Version 1.0

Migration Testing Approach Document for SMETS1 Services (MTAD)

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1 Introduction and General Obligations

1.1 This document is the Migration Testing Approach Document for SMETS1 Services ('MTAD') referred to in Appendix AK of the SEC (SEC Variation Testing Approach Document for SMETS1 Services ("SMETS1 SVTAD")). The SMETS1 SVTAD defines the MTAD as the document that provides supplementary rights and obligations in relation to Migration Testing and Migration Testing Services to those established in the SMETS1 SVTAD.

1.2 This MTAD applies to all Capability Releases. Should a requirement be identified for additional or modified provisions of this MTAD for MOC or FOC, these will be consulted upon and an amended MTAD submitted to the Secretary of State, in accordance with the procedures specified in clause 4 of the SMETS1 SVTAD.

1.3 This MTAD shall be modified only in accordance with the procedures specified in clause 4 of the SMETS1 SVTAD.

2 Definitions and Interpretation

2.1 In this MTAD, except where the context otherwise requires, the expressions in the left-hand column within Table 1 shall have the meanings given to them in the right-hand column within Table 1. Where not defined in this MTAD, capitalised terms used in this MTAD are set out in Section A of the Amended SMETS1 SEC, in the SMETS1 SVTAD, or in Appendix AL of the SEC (SMETS1 Transition and Migration Approach Document ("the TMAD")).

Table 1 – MTAD Definitions

Term	Meaning
Active Meter Migration Testing (Active MMT)	comprises the undertaking of Migration ST for the scenarios described in Clauses 5.2(a), 5.2(b), and 5.2(c) and the undertaking of Regression Testing.
Capability Release	means each of Initial Operating Capability (IOC), Middle Operating Capability (MOC) and Final Operating Capability (FOC).
Depth and Breadth of Migration Testing	means the document produced pursuant to Clause 8.3 that sets out the depth and breadth of testing planned to be undertaken for Migration Testing.

Term	Meaning
Dormant Meter Migration Testing (Dormant MMT)	comprises the undertaking of Migration ST for the scenario described in Clause 5.2(d), Migration DMRT and Regression Testing.
Migration Dormant Meter Readiness Testing (Migration DMRT)	means test activities which comprises testing undertaken by the DCC and the SMETS1 SMSO acting in the capacity of a DCC Service Provider as further set out in Clause 6.
Migration Audit	means a review performed for each Migration Test Phase of testing and assurance undertaken by the DCC and the SMETS1 SMSO acting in the capacity of a DCC Service Provider and the provision of advice on whether the exit criteria for the Migration Test Phase have been met.
Migration Auditor	means the independent person appointed to perform a Migration Audit.
Migration Completion Report	means a report on the completion of testing prepared pursuant to Clause 10.2.
Migration Solution Testing (Migration ST)	means test activities which comprise testing undertaken by the DCC and the DCC Service Providers collectively of the individual systems of the Modified DCC Total System and the SMETS1 SMSO (acting in the capacity of DCC Service Provider) systems used to Migrate SMETS1 Installations comprising SMETS1 Devices that have previously been commissioned with a SMETS1 SMSO.
Migration Test Phase	has the meaning set out in in Clause 4.2.
Mixed Meter Migration Testing (Mixed MMT)	comprises the undertaking of Migration ST for the scenario described in Clause 5.2(e), Migration DMRT, and Regression Testing.
Planned Tests	means the tests that result from the depth and breadth of testing established pursuant to Clause 8.3.
Regression Testing	means the undertaking of tests described in Clause 7.
Regression Testing Approach	means the document produced pursuant to Clause 7.4.
SMETS1 SVTAD	means Appendix AK of the SEC (SEC Variation Testing Approach Document for SMETS1 Services).

2.2 Migration Testing and Migration Test Phases shall be carried out in accordance with the SMETS1 SVTAD and with the provisions of this MTAD. Where there is any conflict between the SMETS1 SVTAD and this document, the SMETS1 SVTAD shall take precedence.

2.3 Where obligations are expressed in respect of DCC Service Providers in this MTAD, these shall be construed as obligations on the DCC. Where text is included in this MTAD which does not explicitly place obligations on a Party, the SEC Panel or a Testing Participant, these shall be construed as obligations on the DCC.

3 Matters covered in this MTAD

3.1 This MTAD provides for the following:

(a) the test activities that constitute Migration Testing (as defined in the SMETS1 SVTAD);

(b) the Testing Services that constitute Migration Testing Services (as defined in the SMETS1 SVTAD);

(c) the testing environment(s) used for the undertaking of Migration Testing and the provision of Migration Testing Services;

(d) the persons other than the DCC that are entitled or obliged to participate in testing under this MTAD;

(e) the entry criteria to be satisfied prior to the commencement of each Test Phase;

(f) the entry criteria to be satisfied prior to making available the environment for the undertaking of Migration DUST;

(g) the exit criteria to be satisfied for the completion of each Test Phase;

(h) the roles, responsibilities and obligations of the DCC in respect of Migration Testing;

(i) the details of the evidence to be presented to the Panel in respect of completion of each Test Phase; and

(j) reporting requirements relating to Migration Testing.

3.2 This MTAD does not provide for any testing of the activities related to configuring Active Meters and any associated Devices and/or upgrading the firmware on Active Meters and any associated Devices prior to the Migration of SMETS1 Installations comprising such Active Meters.

3.3 This MTAD does not provide for any Device testing as a result of the application of a configuration by a SMETS1 SMSO to a Dormant Meter and any associated Devices save for the testing referred to in Clause 6.2 (a) and Clause 6.3 of this MTAD. Nor does it provide for any testing of the effect of an instruction to upgrade the firmware on the Dormant Meter and any associated Devices (pursuant to the requirements in clause 4 the TMAD). Instead the DCC shall place reliance on the testing undertaken by Suppliers in respect of such Device configuration. In addition, the DCC shall rely upon the firmware that is provided to the DCC by an Installing Supplier together with the relevant information that supports the sequencing of the required firmware upgrades (as set out in clause 4 of the TMAD).

4 Migration Testing and Migration Test Phases

4.1 When performing Migration Testing (as defined in the SMETS1 SVTAD) the DCC shall do so with the objective of facilitating the enrolment of all SMETS1 Smart Metering Systems that are in scope for enrolment as soon as reasonably practicable.

4.2 For IOC, the DCC shall commence Migration Testing for each planned entry on the list of SMETS1 Eligible Product Combinations ("EPCL") resulting from each DMC that exited SIT. For MOC and FOC, the DCC shall undertake Migration Testing for each DMC that is planned to be the subject of SIT. As set out in clause 3.6 of the TMAD, an entry on the EPCL must identify whether it applies to SMETS1 Installations comprising either (i) solely Dormant Meters (ii) solely Active Meters; or (iii) either Dormant Meters and/or Active Meters. As Migration Testing could complete at different times for each of these types of SMETS1 Installation, the SMETS1 SVTAD and this document are structured so that testing in respect of each planned entry on the EPCL comprises a Test Phase, for which a completion decision can be sought. The SMETS1 SVTAD therefore defines the following as Test Phases (hereinafter referred to as "Migration Test Phases"):

(a) Active Meter Migration Testing (Active MMT) in respect of a planned entry on the EPCL;

(b) Dormant Meter Migration Testing (Dormant MMT) in respect of a planned entry on the ECPL; or

(c) Mixed Meter Migration Testing (Mixed MMT) in respect of a planned entry on the EPCL.

4.3 Consequently, Migration Testing comprises multiple Migration Test Phases. Migration ST is always required for any Migration Test Phase. Migration DMRT is only required as part of a Migration Test Phase where the testing is for a planned EPCL entry in respect of SMETS1 Installations comprising at least one Dormant Meter. Each Migration Test Phase has entry criteria and exit criteria, requires a Migration Completion Report, and a decision on completion by the SEC Panel. However, this does not preclude exit for multiple Migration Test Phases being considered in parallel and in the same Migration Completion Report, as further set out in this MTAD.

4.4 For each Migration Test Phase the DCC shall source Devices for use in testing that are the subject of that Migration Test Phase and shall use the Manufacturer's firmware and configuration setting for those DMCs. Where an Installing Supplier provides an alternative configuration for use on Devices, the DCC may choose to utilise this configuration for testing.

4.5 For each DMC that is the subject of Migration Testing (as described in Clause 4.2 of this MTAD) the DCC shall undertake the following:

(a) where the entry on the EPCL applies in respect of SMETS1 Installations comprising only Dormant Meters, Dormant MMT;

(b) where the entry on the EPCL applies in respect of SMETS1 Installations comprising only Active Meters, Active MMT, and

(c) where the entry on the EPCL applies in respect of SMETS1 Installations comprising both Active Meters and Dormant Meters, Mixed MMT.

4.6 The DCC may undertake testing for any of the above entries together or at separate times, subject to Clause 7.2 of this MTAD.

5 Migration Solution Testing

5.1 When undertaking any Migration Test Phase, the DCC shall undertake Migration ST.

5.2 Migration ST comprises the undertaking of tests set out in Clauses 5.3, 5.4, 5.5, and 5.6 of this MTAD against any of the following combinations:

(a) SMETS1 Installations containing only Active Meters for the same Responsible Supplier and with the DCC as Commissioning Party;

(b) SMETS1 Installations containing only Active Meters with the same Responsible Supplier, where the Responsible Supplier has indicated that it will submit the relevant Service Requests to Commission Devices (other than CHFs);

(c) SMETS1 Installations containing only Active Meters and more than one Responsible Supplier, with the DCC as the Commissioning Party;

(d) SMETS1 Installations containing only Dormant Meters with one or more Responsible Supplier, with the DCC as Commissioning Party; or

(e) SMETS1 Installations containing both Active Meters and Dormant Meters, with the DCC as the Commissioning Party covering the following combinations:

(i) where the Active Meter is an ESME and the Dormant Meter is a GSME; and

(ii) where the Active Meter is a GSME and the Dormant Meter is an ESME.

5.3 When undertaking Migration ST, the DCC shall test the DCC Systems and SMETS1 SMSO (acting in the capacity of DCC Service Provider) systems for the generation, validation and processing of the following files with respect to content, format and exchange processes:

(a) MAF (Migration Authorisation File) containing MPxNs, Migration date and organisation certificate serial numbers as detailed in the Migration Authorisation Mechanism;

(b) MCF (Migration Common File) containing basic data required to generate Commissioning Requests to enrol SMETS1 Devices as detailed in clause 5.8 of the TMAD;

(c) MVF (Migration Common Validation File) containing the outcome of MCF validation as detailed in clause 5.10 (b) of the TMAD;

(d) MGF (Migration Group File) containing SIM Information and any other credentials that do not require encryption as detailed in clause 5.12 (f) of the TMAD; and

(e) MEF (Migration Group Encrypted File) containing credentials that require encryption as detailed in clause 5.12 (g) of the TMAD.

5.4 When undertaking Migration ST, the DCC shall test the DCC Systems for generating reports prescribed within the Migration Reporting Regime that are applicable to the planned EPCL entry that is the subject of the relevant Migration Test Phase. For the purposes of the testing set out in this Clause 5.4, the DCC may, where appropriate, rely on evidence from previous Migration Test Phases rather than re-running tests.

5.5 When undertaking Migration ST, the DCC shall test the DCC Systems and the SMETS1 SMSO (acting in the capacity of DCC Service Provider) systems used to undertake the following:

(a) successful SIM handover as per the checks and processing detailed in clause 5.12 (e) of the TMAD;

(b) successful SIM rollback as per the checks and processing described as ‘Installation Rollback’ in the TMAD;

(c) check communications with the Communications Hubs following migration as detailed in clause 5.27 of the TMAD;

(d) check HAN configuration (whitelist) following migration as detailed in Table 12.9 of the TMAD;

(e) verify security keys as per the checks and processing set out in the TMAD; and

(f) successful security key rotation as per the checks and processing set out in the TMAD.

5.6 When undertaking Migration ST, the DCC shall test the DCC Systems used for:

(a) the generation, validation and processing of the following files with respect to content, format and exchange processes:

(i) SCF (S1SP Commissioning File) containing the outcome of the S1SP checking activities in preparation for commissioning as detailed in clause 5.28 of the TMAD; and

(ii) COF (Commissioning Outcome File) containing the outcome of commissioning steps as detailed in clause 6.4 of the TMAD; and

(b) the commissioning of Communications Hub Functions and Other Devices comprising the SMETS1 Installation and the sending of Service Reference Variants (SRVs) that generate alerts as per Table 2 of this MTAD.

Table 2 – DCC Commissioning Alerts

Alert	Meaning	Tested by SRV
N16	Device added to the SMI	SRV8.11
N24	Communications Hub Function Whitelist Update	SRV8.11
N42	Security Credentials updated on device	SRV6.15.1 / SRV6.21
N55	S1SP Alert	Any

6 Migration Dormant Meter Readiness Testing

6.1 When undertaking any Migration Test Phase in respect of a planned EPCL entry relating to a SMETS1 Installation that comprises at least one Dormant Meter, the DCC shall undertake Migration Dormant Meter Readiness Testing (Migration DMRT). However, the DCC shall not be required to test:

(a) the arrangements in Clause 6.2 (a) of this MTAD where the DCC considers that it will not be instructing configuration changes in respect of SMETS1 Installations comprising Dormant Meters that are comprised of the DMC that is the subject of the planned EPCL entry; or

(b) the arrangements in Clause 6.2 (b) of this MTAD where the DCC considers that it will not be instructing firmware upgrades in respect of SMETS1 Installations comprising Dormant Meters that are comprised of the DMC that is the subject of the planned EPCL entry.

6.2 Subject to the provisions in Clause 6.1 of this MTAD when undertaking Migration DMRT, the DCC shall demonstrate that any DCC Systems and the relevant SMETS1 SMSO systems (acting in the capacity of DCC Service Provider) that are used in undertaking the following steps are able to:

(a) instruct and apply a configuration to Dormant Meters and any associated Devices in accordance with the obligations in the TMAD; and

(b) instruct the upgrade of the firmware on Dormant Meters and any associated Devices in accordance with the obligations in the TMAD.

6.3 When undertaking Migration DMRT, the DCC shall include:

(a) testing of any DCC Systems to request that the SMETS1 SMSO (acting in the capacity of DCC Service Provider) configures Dormant Meters and any associated Devices, and/or upgrades the firmware on Dormant Meters and any associated Devices, in accordance with the obligations in clause 4 of the TMAD;

(b) testing of any SMETS1 SMSO (acting in the capacity of DCC Service Provider) systems that receives requests from the DCC and send instructions to Devices to configure Dormant Meters and any associated Devices, and/or upgrade firmware on Dormant Meters and any associated Devices, in accordance with the obligations in clause 4 of the TMAD;

(c) verification that the correct configuration has been applied to Dormant Meters and any associated devices (as further described in the Depth and Breadth of Migration Testing document produced pursuant to Clause 8.3), in accordance, with the obligations in clause 4 of the TMAD; and

(d) testing of the generation of a report by the SMETS1 SMSO (acting in the capacity of DCC Service Provider) on SMETS1 Installations that are ready for Migration to commence and receipt of the report by the DCC.

6.4 Subject to the provisions in Clause 6.1 of this MTAD, Migration DMRT shall test the SMETS1 SMSO (acting in the capacity of DCC Service Provider) systems (as further described in TMAD) within the SMETS1 SMSO's test environment for the following three combinations:

(a) a DMC subject to firmware upgrade;

(b) a DMC subject to configuration change; and

(c) a DMC subject to both a firmware upgrade and configuration change.

6.5 When testing the application of configuration, the DCC shall use the DMC that is the subject of the planned entry on the EPCL, using Devices in accordance with Clause 4.4 of this MTAD.

7 Regression Testing for each Migration Test Phase

7.1 Prior to exiting any Migration Test Phase the DCC shall undertake:

(a) two functional end of cycle test runs; and

(b) full regression testing of the Modified DCC Total System.

7.2 The DCC may undertake the testing activities prescribed in Clause 7.1 of this MTAD as a single set of tests for the purpose of multiple Migration Test Phases; provided that, when doing so, the testing is undertaken against the appropriate baseline given the planned timing of the additions of the entries to the EPCL that are the subject of the Migration Test Phases.

7.3 The DCC shall discuss with the TAG its proposals for Regression Testing in accordance with the Regression Testing Approach document. Any disagreements between the DCC and the TAG regarding the Regression Testing that needs to be undertaken shall be referred to the Secretary of State for decision whose decision shall be final and binding. Such discussion may take place prior to this MTAD coming into effect.

7.4 For each Capability Release, the DCC shall publish on the DCC Website the final version of the Regression Testing Approach document for that Capability Release. Each such document shall set out the DCC's approach to Regression Testing for that release. The published version shall either be the version that TAG did not disagree with or, where TAG did disagree, the version that reflects any decision by the Secretary of State referred pursuant to Clause 7.3 of this MTAD. Where the DCC considers it necessary, the DCC shall prepare an updated version of the Regression Testing Approach document and Clause 7.3 of this MTAD and this Clause 7.4 shall apply.

8 Migration Test Phase Entry Criteria

8.1 For MOC and FOC, pursuant to Clause 9.9 of the SMETS1 SVTAD, the DCC shall discuss with the TAG the format and content (including the level of granularity) of any deliverables that are to be produced pursuant to this Clause 8 in advance of them being produced and sufficiently early such that any information that needs to be produced is captured as part of the DCC’s testing activities undertaken pursuant to this MTAD.

8.2 Further to the generic entry criteria in Clause 12.5 of the SMETS1 SVTAD, the fulfilment of the following entry criteria is required to permit entry to a Migration Test Phase (subject to Clause 8.4 of this MTAD):

(a) test plan signed off by the DCC;

(b) Test Completion Certificates for any precursor Test Phase issued;

(c) test specification prepared, including the production of a TTM and associated heat map;

(d) confirmation that the required test laboratories, SMETS1 Devices, tools, stubs, environments, and data are in place, secure and are ready for testing to commence;

(e) the DCC has presented to and discussed with the TAG an overview of the depth and breadth of Migration Testing for the operating capability in accordance with the Depth and Breadth of Migration Testing document; and any disagreements between the DCC and the TAG on the depth and breadth of testing have been referred to the Secretary of State for a decision, whose decision DCC shall comply with when determining its Planned Tests (such discussion may take place prior to this MTAD coming into effect);

(f) the readiness of the solution for testing to commence has been confirmed by the DCC; and

(g) an approval to proceed certificate for the Test Phase has been issued by the DCC.

8.3 For each Capability Release, the DCC shall publish on the DCC Website the final version of the Depth and Breadth of Migration Testing document for that release. Each such document shall set out the DCC's approach to the depth and breadth of Migration Testing for that release. The published version shall either be the version that TAG did not disagree with or, where TAG did disagree, the version that reflects any decision by the Secretary of State referred pursuant to Clause 8.2 (e) of this MTAD. Where the DCC considers it necessary, the DCC shall prepare an updated version of the Depth and Breadth of Migration Testing document and Clause 8.2 (e) of this MTAD and this Clause 8.3 shall apply.

8.4 For IOC, the DCC shall undertake the activities within Clause 8.2(e) of this MTAD as soon as reasonably practicable rather than prior to entry.

9 Migration Test Phase Exit Criteria

9.1 Pursuant to clause 9.9 of the SMETS1 SVTAD, the DCC shall discuss with the TAG the format and content (including the level of granularity) of any deliverables that are to be produced pursuant to this Clause 9 in advance of them being produced and sufficiently early such that any information that needs to be reported is produced as part of the DCC's testing activities undertaken pursuant to this MTAD.

9.2 The exit criteria set out in Table 3 are required to exit each Migration Test Phase. Where the context requires, the exit criteria apply in respect of the planned entry on the EPCL.

Table 3 - Exit Criteria for a Migration Test Phase

#	Exit Criteria	Success	Evidence
1	Functional execution	Successful completion will be 100% of Planned Tests for each Migration Test Phase (unless tests have been de-scoped and such de-scoping approved by the Secretary of State) for functional testing have been executed, with a 90% pass rate for any Planned Tests (excluding those tests that have been de-scoped) for each of Migration ST and Migration DMRT (as applicable to the Migration Test Phase) on the DMC that is the subject of the Migration Test Phase.	Migration Completion Report and TAB Test Completion Certificate
2A	End of cycle test runs	Successful completion will be 100% of end of cycle test runs established pursuant to Clause 7 of this MTAD have been executed, with a pass rate of 100% excluding known defects that result from the 'functional execution' exit criteria.	Migration Completion Report and TAB Test Completion Certificate

#	Exit Criteria	Success	Evidence
2B	Full system regression execution	Successful completion will be 100% of full system regression tests established pursuant to Clause 7 of this MTAD have been executed, with a pass rate of 100% excluding known defects.	Migration Completion Report and TAB Test Completion Certificate
3	Testing Issue Thresholds	Extant Testing Issues are within the relevant Testing Issue Threshold (Clause 15 of this MTAD).	Migration Completion Report and TAB Test Completion Certificate
4	Test results documented and evidence captured	Results of testing documented and evidence stored.	Migration Completion Report
5	Complete set of Testing Issue logs produced	Logs have been produced and stored for all Testing Issues identified in Testing.	Referenced in Migration Completion Report
6	Full Test traceability to the requirements	Test traceability demonstrated in the TTM pursuant to Clause 11 of this MTAD.	Referenced in Migration Completion Report
7	Full Test traceability of executed tests	Test heatmap produced that shows coverage and success of testing, and traceability to the TTM.	Referenced in Migration Completion Report
8	DCC assurance report approved	TAB approval of the DCC assurance report referred to in Clause 9.6 of the SMETS1 SVTAD.	Issuing of Migration Completion Report by the TAB for consideration by the Panel

10 Completion of each Migration Test Phase

10.1 A Migration Test Phase in respect of any entry that is planned to be on the EPCL shall only complete when the Panel determines that the relevant exit criteria for the Migration Test Phase relating to that planned entry have been met.

10.2 A Migration Completion Report shall be prepared by the DCC whenever it considers that a Migration Test Phase in respect of an entry planned to be on the EPCL is complete. Each Migration Completion Report shall include the relevant Independent Migration Testing Audit Report (as an Annex) prepared pursuant to Clause 12.4 of this MTAD. As set out in Clause 4.6 of this MTAD, the DCC may combine the activities described in this Clause 10 so that a single Migration Completion Report covers the completion of more than one Migration Test Phase.

10.3 When the DCC considers that a Migration Test Phase in respect of a planned EPCL entry ought to be complete, the DCC shall:

(a) notify the Secretary of State, the Authority, the Panel and the Parties that the DCC considers that the Migration Test Phase in respect of that entry has completed;

(b) provide the Authority, the Panel, and the Secretary of State with copies of the Migration Completion Report and a list of the sections of such report that the DCC considers should be redacted; and

(c) review the supporting documentation and evidence with regards to the relevant entry and exit criteria with the TAG.

10.4 The Panel shall confirm the completion of a Migration Test Phase in respect of a planned entry on the EPCL or shall highlight where it believes the exit criteria have not been met. Where the Panel believes the exit criteria have not been met, it shall direct the DCC to continue the testing in respect of that planned entry on the ECPL and to address outstanding matters, and submit further documentation and evidence to support the completion of the Migration Test Phase for that entry, following which the Panel shall determine whether or not the Migration Test Phase for that entry has completed (and this Clause 10.4 shall apply again).

10.5 On direction from the Panel, the DCC shall provide the Parties with copies of any Migration Completion Report produced pursuant to this Clause 10 and the corresponding Migration Auditor Report(s) having first redacted any sections specified by the Panel.

11 Traceability

11.1 The overall scope of testing in each Migration Test Phase undertaken pursuant to this MTAD shall be validated by the DCC through the use of a TTM for each Migration Test Phase undertaken pursuant to this MTAD which has been assured by the DCC. The TTM for each Migration Test Phase shall set out how each requirement in Section N of the Amended SMETS1 SEC (including the TMAD) is to be tested and the associated test scenarios.

11.2 The DCC shall assure the TTM (and any subsequent updates to it) in timescales that do not adversely impact upon the timely undertaking of the Migration Test Phase to which the TTM relates. If, prior to the completion of each Migration Test Phase, further changes are made to the Section N of the Amended SMETS1 SEC (including the TMAD), the TTM will be updated to reflect these changes.

11.3 The TTM shall be used by the DCC to track progress for each Migration Test Phase undertaken and to demonstrate the completion of each Migration Test Phase and it shall form a key element of the Migration Audit.

12 Migration Audit and Independent Assurance

12.1 The DCC shall appoint an independent Migration Auditor through the existing DCC audit and assurance framework agreement available on the DCC website.

12.2 Tender responses shall be assessed against criteria which shall inter alia include:

(a) independence from the DCC and the DCC Service Providers;

(b) proposed audit approach;

(c) relevant experience; and

(d) cost.

12.3 The identity of the Migration Auditor shall be provided to the Authority, the Panel, Parties, and the Secretary of State following contract award.

12.4 For each Migration Test Phase, the Migration Auditor shall produce an Independent Migration Testing Audit Report that shall include:

(a) a review of the TTM documentation produced by the DCC, to confirm that it provides a mapping of test scenarios to the requirements of Section N of the Amended SMETS1 SEC;

(b) a review of the test heatmap produced by the DCC to confirm that the Planned Tests map to the test scenarios and test them adequately;

(c) confirmation that DCC testing and assurance has been conducted in accordance with this MTAD and where relevant the SMETS1 SVTAD (including confirming its coverage and completeness);

(d) confirmation that each of the test exit criteria have been met;

(e) confirmation that all open Testing Issues have been captured and are either closed or, where still open, Work Off Plans are in place; and

(f) a view on the acceptability of any open Testing Issues and the associated Work Off Plans.

12.5 The DCC may combine the activities described in this Clause 12 for several Migration Test Phases undertaken pursuant to this MTAD into a single set of activities and report to align to each Migration Completion Report prepared pursuant to Clause 10 of this MTAD.

13 DCC Witnessing of Migration Testing

13.1 The DCC shall observe a subset of the tests carried out in each Migration Test Phase undertaken pursuant to this MTAD. The subset of tests to be observed shall be selected by the DCC having regard to providing assurance that the SMETS1 Testing Objective has been met.

13.2 The DCC shall observe test execution, and record results produced from executed tests. There shall be:

(a) no deviation from test scripts; and

(b) no involvement by observers in the execution.

13.3 The DCC shall in each Migration Completion Report describe the results of DCC's witnessing including:

(a) the number of successfully completed tests;

(b) the number and reasons for the tests that have failed; and

(c) the number of successfully completed tests as a ratio or percentage of the total number of tests executed.

14 Deliverables

14.1 For MOC and FOC, pursuant to Clause 9.9 of the SMETS1 SVTAD, the DCC shall discuss with the TAG the structure, format, and content (including the level of granularity) of the deliverables detailed in Table 4 in advance of them being produced and sufficiently early such that any information that needs to be produced is captured as part of the DCC's testing activities undertaken pursuant to this MTAD.

14.2 The DCC shall publish or update published versions of the documents detailed in Table 4.

Table 4 – MTAD Specific Deliverables

Deliverable	Description	Created by	Audience	Timing	Where available
Independent Migration Testing Audit Report	Using the Migration Testing Auditor as referenced in Clause 12 of this MTAD, a range of independent assurance activities shall be conducted and reports relating to said activity shall be produced and reviewed in accordance with Clause 12 of this MTAD.	DCC	Panel / TAG	As determined by the timing for each Migration Completion Report.	Publish on DCC Website.
Migration Completion Report	Evidence of success against the exit criteria for the relevant Migration Test Phase undertaken pursuant to this MTAD in accordance with Clause 10 of this MTAD.	DCC	Panel / TAG	Following TAB approval of each Test Phase exit.	Publish on DCC Website.

14.3 The DCC shall additionally be accountable and responsible for the following deliverables in relation to each Migration Test Phase undertaken pursuant to this MTAD:

(a) general administration;

(b) the environment plan;

(c) DCC test infrastructure and environments;

(d) DCC test laboratory premises and the Devices; and

(e) the test data plan.

15 Testing Issue Thresholds

15.1 The Testing Issue Thresholds set out in Table 5 apply to each Migration Test Phase. The Testing Issue Thresholds are calculated across all DCC Service Providers collectively, including the SMETS1 SMSO acting in the capacity of DCC Service Provider, and comprise both:

(a) a threshold for the individual Migration Test Phase; and

(b) an aggregate threshold that takes into account any open Testing Issues.

Table 5 - Testing Issue Thresholds per Migration Test Phase

Test Issue Severity	For Clause 15.1 (a) Migration Test Phase (Active MMT, Dormant MMT, and Mixed MMT)	For Clause 15.1 (b) aggregate limit across Migration Test Phases
1	0	0
2	0	0
3	15	30
4	30	60
5	60	120

15.2 On completion of a Migration Test Phase, any Testing Issues that are open that would affect the functioning of the Migration solution for the planned entry on the EPCL shall be counted for the purpose of the Migration Test Phase for that planned entry on the EPCL, irrespective of the Test Phase in which they arose. At the point of exit from each Migration Test Phase, all open Testing Issues shall be documented in a Work Off Plan and resolved pursuant to the process set out at clause 15 of the SMETS1 SVTAD.

15.3 If the DCC believes that any open Testing Issues should not be included against the Testing Issue Threshold for a Migration Test Phase, the DCC shall inform the TAB, the TAG and the Panel; and shall state the rationale for its exclusion. The Testing Issue shall be excluded from the Testing Issue Threshold only if the TAB and the TAG agrees. Information on the Testing Issue excluded from the Testing Issue Threshold shall be included in the Migration Completion Report produced pursuant to Clause 14 of this MTAD.

15.4 Where the DCC's initial exclusion decision is not supported, the Testing Issue shall be included against the Testing Issue Threshold. Should the TAG and the DCC disagree on the exclusion of a Testing Issue and where this decision has a material impact on the ability to deliver IOC, MOC, or FOC, the DCC may refer the matter to the Secretary of State, within 5 Working Days of the TAG's decision for determination. The Secretary of State's decision shall be final and binding for the purposes of this Code.

16 Governance and Communication

16.1 The DCC shall assure Migration Testing activities and monitor progress.

16.2 The DCC shall provide a weekly update on progress regarding Migration Testing to the Panel and the Secretary of State; the content shall be anonymised and redacted where appropriate.

16.3 The DCC shall report on progress of Migration Testing at the monthly TAG meeting.

17 Migration DUST

17.1 When making available Migration DUST in respect of DMCs with respect to each Capability Release the DCC shall do so with the objective of facilitating the enrolment of all SMETS1 Smart Metering Systems that are in scope for enrolment as soon as reasonably practicable.

Migration DUST variations to ETAD and H14

17.2 The Testing Services provisions prescribed in Section H14 and in the Enduring Testing Approach Document (ETAD) shall apply to Migration DUST except where varied by this Clause 17.

17.3 Pursuant to the provisions of Section H14.3, the DCC shall provide a guide for Testing Participants covering matters related to Migration DUST.

17.4 The provisions of Section H14.9 (a) are varied with regard to Migration DUST such that the DCC shall only provide access to this Testing Service remotely for test devices that can be successfully configured to communicate with the DCC test environments (as further set out in the guide prepared pursuant to Clause 17.3).

17.5 The provisions of Section H14.9 (c) (i) are varied with regard to Migration DUST such that the DCC shall take all reasonable steps to obtain a reasonable number of SMETS1 Devices for use by Testing Participants at the DCC's physical test laboratories as further described or set out in this MTAD.

17.6 For the purposes of Migration DUST, the definition of Testing Participant Systems within the ETAD shall also include any systems and processes used in whole or in part for the testing equivalent of the file processing by the Responsible Supplier to support Migration as defined in the TMAD.

17.7 The obligations within clause 8.6 of the ETAD shall be varied such that the DCC will only support the generation of the following alerts, and shall only do so upon Testing Participant request, in relation to SMETS1 Devices within a DCC physical test laboratory when undertaking Migration DUST:

(a) Device Identity Confirmation (DUIS reference N16) (as per clause 8.6 (d) of the ETAD); and

(b) SMETS1 Service Provider Alert (DUIS reference N55) (as per clause 8.6 (g) of the ETAD).

17.8 The obligations within clause 8.7 and clause 8.8 of the ETAD shall not apply in relation to Migration DUST.

17.9 Any test device migrated by a Testing Participant under the Migration DUST provisions set out in this Clause 17 may subsequently be utilised within Device and User System Tests.

General Requirements

17.10 The DCC shall only be required to provide Migration DUST in respect of:

(a) combinations of SMETS1 Device Models that are listed on the EPCL as comprising either SMETS1 Installation relating solely Active Meters or a combination of Active Meters and Dormant Meters; and

(b) where not listed on the EPCL, combinations of SMETS1 Device Models against which a Migration Test Phase has completed in respect of planned entries on the EPCL relating to either solely Active Meters or a combination of Active Meters and Dormant Meters.

17.11 Prior to making available the environment for the undertaking of Migration DUST, the DCC shall ensure the following entry criteria have been fulfilled:

(a) provision of a completed guide for Testing Participants covering matters related to Migration DUST as set out in Clause 17.3 of this MTAD;

(b) the SMETS1 migration code base has been approved by TAB for release into the DCC test environments used to provide Migration DUST;

(c) the DCC has any necessary test data in place to support Migration DUST;

(d) other than SMETS1 devices, the DCC has appropriate resources and processes in place to support Migration DUST; and

(e) the DCC has available any SMETS1 Devices for testing as provided for under Clause 17.5.

17.12 The DCC shall provide a report to TAG detailing how the entry criteria described in Clause 17.11 of this MTAD were fulfilled.

17.13 Only a Party that has completed User Entry Process Tests or tests equivalent to User Entry Process Tests (pursuant to Section H14.32) with any of the following User Roles is eligible to undertake Migration DUST in the relevant User Role:

(a) Import Supplier;

(b) Gas Supplier;

(c) Electricity Distributor; or

(d) Gas Transporter.

17.14 Within Migration DUST, a Testing Participant in the User Role of Import Supplier or Gas Supplier may only submit the relevant Service Requests to Commission Devices (other than CHFs) (as prescribed in clause 6.6 of the TMAD) where that Testing Participant has successfully completed the applicable Eligibility Tests for the relevant Service Requests.

17.15 The DCC shall only be required to make available Migration DUST to a Testing Participant where the DCC has received at least 40 Working Days' notice from that Testing Participant of its intention to undertake Migration DUST, or such lesser notice that the DCC reasonably agrees. Such notice may be given prior to this MTAD coming into effect. Such notice shall provide the DCC with reasonable detail on the manner in which the Testing Participant will utilise Migration DUST.

17.16 The DCC shall additionally be accountable and responsible for the following deliverables in relation to Migration DUST:

(a) general administration;

(b) the environment plan;

(c) DCC test infrastructure and environments;

(d) necessary test data; and

(e) DCC test laboratory premises.

17.17 Where a Testing Participant provides test Devices for use in Migration DUST that Testing Participant may determine whether or not, prior to Migration, the Devices are configured in accordance with the settings provided in the SMETS1 Supporting Requirements. Where that Testing Participant chooses not to configure test Devices it shall notify the DCC. Where the DCC provides test Devices, the Testing Participant shall configure, where the configuration tool is available, the test Devices in accordance with the settings provided in the SMETS1 Supporting Requirements prior to Migration within Migration DUST.

17.18 Each Testing Participant utilising Migration DUST in respect of Active Meters and associated devices shall provide the DCC with an appropriate test Migration Authorisation via a test MAF (Migration Authorisation File), the format for which is defined in the Migration Authorisation Mechanism.

17.19 Following provision of the test MAF as per Clause 17.18 of this MTAD, the DCC shall process the test MAF and undertake a test migration on the relevant test Devices consistent with the provisions in the TMAD.

17.20 Within the provision of a test MAF in accordance with Clause 17.19 of this MTAD, each Testing Participant may test the following file-based exceptions:

(a) the MPxN provided is not a registered MPxN in the SMETS1 SMSO system;

(b) the Migration Week provided does not start on a Monday;

(c) the Migration Week has started;

(d) the Migrate On date is not within the specified Migration Week;

(e) the Migrate On date is a date in the past;

(f) the Responsible Supplier is not identified for the MPxN as per the SMETS1 SMSO system;

(g) the Responsible Supplier has not provided the SupplierCertificateIDs for the Active Meters; and

(h) the Responsible Supplier has provided the incorrect NetworkOperatorCertificateID.

17.21 In relation to the process described in Clause 17.19 of the MTAD, where the relevant Testing Participant has indicated that it will not submit the relevant Service Requests to Commission Devices (other than CHFs), the DCC shall provide the relevant Testing Participant with:

(a) relevant details on the outcome of the test migration process via a test COF (Commissioning Outcome File) containing the outcome of commissioning steps as detailed in Clause 6.4 of the TMAD;

(b) test alerts as per Table 2 of this MTAD;

(c) test reports on the outcome of the test Migration as per the reports that it as Responsible Supplier would be entitled to receive pursuant to the Migration Reporting Regime.

17.22 In relation to the process described in Clause 17.19 of the MTAD, where the relevant Testing Participant has indicated that it will submit the relevant Service Requests to Commission Devices (other than CHFs), the DCC shall provide the relevant Testing Participant with:

(a) a MCF (Migration Common File) containing basic data required to generate Commissioning Requests to enrol SMETS1 Devices as detailed in clause 5.8 of the TMAD;

(b) an SCF (S1SP Commissioning File) containing the outcome of the S1SP checking activities in preparation for commissioning as detailed in clause 5.28 of the TMAD;

(c) test alerts as per Table 2 of this MTAD; and

(d) test reports on the outcome of the test Migration as per the reports that it as Responsible Supplier would be entitled to receive pursuant to the Migration Reporting Regime.

Exception Migration DUST

17.23 In respect of each Capability Release, the DCC shall make available in Migration DUST sample data files consisting of dummy data to illustrate the file-based outcome for the relevant exceptions as detailed in the Migration Error Handling and Retry Strategy defined in clause 8.8 of the TMAD.

Decommissioning Migration DUST

17.24 In respect of each Capability Release, the DCC shall make available Migration DUST until the decommissioning steps set out in clause 7 of the TMAD have been completed for the relevant Requesting Party and Commissioning Party.