installation needs to be replaced.

Error code MA112 will not be returned to Responsible Suppliers for Dormant Meters being migrated at go live as the Dormant Meter installations will be initiated by DCC.

As a result of a comment related to 2.3.1 DCC wishes to clarify that suppliers can submit an MA from the point of receiving the Demand Commitment up to the point as defined in the TMAD which is 10am on the Thursday prior to the Migration Week. DCC will not process the corrected MA until the next Migration Week.

**Comment**

A respondent indicated that it had hoped that the MEHRS would be a single reference point for all errors that might be encountered during the migration process, but in their opinion the MEHRS contains numerous references to errors and checks documented in other artefacts, making it more difficult for Users to understand and capture all potential migration failures/errors.

**Response**

DCC would like to clarify that the error codes and checks mentioned in the MEHRS either refer to validation checks listed in the MEHRS itself or refer to the main SEC document TMAD and repeating references to all errors in the MEHRS will require additional coordination of changes between multiple documents.

We do not intend to prepare a compilation of errors/failure codes at this stage.

**Comment**

Section 2.3.2 details that MRR6 will be used to communicate the Migration Authorisation File error. A respondent raised a concern that the report format for Report 6 in MRR does not contain this data item and requested for DCC to provide sample MRR reports.

**Response**

The MRR6 Report will report the Response Code listed in the Appendix Table A.1 of the MEHRS document. The suppliers may have to liaise with the SMSO to further troubleshoot the installation failure where required because the FailedStepNumber is not included in this report.

The Validation Reason Code will be populated by any failure mentioned in Section 2.3.2 and all other reason codes listed in the Appendix Table A.1 will be reported in the Completion Reason Code.

DCC anticipates publishing sample MRR reports within the next two weeks.

**Comment**

A respondent sought clarity on whether it is possible to correct the file and resubmit as whether the ‘Migration Authorisation File Error’ referred to the whole file error as the Validation checks relates to individual sites.

**Response**

The MCC is currently modelled such that the failed installations can be resubmitted by suppliers in the subsequent migration week. DCC may in the future consider allowing suppliers to resubmit during the same migration week. For section 2.3.2 of the MEHRS document, the checks are at installation level. If a SMETS1 Installation fails, the whole file will not be rejected. The introduction of section 2.3.2 is now updated to clarify.

**Comment**

Confirmation was sought by a respondent as to which reports would be received for dormant installations.

**Response**

For the Dormant SMETS1 Installations, Responsible Suppliers will receive MRR reports as described in the Migration Reporting Regime. For clarity, MRR 10 will not be received by Dormant Meter suppliers.

## Question 3

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| **Q3** | *Do you have any detailed comments on the Retry and Timeout Strategy? Please provide a rationale for your views.* |

The comments received to the above question and DCC response is set out below:

**Comment**

A respondent queried why the retry period was limited to 24 hours.

**Response**

The 24 hour retry strategy has been agreed as part of the IOC Multilateral. It has been supported with figures provided by the IOC SMSO that maximum success to connect with a device can be achieved by retrying to connect with the device for up to 24 hours.

**Comment**

A respondent sought confirmation that the number of retry events would not need to be factored into the volume based submissions to DCC.

**Response**

As retries are not service requests these will not be factored into the volume-based submissions to the DCC (for example, ADTs and SRV thresholds).

## Question 4

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| **Q4** | *Anything else that you think is important? Please provide a rationale for your views.* |

The comments received to the above question and DCC response is set out below:

In response to a respondent that sought clarification on dormant migration failures DCC has updated section 4.1 to clarify that error handling for Dormant SMETS1 Installation will be similar to the error handling steps as described for Active SMETS1 Installations.

Clarification was sought on reporting on errors where there is a retry. The Installations will be retried once the error has been corrected. The errors will appear on all normal MRR reports for Dormant devices.

In response to a query on Error code MA112, it should be noted that the error code will not be returned for Dormant Meters being migrated.

In response to a comment about the state of the meter and recommended actions for a Commission Device failure, the document has been updated to clarify that If the incident can't be resolved then rollback will be carried out. If following the rollback, the SMSO cannot resume the service with the SMETS1 Installation, then the supplier may have to replace the SMETS1 Installation with SMETS2+ devices.

**Comment**

A respondent queried whether MA106 should include a statement that the DCC will coordinate between suppliers as stated in TMAD.

**Response**

The MCC will be coordinating the Migration of a SMETS1 Installation that has more than one Responsible Supplier. This error code is to reject the Installation if both Migration Authorisations are not in the same Migration Week.

**Comment**

A respondent queried what the state of a meter would be when a failure to rollback occurs and the issue has not been resolved after investigation and requested that the document states if replacement is the only option.

**Response**

For Itron and Aclara meters, it is unlikely that a rollback would fail.  For cases where there is an issue with the rollback, DCC will reattempt the rollback manually using the Vodafone Gateway. For IOC devices, the rollback does not require a call to the device and can therefore be done by sending a web service request to the CSP. There is still a limited possibility that the SMSO is unable to establish communications with the SMETS1 Installation depending upon the step where it failed, for example where a key is incorrectly rotated. In this situation a supplier will be unable to carry out business processes due to key failure (data client key) and may therefore need to replace the SMETS1 Installation with a SMETS2+.

# Summary of Changes to the MEHRS

The Migration Error Handling and Retry Strategy document has been updated to amend typographical errors and additional clarity based on feedback from Industry.

DCC has clarified certain aspects of the MEHRS based on the consultation feedback that we received.

DCC has introduced section 2.4.4 to the document that provides details on error handling of the Migration Common Validation File as already outlined in the TMAD.

Section 2.5.3 has aligned the SMETS1 Installation configuration checks to the recent updates made to the TMAD and S1SR documents.

DCC has updated section 2.6.4 to remove consideration of replacement of the SMETS1 Installation with SMETS2+ in circumstances when there is a timeout in the processing of a Migration Group Encrypted File.

# Next Steps

In accordance with Section 8.8 of the SEC Appendix AL, the Transition and Migration Approach Document (TMAD), DCC will publish the MEHRS.

DCC is confident that the MEHRS meets the requirements set out in Section 8.8 of TMAD and is fit for purpose.

DCC is of the view that it has met its obligations set out in Section 8.8 of TMAD having consulted in line with this section. DCC has, where necessary, addressed the comments that have been received from industry and there are no material disputes that have not been resolved.

The TMAD is in line with the overall solution design for the SMETS1 Service and other relevant documents.

DCC considers that the TMAD is defined to a sufficient level of detail to meet the requirements of Section 8.8 of TMAD.

It is DCC’s view that the documents deliver the requirements specified in Section 8 of the TMAD, is materially complete, and the content is technically accurate.

In terms of Section 8.9 of TMAD, within 14 days of the publication of the MEHRS, any Supplier Party may refer the MEHRS to the Secretary of State, which should be sent to the following email address: Smets1\_appeals@beis.gov.uk.

# Attachments

* Attachment 1 – Migration Error Handling and Retry Strategy