

# Smart Metering Implementation Programme

## Guide for Testing Participants

### Testing Prior to DCC Live (Excluding Pre-UIT)

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# 1 Introduction

## 1.1 Background

The Government's vision is for every home in Great Britain to have smart energy meters by 2020. To achieve this vision, the Department of Energy and Climate Change (DECC) has created the Smart Metering Implementation Programme (SMIP). The SMIP is a customer-focused, energy supplier-led approach to the roll-out of an estimated 53 million smart electricity and gas meters to homes and small businesses across Great Britain.

The role of the Data and Communications Company (DCC) is to provide the shared infrastructure necessary for smart meters to operate consistently for all consumers, regardless of their energy supplier. This infrastructure will offer new opportunities for consumers to receive energy services and to reduce their energy usage, as well as provide smart metering data to network operators in support of smart grids.

The DCC is required by the Smart Energy Code (SEC) to provide Testing Services and, amongst other things, to publish on the DCC Website a Guide for Testing Participants describing which persons are eligible for which Testing Services, and on what basis (including any applicable Charges).

This document relates to the following Transitional Test Stages: Systems Integration Testing Phase (SIT); Interface Testing Stage (IT) and End-to-End Testing Stage (E2E). It is focused on providing the information required to participate in the various test phases and stages and should be read in conjunction with the relevant Test Approach Documents for each stage.

## 1.2 Status of this Document

The DCC is required under Section H14.3 of the SEC to publish a Guide for Testing Participants describing which persons are eligible for which Testing Services, and on what basis (including any applicable Charges). This version of the guide provides clarity regarding aspects of the testing service provided during Transitional Testing. This is not a SEC Subsidiary Document.

*[Note: the provisions within this document may be subject to change to accommodate changes to the Test Approach documents, as a result of ongoing discussions with the Service Providers, or for other reasons. These provisions are identified in italics throughout the document]*

## 1.3 Updates to this Document

This document will be updated and re-published as necessary. Should any updates be required please contact [phillip.twiddy@smartdcc.co.uk](mailto:phillip.twiddy@smartdcc.co.uk).

## 1.4 Related Documents

<i>Document</i>	<i>Location</i>
<i>Smart Energy Code</i>	<a href="#">SEC Website</a>
<i>Systems Integration Testing Approach</i>	<a href="#">DCC Website &gt; SITA</a>
<i>SMKI &amp; Repository Testing Approach</i>	<a href="#">DCC Website &gt; SRTA</a>
<i>Interface Testing Approach</i>	<a href="#">DCC Website &gt; ITAD</a>
<i>End-to-End Testing Approach</i>	<a href="#">DCC Website &gt; E2ETAD</a>
<i>Enduring Testing Approach</i>	<a href="#">DCC Website &gt; ETAD</a>
<i>Common Test Scenarios Document</i>	<a href="#">DCC Website &gt; CTSD</a>
<i>SMKI &amp; Repository Test Scenarios Document</i>	<a href="#">DCC Website &gt; SRTSD</a>
<i>Guide for Testing Participants (this document)</i>	<a href="#">DCC Website &gt; Support</a>
<i>Guide to SMKI &amp; Repository Entry Process Tests</i>	<a href="#">DCC Website &gt; SREPT</a>

## 2 DCC Industry Test Services Team

The Industry Test Services Team will support Parties to understand the pre-requisites associated with using the DCC test environments and their obligations when participating in testing.

Initial requests for using test services should be made to the DCC Service Desk with regard to ordering Prototype Communications Hubs and Remote Testing Services. These requests will be forwarded to the Industry Test Services Team. Requests to participate in User Entry Process Testing (UEPT), SMKI & Repository Entry Process Testing (SREPT) and Booking spaces in CSP Test labs should be made directly to the Industry Test Services Team.

The earliest point in time that services can be requested is set out in this document. In summary, these are:

- a) requesting participation in SMKI & Repository Entry Process Testing: 10/08/15
- b) requesting participation in User Entry Process Testing: 9/11/15
- c) ordering Remote Test Lab Services: 2/09/15
- d) provisionally booking a slot in a CSP Test Lab (for End-to-End Testing): 7/12/15
- e) ordering Prototype Communication Hubs for use in a DCC Test Environment: 2/9/15

The Industry Test Services Team will help Parties to:

- understand how to meet the entry criteria associated with different testing activities, including how to demonstrate compliance;
- review Test Artefacts (such as test plans and test scripts);
- ensure that access is provided to the Test Issue Management tool, and that the Party understands how to use it;
- confirm that all entry criteria have been met and issue Approval to Proceed Certificates; and
- review the results of testing and issue Test Stage Completion Certificates (with the exception of End-to-End Testing).

## 3 Systems Integration Testing (SIT)

### 3.1 Description of Test Stage

The purpose of Systems Integration Testing is to ensure that the following aspects of the DCC eco-system are fully integrated and tested together to provide the service that is set out in the Smart Energy Code:

- Data Service Provider Systems
- Communication Service Provider Systems
- SMKI Repository & SMKI Service
- Self-Service Interface
- Service Management Solution
- Parse & Correlate
- DCC Enterprise Systems (including Billing and BI/MI systems)
- Communications Hubs.

SIT also confirms that the DCC systems interoperate with the systems that are provided by the Registration Data Providers (RDPs)

The SIT Approach Document sets out the manner in which the systems will be tested, including the Entry & Exit Criteria that must be met.

### 3.2 Testing Participants

In addition to the DCC, the following categories of testing participant will conduct testing activities in SIT.

#### 3.2.1 Registration Data Providers (RDPs)

RDPs are required to provide data for use in SIT and to execute tests to confirm that they can meet their obligations under the Smart Energy Code. The entry criteria and exit criteria that must be met by the RDPs and the high level test scenarios that must be executed are set out in the SIT Approach Document.

DCC is required under Section T2.3 of the Smart Energy Code, to confirm that each RDP has met the relevant SIT entry criteria prior to the start of SIT. Amongst other things the RDPs will be required to confirm that they have met the security requirements that are set out in the Enduring Test Approach Document. RDPs will also need to follow the requirements of the Enduring Testing Approach Document to gain the necessary Test Certificates (see section 8) – this is, in effect, using the procedures set out in the SMKI Registration Authority Policies and Procedures, with a small number of variations. RDPs will also need to order a DCC Gateway Connection for installation prior to the start of testing during SIT. DCC will manage the establishment of the connection on behalf of RDPs and the costs will be included in the DCC fixed costs.

Xoserve and St Clements Services Ltd (on behalf of gas and electricity RDPs respectively) will provide the data that is required for testing at the start of SIT. *The first point in time at which RDPs will be required to conduct the non-functional testing that is set out in the SIT Approach is the 1 December 2015. These tests include the provision of a full refresh data file. Note: this date may be subject to change as the SIT Solution Test Plan is finalised, and as result of issues that arise during Testing*

A member of the DCC Test Assurance Team will be appointed to each RDP to explain the manner in which its entry criteria will be assessed and the form of evidence that will be required from each RDP. Initial meetings have been conducted

with each RDP in advance of the start of SIT and assessment of the entry criteria will take place 2 weeks before the start of testing during SIT. A further meeting will be conducted 1 month in advance of the start of RDP testing during SIT to ensure that the RDPs understand their test execution responsibilities. Access to the DCC Test Issue Management tool will be provided to each RDP at this point and guidance will be provided to each RDP regarding the use of the tool.

Any RDP that considers that it will not meet the entry criteria by the start of testing during SIT is required to contact the DCC and the SEC Panel as soon as possible.

### **3.2.2 Meter Manufacturers**

DCC has selected Devices for use in SIT through the Device Selection Methodology (DSM) and will agree a delivery schedule for these Devices to the CSP Test Labs. The DCC Device Delivery Project Manager will:

- co-ordinate the delivery of Devices to the CSP Test Labs;
- ensure that the meter manufacturers understand how (and when) to install their meters;
- agree the level of support that is required from each Device manufacturer;
- ensure that each meter manufacturer understands how to raise issues during testing.

### **3.2.3 Other Device Manufacturers**

DCC will use other Devices in SIT (such as HHTs, HCALCS and PPMIDs) if:

- these are made available to DCC before SIT Solution Testing has been completed;
- evidence can be provided that the Device is compliant with the Smart Metering Equipment Technical Specification; and
- using the Devices will not adversely impact the completion of SIT.

Any Device Manufacturer that wishes to submit a Device (other than a gas or electricity meter) to DCC for consideration should contact the DCC Systems Test Assurance Manager. Contact details are available at the end of this document.

## 4 Entry Process Testing (UEPT & SREPT)

Any Party that wishes to communicate with meters via DCC must first become a DCC User. This process includes the requirement for each Party to complete two types of Entry Process Tests:

- a) SMKI & Repository Entry Process Tests (SREPT)
- b) User Entry Process Tests (UEPT).

These entry process tests can be completed in any order. However, both types of tests must be undertaken before the Party can execute tests in the End-to-End Test environment or install meters in customers' premises.

[Note: Although the entry processes must be completed prior to participating in End-to-End Testing, the Party need not first become a DCC User.]

### 4.1 SMKI & Repository Entry Process Tests (SREPT)

The requirement for Parties to conduct SREPT is set out in Section H14 of the Smart Energy Code. Any Party that wishes to conduct SREPT is advised to first read this section of the SEC and the SMKI & Repository Test Scenarios Document (SRTSD) which will be published on the DCC website. [Draft copies of this document can be obtained from the DCC in advance of formal designation by the Government.] The SRTSD sets out the test scenarios that must be completed by each category of test participant, and the test artefacts that must be produced for review by DCC.

The test scenarios are grouped into tests that may be required for a Party that has access to a DCC Gateway Connection and those required for a Party without access to a DCC Gateway Connection.

Additionally, the tests that must be taken by any Party are determined by the SMKI interfaces and SMKI Repository interfaces that they wish to access, and whether they wish to subscribe for Device and / or Organisation Certificates. It is therefore advised that any Party wishing to conduct SREPT has made these key decisions, which will help to tailor the testing required.

#### 4.1.1 Timing & Costs

The first point in time that SMKI & Repository Entry Process Tests can be executed is 2 November 2015. DCC will notify Parties on its website and via e:mail communication if this date changes.

Parties must provide at least sixty [60] working days' notice to DCC that they wish to undertake SREPT. The process that must then be followed is set out in the SMKI & Repository Test Scenarios Document.

There are no costs associated with the conduct of SREPT, regardless of the point in time when the testing is undertaken and regardless of the category of Party undertaking the tests.

#### 4.1.2 Pre-Requisites

Any Party that intends to communicate with the DCC via a DCC Gateway Connection must first establish that connection<sup>1</sup> prior to commencing SREPT. Parties must also provide confirmation to the DCC that they have complied with the security

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<sup>1</sup> A DCC User Gateway Connection can be ordered via the DCC Service Desk.



requirements laid out in the Enduring Testing Approach Document, which will be published on the DCC website.

Parties must follow the procedures set out in the Enduring Testing Approach Document to verify their organisation and to nominate Senior Responsible Offices and Authorised Responsible Offices for testing purposes. These procedures mimic those set out in the SMKI Registration Authority Policies & Procedures (RAPP) – see section 8 for more information.

Parties must also meet the entry criteria that are set out in SRTSD. These require that all relevant test artefacts (set out in the SRTSD) are provided to DCC for review and acceptance, and that the Party has sufficient resources to conduct testing.

### 4.1.3 Initiating the Process

The Industry Test Services Team should be contacted at least sixty (60) working days in advance of the date upon which a Party wishes to commence SREPT. The Industry Test Services Manager will appoint an Industry Test Services Analyst to support the Party throughout the SREPT process by:

- ensuring that the Party understands its obligations in conducting SREPT and the evidence that will be required to demonstrate compliance with the entry and exit criteria;
- providing test data for use by the Party;
- reviewing the test artefacts that are produced by the Party prior to the commencement of testing;
- providing access to the DCC Test Issue Management tool and ensuring that the Party understands how to use it;
- confirming that the Party has met all the SREPT Entry Criteria; and
- reviewing the results of testing and confirming that the Party has met all the SREPT exit criteria.

The first point in time at which a Party can contact the Industry Test Services Team to initiate the process is 10 August 2015.

### 4.1.4 Completing SREPT

The Exit Criteria for completing SREPT are set out in the SMKI & Repository Test Scenarios Document. These require that all test scenarios executed are passed successfully (i.e. within issue thresholds), that test results are recorded for review by DCC and that an agreed Work-Off Plan is provided where necessary.

The DCC will produce a Test Completion Certificate when the testing evidence has been reviewed and will notify the SEC Panel. The Party can refer the decision of DCC to the SEC Panel if it considers that it has passed SREPT, and the DCC disagrees. The Party can further appeal the matter to the Secretary of State<sup>2</sup> if it disagrees with the decision of the SEC Panel. DCC will provide a copy of the Testing Issue Resolution and Disputes Process to the Party if DCC considers that the Party has not demonstrated that it has successfully completed SREPT.

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<sup>2</sup> In May 2015 DECC confirmed that either the Secretary of State, or such other person as the Secretary of State would hear appeals relating to entry criteria during SMKI and Repository Testing. This only applies during Transitional testing.

## 4.2 User Entry Process Testing (UEPT)

The requirement for Parties to conduct UEPT is set out in Section H14 of the Smart Energy Code. Any Party that wishes to conduct UEPT is advised to first read this section of the SEC and the Common Test Scenarios Document (CTSD) which will be published on the DCC website. [Draft copies of this document can be obtained from the DCC in advance of formal designation by the Government.] The CTSD sets out the test scenarios that must be completed by each category of test participant, and the test artefacts that must be produced for review by DCC.

### 4.2.1 Timing & Costs

The first point in time that UEPT can be executed is at the start of the Interface Testing Stage, which, in accordance with the Joint Industry Plan, is the 1<sup>st</sup> February 2016. DCC will notify Parties on its website and via email communication if this date changes. UEPT can also be conducted at any point during the End-to-End Testing Stage and thereafter during the Enduring Testing Stage, although it should be noted that:

- Large Supplier Parties must make all reasonable endeavours to be ready to commence UEPT at the start of the Interface Testing Stage.
- Network Parties must make all reasonable endeavours to be ready to commence UEPT at the start of the Interface Testing Stage if directed to do so under Section T3.21 of the SEC.

Any Large Supplier Party or Network Party that will not be ready to commence UEPT at the start of the Interface Testing Stage must notify the DCC and SEC Panel as soon as possible.

Parties are required to provide 5 months non-binding notice of intention to conduct UEPT to the Industry Test Services Team and are required to provide sixty [60] working days' notice of the date upon which they want to conduct UEPT. The process that must then be followed is set out in the CTSD

There are no costs associated with the conduct of UEPT, regardless of the point in time when the testing is undertaken and regardless of the category of Party undertaking the tests.

### 4.2.2 Principles upon which UEPT will be conducted

UEPT is executed in accordance with the following principles:

- a) UEPT is conducted across the DCC User Gateway Connection
- b) UEPT must be completed in respect of each User Role in which a Party wishes to operate. These include: Import Supplier, Export Supplier, Gas Supplier, Registered Supplier Agent, Electricity Distributor, Gas Transporter and Other User;
- c) tests are conducted against Devices that are installed in CSP Test Labs by DCC. These Devices will be those with which DCC successfully completes Systems Integration Testing. For the avoidance of doubt, UEPT cannot be conducted in a remote test lab, or by using Devices that are selected by any Party other than DCC;
- d) each Network Party will be allocated one Device set (comprising 1 Communications Hub, 1 electricity meter and 1 gas meter) and Energy Suppliers will be allocated 15 Device sets. Other Participants will be allocated 5 Device sets per User Role.

- e) UEPT will be conducted against meter test stubs if no metering Devices are available. However, the DCC will first provide evidence that the test stubs are fit for purpose;
- f) DCC will only introduce meters into UEPT after the start of the Interface Testing Stage if it obtains approval to do so from the SEC Panel and has first undertaken testing to prove that the meters are fit for purpose;
- g) DCC will provide confirmation to Parties conducting UEPT that the Devices have passed all relevant tests during SIT and are suitable for the purposes of testing;
- h) Parties will be scheduled in a CSP region by DCC. All reasonable endeavours will be made to schedule Parties in regions of their choice. The principles that will apply if one CSP is ready to commence Interface Testing in advance of another are set out in the Interface Testing Approach Document which is available on the DCC website;
- i) Parties are only required to undertake UEPT in one CSP region. However Parties can undertake the tests in more than one CSP region if they choose to do so;
- j) Parties will be required to 're-test' specific DUIS messages if these messages change as a result of wider testing activities, or if new DUIS messages are created;
- k) Parties may conduct UEPT on an early version of Parse & Correlate on the condition that testing is completed with the version of Parse & Correlate that is used by the DCC in live operation; and
- l) Parties' staff will not attend CSP Test Labs in order to conduct UEPT, with the exception of the Install & Commission Test Scenario, for which their staff will need access to the meters. The DCC Industry Test Service Team will agree the date upon which the Party can attend the CSP Test Lab and will ensure that the Party is aware of all necessary pre-requisites.

### 4.2.3 Additional Test Scenarios during Interface Testing

Parties that are conducting UEPT during the Interface Testing Stage will be invited to conduct some additional tests to support DCC's testing activities. These include:

- volume Test
- change of Supplier Test
- non-User Change of Supplier Test

Further details including the relevant Test Scenarios can be found in the Interface Testing Approach Document.

### 4.2.4 Pre-Requisites

Any Party wishing to undertake UEPT must first establish a DCC Gateway Connection and provide confirmation that it has complied with the security requirements that are set out in the Enduring Testing Approach Document. This will include completion of the verification process as set out in the DCC Key Infrastructure (DCC KI) Registration Authority Policies and Procedures and obtaining the necessary DCC KI Certificates/Keys.

It must also have met the entry criteria that are set out in the CTSD. These require that the Party wanting to conduct UEPT is a SEC Party and has identified the User Roles against which it wants to execute tests. All relevant test artefacts that are required by the CTSD must have been produced and reviewed and accepted by the DCC Industry Test Services Team. This includes the production of a Requirements Traceability Matrix (RTM) which has been reviewed and agreed by the DCC showing how the tests the Party is planning to execute relate to the test scenarios.

The Party must also provide evidence that sufficient test resources and a suitable test environment are available.

#### 4.2.5 Initiating the Process

The Industry Test Services Team should be contacted at least sixty (60) WD in advance of the date upon which the Party wishes to commence UEPT. The Industry Test Services Manager will appoint an Industry Test Services Analyst to support the Party throughout the UEPT process by:

- ensuring that the Party understands its obligations in conducting UEPT;
- providing test data for use by the Party
- agreeing the evidence that will be required to demonstrate compliance with the entry and exit criteria;
- reviewing the test artefacts that are produced by the Party prior to the commencement of testing;
- providing access to the DCC Test Issue Management tool and ensuring that the Party understands how to use it;
- confirming that the Party has met all the UEPT Entry Criteria; and
- reviewing the results of testing and confirming that the Party has met all the UEPT exit criteria.

The first point in time at which a Party can contact the Industry Test Services Team to initiate the process is 9 November 2015.

#### 4.2.6 Conducting UEPT

Prior to conducting UEPT, the Party must conduct a DUIS connectivity test to verify that the Testing Participant's system can connect to the DCC. The DUIS Connectivity Test demonstrates that the Testing Participant's system is capable of successfully sending Service Requests to and receiving Acknowledgements from the DCC System.

The DUIS Connectivity Test consists of three test scenarios: one for each web service which connects the Testing Participant to the DCC. This comprises:

- sending a DCC-only Service Request and receiving an Acknowledgement / Response;
- sending a critical pre-command and receiving the transformed message; and
- sending a non-critical Service Request and receiving an Acknowledgement.

The relevant Test Scenarios can be found in the Interface Testing Approach Document which can be found on the DCC website.

After completing the Connectivity Test, the Party can then conduct the following tests:

**Install & Commission:** This tests the Party's ability to install and commission Devices. Service Requests are set out in a specific order within the test scenario in the CTSD for the purposes of proving the Install and Commission process.

**DUIS Service Requests:** Each Party is required to test Service Requests relevant to each User Role for which it is undertaking UEPT. The full list of Service Requests is set out by User Role in section 8.2 of the CTSD.

**Self-Service Interface (SSI):** Each Party must produce and execute Test Scripts that demonstrate that it can access (but not use) the SSI system to the extent permitted by its User Role as defined in Section H8.15 of the SEC.

Test Scenarios for each of the Install & Commission and DUIS Service Requests can be found in the CTSD.

The form of evidence provided will be agreed with DCC at the Test Initiation Meeting.

#### **4.2.7 Completing UEPT**

The Exit Criteria for completing UEPT are set out in the CTSD. These require that all test scenarios executed are passed successfully (i.e. within issue thresholds), that test results are recorded for review by DCC and that an agreed Work-Off Plan is provided where necessary.

The DCC will produce a Test Completion Certificate when the testing evidence has been reviewed and will notify the SEC Panel.

The Party can refer the decision of DCC to the SEC Panel if it considers that it has passed UEPT, and the DCC disagrees. DCC will provide a copy of the Testing Issue Resolution and Disputes Process to the Party if DCC considers that the Party has not demonstrated that it has successfully completed the UEPT.

## 5 End-to-End Testing

### 5.1 Description of Test Stage

The End-to-End Test stage provides the first opportunity for Parties to conduct Device and User System Tests against the DCC – i.e. to test the interoperability of meters and back office systems against the DCC.

These tests can be undertaken against meters that are installed in a CSP Test Lab, or against meters that are installed in a remote test lab which has been established in a location chosen by the Party. Parties can use their own meters during end-to-end testing, or can ask the DCC to obtain meters on their behalf. The meters that are obtained by the DCC will be identical to those that are used during UEPT.

Device and User Systems Tests can be conducted during the End-to-End Testing Stage on a voluntary basis. Parties must meet certain entry criteria before they can conduct these tests, but there are no associated test exit criteria and DCC will not verify that the tests have been executed correctly.

Entry Process Tests can also be conducted in the End-to-End Testing environment and the conditions that are set out in Section 4 of this document apply in full to these tests.

Further information on the End-to-End Testing Stage can be obtained from the End-to-End Testing Approach Document which is available on the DCC website. It is recommended that all Parties read this document before participating in the End-to-End Testing.

### 5.2 Availability of Test Service

The End-to-End Testing Stage will be available at the commencement of the Interface Testing Stage, as agreed by the SEC Panel.

Therefore in accordance with the Joint Industry Plan, the earliest date upon which the End-to-End Testing Stage will be available is the 1<sup>st</sup> February 2016.

#### 5.2.1 Support Hours

The DCC will make the test environment available and provide a test support service from 08:00 to 18:00 on each working day.

The test environment (including Remote Test Labs) may be used for testing outside these hours, but will be unsupported. Should an issue occur during the night or weekend, then work to resolve it will not commence before 08:00 on the following working day. *The environment will be unavailable during scheduled maintenance windows, which will be on a fixed schedule during the period of Interface Testing and on a variable schedule thereafter.*

Access to the CSP Test Labs will be possible 08:00-18:00 during each working day.

### 5.3 Eligible Test Participants

The following categories of Parties can use the End-to-End Testing Environment subject to meeting the relevant entry criteria.

- supplier Parties and Network Parties that wish to undertake Device and User System Tests;
- other User Parties that wish to undertake User System Tests;



- Parties that wish to undertake Entry Process Testing;
- Device Manufacturers, Test Houses and Scheme Operators that wish to undertake Device Testing, if these organisations have first become SEC Parties;
- any other Party that has a valid reason to perform tests in the End-to-End Testing environment.

Note: Devices that are placed in a CSP Test Lab must be 'driven' by sending commands to the Devices through a User Gateway Connection to the DSP.

## 5.4 Pre-Requisites

### 5.4.1 Entry Process Testing

The pre-requisites for conducting Entry Process Tests are set out in Section 4 of this document – and these apply equally to the conduct of SREPT and UEPT during the End to End Testing Stage.

### 5.4.2 Device & User System Testing: Supplier & Network Parties

These Parties must establish a DCC Gateway Connection; follow the procedures set out in the Enduring Testing Approach Document to verify their organisation and to nominate Senior Responsible Offices and Authorised Responsible Offices for testing purposes; and successfully complete UEPT and SREPT prior to participating in the End-to-End Testing environment.

The Parties must also:

- a) order Communications Hubs for Testing;
- b) obtain meters for use in testing;

and if required:

- c) book Testing slots in a CSP Test Lab and meet the pre-requisites associated with participating in a CSP Test Lab (set out below);
- d) order the equipment required to establish a remote test lab.

### 5.4.3 Device Testing – Meter Manufacturer, Test House & Other Eligible Parties

These test participants must establish a means of sending DUIS commands to the meters via the DSP, regardless of whether the meters are located in a CSP Test Lab or in a remote test lab. This will require the Test Participant to establish a DCC Gateway Connection and to first become a SEC Party. DCC Gateway Connections can be ordered via the DCC Service Desk, with a lead time of 90 Working Days for a Low Volume Gateway Connections and 7.5 months for a High Volume Gateway Connections.

The test participants will also be required to complete the procedures to gain Test Certificates (see section 8) set out in the Enduring Testing Approach Document.

The test participants can develop their own DUIS message generator or can purchase a solution (which may already have been tested against DCC) from another organisation e.g. from a technology provider.

Prior to the commencement of testing, DCC will require evidence that the test participant is able to generate Service Requests as set out in DUIS. It must also

demonstrate that it is capable of sending DUIS Service Requests and receiving Service Responses by establishing a DCC Gateway Connection and performing a DUIS Connectivity Test.

The evidence of compliance required by the DCC will be agreed on an individual basis with each Testing Participant at a Testing Initiation Meeting.

These test participants must also:

- a) order Communications Hubs for Testing;
- b) obtain meters for use in testing;

and if required:

- c) book Testing slots in a CSP Test Lab and meet the pre-requisites associated with participating in a CSP Test Lab (set out below);
- d) order the equipment required to establish a remote test lab.

## 5.5 CSP Test Lab Service

Section 3.2.4 of the End-to-End Testing Approach Document sets out the requirements for using the CSP Test Labs. These are summarised below:

- nomination and authorisation of individual(s) requiring access to the CSP Test Lab;
- agreement to Non-Disclosure Agreements and Acceptable Use Policies;
- Health and Safety training;
- security training and guidance; and
- training on use of test labs and installation of Devices in spaces provided.

The final version of the Enduring Testing Approach Document will also include requirements on users of the CSP Test Labs to maintain the confidentiality of their own information and to treat other users' information as confidential.

Where the Party supplies its own Devices, it must also provide the following information to the DCC prior to installing a Device in a CSP Test Lab:

- self-declaration that the Devices conform to SMETS (excluding any exemptions that may be issued by the Secretary of State, and that the Device need not be CPA compliant). Supporting information should be provided, including evidence of testing that has been undertaken, which could include the use of GIT for Industry.
- evidence that all the supplied Devices are safe to store, install, operate and decommission. This may be in the form of statement of compliance with the relevant parts of the CE marking or equivalent.
- confirmation that the Devices have been produced in accordance with a defined quality assurance process and a defined defect management / configuration management process

DCC reserves the right to instruct any Testing Participant to immediately remove its Devices from the CSP Test Lab if its testing activities have resulted in an adverse impact on any other Testing Participant or the DCC.

DCC will publish and maintain a schedule of available testing slots in the CSP Test Labs on the DCC website, commencing 4<sup>th</sup> January 2016. Parties are required to request these testing slots on 15<sup>th</sup> of each month (or previous working day) for testing in the following month. DCC will then confirm the allocation of test slots the following working day and testing participants will be required to confirm their intention to use



the slot within five working days. The timetable is set out in further detail in section 5.9 of the End-to-End Testing Approach Document.

In order to expedite access to the CSP Test Labs, the DCC will arrange Health & Safety training for all Party personnel that require access to the test labs prior to the commencement of the End-to-End Testing stage.

### 5.5.1 Booking a testing slot in a CSP Test Lab

Any Party that wishes to book a slot in a CSP Test Lab must first contact the Industry Test Services Team who will provisionally book the slot and then confirm that the request has been received from an eligible Party. The Industry Test Services Team will also ensure that the Party understands the pre-requisites for using the test labs, including the type of evidence that it will need to provide.

Prior to commencement of testing, the Industry Test Services Team will:

- conduct a review of evidence to confirm compliance with the pre-requisites;
- confirm the number of Devices the Party would like to store at the CSP Test Lab;
- ensure that the Party has access to the DCC Test Issue Management Tool and understands how to use the tool;
- provide Data to the Party for use during testing;
- ensure that the Party conducts the relevant Health & Safety Training (required by each CSP) prior to executing tests;
- contact the Party no later than 2WD prior to the start of testing to confirm that all necessary arrangements are in place for the Party to attend the CSP Test Lab; and
- contact the Party 1 day prior to the expiration of the testing slot to ensure that the Party understands its obligations associated with vacating the CSP Test Lab.

There are no costs associated with the use of CSP Test Lab for any category of Test Participant.

## 5.6 Remote Test Lab Service

The equipment that is required to establish a remote test lab is set out in the End-to-End Test Approach Document, the Enduring Test Approach Document and the DCC Charging Statement.

In order to use a Remote Test Lab, Parties will need to:

- order the equipment that is required to establish WAN connectivity. The type of connection depends on the CSP and on the location of the proposed Test Lab;
- order Communication Hubs and obtain meters for installation in the Remote Test Lab;
- establish a means of sending messages to the meters (as set out in Section 5.4.3 of this Guide).

The following table sets out the equipment that will be required to establish WAN connectivity for each CSP.

	CSP(N)	CSP(C/S)
Site survey required?	Yes	Yes
Equipment needed to connect to CSP	Dependent on availability: <ul style="list-style-type: none"> <li>• Omni Base Station; or</li> <li>• R100 Relay.</li> </ul>	Depending on radio coverage: <ul style="list-style-type: none"> <li>• None; or</li> <li>• Boostbox or Repeater.</li> </ul> Confirmation will be undertaken by using Coverage Checker. A site survey will also be undertaken.  If the cellular signal is good, no additional equipment is needed. If cellular signal is poor, the Testing Participant will need to order equipment as determined by the site survey.
Lead-time for ordering equipment	6 months	5 months
Other pre-requisites	Party will need to provide a telephone line over which an ADSL connection can be established. Other pre-requisites - subject to the site survey	If cellular signal is not sufficient the Party will need to provide a broad band connection via which a BoostBox can generate a local 3G signal. Other pre-requisites - subject to the site survey

A testing participant that wishes to use a Remote Test Service does not need to book slots in a CSP Test Lab and has unfettered access to the service – noting the support restrictions that are outlined in section 5.2.1 of this document.

### 5.6.1 Remote Test Lab Service Costs

Each Party that wishes to use a Remote Test Lab will be required to pay an explicit charge to establish WAN connectivity (on a CSP basis) and a monthly operational cost.

The costs are set out in the DCC Charging Statement .

### 5.6.2 Obligations Associated with Using a Remote Test Lab Service

The pre-requisites for using a remote test service are set out in the End-to-End Testing Approach Document and the Enduring Testing Approach Document. The obligations placed on Parties will also be set out in these documents. In summary Parties will need to meet the pre-requisites that are set out in section 4.1.2 and Section 4.2.4 of this document. They will also need to:

- meet all applicable security requirements that are set out in the Enduring Testing Approach Document;
- provide a suitably prepared area, with suitable power feeds prior to the installation of any additional equipment by the DCC, as specified by the DCC as part of the site survey or otherwise ahead of an order being confirmed;
- provide a dedicated phone connection over which an ADSL connection can be established for the CSP N solution and, where necessary, access to an open internet connection (broadband) for CSP C/S solution, which enables transmission of data between the Remote Test Lab and the DCC;
- carry out routine inspection of the equipment supplied by the DCC and maintenance of the environment in which the equipment is located; and

- provide DCC personnel with reasonable access to its equipment at the Remote Test Lab site.

Further details on the remote test service equipment can be found in Appendix 1.

## 5.7 Ordering the Remote Test Lab Service

The Remote Test Lab Service will be ordered via the DCC Service Desk. The request will then be forwarded to the Industry Test Services Team which will contact the Party to:

- confirm that the Party understands the pre-requisites that must be met before the Remote Test Service can be used;
- explain any restrictions associated with the use of the service (for example restrictions on use of data);
- determine the date upon which the remote test service is required and confirm that this is appropriate;
- provide the contact details of an Industry Test Services Analyst who will act as the point of contact for any questions or issues that may arise during the installation or operation of the service.

If the Party wishes to proceed, the Industry Test Services Team will instruct the Service Desk to proceed with processing the order and will instruct the DSP to arrange access to the Test Issue Management Tool.

The relevant Industry Test Services Analyst will conduct a review meeting with the Party two weeks in advance of the proposed start date for the use of the service. At this meeting DCC will:

- Conduct a review of evidence to confirm that all pre-requisites for using the Remote Testing Service have been met;
- Ensure that the Party understands the pre-requisites for using the test labs;
- Ensure that the Party has access to the DCC Test Issue Management Tool and understands how to use the tool;
- Provide Data to the Party for use during testing

DCC will then issue an Approval to Proceed Certificate and allow the Party to use the remote test service.

The first point in time at which the Remote Testing Service can be ordered is 2 September 2015. This will provide sufficient time for a site survey to be conducted and the relevant equipment ordered and installed such that the service can be used at the start of the End-To-End Testing Stage.

## 6 Obtaining Prototype Communications Hubs

Communications Hubs that are provided for use in the DCC test environments will be ZigBee Certified, but will not be CPA Certified. They will contain ZigBee production certificates, but they must be operated with SMKI Test Certificates in the End-to-End Testing environment and cannot be used in the live environment.

In order to obtain Prototype Communication Hubs (CH) for Testing, Parties must place a firm order. A firm order should be placed via the DCC Service Desk 5 months before the required delivery date. The Service Desk will validate the order and co-ordinate delivery of the CH to the Party. The relevant CSP will install and configure some CHs in the Parties remote test lab and Testing Participants will be expected to install the remainder.

The first point at which the Prototype CH can be used in a DCC test environment is at the start of the End-to-End Testing Stage.

The cost of the CH variants that are provided by each CSP are set out in the DCC Charging Statement.

The following pre-requisites apply to the use of the Prototype Communications Hubs:

- a) they can only be ordered and used by SEC Parties;
- b) they must be used in a DCC Test Environment;
- c) they can only be ordered by delivery in the UK;

## 7 Obtaining Meters for Testing Purposes

DCC will provide meters for use during User Entry Process Testing. These meters will be those with which DCC completes Systems Integration Testing.

Parties can use meters of their own choice in the CSP Test Labs (if they meet the pre-requisites that are set out in the End-to-End Test Approach Document) and within their own remote test labs. Alternatively, Parties can request that the DCC obtains meters for use in a CSP Test Lab or remote test lab. These will be the same meters which are used in UEPT. The costs of these meters, lead times and ordering process will be provided in a further version of this document which will be issued close to the end of SIT Solution Testing (i.e. when the meters that will be used in UEPT will be identified).

## 8 Gaining Test Certificates (IKI, SMKI & DCCKI)

### 8.1 Purpose of IKI and DCCKI

IKI credentials enable authentication to SMKI Services and to the SMKI Repository which, in turn, enables authorised users to undertake SMKI activities such as submitting (Organisation or Device) Certificate Signing Requests and retrieving the associated Certificates, or accessing information from the SMKI Repository.

DCCKI credentials enable authentication to DUIS, REGIS and SSI which, in turn, enables authorised users to send Service Requests and receive responses, submit registration data and use the Self-Service Interface.

### 8.2 How to Gain Test Certificates

The Enduring Testing Approach Document (ETAD) sets out the requirements for gaining IKI, SMKI and DCCKI Test Certificates (it does not cover Pre-UIT).

In simple terms, Testing Participants will need to follow the SMKI or DCCKI RAPP, completing the necessary forms, marking them as 'For Testing Purposes' and submitting the forms on SharePoint in an area specifically for Test Certificates.

Where a Testing Participant has already undergone verification checks (either for the Organisation or an Individual for a particular role) the verification checks can be avoided. For instance, if a SMKI ARO has already been verified for live they will not need to be verified for test purposes (and vice versa).

There are minor variations in the obligations set out in the ETAD.

Testing Participants will not need to conduct SREPT to gain Test Certificates (whereas, they will need to conduct SREPT to gain Certificates for live operation). A short explanatory note has been published on this topic – [here](#).

The requirements for Pre-UIT will be set out separately in the Guide for Testing Participants (Pre-UIT).

### 8.3 Test Certificates Used in Each Test Phase

The table below sets out the different Test Phases from a Testing Participant perspective and shows the relationship between the Test Certificates.

	SIT	Pre-UIT	SREPT	UEPT	E2E
IKI	SIT	Defined in Pre-UIT guide	UIT	UIT	UIT
DCCKI	SIT		Not required	UIT	UIT

## 9 Checklist

### 9.1 Systems Integration Testing

RDP checklist:

Activity	
Have in place a configured DCC Gateway Connection	
Have in place necessary systems, test and support resources to undertake testing	
Meet entry criteria in clause 6.6.2 of SIT Approach	
Meet security requirements in clause 2 of Enduring Testing Approach Document	
Gained Test Certificates per clauses 3 and 4 of Enduring Testing Approach Document	

### 9.2 SMKI & Repository Entry Process Tests (SREPT)

All Testing Participant checklist:

Activity	
Be a SEC Party or RDP	
Have in place a configured DCC Gateway Connection (unless Testing Participant will not have DCC Gateway Connection and will use SMKI Portal interface over the internet)	
Have in place necessary systems, test and support resources to undertake testing	
Advisory: Read 'Guide to SREPT'	
Notify DCC of intention to test	
Advisory: Complete SMKI RAPP forms (particularly Appendix B)	
(Related to above) determine which interfaces the Testing Participant wishes to access in live (which determines test scenarios required)	
Comply with SREPT initiation in clause 5.3.1 of SMKI and Repository Test Scenarios Document (SRTSD)	
Meet entry criteria in clause 5.3.2 of SRTSD	
Meet security requirements in clause 2 of Enduring Testing Approach Document (ETAD)	
Gained Test Certificates per clause 3 of ETAD	

### 9.3 User Entry Process Tests (UEPT)

All Testing Participant checklist:

Activity	
Be a SEC Party	
Have in place a configured DCC Gateway Connection	
Have in place necessary systems (including Parse & Correlate – or own equivalent), test and support resources to undertake testing	
Determine which User Roles the Testing Participant will use in live	
Notify DCC of intention to test (in each User Role)	
Comply with UEPT initiation in clause 5.4.1 of Common Test Scenarios Document (CTSD)	
Meet entry criteria in clause 5.4.2 of CTSD	
Meet security requirements in clause 2 of Enduring Testing Approach Document (ETAD)	
Gained Test Certificates per clauses 3 and 4 of ETAD	

### 9.4 End-to-End Testing (for Device & User System Testing)

All Testing Participant checklist:

Activity	
Be a SEC Party	
Have in place a configured DCC Gateway Connection	
Have in place necessary systems (including Parse & Correlate – or own equivalent), test and support resources to undertake testing	
If desired, procured a Remote Test Lab Service from DCC	
If desired, procured Metering Devices for Testing from DCC	
Procured Prototype Communications Hubs for testing	
If desired, requested a test slot at DCC (CSP) Test Lab(s)	
Complete necessary SREPT (see above)	
Complete necessary UEPT (for each User Role)	
Comply with Terms and Conditions for use of CSP Test lab in clause 3.2.4 of End-to-End Testing Approach Document (E2ETAD), as necessary	
Comply with entry criteria for Devices placed in CSP Test Labs in clause 3.2.5 of E2ETAD, as necessary	
Comply with the timetable in clause 5.9 of the E2ETAD	
Meet entry criteria in clause 5.10.1 in E2ETAD	
Meet security requirements in clause 2 of Enduring Testing Approach Document (ETAD)	
Gained Test Certificates per clauses 3 and 4 of ETAD	



## 10 Contact Details

Contact details of key DCC Test Team personnel are included below:

Name	Role	Contact Information
Jane Eccles	Testing Project Director	<a href="mailto:jane.eccles@smartdcc.co.uk">jane.eccles@smartdcc.co.uk</a>
Rupal Patel	Industry Test Services Manager	<a href="mailto:rupal.patel@smartdcc.co.uk">rupal.patel@smartdcc.co.uk</a>
Gina Dover	Issue Management Manager	<a href="mailto:gina.dover@capita.co.uk">gina.dover@capita.co.uk</a>
Phillip Twiddy	Test Governance Manager	<a href="mailto:phillip.twiddy@smartdcc.co.uk">phillip.twiddy@smartdcc.co.uk</a>
Lee Cox	Systems Test Assurance Manager	<a href="mailto:lee.cox@capita.co.uk">lee.cox@capita.co.uk</a>

Communications regarding Testing Issues should be sent to:

[Testing.Issues@capita.co.uk](mailto:Testing.Issues@capita.co.uk)

Communications to the Industry Test Services Team should be send to:

[Testing.Notices@smartdcc.co.uk](mailto:Testing.Notices@smartdcc.co.uk)

## Appendix 1: Remote Test Service Equipment

This section will contain details of the equipment that will be installed at a Party premise in order to establish a connection to an SMWAN for each CSP.

### CSP (N)

#### Internal Omni Rack Dimensions:

**1.2m High x 800mm deep x 600mm wide**

See embedded presentation for further information



Internal Smart  
Metering Racks.ppt





## CSP (C/S)

The CSP (C/S) connection will be via the O2 network to the test lab or if the signal is low a boost box will be installed, which is similar in dimension to a broadband router.

See embedded presentation for further information



Microsoft PowerPoint  
Presentation