

D-4.3.2 E2E Integration Plan

Ofgem Switching Programme

Delivery Workstream

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i. Defined and Common Terms

The E2E Integration Plan uses terms defined for the Switching Programme. Table 1 provides a sample of common terms used throughout the E2E Integration Plan.

The following terms are also used in this document and these may be subject to change before incorporation into the 'Switching Programme Defined Terms':

Core Systems	The new CSS together with UK Link, MPRS, ECOES, DES and DSP.
Core Systems Assurer	The organisation or organisations responsible for providing independent assurance of the CSS and SI Procurer and Manager; CSS Component Providers; providers of CDSs; and SI.
CSS and SI Procurer and Manager	The organisation managing the delivery of the CSS, including procurement and management of CSS Provider(s), and the delivery of a systems and service integration service, including the procurement management of an outsourced SI contract. A single organisation will be responsible for both functions. It is assumed this organisation will be the DCC.
CSS Component Provider(s) (CSSP)	The organisation(s) responsible for designing, developing, testing and operating a component(s) of the CSS. It is assumed that the CSS Component Provider(s) will be managed under contracts procured by DCC.
Programme Co-ordinator	The organisation(s) acting on behalf of Ofgem with responsibility for: PMO; SRO Support; Programme Assurance and Industry Co-ordination.
Licenced Party	An organisation whose activities are governed in full or in part by a Licence and which interacts directly with the CSS.
Licensed Party Assurer	The organisation working on behalf of Ofgem to provide independent assurance of Licensed Parties during the DBT phase of the programme.
Network Party	A Gas Transporter or Distribution Network Operator
party /parties	any organisation involved in the Ofgem Switching Programme, unless the term Licenced Party or Network Party is used

Systems Integrator (SI)

The organisation responsible for the execution of service and systems integration activities across the Centralised Switching Service (CSS) and the existing Central Data Services (CDS) together with interfaces to Licensed Market Participants. It is assumed that this role will be managed under contract by DCC.

Table 1 – Defined Terms used in the E2E Integration Plan

Term	Acronym/Abbreviation	Definition
Customer Enquiry Service	CES	Means the enquiry service operated by the Registration Agent to provide Consumers with the MPxN(s) for a Premises Served or the Registered Supplier for a specified Retail Energy Location Address or MPxN
Data Communications Company	DCC	Means the person holding the Smart Meter Communication Licence
Central Data Service(s)	CDS	Means a Data Service or Data Services operated on behalf of multiple industry participants under the governance of an Industry Code. NOTE: Comprises some or all of CSS, UK Link, MPRS, Smart Metering, ECOES and DES
Centralised Switching Service	CSS	Means the Central Data Service operated by the Centralised Switching Service Delivery Manager to support Switching
Data Enquiry Service	DES	Means the Central Data Service operated by the CSDP which allows authorised users to access Gas Retail Data
Smart Metering System	Smart Metering	Means the Central Data Service operated by DCC to manage the transmission of service requests and data between users and smart meters
Electricity Central Online Enquiry Service	ECOES	Means the Central Data Service operated by MRASCo which allows authorised users to access Electricity Retail Data
Energy Supplier		Means either an Electricity Supplier or a Gas Supplier
Meter Point Registration System	MPRS	Means the Central Data Service operated by DNOs to manage Electricity Retail Data
UK Link		Means the Central Data Service operated by Xoserve on behalf of GTs, which inter alia manages Gas Retail Data

An expanded glossary of terms is included in Appendix A

1 Executive Summary

The Switching Programme aims to deliver improvements in the reliability and speed of energy switching and harmonise the switching process across both gas and electricity. This requires a coherent approach to the implementation and operation of the new End to End Switching Arrangements (the “E2ESA”) across the diverse range of parties involved in the switching process.

The approach to integrating the systems and services provided by these parties must provide assurance that:

- new and changed systems and services are compliant with functional and non-functional requirements and work together as intended across all parties;
- all parties can operate the Switching Arrangements systems and business processes in a coherent and consistent manner as intended;
- all parties have fully complied with the Security Requirements; and
- data is cleansed and migrated into new systems.

The E2E Integration Plan enables the provision of this assurance by defining:

- an Integration approach for the Design, Build and Test (DBT) phase of the Switching Programme;
- a programme co-ordination and assurance framework that includes a Programme Coordination Function supported by a Licenced Party Assurance Function and Core Systems Assurance Function.
- a systems and service integration function with the role and responsibilities of a Systems Integrator (SI) which will integrate the new Central Switching Services (CSS) with other existing Central Data Services (CDS) including UK Link, MPRS, Smart Metering DSP, ECOES and DES;
- the high level system and service integration requirements of individual parties (including service providers, Licenced Parties and other market participants) involved in implementing the E2ESA.

Specific integration and testing activities are covered in greater detail in other related products including the E2E Design & Build Plan, E2E Transition Plan, E2E Testing Plan and E2E Data Migration Plan, as well as the CSS Delivery Plan and CSS Data Migration Plan. These products are referenced at appropriate points within the E2E Integration Plan.

This document provides an initial version of the E2E Integration Plan which is likely to evolve over time. A new baseline document will be issued, if appropriate to reflect these decisions and the document will be further developed under change control by the SI (noting that a different approach to Integration may be recommended by the SI).

2 Introduction

The approach to system and service integration was originally laid down in the System Integration Strategy produced in the Blueprint phase of the programme. The SI Strategy recognised that implementation of the new arrangements was a complex, IT-enabled change programme spanning multiple parties and providers and that it must utilise a range of regulatory and commercial instruments.

The Blueprint work recommended that an SI function should be established to manage Integration and Testing activities across all parties during DBT, together with the need to monitor and manage physical design issues and defects.

The SI and Programme Co-ordination Function roles are described in more detail within this E2E Integration Plan along with a high level summary of a Design Authority and other assurance functions that are designed to:

- assess compliance of parties with their obligations to support the implementation of the E2ESA;
- monitor progress against an E2E Programme Plan;
- identify and manage programme wide risks;
- and enable execution of specific programme wide activities, such as data migration.

Further detail on the independent assurance functions can be found in Product D8.2 Governance and Assurance Plan (DBT to GONG¹). This Governance and Assurance Plan will complement the E2E Integration Plan and will set out roles and responsibilities for all parties undertaking assurance activities. The Governance and Assurance Plan (DBT to GONG) will be published in the Enactment Phase of the programme.

2.1 Purpose

The E2E Integration Plan builds on lessons learnt and best practices from previous industry programmes and projects of similar size and scope to the Ofgem Switching Programme. It sets out a framework for System Integration and Programme Co-ordination functions and identifies the need for independent assurance functions to operate together with a systems and service integration function.

The document then defines, at a high level, the responsibilities of all parties involved in the DBT phase of the Programme and includes the Enactment Phase activities that are required to mobilise and prepare for DBT. Further detail is included to enable the plan to provide the basis against which:

- an CSS and SI Procurer and Manager will establish the systems and service integration function and procure and manage an SI;
- the SI will develop a Core Systems and Service Integration Approach.

¹ Go or No Go. This decision will be taken by Ofgem.

- Ofgem will establish a Programme Co-ordination Function encompassing central PMO; Industry Coordination; Programme Assurance; support to the Ofgem Senior Responsible Officer (SRO); and
- DCC will establish a Core Systems Assurance Function.

The primary purpose of this document, as defined in the Product Description, is to set out the requirements of a System Integration function. However it also summarises the requirements for: a Programme Coordination Function which will develop:

- an E2E Programme Plan;
- E2E risk management and dispute processes;
- an E2E Policy and Logical Design Authority process;
- programme co-ordination plan (explaining how it will direct cross programme activities and the responsibility of parties to comply with that direction) and
- a reporting and monitoring regime (including reporting requirements placed on the CSS and SI Procurer and Manager; Core Systems Assurer and Licenced Party Assurer).

Further details of the role of the Programme Coordination Function will be set out in Product D8.2 Governance and Assurance Plan (DBT to GONG).

This initial version of the E2E Integration Plan will be further developed to reflect the detailed approaches proposed by the SI and the Programme Coordination Function and maintained under change control by Ofgem.

Note: The E2E Integration Plan covers activities during the Enactment stage and DBT Phase of the Programme. Systems and service integration activities are also required post implementation and during on-going operation (in respect of future releases). The full set of SI requirements will be set out in a Systems Integration Requirement Specification which will be used by the CSS and SI Procurer and Manager as the basis for establishing a systems integration function and procuring an outsourced SI capability.

3 Integration and Assurance Framework

The Integration and Assurance Framework (the 'Framework') describes different activities that together provide assurance that the new E2ESA can be transitioned into live operation. The Framework is based on best practice integration guidelines but recognises the unique characteristics of the Switching Programme and includes:

- a) Preventative Techniques To prevent 'defects' entering into Live Operation.
- b) Corrective Techniques To support resolution of defects/issues that are identified during the DBT Phase.
- c) Detective Techniques To determine whether: the Switching Programme is 'on track' to meet the Go Live date; all parties are compliant with their obligations; and to monitor risks and the effectiveness of risk mitigation activities.

The different assurance techniques that will be used throughout the DBT Phase are described below. DBT risks and the Framework will be reviewed by Ofgem on a regular basis to ensure that the Framework is: appropriately focused on key risks; does not unnecessarily duplicate assurance activities; and does not add unnecessary cost and bureaucracy, thereby slowing down programme progress.

3.1 Preventative Assurance

A large number of diverse parties are involved in the delivery of the new E2ESA, all of which must develop their systems against a common baseline to ensure that these systems can interact in a coherent and consistent manner.

An E2E Logical Design Baseline (the 'baseline') will be created during the Transitional Phase of the Programme and this should be maintained throughout the DBT and Operational Phases of the programme to provide a common basis against which all components of the E2ESA are developed and operated (including by CSS Provider(s), providers of CDSs, Licenced Parties and any other market participant that interacts with the CSS).

Preventative pre-integration assurance will be required that the CSS systems/services are compliant with the design baseline prior to integration, including that the requirements set out in the E2E Design and Build Plan, E2E Testing Plan and CSS Delivery Plan have been met. This includes confirmation that the systems/services have successfully completed Pre-Integration Testing and that gate entry criteria for the introduction of CSS components into Integration Testing have been achieved.

Likewise assurance is required that the providers of CDSs and Licenced Parties systems/services are compliant with the design baseline prior to integration and have met the requirements set out in the E2E Design and Build Plan, E2E Test Plan and the gate entry criteria for Integration Testing.

Preventative integration assurance is largely focused on system and service integration testing of the different components of the E2ESA. A systems and service integration capability should be established and outsourced aspects should be delivered by an SI that is independent of those organisations that have been contracted to develop and test the CSS

and CDS to ensure that conflicts of interest do not occur. Integration testing should first assure the integration of core systems (CSS and existing CDS) to ensure defects in core systems are rectified and not exposed to Licenced Parties to the extent possible. An integration testing service should then be provided to enable Licenced Parties and other market participants to prove their systems and business processes against the central system components

The success of the new switching process will be dependent upon the quality of data held with the systems that comprise the E2ESA. It is therefore critically important that each party cleanses the data within its existing systems and that relevant data items are migrated to the CSS in a controlled manner. These data cleansing activities should be undertaken to a common standard and against a central Data Stewardship process and Logical Data Model and independently assured. A centrally managed data migration process should also be established and responsibilities for data migration clearly assigned.

A co-ordinated approach to cut over to live operations is also required, with clear and measurable Go/No Go (GONG) criteria and supported by a centrally co-ordinated dress rehearsal.

3.1.1 Corrective Assurance

Issues may arise during the design and development of CSS and modification of existing systems/services (including existing CDS and Licenced Party systems). Clarification of ambiguities in the baseline documents may be required and inconsistencies, errors and gaps in the design baseline may also be identified. An E2E Design Authority will therefore be required throughout the DBT Phase and should be supplemented by a subsidiary CSS Design Authority to support resolution of issues between CSS Component Providers in relation to physical design of the CSS systems (but only to the extent that these issues do not affect the CDS and Licenced Party systems, these being resolved by the E2E Design Authority.)

Issues and defects will arise during all stages of testing and cross party triage and defect resolution processes should therefore be established. The issues and defects may arise as a result of test data errors; test specification errors; test execution errors and environment/connectivity issues. These test defects should be resolved locally in respect of Pre-Integration Testing and by the systems and service integration function in respect of integration testing. However issues that relate to the design baseline should have an escalation route to the E2E Design Authority.

3.1.2 Detective Assurance:

Progress reporting will be required across all stages of the DBT Phase to ensure that all parties are tracking to plan against a common Go Live date. This progress reporting should be based upon the creation of a central E2E Programme Plan and reporting regime supported by a risk and issues management process. Due to the interdependencies between multiple parties, a communication/information dissemination process will be required and should be supported by a governance structure, including multi-stakeholder working groups.

All parties will be required to develop their own programme plans which will be subsidiary to the E2E Programme plan and comply with the requirements of the monitoring/reporting and risk management processes.

Further independent assurance of the activities of parties should also be provided to ensure a further degree of scrutiny and that no conflicts of interest have arisen and/or misinterpretation of requirements taken place. This independent assurance should take the form of review of progress/risk reports, targeted spot checks (including deep dive reviews) and independent verification that gate entry criteria have been met, thereby gaining minimising duplication of activity and avoiding unnecessary cost.

3.2 Integration and Assurance Functions and Organisations

The central assurance activities described above have been allocated to 4 functions:

- Programme Coordination Function (which includes PMO; SRO Support; Programme Assurance and Industry Coordination)
- Licenced Party Assurance Function
- Core Systems Assurance Function
- Systems Integration Service

The activities of the assurance functions will be described in more detail in Product D8.2 Governance and Assurance Plan (DBT to GONG) and Section 6 of this product which sets out at a high level the requirement for an E2E Programme Approach and E2E Programme Plan.

Table 2 provides an overview of activities by function, as well as the organisation that will discharge the activity and the authority under which it will act. Figure 1 illustrates the logical relationship between these organisations

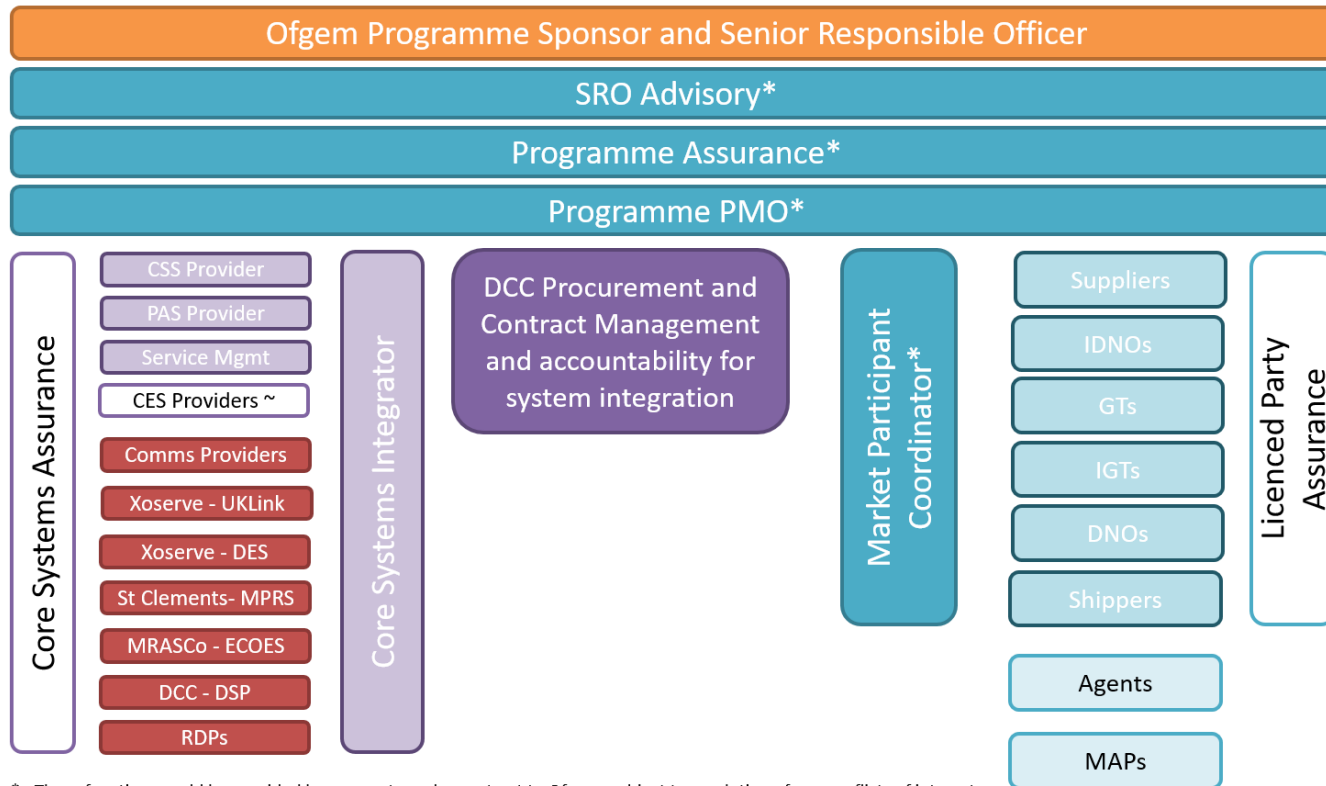
Function	Assurance activity	Organisation	Authority
Programme Coordination	<p>Establish and maintain: E2E Programme Plan, risk management process, monitoring and reporting regime</p> <p>Establish communication process and governance structure (chairing and administering working groups)</p> <p>Initiate deep dive reviews and risk mitigation activity</p> <p>Act as E2E Logical Design Authority and maintain design baseline</p> <p>Make determinations on escalated design and testing issues</p> <p>Maintain the Data Stewardship model and seek evidence of compliance</p>	<p>Ofgem; or Programme Coordination agent acting on behalf of Ofgem.</p> <p>Agent must be independent of any other party in E2ESA except Licenced Party Assurer</p>	Regulatory Powers, including Licence and Transitional Obligations

	<p>Direct cross party activities including data cleansing and coordinate preparation for post Go Live activities and return to BAU operations</p> <p>Provide support to the Ofgem SRO</p>		
Licensed Party Assurance	<p>Monitor Progress of Licensed Party against E2E Programme Plan and provide reports to E2E Coordination Function</p> <p>Conduct independent assurance of Licensed Party activities including data cleansing and readiness for key programme gates</p> <p>Assure results of Licensed Party entry process testing against CSS.</p> <p>Undertake deep dive reviews.</p> <p>Support Licensed Party to extent possible without compromising independence, providing advice and making recommendations for improvements in programme activities</p>	<p>Licensed Party Assurance Agent acting on behalf of Ofgem</p> <p>Agent must be independent of any other party in E2ESA except E2E Programme Coordination</p>	<p>Regulatory Powers, including Licence and Transitional Obligations</p>
Core Systems Assurance	<p>Monitor Progress of CSS Component Providers, providers of CDSs, CSS and SI Procurer and Manager and SI against E2E Programme Plan and provide reports to Programme Coordination Function</p> <p>Conduct independent assurance of activities, including data cleansing, and readiness for key programme gates</p> <p>Conduct independent assurance of results of CSS and CDS testing</p> <p>Undertake deep dive reviews.</p> <p>Support parties to extent possible without compromising independence, providing advice and making recommendations for improvements in programme activities</p>	<p>Independent organisation appointed by DCC</p> <p>Organisation must demonstrate no conflicts of interest exist with respect to activities of DCC, CSS Component Providers and providers of CDSs</p>	<p>Licence Obligation on DCC</p> <p>Contract Management of Core Systems Assurer by DCC</p> <p>CDS compliance with independent assurer will be required through MOU with DCC and Transitional Obligations</p>

<p>Systems and Service Integration</p>	<p>Establishment of Systems and Service Integration Approach for core systems integration and Integration Testing Service for Licenced Parties</p> <p>Production of all testing artefacts in accordance with E2E Testing Plan</p> <p>Establishment of test environments</p> <p>Establishment of Triage and Defect Management processes, including in respect of design issues that are restricted to integration of CSS components</p> <p>Establishment of Design Authority in respect of CSS design issues that do not affect wider design baseline.</p> <p>Establishment and management of data migration processes</p> <p>Management of implementation dress rehearsal and cutover activities</p> <p>Provide reports to Programme Coordination Function</p>	<p>DCC as CSS and SI Procurer and Manager, with outsourced SI contract</p>	<p>Licence Obligation on DCC to provide systems and service integration function and to appoint Systems Integrator (SI)</p> <p>Delivery Management by DCC via contract with SI</p> <p>CSS Provider compliance with SI through contracts with DCC</p> <p>CDS compliance with SI through MOU with DCC and Transitional Obligations</p> <p>Licenced Party compliance with SI through Transitional Obligations</p>

Figure 1 – E2E Assurance and Integration Functions

The Systems and Service Integration Function. Core Systems Assurance Function and Licenced Party Assurance Function will provide reports to the Programme Coordination Function but are not managed by the Programme Coordination Function.



* - These functions could be provided by one party under contract to Ofgem, subject to resolution of any conflicts of interest
 ~ - CES Providers TBC

3.3 Ofgem and the Programme Coordination Function

Ofgem is accountable for the successful delivery of the E2ESA and will make the 'Go Live determination'.

It will use 'soft powers' to intervene at an early point in time to ensure that the programme plan is maintained, risks are managed and 'disputes' between parties are resolved. These soft powers will be reinforced by regulatory intervention to the extent necessary on parties with existing licence obligations.

An E2E programme plan and central risk register will be established for the DBT Phase and post implementation stages, compliance with the plan monitored success of risk/issue mitigation activities reviewed and readiness of parties to 'go live' confirmed. An E2E logical design baseline will also be maintained to enable the resolution of disputes raised during integration testing.

These activities will be discharged on Ofgem's behalf by a Programme Coordination function which will work directly to Ofgem and which will be provided by an organisation that is independent of any of the other E2ESA parties/ providers to avoid conflicts of interest. This Programme Coordination Function will provide regular reports to Ofgem covering progress, risks and issues across the entire E2E Programme and advice on material issues of relevance that may arise. This may result in the commissioning of deep dive assurance reviews on behalf of Ofgem. The function will also support the development of Go Live criteria and a Go Live decision making process.

The programme plan will include activities that must be undertaken in a co-ordinated manner by a diverse range of parties and providers that are governed by a mixture of contractual, licence and other regulatory instruments. Whilst some of the activities can be managed by 'delivery/contract managers', only Ofgem (or an adviser/agent acting on Ofgem's behalf) can require the co-operation and compliance of the wider stakeholder community. The Programme Coordination function will therefore develop plans to co-ordinate E2E activities (such as data cleansing and migration), E2E transition activities and cut over into live operations. This will include directing parties to discharge activities that are set out in the E2E Programme Plan and any subsidiary plans that are created by the function, such as data cleansing plan.

The activities of this Programme Coordination Function are described in more detail in Product D8.2 Governance and Assurance Plan (DBT to GONG) and in Section 6 which sets out the requirement for an E2E Programme Approach and E2E Programme Plan.

It should be noted that the Programme Coordination Function encompasses: PMO activities; Programme Assurance activities; Industry Coordination activities and provision of support to the Ofgem SRO. Ofgem may decide to provide these activities 'in house' or outsource them to one or more agents which will act on its behalf.

3.4 Licenced Party Assurance

The success of the Switching Programme is dependent on the ability of each Licenced Party (including Energy Suppliers, Shippers and Network Parties) to implement changes to its systems/processes in accordance with the programme timelines and to discharge its obligations post Go Live.

Transitional obligations will be placed on Licenced Parties to support achievement of the Go Live date and the compliance of each party and readiness to 'go live' will be assessed

by a Licenced Party Assurer, including assuring the results of entry process testing in accordance with the E2E Testing Plan. Good practice requires that this assessment is undertaken by an independent body (rather than directly by the Licenced Party) and this role could be discharged by the Programme Coordination Function.

However, separation of the roles of the Programme Coordination Function and Licenced Party Assurance will provide an additional degree of assurance/.scrutiny over the reports that are provided by a Licenced Party Assurer and will enable the development of close relationship between a Licenced Party and a dedicated assurer: benefits can also be gained through the provision of support, guidance and advice to Licenced Parties via the appointment of a dedicated assurance 'partner', including immediately post implementation.

The Licenced Party Assurer, whose role will be described in more detail in Product D8.2 Governance & Assurance Plan (DBT to GONG) will be appointed by and act on behalf of Ofgem.

3.5 Core Systems Assurance

The CSS and SI Procurer and Manager will be accountable to Ofgem via licence obligations for the design, build and testing of each CSS component and will manage the CSS Provider(s) via contracts that will be established between the CSS and SI Procurer and Manager and CSS Component Provider(s). These contracts will include SLAs and other contractual instruments (including cross CSS Provider liabilities) that will enable achievement of the programme Go Live date.

The existing CDS will also be modified to comply with the new E2ESA. Compliance of these providers of CDSs with the E2E Design and Build Plan, E2E Testing Plan, Programme plan and design baseline specifications cannot be enforced via contractual obligations, with the exception of the Smart Metering DSP. The DCC, through its Licence Obligations and contract with the DSP will ensure that the DSP is compliant with the requirements of the Switching Programme.

Ofgem will use transitional requirements placed upon GTs and DNOs to ensure that other providers of CDSs support achievement of the Go Live date and these obligations may be incorporated into the Retail Energy Code (REC) and/or through modification of existing industry codes.

Ofgem may also establish a Memorandum of Understanding (MOU) between the providers of CDSs and the CSS and SI Procurer and Manager which will set out the obligations of providers of CDSs and CSS and SI Procurer and Manager (and through it the SI) to support systems and service integration testing.

Independent assurance that the CSS and SI Procurer and Manager/ CSS Component Providers and providers of CDSs are compliant with the requirements of the E2E Design and Build Plan, the Programme Plan and E2E Testing Plan will be provided by a Core Systems Assurance Function. The Core Systems Assurer will also monitor compliance of the providers of CDSs and CSS and SI Procurer and Manager/SI with the MOU and failure to meet the requirements set out in the MOU will be reported to Ofgem for resolution (which may be via its Programme Coordination function).

DCC will appoint the independent Core Systems Assurer (and will be required to do so via a change to its Licence) but this function must act independently of the CSS and SI Procurer and Manager function (if these roles are also provided by DCC) and will provide assurance reports to the Programme Coordination function and to the DCC Executive Board (the latter activity in respect of recommendations for improvements in the DCC's execution of the CSS and SI Procurer and Manager role, should this role be provided by DCC).

In the event that the CSS and SI Procurer and Manager role is undertaken by DCC, the Core Systems Assurer will seek assurance (on an on-going basis) that DCC does not give precedence to the CSS Component Providers or DSP with regard to testing and resolution of testing and design defects

The role of the Core Systems Assurance Function will be described in more detail in Product D8.2 Governance and Assurance Plan (DBT to GONG).

3.6 Systems and Service Integration: The CSS and SI Procurer and Manager

The CSS and SI Procurer and Manager will establish processes (including resources) during the Enactment stage to manage SI activities and provide an integration service (aspects of which may be insourced or procured as part of an outsourced SI contract).

This integration service must include provision of a 'help desk' for all parties to log requests for integration support. A testing issue/defect management service will also be provided and the CSS and SI Procurer and Manager will ensure that testing artefacts (test data, testing stubs) are available for use by all categories of testing participant.

In respect of CSS component integration, the CSS Component Providers will be required to participate in the SI's triage and defect management process. Disputes between the SI and the CSS Provider regarding the outcome of the triage/defect management process will be escalated to the CSS and SI Procurer and Manager for determination **where these do not impact the wider design baseline or programme timelines** (in which case they will be escalated to Ofgem, as the Design Authority, for determination).

The requirement for the CSS and SI Procurer and Manager to establish a CSS Design Authority Function is set out in Section 4.

The CSS and SI Procurer and Manager will likewise manage resolution of escalated testing/issues defects in respect of testing undertaken by providers of CDSs and market participants' with the CSS. However, the Programme Coordination function will act as the escalation point between the CSS and SI Procurer and Manager and testing participant/provider in the event of a dispute/disagreement.

The CSS and SI Procurer and Manager will manage the development of a dress rehearsal process for cutover to live operation and direct the SI during the dress rehearsal and transition process, monitoring progress and providing reports to the E2E Performance Assurance Function.

The Integration Service provided during DBT must continue into post Go-Live operation until such point as the new Switching Arrangements are deemed, by Ofgem,² to be stable.

² It is expected that Ofgem in consultation with the REC Panel will establish criteria against which system/service stability will be assessed in line with the E2E Post-Implementation Plan.

The CSS and SI Procurer and Manager should therefore ensure compatibility of the systems and service integration function with the E2E Switching Arrangements Service Management strategy and E2E Post-Implementation Plan to enable a smooth transition between programme phases.

3.7 Systems and Service Integration: The SI

The SI has responsibility for management of the integration and testing, transition and data migration activities across the CSS components and between the CSSPs and existing CDSs, including interfaces with Market Participants

As defined in the E2E Testing Plan, the SI will also have a role in supporting wider Market Participants (mainly Licensed Parties but with some support to their testing with Agents) through the management of a testing schedule, co-ordination of test activities with these organisations, provision of test tools, test environments and test data and provision of a triage and testing issues/defect management service.

However, the SI will not directly assure the activities of these wider Market Participants other than confirming that the Market Participants have met gate entry requirements for participating in testing against the CSS and other CDSs and providing evidence for use in a GONG Decision if requested to do so by the Programme Coordination Function. The assurance of Licenced Party activities will be undertaken by the Licenced Party Assurance Function which is described in Section 4.

Triage and Testing Issue/Defect resolution activities that are undertaken with CSS Component Providers (CSSPs) will be escalated to the CSS and SI Procurer and Manager for resolution unless the defect impacts the design baseline or overall programme plan timelines, in which case it will be further escalated to Ofgem by the Programme Coordination Function. Testing Issues/defects that fall across one or more CSSPs and other CDSs or with Licenced Parties will be escalated to Ofgem for resolution if they cannot be resolved by the CSS and SI Procurer and Manager and/or they have an impact on programme plan timescales or the E2E design baseline. The SI's role in Testing (including defect and environment management) is further set out in the E2E Testing Plan.

The manner in which the SI will execute systems and service integration activities, including data migration and transition cutover to live operation) must be set out in a Core Systems and Service Integration Approach document which will be developed by the SI in the Enactment stage and early DBT stage of the programme and approved by the CSS and SI Procurer and Manager. These transition cutover activities will include in-flight switch management of 'held' switch transactions.

The requirements on the Service Delivery Manager and SI are further expanded in Sections 7 to 14 of this document.

4 Roles and Responsibilities of the E2E Design Authority

Design Authority (DA) is a function which establishes and maintains a design baseline and ensures that the consequences of any business process, architecture, data and technical change decisions are understood. Ofgem will provide the role of E2E Design Authority role

throughout the DBT stage, although this may transition to new governance arrangements at a future point in time.

The E2E DA will maintain a consistent, coherent and complete perspective of the E2E design and architecture, defining the programme critical interfaces and integration points, such that business operations across the Switching Arrangements can be changed and benefits secured in a coordinated manner across the industry.

The E2E DA will act as the ultimate arbitrator of design issues and testing issues/defects that relate to the design baseline, irrespective of the testing stage/phase during which these defects arise. It will:

- Ensure that the solution design is ‘fit for purpose’ and propose and/or approve changes to the design.
- Ensure that the solution design adheres to a common set of design principles
- Develop and impose controls over programme change activities from architecture and design perspective.
- Define and enforce adherence to the architecture policies, standards, methodologies, processes, tools and frameworks.
- Arbitrate and resolve disputes on design and testing issues/defects relating to the design baseline.

The E2E DA is expected to establish resources (including tools and capabilities) to fulfil this function directly or via an outsourced service provider.

The following diagram illustrates the relationship between the SI and the DA at programme level during the DBT phase of the programme,

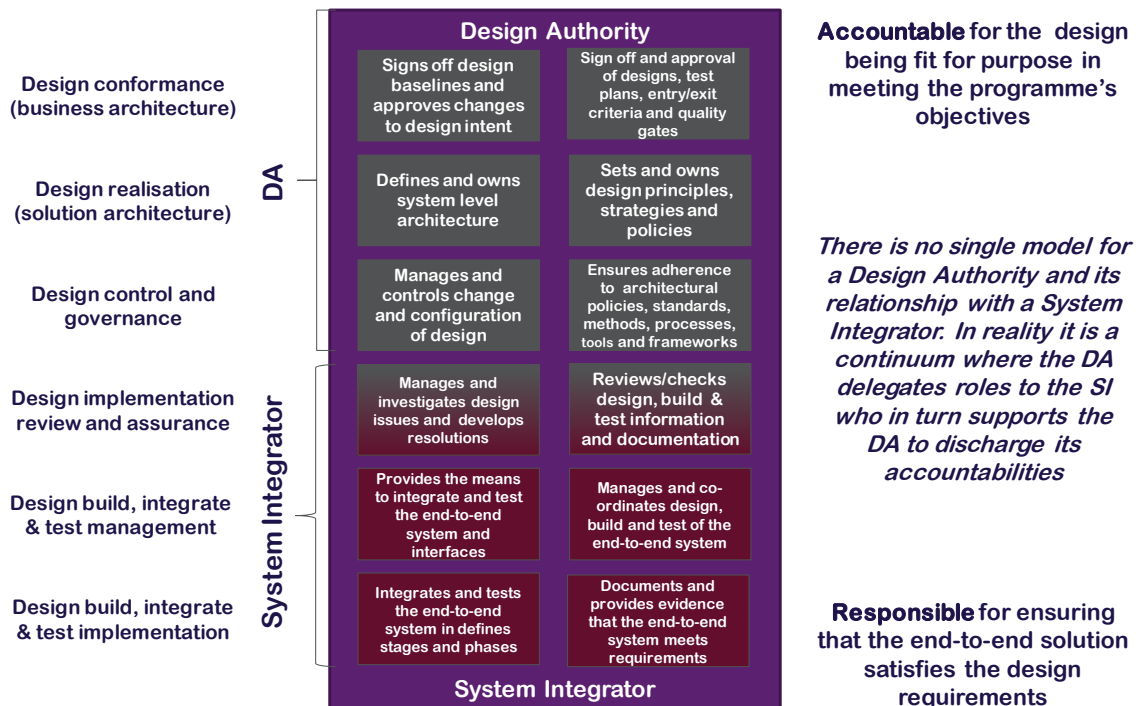


Figure 2 - Illustrative relationship between the SI and DA

A subsidiary CSS Design Authority is required in respect of the components of the CSS systems (excluding wider CDS except the interface specifications) and this function will be provided by the CSS and SI Procurer and Manager.

The CSS and SI Procurer and Manager will maintain a consistent, coherent and complete perspective of the CSS physical design and architecture, defining the programme critical interfaces and integration points. It will act as the ultimate arbitrator of design issues and testing issues/defects that relate to those aspects of the Switching Arrangements that are delivered by the CSS Provider (s) unless these testing issues/defects impact other providers of CDSs and market participants, in which case they will be escalated to Ofgem. The CSS and SI Procurer and Manager will:

- Ensure that the solution design is 'fit for purpose' and propose and/or approve changes to the design.
- Ensure that the solution design adheres to a common set of design principles
- Develop and impose controls over programme change activities from architecture and design perspective, establishing a configuration management system.
- Define and enforce adherence to the architecture policies, standards, methodologies, processes, tools and frameworks.
- Arbitrate and resolve disputes on design and testing issues/defects relating to the design baseline

The CSS and SI Procurer and Manager is expected to establish resources (including tools and capabilities) to fulfil this function during the Enactment Stage of the Programme.

5 Roles and Responsibilities of Parties Participating in DBT

General responsibilities of parties involved in systems and service integration activities include:

- Supporting the creation of the Core Systems and Service Integration Approach during the Enactment Stage and its maintenance through DBT;
- Ensuring DBT phase activities are completed in accordance with the requirements set out in the Core Systems and Service Integration Approach; including readiness for integration testing, data cleansing and compliance with any gate entry criteria that are required by the SI or other co-ordination and assurance functions;
- Complying with directions from the Programme Coordination Function to execute specific activities that are set out in the E2E Programme Plan and any subsidiary plans.
- Complying with assurance activities and reporting requirements that are specified by the assurance functions described in Section 3.

- Providing resources (including people, environments and testing artefacts as defined in the E2E Test Plan) to support integration activities
- Co-operating with the SI and Programme Coordination function in a timely manner during test execution, triage and testing issue/defect resolution activities and data cleansing/ data migration activities.

Parties' progress during their individual design build and testing activities (described at a high level in the E2E Design and Build Plan and E2E Testing Plan) will be monitored and assured by the:

- CSS and SI Procurer and Manager and Core Systems Assurance Function³ in respect of delivery of CSS components into systems integration.
- Licenced Party Assurance function for the Licenced Parties; and
- the Core Systems Assurance Function in respect of the UK Link, MPRS, ECOES, DES and DSP Smart Metering systems.

Progress and any risks and issues will be reported to the Programme Coordination function.

These assurance functions, together with the SI, will work collaboratively with the Programme Coordination functions which will manage the overall Programme Plan for the DBT and Post Implementation Stage. The Core Systems and Service Integration Approach, and the gate criteria for entry into integration testing, will be included within (or referenced by) the overall E2E Programme Plan. As already stated, parties will be required to coordinate and align their delivery activities with the milestones set out in the Core Systems and Service Integration Approach and the overall programme plan.

Transitional Obligations requiring compliance with the E2E Integration Plan, Systems and Service Integration Approach and overall Programme Plan, and co-operation with the SI, will be applied to parties. These obligations may take the form of changes to existing Industry Codes and Licences and/or requirements set out in a new Retail Energy Code (REC) and/or MOU between the CSS and SI Procurer and Manager and an individual party as determined by Ofgem.

Some high level specific responsibilities regarding the interaction of different categories of DBT participant with the System Integration and Programme Co-ordination Functions are set out below.

5.1 Gas Registration Data Provider (RDP): Xoserve

Xoserve will be responsible for changes to its existing systems, business processes and services to accommodate changes required by the Switching Arrangements and will establish an interface to the CSS in accordance with the requirements set out in the Interface Specifications and Security Requirements documents.

It will be required to implement these changes in accordance with the requirements of the Systems and Services Integration Plan and to participate in all test stages (via its third-party

³ The roles of Core Systems Assurance, Licenced Party Assurance and E2E Systems Co-ordination and Programme Assurance functions are described in section 5.

IT providers where necessary) as defined in the E2E Testing Plan.⁴ This includes supporting testing with Licenced Parties and participation in triage and testing issue/defect resolution activities in a timely manner in accordance with the E2E Testing Plan.

It will be required to support the cleansing of data in its existing systems and migration of data from these systems to the new CSS in accordance with the requirements set out in the Core Systems and Service Integration Approach, Data Migration Plan and E2E Programme Plan. Xoserve may also be required to provide data for use in testing and assistance to the SI in populating testing environments with data.

5.2 MPRS Provider: St Clements Services Ltd

St Clements Services will be responsible for modifying MPRS to accommodate system and service changes required by the new Switching Arrangements. The modified 'software' must complete testing in accordance with the requirements set out in the E2E Testing Plan before release to the electricity RDPs. The new release must be implemented tested by the electricity RDPs in accordance with requirements set out in the E2E Testing Plan, E2E Integration Plan, Core Systems and Service Integration Plan and E2E Programme Plan

St Clements Services will be treated as a third-party vendor to the electricity RDPs with interaction with the SI limited to:

- Integration testing undertaken on behalf of electricity RDPs prior to release to the RDPs; and
- Participation in triage and testing issue/defect resolution activities in a timely manner.

Note: any testing undertaken on behalf of the electricity RDPs by St Clements Services does not discharge the electricity RDPs responsibility to test the newly deployed release against the CSS and other CDS.

5.3 Electricity Registration Data Providers (RDPs): C&C, SPEN and WPD

The electricity RDPs will be responsible for deploying new versions of MPRS in order to accommodate systems, process and service changes required by the Switching Arrangements and for establishing an interface to the CSS in accordance with the requirements set out in the Interface Specifications and Security Requirements. These changes must be implemented in accordance with the requirements of the E2E Integration Plan and the RDPs will be required to participate in all test stages (with the support of St Clements Services or another partner where necessary) as defined in the E2E Testing Plan. This includes supporting testing with market participants and participation in triage and testing issue/defect resolution activities in a timely manner.

Electricity RDPs will be required to support the cleansing and improvement of data in their existing systems and migration of data from these existing systems to the new CSS in accordance with the requirements set out in the Core Systems and Service Integration Approach and Data Migration Plan. The electricity RDPs may also be required to provide data for use in testing and assistance to the SI in populating testing environments with data.

⁴ This requirement will be made via a measure such as a transitional requirement placed on Gas Transporters (GTs).

5.4 Smart Metering Provider: DCC

It is currently understood that some changes will be required to the Smart Metering systems to support the Switching Arrangements, but this is subject to confirmation when the design of the CSS Requirements Specification is completed. The changes are:

- A new interface with CSS that provides registration data to Smart Metering;
- A change in the way that Future-Dated Change of Supplier Service Requests are processed, so that these are sent from the DSP to the meter upon confirmation from CSS that switch is “secured” (rather than 24hrs before execution, as currently).

DCC will also be required to demonstrate that Smart Metering can successfully ‘manage’ an increased volume of Service Requests from Energy Suppliers (in accordance with a potential increase in the volume of switches) and fulfil its TCoS obligations. DCC may also be required to participate in security testing if so required by the SI and in E2E testing with market participants.

5.5 Licenced Parties and other Market Participants

Licensed Parties will be responsible for ensuring that changes are made to their own systems and processes to support the new Switching Arrangements, including any new communication network and security requirements. They will be expected to develop individual programme plans that align with the E2E Integration Plan, Core Systems and Service Integration Approach and the overall E2E Programme plan and must provide progress reports to the Licensed Party Assurance function.

Licensed Parties will be required to actively participate in User Integration Testing (UIT) and End-to-End Testing and to conduct User Entry Process Testing in accordance with the E2E Test Plan. This includes participation in the SI triage and testing issue/defect resolution activities in a timely manner.

They will also be required to support data cleansing prior to cutover to minimise the potential for erroneous switches or hung transactions; participate in transition and Go Live cutover activities; manage a communication plan with consumers to ensure that consumers are advised about any potential delay in switching supplier during the cutover period; and align relevant internal marketing campaigns/strategies to ensure that there is not an unusually high volume of switching transactions at Go Live. The Programme Coordination Function will require progress reports from the Licensed Parties in respect of these activities and will co-ordinate data cleansing activities.

Energy Suppliers will also be expected to manage the readiness of their own Supplier Agents for Go Live and to conduct testing with these Agents against the CSS and other providers of CDSs as necessary.

It should be noted that the CSS and SI Procurer and Manager and SI will be required to support this testing with the Supplier Agents. The term Market Participant testing is used throughout this document to refer to testing with Licensed Parties or testing with a combination of Licensed Party/Supplier Agent(s).

If a Network Party (or any other party) has an interest in Xoserve, the Electricity RDPs or St Clements Services (or any other relevant linked system) that party will be required to ensure that Xoserve, the electricity RDPs and St Clements Services are participating in the programme in good faith.

5.6 CSS and SI Procurer and Manager and CSS Component Provider(s)

These CSS Component Provider(s) must deliver new CSS systems in accordance with the requirements of the CSS Design and Delivery documents, E2E Integration Plan, E2E Design and Build Plan and these systems and services must be compliant with the design baseline. The CSS and SI Procurer and Manager will be expected to provide assurance that the new systems and services have successfully completed Pre-Integration Testing and that all gate criteria are met prior to the introduction of the CSS into integration testing.

The CSS Component Providers will be required to support the development of the SSIA and to participate in integration testing and testing with Licenced Parties as required by the SI. They must participate in triage and testing issue/defect resolution activities in a timely manner in accordance with the requirements set out in the E2E Testing strategy and are responsible for making defect fixes and systems/process changes in a manner that matches the priority of fixes/changes agreed across the programme. They will also be required to participate in data migration and cut over activities as directed by the Programme Coordination Function and SI and support cross industry working groups to resolve matters which may include design baseline changes, development of test tools and resolution of cutover issues (for example).

5.7 ECOES and DES Providers: MRASCo and Xoserve

The providers of ECOES and DES will be responsible for making changes to their systems and process to accommodate the requirements of the new Switching Arrangements and to establish an interface to the CSS in accordance with the requirements set out in the Interface Specifications and Security Requirements.

They will be required to implement these changes in accordance with the requirements of the Core Systems and Service Integration Approach and to participate in all test stages (via their third-party IT providers where necessary) as defined in the E2E Testing Plan. This will include supporting testing with Licenced Parties and participation in triage and testing issue/defect resolution activities in a timely manner and must comply with direction from the Programme Coordination Function with regard to discharging activities that are set out in the E2E Programme Plan.

6 Programme Coordination Approach

The Programme Coordinator will be required to develop an E2E Programme Assurance and Co-ordination Approach document (E2E PACA) during the Enactment stage of the programme.

The E2E PACA will be used by the Programme Coordination Function to:

- Create and manage an E2E Programme Plan, with critical path, critical path dependencies and key milestones;
- Establish a reporting and monitoring regime, with standard reporting templates and clearly defined RAG ratings;

- Record risks and issues with a RAID log and process for assessing the effectiveness of risk mitigation activities;
- Direct cross programme activities of the existing providers of CDSs and Licenced Parties, such as Data Cleansing;
- Establish an E2E Design Authority and dispute/issue resolution procedures.

The E2E Assurance and Co-ordination Approach must provide clear direction and guidance to all parties involved in DBT and enable them to plan their activities and support central programme processes and reporting requirements. This document must therefore clearly describe those cross-programme activities that will be directed by the Programme Coordination Function, the responsibility of parties in complying with that direction and manner in which the Programme Coordination Function will interact/work with the SI.

The requirements of the Programme Coordination Function will be further defined in product D8.2 Governance and Assurance Plan (DBT to GONG) and are not included in this E2E Integration Plan. Subsequent sections of this document are concerned with the requirements on the CSS and SI Procurer and Manager and SI.

7 Core Systems and Service Integration Approach

The SI will be required to develop a further version of the existing Blueprint Integration Strategy and an associated Core Systems and Service Integration Approach.

The Core Systems and Service Integration Approach will be used by the SI to:

- integrate the individual CSS components (e.g. Premises Address Service with the Registration Service)
- integrate the CSS components with other CDS systems and services⁵; and
- provide integration and testing service to integrate Market Participant⁶ systems and business processes with the CSS.
- Migrate data to the CSS from existing CDS; and
- Manage transition and cutover activities

These documents, along with a final version of this E2E Integration Plan, will be produced by the SI during the Enactment phase of the Programme and finalised during the early stages of Design and Build. They will define the optimum order of integrating and testing the components and sub-systems that comprise the core systems aspects of the new E2E Switching Arrangements and their interfaces with Market Participant systems. The Core Systems and Service Integration Approach must be coherent and aligned with the E2E

⁵ UK Link, MPRS/MPAS, DES, ECOES and Smart Metering.

⁶ Market Participants includes all parties that are involved in the switching ecosystem, irrespective of whether they are licenced by Ofgem or not e.g. it included Agents, MAPs etc.

Programme Plan which will be developed by the Ofgem-procured Programme Coordination Function.

The Core Systems and Service Integration Approach must provide clear direction and guidance to the CSS Provider(s), providers of CDSs and Licenced Parties and enable them to plan their DBT activities and participate in Pre-Integration Testing (PIT), Systems Integration Testing (SIT) and User Integration Testing (including UEPT and E2E Testing) as well as the other Test Phases defined in the E2E Testing Plan. In developing the Core Systems and Service Integration Approach, the SI will liaise with other parties and take into account the realisation time of the different components of the Switching Arrangements, their scheduled delivery order, their level of complexity, the technical risks, the availability of integration tools and environments, costs, deadlines, specific personnel capability and other relevant considerations.

The Integration Strategy and Core Systems and Service Integration Approach must take into account the range of business scenarios that may arise during live operation and ensure that these are fully exercised during Integration and testing. Integration activities, together with testing activities as defined in the E2E Testing Plan, must include: system and service integration and testing; all functional and non-functional requirements, including security and service management, and any temporary mechanisms used to enable effective Data Migration and Transition.

The hierarchy of documents that will be produced by the SI during the Enactment Stage is illustrated in figure 3.

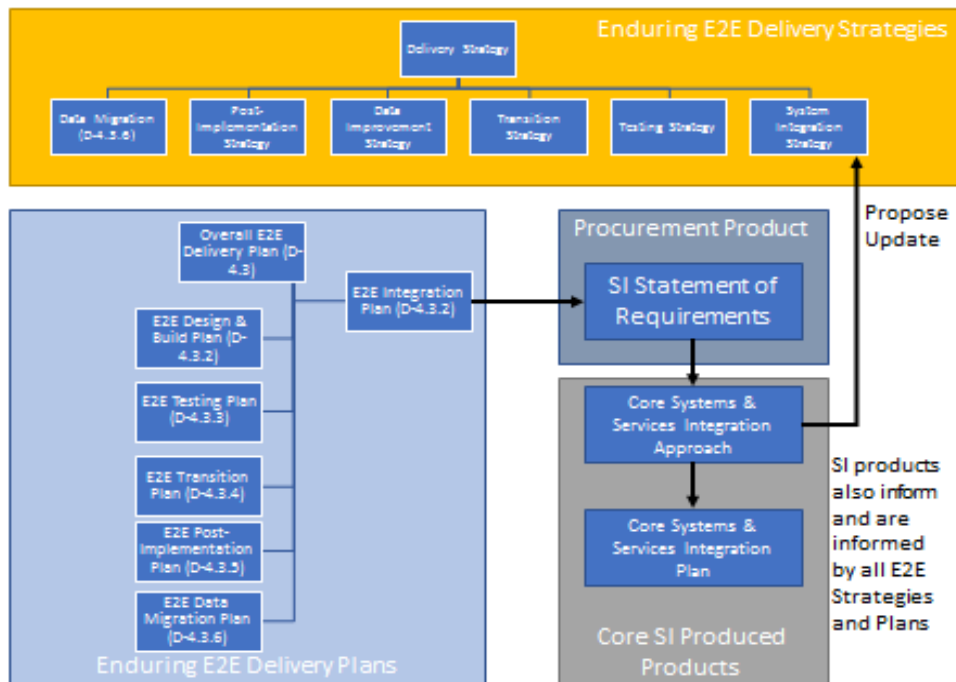


Figure 3 – Breakdown of Products produced by SI during Enactment, showing relationship with E2E Delivery Plans and Strategies

7.1 Alignment with the E2E Design and Build Plan

The SI is expected to align the Core Systems and Service Integration Approach with the E2E Design and Build Plan, covering such areas as (but not limited to) the following:

- Collecting and assessing Design and Build information for use in the refinement of a Core System and Service Integration Approach and Plan
- Incorporating Design and Build activities as they relate to Integration Readiness
- Taking into account the Design and Build roles and responsibilities and the manner in which these relate to integration and testing activities
- Taking opportunities to de-risk integration and testing through effective monitoring of physical design interpretations across the CSS Component Providers and providers of CDSs during Design and Build to ensure consistency and sharing of best practice; particularly in respect of interpretation of interface specifications

7.2 Alignment with the E2E Transition Plan

The SI will be required to:

- Provide advice and input to Ofgem to define the entry and exit criteria, and Go/No-Go decision criteria as appropriate, for each agreed Transition stage (including final cutover/Go-Live) as defined in the E2E Transition Plan, and other programme milestones as appropriate;
- Manage, deliver and execute the various integration and testing activities across the CSS and other CDS systems and services aligned to the E2E Transition Plan, enabling market participants to also test their interfaces with these systems in a timely manner to support Transition; and
- Transition the new and changed CSS and CDS components into the live environment (including associated data migration and any relevant in-flight switch management) as described by the E2E Transition plan.

The Integration Strategy and Core Systems and Service Integration Approach must therefore align to the E2E Transition Plan which describes how the new Switching Arrangements will be deployed into the live (production) environments in a series of staged releases over a period of time. The preferred transition approach comprises the following stages:

- a preliminary phase where some changes to existing industry systems are made in readiness for go-live;
- three stages in which sets of business and technology changes required to build the new CSS and the interfaces with other aspects of the end-to-end solution are delivered and implemented, leading up to 'go-live' of the new CSS. The third of these

three stages will be a single CSS ‘go-live’ event across all customers and suppliers; and

- a post-implementation stage following CSS ‘go-live’, in which Licenced Parties and providers of CDSs are required to monitor the stability of the new arrangements and address issues which arise.

These stages are summarised in the following table:

Stage	Description
Preliminary Transition Stage	Data currently distributed across industry is consolidated in existing industry sources (e.g. MAP ID to UK Link).
Transition Stage 1	Initial CSS data transformation and migration to create Retail Energy Location addresses (using Industry held Meter Point addresses) with Premises Address Served solution.
	CSS interfaces from UK Link and MPRS are implemented to enable initial data migration to CSS with industry central systems.
	Interfaces from CSS to UK Link and MPRS are implemented to “stubs” (or similar approach) to support the data improvement integration in Release 2.
Transition Stage 2	Interfaces with DES and ECOES are implemented from CSS initiating the data improvement of Retail Energy Location to industry enquiry systems.
	Interfaces from CSS to UK Link and MPRS are fully implemented initiating the data improvement of Retail Energy Location addresses to industry central data systems.
	Implement any temporary measures, e.g. harmonised objections windows, to enable the management of in-flight switches as defined in the E2E Transition Plan.
Transition Stage 3	“Cut-Over” of E2E Switching Arrangements with the complete implementation and interface integration of CSS with all industry systems to initiate the central switching service for registered meter points. New objections policy/timescales and cooling-off policy implemented. Manage in-flight switches as defined in E2E Transition Plan
Post-Implementation Stage	Market participants and central service providers will need to hold resources in place until the new switching arrangements have stabilised for all end users and been handed over to BAU.

Table 2 - Representative Description of the E2E Transition Approach

However, as these releases essentially culminate in a single Go-Live event across the Market (Transition Stage 1 and 2 are essentially involved with the migration and improvement of Industry held data), then it is assumed that the design, build, integration

and testing of the full E2E functional, non-functional and service requirements will need to take place prior to the start of the Transition Stage 1 above.

Additionally, it is expected that the SI will test the new E2E Switching Arrangements solution's ability to switch by the next working day in respect of CSS, CSDP and market participant systems/processes and services prior to Go Live.

7.3 Alignment with E2E Testing Plan

The approach to integration as defined in the Core Systems and Service Integration Approach must be aligned with the E2E Testing Plan. The E2E Testing Plan describes the planned test regime (test phases and stages), as well as the test and verification (test assurance) process and criteria, required for all phases and stages of testing.

The SI is expected to be responsible for managing all cross-party Test Phases as defined in the E2E Testing Plan and providing other testing services and facilities such as Test Specifications, Test Environments, Test Data and Testing Tools/stubs. These must be made available for assurance and acceptance by the CSS and SI Procurer and Manager and Core System Assurance roles prior to the commencement of integration and testing.

7.4 Alignment with other Governance and Assurance Functions

The approach to Systems and Service Integration as captured in the Core Systems and Service Integration Approach must be aligned with the different DBT phase governance and assurance functions described at a high level in this document, and will be defined in detail in the DBT Governance and Assurance product (D-8.2). The manner in which these functions will interact will be set out in the Core Systems and Service Integration Approach. The SI will escalate issues to the CSS and SI Procurer and Manager where responsibilities overlap or conflict with those of the Assurance Functions.

8 Core Systems and Services Integration Plan

The Core Systems and Services Integration Plan will define the systems integration and testing activities that are undertaken in DBT and in preparation for DBT in line with the Core Systems and Service Integration Approach.

The SI will develop the Core Systems and Service Integration Plan and this will:

- describe the systems and service integration effort in the form of: timelines, activities, tasks and milestones; and
- resources, skill sets, experience level and activity / task assignment in the project plan (for Resource Capacity Planning purposes).

The Core Systems and Services Integration Plan will be developed by the SI in cooperation with other key participants in the systems integration and testing activities such as the CSS Provider(s), providers of CDSs, the E2E System Co-ordination and Programme Assurance functions and Industry Parties.

The Core Systems and Services Integration Plan shall cover integration activities required by CSSPs and providers of CDSs during DBT but will not exclude testing activities which will be provided in the SIT Plan (refer to E2E Testing Plan).

8.1 DBT Programme Timelines

During the Enactment phase, the SI will develop the timelines for the DBT integration activities on the basis of full 'Left to right' planning. These timelines will be iteratively refined in light of information received during the CSS Procurement Process and wider Enactment process in respect of providers of CDSs.

8.2 Integration Programme Mobilisation and Preparation

The SI will provide detailed plans during the Enactment Phase that will describe the activities and resources required to support mobilisation and preparation for systems integration and testing. This mobilisation plan will form part of the final Core Systems and Services Integration Plan.

The Mobilisation and Preparation plans shall include activities required for the effective and efficient start of the systems integration and testing in the DBT Phase, such as (but not limited to) the following:

- Due-diligence of Design and Design Specification products and artefacts
- Establishment of Change and Configuration Management, Environment Management and Test Management processes/systems/resources
- Creation of test data, test subs and test data to the extent possible; and
- Assistance and support with the on-boarding of the CSS Component Providers as well as other key participants in core systems integration and testing (e.g. providers of CDSs).

8.3 Integration Programme Assumptions and Dependencies

The SI will provide a detailed list of all the key assumptions and dependencies related to the Core Systems and Services Integration Plan

The list of programme dependencies and assumptions provided by the SI shall include information necessary to facilitate their timely and effective management.

8.4 Integration Programme Deliverables

The SI will provide a detailed list of all deliverables that are included within the Core Systems and Services Integration Plan for the scope of its responsibilities within the E2E integration and testing effort during DBT. This list will identify how, to whom and when these deliverables will be made available.

All parties shall support the development of programme deliverables including:

- Integration Programme – Project and Resource Plans

- Integration Programme Governance Model
- Integration Programme RACI Matrix
- Integration Programme Reports and Performance Metrics
- Risk and Issue Register / Logs (delivered in a form compatible with programme-wide risk registers and logs)
- Management Plans for Test Environments and other environments for which the SI is responsible
- Test Plans and Cases (as defined in the E2E Testing Plans)
- Defect Register / Log (applicable across the whole DBT Phase)
- Query Log (applicable across the whole DBT Phase)

8.5 Integration Support

The SI will set out the detail of all capabilities that are required to manage, coordinate, execute and support the systems integration and testing effort in DBT and will specify the support (including assurance activities) that is provided to Ofgem, independent assurance functions, CSS Component Providers, providers of CDSs and that which is available to other Market Participants.

The support that will be provided will include (but is not limited to):

- Systems integration and technical senior specialists to support the Ofgem DA (i.e. TDA) function during DBT
- Specialist integration and interface resources to support Industry Parties during DBT
- Specialist data migration resources to support the various data migration work-streams
- Triage resources to support Defect Management during DBT
- Additional test analysts and testing specialists to support testing efforts throughout Design and Build, as well as to support testing during integration (e.g. E2ET, Live-Rehearsal, etc.)
- Additional operational transition specialist resources to assist and support Operational Transition and Post-Implementation.

The SI will provide a matrix describing these support activities, as well as to whom they can be provided. The SI will also reflect this resourcing view in the Programme Resource Plan.

9 Programme Management Activities

The SI, in consultation with the CSS and SI Procurer and Manager, will develop an Integration Programme Structure that describes the manner in which the CSS and Core Systems integration activities shall be managed as a coherent programme of work during DBT.⁷⁷ This programme structure will be documented in the Core Systems and Services Integration Plan and will be aligned to the wider programme governance and assurance regime described within Product D-8.2 and to the overall Programme Plan managed by the E2E System Co-ordinator role. This will include, but shall not be limited to, the following programme management functions:

- CSS and Core Systems Integration Project Management Office (PMO): to track progress, resource utilisation, expenditure and risks/issues process
- Quality Management: to review all products and testing artefacts prior to release and ensure compatibility with design baseline and coverage of all relevant requirements set out in a Requirements Traceability Matrix (to be provided by the Ofgem Design Authority).
- Change Management: to analyse, plan and manage changes to the Systems and Service Management activities.
- Reporting: to provide progress reports to the SI Delivery Manager, E2E Systems Co-ordination and Programme Assurance functions and Ofgem. The format, content and frequency of provision of these reports shall be proposed by the SI and agreed by the CSS and SI Procurer and Manager, E2E Systems Co-ordination and Programme Assurance functions and Ofgem

An organisation chart supported by a detailed description of the activities to be undertaken, resources (people and tools) required and management/reporting structure will be developed by the SI along with job descriptions for all roles.

9.1 Systems Integration Programme Reporting and Communications

A Programme Reporting and Communications plan will be included in the Core Systems and Services Integration Plan that enables recording and reporting status against all CSS and Core Systems integration activities for which the SI is accountable and responsible. This shall include reporting of risks, issues and mitigating actions in a manner that allows the key programme stakeholders to take appropriate and timely action. Progress reports shall include (but shall not be limited to) provision of the following information:

- RAG status, indicating confidence in achieving target completion date for each stage of integration
- Progress of activity undertaken in the previous and current reporting period against plan and forecast of activity against plan in next reporting period in accordance with Performance Metrics that will be developed by the SI and accepted by the CSS and

⁷⁷ The SI's PMO function will interact with the CSS and SI Procurer and Manager's PMO function, which will interact with the Switching Programme-wide PMO function in respect of CSSP and SI activity.

SI Procurer and Manager, Programme Co-ordination and Programme Assurance Functions and Ofgem before the commencement of DBT

- Milestones met and/or achieved
- Testing progress with glide path
- Current prioritised Issues, the status of those Issues and mitigation activity
- Current prioritised Risks, the status of those Risks and the mitigation activity
- Number of Category 1 and 2 Testing Issues/Defects and their resolution status
- Change Request (CR) status

9.2 Integration Programme Assets and Facilities

The Core Systems and Services Integration Plan will include a list of the assets and facilities that the SI will use as well as the type of assets and facilities the SI requires to be provided by other organisations. The SI will record and maintain these assets and facilities in an Asset and Facility inventory matrix which will include, but shall not be restricted to, the following information:

- Description of the Asset/Facility
- Version Number
- Identity of organisation providing the Asset/Facility
- Identity of organisation that the Asset/Facility has been or shall be provided to, including number of instances
- Date upon which the Asset/Facility has been or shall be provided
- Identity of person or persons that has or who shall be required to approve the provision of the Asset/Facility
- Identity for the point of contact within the SI and the organisation to whom the Asset/Facility has been or shall be provided, including contact details.

9.3 Integration Programme Performance Metrics

The SI will develop a set of performance metrics that include, but shall not be limited to the metrics set out in the following table:

Programme Activity	Performance Metric
Progress	<ul style="list-style-type: none"> • % Variance to Plan • % Variance to Baseline Plan

Programme Activity	Performance Metric
	<ul style="list-style-type: none"> • % Contingency Utilised • Ageing of Open/Pending Items by criticality • Earned Value Analysis against key milestone activities
Scope Management	<ul style="list-style-type: none"> • % Change to Requirements / Component Catalogue • % increment to Original Programme Budget • % of Change Requests (CRs) - Approved: Rejected: On Hold • % of CRs by criticality • % of "late" CRs • Cost of Delay and Cost of Rework
Risk and Issue Management	<ul style="list-style-type: none"> • Risk Exposure Score • % Closure and ageing of Open Risks • % Risks converted to Issues • Internal audit scores
Reporting and Communications	<ul style="list-style-type: none"> • % Late inclusion of stakeholders into communication groups • Stakeholder Survey Scores
Knowledge Transfer and Management	<ul style="list-style-type: none"> • Average delay in completion of Knowledge Transfer (KT) Tasks • KT Sufficiency Survey Scores • % Utilisation of KT Budget
Quality Management	<ul style="list-style-type: none"> • Standard Testing and Defect Management Metrics • Progress against Testing Glide Path • Variance to Budgeted Cost of Quality • % First Hand Pass Ratio between Phase-Gates

Table 1 - Illustrative Example of Programme Performance Metrics

The SI will provide a detailed set of programme performance metrics in the final version of the Core Systems and Services Integration Plan.

9.4 Integration Risk and Issue Management

The SI will be expected to provide a process for managing and mitigating risks and issues throughout the CSS and Core systems integration and testing effort for DBT. This will be defined in the Core Systems and Services Integration Plan and will be aligned to the programme wide risk and issues management process that is established by the Programme Coordination function.

9.5 Integration Change Management

During the stages of DBT for systems integration and testing in the programme, there may be changes that are identified that could correct or improve the design of one or more components of the Switching Arrangements solution. It is essential to restrict these to priority changes (i.e. critical, serious, etc.) in a manageable, controlled, traceable and efficient manner via Change Management (i.e. Change Control Management).

The SI is expected to develop and provide a Change Management Plan and approach as part of the Core Systems and Service Integration Plan aligned to the E2E Testing Plan.

10 Integration Readiness

The SI will establish quality gates for:

- the entry of systems and processes into Systems Integration Testing (SIT).
- the entry of systems and processes from SIT into later stages of testing as set out in the E2E Testing Plan.

The quality gate meetings shall be chaired by the CSS and SI Procurer and Manager.

The SI will recommend and prescribe the appropriate criteria, checklists and activities needed to facilitate an effective and efficient Integration Readiness function for DBT and will confirm that resources, test cases, test environments, network connectivity, security requirements and necessary tools are in place and ready to start integration and testing activities. This shall be defined in the Core Systems and Services Integration Plan

The SI will inform the Programme Coordination function when a release of the new Switching Arrangements solution has passed Integration Readiness, and is ready for promotion to the next stage or phase of testing in DBT.

The SI will also support the Programme Coordination function and Ofgem in developing entry and exit criteria for other E2E stages and phases; in particular the E2E Transition stages as defined in the E2E Transition Plan, as well as the Post-Implementation stage as defined in the E2E Post-Implementation Plan.

11 Operational Readiness

The SI is expected to develop and implement one or more Operational Readiness gates, and set of processes to support these gates, to confirm that all parts of the core solution (CSS and CDS), including environments, tools and resources, are ready for promotion to the Production (Live) environment and ready for takeover by the BAU activities of the CSSPs, CSS and SI Procurer and Manager and providers of CDSs. (It is assumed that the Licenced Party Assurance Function will perform the same role in respect of Licenced Parties). This is expected to form part of the wider readiness (exit) criteria for the Transition stages and final cutover (Go-Live) as defined by the Programme Coordination Function and Ofgem in line with the E2E Transition Plan.

The SI will be required to provide a detailed complete and refined checklist of operational readiness criteria, which should be documented in the Core Systems and Service Integration Plan, and these should include (but not be limited to):

- Back-up, Restore and Recovery (including Rollback)
- Performance, Reliability and Stability
- Security
- Disaster Recovery (including Failover) and Business Continuity Plans
- Data Centre / Server Rooms or IT Cloud Prover Infrastructure
- Resource skills and experience
- Available and continuous Training and Knowledge Transfer
- Lines of Communication (between the various organisations including vendors/providers supporting IT Service Operations and future solution releases)
- Financial budgets

12 Operational Transition

The SI will develop an Operational Transition plan as part of the Core Systems and Services Integration Plan and provide a capability to support the handover of Systems and Service Integration activities from DBT to enduing Business as Usual and Change Management Functions. This will include provision of enhanced early life support to the steady state service management functions as defined in the E2E Post-Implementation Plan.

This will include the transfer of:

- Knowledge and arrangements for provision of enduing support
- Risk and Issues Logs
- Integration Tools
- Outstanding testing issues defects
- Workarounds
- Testing Artefacts including automated test tools, test specifications, test date, test management tool

13 Integration Data Migration

The SI is expected to work with the CSS Component Providers and providers of CDSs to orchestrate a consolidated data migration approach and plan to facilitate a smooth migration of data from the CDS to the new CSS Systems including the Premises Address Service.

This must be aligned to the E2E Data Migration Plan and the CSS Data Migration Plan and follow the E2E Transition Plan.

As part of the Core Systems and Services Integration Plan, the SI will be expected to define its role and approach in ensuring successful implementation of the E2E and CSS Data Migration Plans noting that the CSS and SI Procurer and Manager (working other industry parties) is responsible for a more comprehensive and detailed CSS Data Migration Plan and Solution that covers the following areas:

- Data Migration (i.e. transform, load, etc.) of the Premises Address Served data to enable the Retail Energy Location data to be created for the CSS solution
- Data Migration (i.e. extract, cleanse, transform, load, etc.) of UK Link and MPRS/MPAS data to “seed” the CSS solution
- Data Migration to ensure Inflight Switch Requests from the existing systems are fed into the new Switching Arrangements at CSS solution cut-over.

In addition to the detailed CSS Data Migration activities proposed by the CSS Provider in line with the CSS Data Migration Plan, the SI will also need to take account of the Data Migration activities that will have already taken place (in Stage 0 or Pre-Transition as defined in the E2E Transition and E2E Data Migration Plans) by other parties and providers. The CSS Data Migration will be dependent on successful completion of these wider activities prior to the commencement of Stage 1 of the Transition.

These Data Migration activities will require close coordination and orchestration by the SI and the CSS and SI Procurer and Manager with the CSSPs and providers of CDSs as per the E2E Data Migration Plan and the CSS Migration Plan.

Appendix A – Glossary

Acronym / Term	Definition
AKA	Also Known As (a.k.a.)
BAU	Business As Usual
CAB	Change Advisory Board
CCB	Change Control Board
CES	Customer Enquiry Service
CESP	CES Service Provider
COTS	Commercial Off-the-Shelf
CMMI	Capability Maturity Model Integration
CR	Change Request
CSS	Central Registration Service
CSSP	CSS Component Provider
CSS	Centralised Switching Service
DA	Design Authority (a.k.a. TDA)
DC	Data Collector
DBT	Design, Build and Test
DCC	Data Communication Company (synonymous with Smart DCC)
DCN	Data Communications Network
DLS	Design Level Specifications (a.k.a. Design Phase)

Acronym / Term	Definition
DNOs	Distribution Network Operators
DPP	Design Proving Project
DMT	Data Migration Test
DSP	Data Service Provider
E2E	End-to-End
E2ET	End-to-End Test
EA	Enterprise Architecture
FAT	Factory Acceptance Test
FTE	Full Time Equivalent
GDS	Government Digital Service
GTs	Gas Transporters
IA	Information Assurance
IAAS (IaaS)	Infrastructure as a Service
ICT	Information Communications Technology
IEEE	Institute of Electrical and Electronics Engineers
INT	Integration Test
IT	Information Technology
ITIL	Information Technology Infrastructure Library
ITSM	IT Service Management
KM	Knowledge Management

Acronym / Term	Definition
KT	Knowledge Transfer
MAM	Meter Asset Manager
MAP	Metering Asset Provider
MOP	Meter Operator
MPxN	Meter Point Administration / Reference Number
MRASCo	Master Registration Agreement Service Company
MSO	Most Sustainable Organisation
MSP	Managed Service Provider
OAT	Operational Acceptance Test
ORT	Operational Readiness Test
O-SP	Other Service Provider
PAAS (PaaS)	Platform as a Service
PASD	Premises Address Served Data
PIT	Pre-Integration Test
PMBOK	Project Management Body of Knowledge (a.k.a. A Guide to the Project Management Body of Knowledge, IEEE, 1490-2003 - Guide Adoption of PMI Standard)
PMI	Project Management Institute
PMO	Project Management Office
PwC	PricewaterhouseCoopers
QA	Quality Assurance

Acronym / Term	Definition
RACI	Responsible, Accountable, Consulted and Informed (a.k.a. Responsibility Assignment Matrix)
RAID	Risks, Assumptions, Issues and Dependencies
RCS	Revision Control System
RP	Reform Package
RT	Regression Test
RTM	Requirements Traceability Matrix
SCCS	Source Code Control System
SCM	Software Configuration Management
SI	Systems Integrator
SI-P	SI Provider (a.k.a. Systems Integrator Provider)
SIAM	Service Integration and Management
SIT	System Integration Test
SLA	Service Level Agreement
SP	Service Provider
SRO	Senior Responsible Owner
TBD	To Be Determined
TDA	Technical Design Authority (a.k.a. DA)
UAT	User Acceptance Test
UIT	Unit Test
UNC	Uniform Network Code

Acronym / Term	Definition
QA	Quality Assurance