Version J 1.4

Appendix J

Enduring Testing Approach Document

Contents

1 Introduction 3

2 Security Requirements 4

3 IKI and SMKI Test Certificates 6

4 DCCKI Test Certificates 8

5 Obligations on Testing Participants using Remote Test Labs 10

6 Requirements for Use of DCC Test Labs 15

7 User Entry Process Tests 18

8 Device and User System Tests 20

9 SMETS1 Pending Product Combinations Tests 27

10 DCC Internal System Change Testing 31

11 Modification Proposal Implementation Testing 32

12 Use of Testing Issue Management Tool 33

Definitions & Interpretation 34

1 Introduction

Scope

1.1 The Enduring Testing Approach Document (ETAD) describes the detailed procedural and technical requirements for the Testing Services, as defined in Section H14.1 of this Code, that the DCC will make available to Testing Participants on an enduring basis. Unless indicated otherwise this ETAD applies to Testing Services in respect of SMETS1 Devices and SMETS2+ Devices

2 Security Requirements

2.1 For the purposes of this document, "Testing Participant Systems" means:

a) any Systems (excluding any Devices) that are operated by or on behalf of a Testing Participant and used in whole or in part for the testing equivalent of:

(i) constructing Service Requests;

(ii) sending Service Requests over the DCC User Interface;

(iii) receiving, sending, storing, using or otherwise carrying out any processing in respect of any Pre-Command or Signed Pre-Command;

(iv) receiving Service Responses or Alerts over the DCC User Interface;

(v) generating Data for communication to the OCA, DCA or ICA, or receiving Data from the OCA, DCA or ICA (including any Systems which store or use Secret Key Material for such purposes) but only communications in relation to Devices that have an SMI Status of "commissioned" or "installed not commissioned";

(vi) generating any Unique Transaction Reference Number;

(vii) providing (or procuring the provision of) Registration Data in respect of a particular MPAN or MPRN; and/or

(viii) the collection, storage or communication of the Registration Data referred to in sub-clause vii) above prior to, or for the purposes of, its provision to DCC over the Registration Data Interface; and

b) any other Systems from which the Systems used in whole or in part for the purposes set out in clause (a) are not Separate.

2.2 Each Testing Participant shall ensure that its Testing Participant Systems are Separate from:

a) its RDP Systems or User Systems, as appropriate; and

b) any other Systems not used for the purposes of carrying out tests using the Testing Services.

2.3 Each Testing Participant shall take reasonable steps to ensure that:

a) its Testing Participant Systems are capable of detecting any unauthorised

software that has been installed or executed on them and any unauthorised attempt to install or execute software on them;

b) if those Testing Participant Systems detect any such software or such attempt to install or execute software, that the installation or execution of that software is prevented; and

c) where any such software has been installed or executed, to take appropriate remedial action.

2.4 Each Testing Participant shall ensure that it carries out assessments that are designed to identify any vulnerability of its Testing Participant Systems to Compromise:

a) prior to accessing any Testing Services using such Testing Participant Systems and on at least an annual basis thereafter;

b) in respect of each new or materially changed component or functionality of its Testing Participant Systems, prior to that component or functionality becoming operational; and

c) on the occurrence of any security issue in relation to its Testing Participant Systems.

2.5 Where, following any assessment of its Testing Participant Systems in accordance with clause 2.4 or otherwise, any material vulnerability has been detected, the Testing Participant shall:

a) take reasonable steps to ensure that the cause of the vulnerability is rectified, or the potential impact of the vulnerability is mitigated, as soon as is reasonably practicable; and

b) promptly notify the DCC of the steps being taken to rectify its cause or mitigate its potential impact (as the case may be) on DCC Systems and the time within which they are intended to be completed, and comply with any reasonable request from the DCC to mitigate or prevent any potential adverse impact on the DCC Systems arising from such vulnerability.

3 IKI and SMKI Test Certificates

3.1 The DCC shall issue Test Certificates simulating the function of Organisation Certificates, OCA Certificates, Device Certificates, DCA Certificates, IKI Certificates and ICA Certificates in accordance with the relevant provisions of the "Test Documents".

3.2 For the purposes of clause 3.1, the Test Documents means:

a) the Test Certificate Policy, which shall be a document published by the DCC and approved by the SMKI PMA which corresponds (insofar as relevant in respect of the Testing Services) in purpose, content and effect to the Organisation Certificate Policy, the Device Certificate Policy and the IKI Certificate Policy; and

b) subject to clauses 3.3 and 3.4:

(i) the SMKI RAPP;

(ii) the SMKI Interface Design Specification;

(iii) the SMKI Code of Connection;

(iv) the SMKI Repository Interface Design Specification; and

(v) the SMKI Repository Code of Connection.

3.3 For the purposes of clause 3.2(b) (i), each Testing Participant shall, when completing the forms in the appendices of the SMKI RAPP for test purposes, clearly mark each page with the text, "For Testing Purposes" and submit the completed forms to the SMKI Registration Authority, in writing, as directed on the DCC Website.

3.4 For the purposes of clause 3.2(b):

a) any reference in such documents to any office, function, role, system, process or other thing shall be construed as being a reference to the corresponding equivalent of that office, function, role, system, process or thing which is established, undertaken, operated or given effect (as the case may be) for the purposes of the Testing Services;

b) Testing Participants shall not be required to complete SMKI and Repository Entry Process Tests to become eligible to obtain IKI and SMKI Test Certificates;

c) where agreed by the DCC and a Testing Participant, any of the requirements that a Testing Participant must satisfy in order to be entitled to become an Authorised Subscriber for a Test Certificate may be disregarded for the purposes of such entitlement;

d) the DCC shall publish on the DCC Website, and from time to time update, limits on the number of Certificate Signing Requests that each Testing Participant may submit in any particular time period over any relevant interface for testing purposes;

e) each Testing Participant shall take all reasonable steps to ensure it does not submit certificate signing requests for testing purposes in excess of any limit published (or updated) in accordance with clause (d) above;

f) the DCC shall publish on the DCC Website, and from time to time update, limits on the total number of Certificate Signing Requests across all Testing Participants that can be processed each day. The DCC shall not be required to process any Certificate Signing Request in excess of such limits that is submitted by any Testing Participant.

4 DCCKI Test Certificates

4.1 The DCC shall issue DCCKI Test Certificates simulating the function of DCCKI Certificates in accordance with the relevant provisions of the "DCCKI Test Documents". A separate DCCKI Test Certificate will be required for each test environment.

4.2 For the purposes of clause 4.1, the DCCKI Test Documents means, subject to clauses 4.3 and 4.4:

a) the Test DCCKI Certificate Policy;

b) the DCCKI RAPP;

c) the DCCKI Interface Design Specification and DCCKI Repository Interface Design Specification; and

d) the DCCKI Interface Code of Connection and DCCKI Repository Code of Connection.

4.3 For the purposes of clause 4.2 (a) and for issuing Test DCCKI Certificates, the Test DCCKI Certificate Policy shall be the most recent DCCKI Certificate Policy at that date, modified such that:

a) the OID in clause 1.2 is replaced by 1.2.826.0.1.8641679.1.2.1.12

b) the modifications identified in clause 4.5 below apply; and

c) any changes that:

(i) have been approved by the DCCKI PMA function prior to taking effect; and

(ii) do not directly affect any rights or obligations of Parties (other than the DCC) or RDPs, apply.

4.4 For the purposes of clause 4.2:

a) any reference in such documents to any office, function, role, system, process or other thing shall be construed as being a reference to the corresponding equivalent of that office, function, role, system, process or thing which is established, undertaken, operated or given effect (as the case may be) for the purposes of the Testing Services;

b) Parties and RDPs shall be considered to be DCCKI Authorised Subscribers for

testing purposes where they have appointed at least one DCCKI SRO and at least one DCCKI ARO;

c) any reference to lodging of information in the DCCKI Repository, including DCCKI Certificates, EII DCCKICA CRL and DCCKI ARL, shall be modified such that the DCC may, where the DCCKI Repository is not available, provide such information via an alternative means to be notified to DCCKI Authorised Subscribers, and where approved in advance by the DCCKI PMA function;

d) all obligations on the DCC in respect of timescales associated with the delivery of DCCKI Services or DCCKI Repository Services, shall be modified so that any such timescales shall be replaced with "as soon as reasonably practicable, having regard to the requirement to provide DCCKI Services and DCCKI Repository Services";

e) any reference to raising Incidents and Major Security Incidents shall not apply and the provisions of the Testing Issue Resolution Process shall apply; and

f) the following provisions of the documents shall be disregarded and treated as forming no part of the DCCKI Test Documents:

(i) references to interactions with the Service Desk processes shall not apply, except to the extent that such processes are required to support the identity verification of individuals nominated to become DCCKI SROs or DCCKI AROs for testing purposes; and

(ii) clauses 3.2 (b); 3.15; 3.16; and 4.4 to 4.12; in the DCCKI RAPP shall not apply.

4.5 For the purposes of clause 4.2(b), each Testing Participant shall, when completing the forms in the annexes of the DCCKI RAPP for testing purposes, clearly mark each page with the text, "For Testing Purposes" and submit the completed forms to the DCCKI Registration Authority, in writing, as directed on the DCC Website.

5 Obligations on Testing Participants using Remote Test Labs

5.1 In accordance with Section H14.31, Testing Participants are eligible to connect to a simulation of the SMETS2+ SM WAN ("a test SMETS2+ SM WAN") for the purposes of conducting Device and User System Tests remotely at premises of their choice. The DCC shall offer a service of providing connections to the test SMETS2+ SM WAN, but shall not offer such service in respect of the SMETS1 SMWAN. However, where a Testing Participant is able to arrange for its own connection to a simulation of the SMETS1 SM WAN ("test SMETS1 SM WAN"), that Testing Participant shall be entitled to conduct Device and User System Tests remotely at premises of their choice.

SMETS 2+

5.2 As well as providing the necessary Test Communications Hubs, Smart Meters and any other Devices which they choose to test, the Testing Participant may need to establish a connection to the test SMETS2+ SM WAN (in the chosen Region(s)). DCC will provide separate testing environments to support fix on fail and development activities. Testing Participants will need to establish connections to the environments they choose to test in.

5.3 The DCC shall include a description of the equipment that will be provided to enable connection to and use of a test SMETS2+ SM WAN for the purposes set out above in the guide for Testing Participants which the DCC is obliged to publish under Section H14.3.

5.4 Where a Testing Participant is considering ordering a connection to the test SMETS2+ SM WAN, the Testing Participant shall first contact the DCC via the Service Desk to request a site survey and resulting quotation setting out the charges to apply. For each additional Remote Test Lab connection to a specific testing environment, a site survey may be required.

5.5 When seeking a connection to the SMETS2+ SM WAN, a Testing Participant shall comply with any reasonable requests of the DCC to provide supporting information, which may include but not be limited to:

a) location of the site which needs to be connected;

b) an estimate of the number of Test Communications Hubs, Electricity Meters and Gas Meters that the Testing Participant wishes to install in its test facility and each testing environment; and

(c) a digital floor plan including the area surrounding the test facility, including dimensions, floors above and below and outside windows.

5.6 On receiving a request for a site survey and a quotation of the charges to apply for connection to the test SMETS2+ SM WAN, the DCC shall undertake the steps detailed below as soon as is reasonably practicable:

a) conduct a site survey to assess the equipment that needs to be provided by the DCC, and any specific requirements to be fulfilled by the DCC for the premises at which the equipment is to be installed. For this purpose, the Testing Participant shall provide the DCC personnel with access to its site to enable the DCC to conduct a site survey; and

b) set out the charges to apply, which may comprise:

(i) a connection charge for standard connection equipment;

(ii) an additional charge for additional, non-standard connection equipment; and

(iii) a monthly operating charge.

5.7 Upon receipt of the details of the site survey and the charges which will apply, the Testing Participant shall, if it wishes to place an order, notify the DCC accordingly within 30 days of receipt. Any dispute relating to the charges specified by the DCC shall be resolved in accordance with Section M7.2(d).

5.8 Where the Testing Participant notifies the DCC that it wishes to place an order under clause 5.70, the DCC shall provide the connection as soon as is reasonably practicable, and in any event within 6 months of the order being placed.

5.9 The DCC shall provide reasonable notice to the Testing Participant of the planned date of installation of the connection equipment and the establishment of the connection to the test SMETS2+ SM WAN.

5.10 Where the Testing Participant requests a change to the planned date of installation advised by the DCC, that planned date of installation shall be amended, subject to the

Testing Participant agreeing to pay for any additional charges notified by the DCC to cover the additional reasonable costs incurred by the DCC resulting from the change of date. In first providing the connection at the premises, the DCC shall procure that the test SMETS2+ SM WAN connection equipment is installed at the premises and that it is done so in accordance with Good Industry Practice and all applicable Laws and Directives.

5.11 A Testing Participant at whose premises test SMETS2+ SM WAN connection equipment has been installed shall implement and maintain reasonable controls to ensure the physical security of the equipment and ensure that no damage is deliberately or negligently caused to that equipment (save that such a Party may take emergency action in accordance with Good Industry Practice to protect the health and safety of persons or to prevent imminent damage to property).

5.12 The test SMETS2+ SM WAN connection equipment shall (as between the DCC and the Testing Participant) remain the property of the DCC, and shall form part of the DCC System. No Testing Participant shall hold itself out as the owner of such connection equipment, or purport to sell or otherwise dispose of such connection equipment. Such equipment is installed at the DCC's risk and no Testing Participant shall have liability for any loss or damage to the equipment unless and to the extent that such loss or damage arose as a result of that Testing Participant's breach of this Code.

5.13 Where test SMETS2+ SM WAN connection equipment is to be installed at a Testing Participant's premises, the Testing Participant shall for each connection to a testing environment:

a) provide a suitably prepared area, with suitable power feeds prior to the installation of any equipment by the DCC, as specified by the DCC as part of the site survey ahead of an order being confirmed;

b) provide suitable broadband connectivity or a phone connection as advised by the DCC following a site survey or analysis of the Testing Participant's requirements, over which a connection can be established to the data centre for the relevant Region and testing environment, as required, which enables transmission of data between the Testing Participant's test laboratory and the DCC;

c) carry out routine inspection of the equipment supplied by the DCC and notify

the DCC's Service Desk if there appears to be a problem with the equipment; and

d) carry out maintenance of the environment in which the equipment is located.

5.14 Where the DCC is required to install any test SMETS2+ SM WAN connection equipment, the DCC shall take all reasonable steps to avoid interruption to existing services at those premises. Where existing services are interrupted, the DCC shall take all reasonable steps to minimise the length and impact of any interruption and shall ensure that existing services are restored as soon as reasonably practicable.

5.15 Where the DCC has acted in accordance with Good Industry Practice during installation, maintenance and / or removal activities, the DCC shall not be responsible for or liable to the Testing Participant for making good any minor repairs to decoration that have become necessary as a result of those activities.

5.16 The Testing Participant shall be entitled to and shall only use the connection to the test SMETS2+ SM WAN for the purposes of undertaking the tests set out in Section H14.1(c); Section H14.1(d); and Section H14.1(e), and shall not use it for any other purpose.

5.17 Fault Diagnosis, Maintenance and Removal of Test SMETS2+ SM WAN Connection Equipment

5.18 The DCC shall undertake the following in relation to the test SMETS2+ SM WAN connection:

a) provide remote assistance to the Testing Participant to diagnose faults with any connection to the test SMETS2+ SM WAN, including faults with any test SM WAN connection equipment or environment supplied by the DCC;

b) rectify any faults with the connection to the test SMETS2+ SM WAN, including faults with any test SMETS2+ SM WAN connection equipment supplied by the DCC. Where rectification requires replacement of equipment the DCC shall remove any redundant equipment within 30 days of replacement of the equipment. In the event that the DCC fails to remove the equipment within this period, the Testing Participant may dispose of the equipment and shall notify the DCC at least 5 days prior to disposing of the equipment, provided that the DCC shall have the right to remove the equipment prior to the end of that 5 day

period;

c) provide ongoing configuration management of test SMETS2+ SM WAN connection equipment;

d) ensure that the equipment is operated and maintained in accordance with Good Industry Practice, and that it complies with all applicable Laws and Directives; and

e) manage and implement firmware and hardware upgrades associated with the test SMETS2+ SM WAN connection equipment.

5.19 The DCC may modify or replace the equipment where necessary to maintain the operation of the test SMETS2+ SM WAN, provided that such modification or replacement does not materially diminish the performance of the test SMETS2+ SM WAN, and only after giving reasonable notice to the Party of the need to modify or replace the equipment.

5.20 The Testing Participant, at whose premises the test SMETS2+ SM WAN connection equipment is (or is to be) installed, shall provide the DCC with such access to that premises as the DCC may reasonably require in order to allow it to undertake the installation, maintenance or removal of the test SMETS2+ SM WAN connection equipment. The DCC shall ensure that all persons exercising such rights of access do so in compliance with the site rules and reasonable instructions of the Testing Participant.

5.21 Where the Testing Participant ceases to be a Party or notifies the DCC that it no longer requires the connection to the test SMETS2+ SM WAN (on not less than 1 month's prior notice), then the DCC shall within 30 days of that notice period ending or that Testing Participant ceasing to be a Party, remove the test SMETS2+ SM WAN connection equipment from the relevant premises in accordance with Good Industry Practice and all applicable Laws and Directives.

5.22 In the event that test SMETS2+ SM WAN connection equipment is not removed within 30 days, the Testing Participant may dispose of that equipment and shall notify the DCC at least 5 days prior to disposing of the test SMETS2+ SM WAN connection equipment, provided that the DCC shall have the right to remove the equipment prior to the end of that 5 day period.

6 Requirements for Use of DCC Test Labs

6.1 Pursuant to Section H14.9(a), the DCC shall make available the DCC's physical test laboratories to Testing Participants to conduct User Entry Process Tests, Device and User System Tests, Modification Proposal implementation testing and DCC Internal Systems change testing.

6.2 Where a Testing Participant is performing tests in a DCC physical test laboratory, it must comply with any reasonable supplemental terms and conditions that are required by the DCC and notified prior to testing which may include:

a) identification and authorisation of the individual(s) requiring access to the DCC physical test laboratory;

b) requirements to maintain confidentiality of information;

c) policies relating to the acceptable use of the laboratory and equipment; and

d) requirements to follow:

(i) health and safety guidance for test laboratories;

(ii) security guidance; and

(iii) training on use of test laboratories and installation of Devices in the spaces provided.

6.3 Where DCC considers that the Testing Participant has breached any SEC obligations relating to the use of a Testing Service at the physical test laboratory it shall notify the Testing Participant to that effect. The DCC and Testing Participant shall use reasonable steps to rectify the situation. Where DCC considers that the situation has not been rectified the DCC may request that the Testing Participant shall immediately remove its Devices from the Test Lab and the Testing Participant shall comply with such a request. DCC will provide the Testing Participant with:

a) the reason(s) for this instruction; and

b) the steps that must be taken and the evidence required, in order for the Participant to re-commence testing.

6.4 A Testing Participant may dispute the reasons for the instruction in clause a) or b) to the Panel and the DCC and Testing Participant shall comply with any determination.

6.5 Where a Testing Participant wishes to install their own devices in a DCC physical test laboratory, the Testing Participant must provide the following to the DCC prior to installing a device in a DCC physical test laboratory:

a) in the case of SMETS2+ Devices only, where a Testing Participant reasonably believes that devices do not conform to SMETS2+ that any non-compliant aspects are notified to, and agreed with, the DCC (such agreement not to be unreasonably withheld). Supporting information should be provided, including evidence of testing that has been undertaken, which could include the use of GIT for Industry;

b) evidence that all the supplied devices are safe to store, install, operate and decommission. This may be in the form of a statement of compliance with the relevant parts of the CE marking or equivalent; and

c) confirmation that the devices have been produced in accordance with a recognised quality assurance process and a defined testing issue management and configuration management process.

6.6 Where a Testing Participant wishes to install their own Devices in a DCC physical test laboratory, the Testing Participant must:

a) remove devices from the DCC physical test laboratory by 17:00 on the last day of the allocated test slot; and

b) comply with any other reasonable restrictions notified by the DCC, which the DCC shall notify to a Testing Participant when informing them that their requested test slot is available.

6.7 For the purpose of Section H14.10, storage space requirements for equipment shall be arranged between the DCC and the Testing Participant when making application to use the physical test laboratory. Pursuant to Section H14.10, the DCC will store at its physical test laboratories any number of Devices that a Testing Participant has procured itself that the DCC can reasonably accommodate.

6.8 In relation to testing being undertaken in a DCC physical test laboratory:

a) without prejudice to the DCC's obligations under Section M4 (Confidentiality), each Testing Participant shall take reasonable steps to preserve the confidentiality of the Testing Participant's Confidential Information;

b) no Testing Participant shall attempt to discover, overhear or obtain Data regarding testing being conducted by other Testing Participants in the DCC physical test laboratory; and

c) (without prejudice to (b) above) no Testing Participant shall disclose or use any Data of the DCC or any other Testing Participant that the first Testing Participant discovers, overhears or obtains in the course of using the DCC's physical test laboratory.

7 User Entry Process Tests

7.1 In accordance with Section H14.9, DCC physical test laboratories will house sets of Devices or the DCC shall provide test stubs for SMETS2+ Devices, with a set consisting of:

a) For tests in respect of SMETS2+ Devices:

(i) one Test Communications Hub;

(ii) one Electricity Smart Meter; and

(iii) one Gas Smart Meter.

b) For tests in respect of SMETS1 Devices, two Device Model Combinations that are on the list of Eligible Product Combinations, comprising one of each of the following:

(i) a Communications Hub, an Electricity Smart Meter, a Gas Smart Meter and an IHD; and

(ii) a Communications Hub, an Electricity Smart Meter, a Gas Smart Meter and a SMETS1 PPMID.

7.2 DCC shall allocate a number of spaces in the DCC physical test laboratory, together with Device sets to the Testing Participant, as agreed at the User Entry Process Tests initiation meeting, according to the following allocation schedule:

a) Parties that are Affiliates undertaking UEPT in the User Roles of Import Supplier and / or Gas Supplier will collectively be allocated a total of two SMET2+ Device sets and two SMETS1 Device sets to undertake UEPT in those User Roles;

b) Parties that are Affiliates undertaking UEPT in the User Role of Export Supplier will collectively be allocated a total of two SMETS2+ Device sets and two SMETS1 Device sets to undertake UEPT in that User Role;

c) Parties that are Affiliates undertaking UEPT in the User Roles of Electricity Distributor and / or Gas Transporter will collectively be allocated a total of two SMETS2+ Device sets and two SMETS1 Device sets to undertake UEPT in those User Roles. Where Parties that are Affiliates hold Electricity Distribution Licences and/or Gas Transportation Licences in different Regions, in the case of

SMETS2+ Device sets, such Affiliates shall be offered on request two Device sets collectively in relation to each Region; and

d) Parties that are Affiliates undertaking UEPT in the User Role of Other User will collectively be allocated a total of two SMETS2+ Device sets and two SMETS1 Device sets to undertake UEPT in that User Role.

7.3 The Device sets allocated for the conduct of User Entry Process Tests shall not be used for other testing without the agreement of DCC, such agreement not to be unreasonably withheld.

8 Device and User System Tests

8.1 Each Party is eligible to undertake Device and User System Tests once the following entry criteria have been achieved:

a) for a Testing Participant conducting the user system element of Device and User System Testing:

confirmation from the DCC that the Testing Participant has successfully completed SREPT and UEPT for the User Role(s) that they intend to participate in when undertaking User System Testing.

b) for a Testing Participant conducting the device testing element of Device and User System Testing, either:

(i) confirmation from the DCC that the Testing Participant has successfully completed SREPT and UEPT for the User Role(s) that they intend to participate in when undertaking Device Testing; or

(ii) if the Testing Participant is not eligible to conduct UEPT:

(A) demonstrate to the DCC that it is capable of sending Service Requests and receiving Service Responses in accordance with the DCC User Interface Specification by establishing a DCC Gateway Connection and performing a DUIS Connectivity Test, (as defined in the Common Test Scenarios Document); and

(B) provide evidence to the DCC that all Service Requests can be generated in accordance with the DCC User Interface Specification; the form of this evidence may include test results and will be agreed on an individual basis between the DCC and each Testing Participant.

8.2 Where agreement cannot be reached under clause 8.1, the Testing Participant may dispute the reasons for disagreement to the Panel under Section H14.16.

8.3 For the purpose of user system testing with SMETS2+ Devices, the DCC shall provide upon request Device(s) or Test Stubs, as provided for in Section H14.9. In respect of user system testing with SMETS1 Devices, the DCC shall, at a minimum, provide Device Model Combinations upon request for use in a DCC laboratory that consists of

two Device Model Combinations that are on the list of Eligible Product Combinations comprising one of each of the following:

a) a SMETS1 Communication Hub, a SMETS1 Electricity Smart Meter, a SMETS1 Gas Smart Meter, and a SMETS1 IHD; and

b) a SMETS1 Communication Hub, a SMETS1 Electricity Smart Meter, a SMETS1 Gas Smart Meter, and a SMETS1 PPMID.

The DCC shall take all reasonable steps to provide all of the Device Model Combinations that are on the list of Eligible Product Combinations for use in testing, and to enable a Testing Participant to select the particular Device Model Combination(s) that it uses in testing, subject to the DCC being able to source the Device Model Combinations.

8.4 As set out in Section H14.10, a Testing Participant may supply its own Device(s) provided prior agreement has been obtained from the DCC and providing that the Device(s) complies with the following:

a) the Device(s) can reasonably be accommodated in the space allocated; and

b) the Device(s) meet the criteria set out in clause 6.5, were they to be installed in a DCC physical test laboratory.

c) In the case of SMETS1 Devices, the Device Model Combination is on the list of Eligible Product Combinations. Unless agreed otherwise:

d) each Testing Participant shall be responsible for ordering from the DCC the SMETS1 Communications Hubs, Test Communications Hubs and Smart Meters, IHDs, SMETS1 PPMIDs or Test Stubs for testing that it wishes the DCC to provide and installing them in the space allocated, as well as for their removal at the end of the testing slot;

e) any other physical interaction with the Devices shall be the responsibility of that Testing Participant and in accordance with any other reasonable instructions notified to the Testing Participant by the DCC.

8.5 The following alerts may be generated by SMETS2+ Devices or, as necessary, Test Stubs and Test Communications Hubs from within a DCC physical test laboratory:

a) GSME – Low Battery Capacity (GBCS reference 0x8F1F)

b) ESME / GSME Only: Trusted Source Authentication Failure (GBCS reference 0x8F3D)

c) Supply Armed (GBCS reference 0x8F32);

d) Polyphase ESME – Voltage Alert (GBCS reference 0x8005)

e) Device Joined SMHAN (GBCS reference 0x8183);

f) Average RMS Voltage above Average RMS Over Voltage Threshold (current value over threshold, previous value below threshold) (GBCS reference 0x8002);

g) Future - date HAN Interface Command Successfully Actioned (GBCS reference 0x8F66);

h) Supply Outage Restored (GBCS reference 0x8F35);

i) Supply Outage Restored – Outage >= 3 minutes (GBCS reference 0x8F36);

j) Device Identity Confirmation (DUIS reference N16);

k) Schedule removal because of CoS (DUIS reference N17);

l) Device CoS (DUIS reference N27); and

m) PowerOutageEvent (DUIS reference AD1).

8.6 The DCC will support the generation of the following alerts, upon Test Participant request, in relation to SMETS1 Devices within a DCC physical test laboratory:

a) Unauthorised Physical Access: Tamper Detect (SMETS1 Supporting Requirements reference 0x8F3F))

b) Supply Armed (SMETS1 Supporting Requirements reference 0x8F32);

c) SMETS1 Average RMS Voltage above Average RMS Over Voltage Threshold (SMETS1 Supporting Requirements reference 0x8F40);

d) Device Identity Confirmation (DUIS reference N16);

e) Schedule removal because of CoS (DUIS reference N17);

f) Device CoS (DUIS reference N27);

g) SMETS1 Service Provider Alert (DUIS reference N55); and

h) SMETS1 Service Provider Provision of prepayment top-up UTRN (DUIS reference N56).

8.7 Additional alerts or response codes required may also be generated by the Testing Participant when using Smart Meters, SMETS1 Communications Hubs and Test Communications Hubs within a DCC physical test laboratory. However, further alerts may only be generated where they do not require physical interaction with the Devices or a change to the power supply in the DCC physical test laboratory, or where the DCC has given prior agreement and the actions comply with Health and Safety and any other reasonable instructions of the DCC.

8.8 When undertaking Device and User System Testing, the DCC and each Testing Participant shall take reasonable steps to comply with the timetables set out in Table 1 and Table 2 in clause 8, or another timetable reasonably agreed.

Table 1, below, sets out a high-level timetable for initiating testing. In the From and To columns, where an item is relevant to test laboratories, either "Remote Lab" or "DCC Lab" is shown, to clarify whether it relates to Testing Participants using Remote Test Labs or DCC physical test laboratories (or both).

Ref	By When	Action	From	To	Information / Action Required	Method
1a	See lead times described in the Guide for Testing Participants	Order equipment and DCCKI Test Certificate required to commence testing specifying which environment. Note a separate DCCKI Test Certificate will be required for each test environment	Testing Participant (Remote Lab)	DCC	This could include ordering • Remote SM WAN equipment to connect Remote Lab to CSP test system (SMETS2+ only) • DCC Gateway Connection • Test Communications Hubs (SMETS2 + only)	Via DCC Service Desk
1b			Testing Participant (DCC Lab)	DCC	This could include ordering • DCC Gateway Connection	Via DCC Service Desk
2	See lead times agreed with Device manufacturer (or with DCC if Devices	Order Devices required to commence testing, including	Testing Participant (Remote Lab + DCC Lab)	Meter Manufacturer (or DCC)	Order Devices	Via Meter Manufacturer or via DCC Service Desk

Ref	By When	Action	From	To	Information / Action Required	Method
	provided by DCC)	supply of certificates				
3	40 working days (or where less, as much prior notice as is reasonably practicable, as per H14.8) before Participant intends to commence testing[1]	Notify DCC of intention to commence testing specifying which environment. Subject to potential later constraints and agreement with DCC it may be possible to change the specified environment during the 40 Working Day period	Testing Participant (Remote Lab + DCC Lab)	DCC	Date to commence testing, whether testing to be conducted in DCC physical test laboratory (and which) or in remote test lab.	Email
4	30 Working Days before Participant intends to commence testing	Test Initiation Meeting	Testing Participants (Remote Lab + DCC Lab)	DCC	Entry criteria, as described in clause 8.1, evidenced. (Meeting offered to all TP's can be declined by TP's who are already testing in End to End)	Meeting
5	20 Working Days prior to the start of testing	Publish Schedule of available test slots in DCC physical test laboratories	DCC		Schedule – which will be maintained on an enduring basis	DCC SharePoint
6	15 Working Days prior to the start of Device and User System Testing	Health/safety & other CSP Lab training	DCC	Testing Participant (DCC Lab)	DCC to deliver training as described in clause 6.2. Method of training to be agreed.	As set out in Guide for Testing Participants
7	No later than 10 Working Days prior to the start of testing	Provide test tool to participant to record Testing Issues	DCC	Testing Participant (Remote Lab + DCC Lab)	Testing Issue Management Tool	
8	No later than 5 Working Days	Complete Readiness Verification	Testing Participant	DCC	Completed Quality Gate Checklist, see section entitled	Email

[1] This notification can be given before a Testing Participant completes UEPT. The Testing Participant may commence User System/Device Testing immediately upon completing UEPT, providing that 40 working days have elapsed since giving notice.

Ref	By When	Action	From	To	Information / Action Required	Method
	prior to the start of testing		(Remote Lab + DCC Lab)		'Checklist' in Guide for Testing Participants.	
9	No later than 2 Working Days prior to the start of testing	Confirm criteria in Quality Gate Checklist met or request further preparatory work	DCC	Testing Participant (Remote Lab + DCC Lab)	Quality Gate Checklist If DCC requests further preparatory work, it may be necessary to release the test slot and reschedule the testing, and Testing Participant to repeat step 8.	Meeting
10a	1st Day of testing	Perform DUIS connectivity test, as defined in Common Test Scenarios Document, if necessary, and commence testing	Testing Participant (Remote Lab)		In accordance with terms and conditions provided by DCC.	
10b		Unless otherwise agreed install Devices, and commence Testing	Testing Participant (DCC Lab)			
11	Last day of testing	Unless otherwise agreed uninstall Devices from DCC test laboratory	Testing Participant (DCC Lab)		Terms and conditions required by DCC	

Table 1 - Timetable for test initiation

Table 2, below, sets out the timetable to be followed by DCC and each Testing Participant on a monthly basis to enable scheduling of Testing Participants into a DCC physical test laboratory.

Ref	By When	Action	From	To	Information Required	Method
1	15th of each month (or previous working day)	Request test slot[2] specifying which environment	Testing Participant (CSP Lab)	DCC	Date of commencing test slot, number of meter Devices sets / DMCs to be tested which DMCs to be tested and duration of testing.	Email
2	First working day after 15th of each month	Publish test slot details	DCC	Testing Participant (CSP / DCC Lab)	Confirm that requested test slot is available (for slot commencing following month) or suggest alternative.	Email

[2] Note that test slots commence on the first working day of each month. Notice must be given by the 15th of a month (or the previous working day if 15th is not a working day), to obtain a slot commencing the following month.

Ref	By When	Action	From	To	Information Required	Method
3	Within 5 working days of DCC's publication of test slot	Confirm intention to use test slot in DCC physical test laboratory	Testing Participant (CSP Lab)	DCC		Email
4	Periodically, as required.	Update test schedule and republish	DCC	Testing Participants (CSP Lab)	Start and duration of test slot and number of spaces for Device sets	DCC SharePoint

Table 2 - Timetable for test slot scheduling

9 SMETS1 Pending Product Combinations Tests

9.1 A Testing Participant can request the DCC to execute SMETS1 Pending Product Combinations Tests (hereafter referred to as a "**PPCT**") to one or more combinations of SMETS1 Device Models (hereafter referred to as "**DMCs**") and communication services provider that are not at that time on the list of Eligible Product Combinations.

9.2 When requesting PPCT, the Testing Participant shall provide the DCC with all data pertaining to the DMC that is reasonably required and requested by the DCC, and shall indicate whether it is requesting that the processing of the DMC through PPCT is prioritised due to the DMC arising as a consequence of the need for a firmware upgrade that is required to address a material security vulnerability on an urgent basis. This data reasonably required by the DCC shall include (but is not limited to) Device Models, release notes, Device configuration, user guidance notes, and a nominated contact for the DCC to liaise with during testing for receipt of reports, and associated contact details. When a Testing Participant requests PPCT, subject to clause 9.3, the DCC shall enter the DMC on the list of Pending Product Combinations with a status of 'under assessment'.

9.3 Each Testing Participant that is requesting PPCT shall ensure that it has obtained consent from any relevant Manufacturer for its name to be published in the list of Pending Product Combinations or shall notify the DCC at the time that it is requesting the testing that such information should be treated as confidential in accordance with Section M4 of this Code. In the absence of such a notification, the DCC shall not be required to treat such information as confidential. Where the DCC is required to treat the information as confidential it shall not add the DMC to the list of Pending Product Combinations.

9.4 Following receipt of all of the data that the DCC reasonably requires and requested pursuant to clause 9.2, the DCC shall determine whether or not testing is required and shall notify the Testing Participant accordingly.

9.5 In determining whether or not testing is required, the DCC shall take into account the following:

a) whether the DMC proposed for testing is on the list of SMETS1 Eligible Product Combinations; and

b) whether the DMC proposed is substantively equivalent to an existing DMC that is on the list of SMETS1 Eligible Product Combinations.

9.6 Where the DMC proposed for testing is on the list of SMETS1 Eligible Product Combinations or where, in the DCC's opinion the DMC proposed for testing is substantively equivalent to a DMC that is on the list of SMETS1 Eligible Product Combinations, the DCC shall notify the Testing Participant accordingly and PPCT shall be deemed to have been successfully completed for the purposes of this Code. The DCC shall:

a) where the DCC is of the opinion that the DMC proposed for testing is substantively equivalent to a DMC that is on the list of SMETS1 Eligible Product Combinations, ensure that it documents within its organisation its evidence and/or rationale to support this position;

b) provide a PPCT completion certificate to the Testing Participant; and

b) subject to clause 9.3, update the list of Pending Product Combinations to reflect the DMC testing status as 'completed' and indicating that the DMC has been entered on the list of SMETS1 Eligible Product Combinations.

9.7 Where the DCC determines that testing is required, the DCC shall notify the Testing Participant. Following receipt of the DCC's notice, the Testing Participant shall provide the DCC with:

a) their proposed start date for testing; and

b) the date on which they will provide the DCC with two sets of the DMC to be installed by the DCC for testing.

The proposed start date for testing shall be at least 25 Working Days after the date on which the Testing Participant informs the DCC of its proposed date. The date on which the Testing Participant shall provide the DMCs to the DCC for PPCT shall be at least 5 Working Days prior to the Testing Participant's proposed start date for testing.

9.8 Following the receipt of the proposed start date for testing, the DCC shall provide confirmation to the Testing Participant of the start date and the date on which the DMCs will be provided to the DCC (except where the proposed dates do not meet the minimum notice periods set out in clause 9.7 in which case the DCC shall ask the Testing Participant to re-submit their proposed dates). In doing so the DCC shall take all reasonable steps to accommodate the two dates set out in clause 9.7, where this is

not possible the DCC shall select start dates that are as soon as reasonably practicable thereafter.

9.9 Following receipt of the DMC device sets from the Testing Participant, the DCC shall install the component Devices that make up the DMC in the DCC test laboratory, in order to facilitate the commencement of testing on the agreed start date.

9.10 The DCC shall take all reasonable steps to commence the tests on the start date and complete them as soon as is reasonably practicable. Where:

a) the DCC is unable to commence the tests on the start date; or

b) where the Testing Participant is unable to provide the DMC device sets by the agreed planned date,

the DCC shall discuss with the Testing Participant and shall notify a revised date(s), which shall be the earliest available date(s) in the DCC's testing schedule.

9.11 Upon successful completion of testing of the DMC the DCC shall:

a) provide a PPCT completion certificate to the Testing Participant;

b) return the test devices provided to the DCC to the Testing Participant; and

c) subject to clause 9.3, update the list of Pending Product Combinations to reflect the DMC testing status as 'completed' and indicating that the DMC has been moved to the list of SMETS1 Eligible Product Combinations.

9.12 Where testing has not successfully completed, the DCC shall:

a) inform the Testing Participant in a summary report which sets out:

(i) the reason(s) why the DMC testing has been suspended as either:

(A) change is required to the DMC to enable successful completion of testing; or

(B) a material change to the DCC Systems and/or modification to this Code need to be made in respect of the combination of SMETS1 Device Models to enable successful completion of testing.

(ii) the details of all test results which are not an expected outcome, and:

(A) where a Testing Participant has provided a production device for testing, the DCC shall provide a report which shall contain logging of the traffic on the DCC systems;

(B) where a Testing Participant has provided devices capable of revealing the Zigbee and network link keys, the DCC shall provide a report which shall contain logging of the traffic on the DCC systems and Zigbee logs of HAN traffic; and

b) subject to clause 9.3, update the list of Pending Product Combinations to reflect the DMC's testing status as 'suspended'.

9.13 Where the information provided by the DCC pursuant to Clause 9.12 indicates that the inability to successfully complete testing arose as a consequence of an issue(s) with the Device(s) provided for testing, a Testing Participant may submit a revised DMC for testing once the issue(s) has been resolved. In so doing, the Testing Participant shall provide a release note that confirms that the appropriate fixes have been applied and tested successfully, and shall follow the process for requesting PPCT as set out in this Clause 9. The DCC shall then update the list of Pending Product Combinations to reflect the testing status of the original DMC as 'withdrawn'.

9.14 Where the information provided by the DCC pursuant to Clause 9.12 (i) (B) indicated that that in order for testing to successfully complete, a material change was required to the DCC Total System or a SEC Modification was required, the Testing Participant shall be entitled to resubmit the DMC for testing where the required change or Modification has been made and where it wishes to resubmit shall follow the process for requesting PPCT set out in this Clause 9.

SMETS1 Pending Product Combinations Tests: Fast Track Process

9.15 Where, for a firmware upgrade required to address a material security vulnerability, a Testing Participant requests that the processing of a DMC through PPCT is prioritised in order to achieve their proposed rectification date for the vulnerability, the DCC shall contact the Code Administrator to confirm that the security vulnerability has been notified to the Security Sub-Committee in accordance with Section G3.18(c) of the Code. The DCC shall also inform the Code Administrator of when (subject to Clause 9.10) processing of the DMC through PPCT would complete if it is not prioritised and,

if the proposed rectification date of the vulnerability is earlier than this date, when it would be expected to complete if it is prioritised.

9.16 The Code Administrator, on behalf of the Security Sub-Committee, shall confirm to the DCC whether:

(a) the vulnerability has been reported to the Security Sub-Committee;

(b) the Security Sub-Committee Chair considers the vulnerability to be material; and

(c) whether the Security Sub-Committee Chair considers that the materiality of the vulnerability warrants the processing of the resultant DMC through PPCT on an urgent basis.

9.17 Where, pursuant to Clause 9.16, it is confirmed that the Security Sub-Committee considers that the DMC should be processed through PPCT on an urgent basis, then the DCC shall so prioritise the processing of the DMC. Where this (despite the DCC taking reasonable steps to avoid this being the case) results in previously notified commencement dates for the testing of other DMCs in PPCT needing to change, the DCC shall notify the affected Testing Participant(s). In determining the revised dates, the DCC shall, where reasonably practicable, take any affected Testing Participant's views of those dates into account.

10 DCC Internal System Change Testing

10.1 The DCC shall publish a plan notifying changes to the DCC Internal Systems which includes a reasonable period for Parties and/or RDPs to be involved in any testing of the change to the DCC Internal Systems prior to its implementation, as provided for in Section H8.8(c).

10.2 DCC shall provide Parties and/or RDPs the opportunity to conduct testing of the change to the DCC Internal System remotely and / or in DCC physical test laboratories.

10.3 DCC and each Party or RDP wishing to conduct testing of changes to DCC Internal Systems shall take reasonable steps to comply with the timetables set out in Table 1 and Table 2 in clause 8 where required the type of testing being performed, unless determined otherwise in accordance with the DCC Release Management Policy.

11 Modification Proposal Implementation Testing

11.1 Where the Panel determines, pursuant to Section H14.35, persons eligible to undertake implementation testing for a Modification Proposal, the DCC shall facilitate their participation remotely and / or using DCC physical test laboratories, unless determined otherwise by the Panel.

12 Use of Testing Issue Management Tool

12.1 Where DCC makes available a Testing Issue Management Tool to a Testing Participant and the Testing Participant elects to use such tool, the DCC and each Testing Participant shall comply with all reasonable terms set out by the DCC relating to the use of the Testing Issue Management Tool.

12.2 The DCC shall notify any terms relating to the use of the Testing Issue Management Tool to each Testing Participant prior to use of the Testing Issue Management Tool in support of any period of testing by a Testing Participant.

12.3 The Testing Issue Management Tool terms may include, without limitation:

a) operational security;

b) authentication and access control;

c) boundary protection and interfaces;

d) protecting data at rest and in transit;

e) user and administrator separation of data;

f) information relating to permitted users; and

g) testing security.

Definitions & Interpretation	
GIT for Industry	means a test tool provided by DCC to validate implementation of GBCS by a Device.
Quality Gate Checklist	means a checklist document used to support assessment whether criteria have been met.
Testing Issue Management Tool	means a test management tool that has the ability to log and track Testing Issues.