Detailed Cost Analysis

for

Change Order COR2831

Project Name Smart Metering: UNC0430 and iGT Mod047 for DCC Day 1

Submitted to

Network Operators

from

Xoserve

Network representative	**Joanna Ferguson**
Network subject matter expert	*As above*
Network change reference	*COR2831*
Change type	*Change Order*
Lead Xoserve operational manager name & contact details	Andy Miller Tel: 0121 623 2348 Email: Andy.J.Miller@xoserve.com
Lead Xoserve subject matter expert name & contact details	Steve Nunnington Tel: 0121 623 2563 Email: Steve.J.Nunnington@xoserve.com
Project Manager name & contact details	Lee Chambers Tel: 0121 623 2852 Email: Lee.Chambers@xoserve.com
Business Analyst name & contact details	Julie Smart Tel: 0121 623 2377 Email: julie.smart@xoserve.com

1 Evaluation Summary

The objective of this change is to implement the necessary changes to Xoserve systems and processes to facilitate a smart metering regime to meet the requirements of UNC MOD 0430 and iGT MOD 047.

The solution proposed will make the necessary changes to Xoserve systems to allow the capture of GT and iGT data items required to support the 'DCC Day 1' phase for of the Smart metering portfolio. This would be achieved via new and existing interfaces to enable their storage and playback to Shippers / Suppliers. The solution will also allow the presentation of data to the industry through the Data Enquiry service and provision of information to the DSP; but will exclude the delivery mechanism to the DSP, as this is yet to be defined.

The cost for implementing the recommended solution option for Change Order CR2831 'Smart Metering UNC 0430 and iGT Mod047' is forecast to be £1,963,000 for the full delivery of this change.

The high level breakdown of costs across the delivery workstreams are:

Shipper Full Delivery - £673,000

iGT Full Delivery - £482,000

DSP Interface Delivery - £752,000

DSP Gateway mechanism analysis and design - £56,000

The project is estimated to take 42 weeks to deliver the system changes and it is assumed that the project will commence at the beginning of August 2013.

Based on simultaneous project management of the system changes, industry governance processes being agreed in a timely manner (e.g. UK Link Committee and SPAA) and industry stakeholder plans being aligned to deliver these, there is an estimated potential cost saving in the development cost as follows:

1.   Shipper, iGT and DSP system changes – circa £350,000
2.   Shipper and iGT system changes - circa £180,000

2 Key Business Requirements

The key business requirements to facilitate Smart Metering roll-out are as follows:

Shippers & iGT's

1 Enable Suppliers / Shippers and iGT's to comply with obligations under UNC MOD 0430 and iGT Modification 047 respectively to facilitate Smart Metering and meet the government objective to roll-out smart metering.
2 Create a new interface which complies with UK Link standards between Xoserve and iGTs to enable the transfer of Smart metering data items.
3 Ensure new Shipper data items are exchanged as per the existing UK Link file format standards.
4 Capture new Shipper data items: In Home Display (IHD) and IHD Install Status.
5 Ensure UPRN data which may be provided by Shippers via existing data flows is not played back.
6 Derive new Shipper data items Meter Asset Manager (MAM) ID Effective from date (EFD), Supplier ID Effective to date (ETD), Source Registration System ID, to store in Xoserve systems and play back via existing file interface/s.
7 Capture new data items from iGTs: Supplier ID, Supplier ID EFD, Supplier ID ETD, Network Owner EFD, MAM EFD, Market Sector Flag (premises / customer type), SMSO EFD, IHD Install status, First SMETs installation date, UPRN, Sub building name, Dependent locality and append to existing data items (currently provided in the SCOGES file interface) via a new file interface; store in Xoserve Systems and playback to Shippers/Suppliers via the Data Enquiry service.
8 The maximum permissible delay for data items to be sent to iGTs is 3 business days.

DCC

9 Create a new interface between Xoserve (on behalf of all Transporters) and the DSP using Coordinated Universal Time (UTC) to transfer Smart metering data items.
10 Receive three data items MPRN, DCC Service Flag and DCC Service Flag EFD from the DCC to confirm access control made by the DSP.
11 Enable Xoserve to respond to a DSP data refresh request within 3 calendar days in a single extract (on request), for either a full or partial data extract. These requests will be routed from the DCC Incident Management team. The exact response timeframe is to be agreed as part of the Code of Connections (CoCo) agreement.
12 Enable Xoserve to provide a daily file of GT and iGT changes to the DSP. Xoserve will act on behalf of iGTs, however, any problem resolution associated with iGT data quality will be handled directly by the DSP and the respective iGT.
13 For iGT data which is not received by 19:00, no delta / update from that particular iGT on that day will be included in the daily delta file update to the DSP.
14 Send a scheduled daily extract to the DSP no more than once within a 24 hour period.
15 The maximum permissible delay of the daily / ad-hoc extract to the DSP is 8 hrs.

All parties

16 Deliver changes to Xoserve systems to allow additional new Smart values to be received, stored and played back. These values will be played back at Meter Point Reference Number (MPRN) level using new file interfaces for iGT's and the DSP and by adding new records within existing interfaces for Shippers.

17 Ensure back population for Shippers and iGT data to enable provision of historic portfolio data to the DCC on go-live, anticipated in October 2015.

3   Business Drivers

The Department of Energy and Climate Change (DECC) is currently progressing the Smart Metering Implementation Programme (SMIP) with an aim to establishing a central smart metering Data Communications Company (DCC) in 2014 together with a Smart Energy Code (SEC) as a governance framework. To facilitate this DECC, through their working groups, have identified changes to existing industry codes that will be required to fully facilitate the SMIP. These changes include, but are not limited to, additional data items that will allow incoming suppliers to identify the existence of Smart Metering System (SMS) at a supply meter point.

The DECC programme will require information to be captured for all supply points, including those on iGT networks and relevant information provided to parties including shippers and the DCC when it is established. In order to meet the requirements at the start of mass roll-out it is expected that data capture will be required from Q2 2013.

Suppliers will have licence obligations to install SMS at domestic premises and the capture, storage and transfers of this data will facilitate compliance with these obligations and provide incoming suppliers relevant information about the presence of a SMS. These obligations together with the provision of smart metering information during a change of supplier event will be mandated from Q3 2013. This will also ensure that when the DCC goes live in 2014 there will be sufficient historic data available to ensure efficient operation of the smart metering market.

4   Change Objectives

The changes associated with Mod0430 are likely to have a positive impact on the following Relevant Objectives:

A11.1 (d) Securing of effective competition;
A11.1 (f) Efficiency in the implementation and administration of the network code

An equivalent impact on relevant objectives could be expected from iGT Mod047.

5   Key Change Dependencies

The key dependencies to be achieved prior to implementation of the 'DCC Day 1' Smart Metering regime are:

o Approval of an agreed implementation date of UNC MOD 0430 and iGT MOD 047 'Inclusion of data items relevant to smart metering into existing industry systems'.

o The change is dependent on approval by UK Link Committee to agree file formats and approve the change as a Class 1 Modification.

o The change is dependent on approval by SPAA parties on the changes to meet UNC MOD 0430 and iGT MOD047 requirements.

o Engagement with Industry participants to ensure that any impacts are understood and communicated in a timely and appropriate manner.

o The Change is dependent on Shipper / Supplier readiness to provide the data items and

receive these via the proposed interfaces.

- o Changes to the ASA defined, approved and documented to reflect the service provided as part of the Smart Metering regime for the interface with the Data Service Provider.

- o Contractual changes for the iGT services.

- o Amendment to existing energy licences and industry codes, for example to require Suppliers to roll out smart meters by a date in 2020, and consequential changes to legislation, licences and codes.

- o Internal resource availability from the business experts to support the analysis, development, testing and implementation of the required changes.

- o Delivery of the Xoserve UK Link Replacement programme to current timescales due to volume implications on legacy systems if delivered late.

- o Timely completion of other on-going Xoserve dependent changes (e.g.) UK Link Sustaining, 21 Day Effective Switching.

- o Support of UK Link, Information Provision (IP) and Data Enquiry (DE) systems until Q2 2016.

- o Xoserve is dependent on the DCC; a licensed entity responsible for the procurement and contract management of the data service providers who will be responsible for providing data and communications services that will interface with Xoserve on behalf of the Transporters. The DCC is a new central body which will have a key role in both data and communications services.

- o Xoserve is dependent on the approval of the Smart Energy Code (SEC) and Code of Connections (CoCo) documentation which sets out the rules, rights and obligations for all parties for the new enduring metering arrangements in Great Britain. This will ensure the rights and obligations between the DCC and the users of its services (along with other provisions to govern the end-to-end management of smart metering).

- o To meet the delivery timescales, authorisation to proceed with the change will be required by 31/07/2013.

6 Constraints

- o The agreed option for delivery of the DCC initial extract will be required before the detailed design stage of the delivery project.

- o The delivery date must be before the SMIP Industry testing and trials commence, currently expected to be April 2015.

7 Impacts

Shippers, Suppliers, iGT's

- o Shippers/ Suppliers / iGTs will need to amend their systems to enable the submission of the new data items and the response files.

- o File Formats will need to be updated, reviewed and approved

Xoserve

- o Increased load on current systems and processes to support a Smart metering regime.

- o Establishing the DSP as a new customer of Xoserve and any supporting management processes.

- o Internal knowledge sharing will be needed to support and manage new processes

associated with the DSP.

The impacts are not exhaustive. There may be other impacts to the Network or Shipper / Supplier systems or processes of which Xoserve is not aware.

8 Assumptions

1 The current processes and file flows will remain as-is for existing data items unless explicitly stated.
2 Xoserve will play back the Shipper data items via a new record within existing file formats interfaces.
3 In the event of a transfer of ownership process occurring on UK Link, the daily delta will flow to the DCC at the earliest reliable point after the objection window has closed, or the start of the Transfer of Ownership window (D-7).
4 The Post office Address File (PAF) format that is currently sent to Shippers will be of the same format used to send address related data to the DSP.
5 The interface / communication mechanism between iGT's and Xoserve will be dealt with as a separate project.
6 The Smart Energy Code (SEC) and Code of Connections (CoCo) documentation will detail the full change management procedures for Smart Metering that will be agreed separately with Xoserve.
7 There will be no additional compliance standards other than ISO27001 for the interfaces between Shippers, iGTs and DCC with Xoserve.
8 Adherence to security compliance will be achieved by adopting existing Xoserve best practices. Validating the implemented security against ISO 27001 security principles will be carried out by Xoserve.
9 Requests for DSP full or partial data refreshes will be where data is identified to be misaligned through investigation and repeat access control failures are experienced by the DSP. The detailed scenarios will be agreed as part of the CoCo.
10 No further changes are expected to be made to the validation rules associated with the Meter Mechanism Code (MME) values and will exclude validation against meter model and manufacturer.
11 There is no change to the current cyclic meter read volumes.
12 Meter reading volumes will not increase before UK Link replacement and volumetrics will not exceed current estimates.
13 Any changes to file formats will follow the UK Link manual file format standards and governance process and timescales.
14 The existing service level agreement for Shippers files will be applied for the new DCC Day 1 data items.
15 The daily delta extract to the DCC will be generated between 20:00 and 07:00 UTC.

16 The change of supplier process managed through the existing SUN file will be decommissioned and the process will migrate to new functionality utilising the new GEA file being implemented as part of Foundation - Smart Switching.

17 The new GEA file will not be adapted to accommodate the "Change of MAM process" as part of DCC Day 1 as Shippers have an express requirement to retain the existing process flows to update this attribute.

18 Shippers/ Suppliers will inform Xoserve of the new data items via existing interfaces, by the introduction of a new record within existing file formats.

19 iGTs will submit all data items to Xoserve via a new interface file that is compliant with UK Link file format standards.

20 Xoserve will not be responsible for the integrity of data and will accept items as long as they comply with the file format field level validations as agreed in the approved Business Requirements Definition (BRD) document.

21 'SMSO' values will be created and maintained by SPAA, with input from Xoserve and this will be part of the Foundation stage of the Smart metering project, and therefore out of scope of the 'DCC Day 1 Delivery Project'.

22 The introduction of DCC Day 1 data items on UK Link may impact the UK Link system performance if computing power of UK link system is not scaled up as per the recommendation provided in the UK Link sustainability.

23 No performance enhancement costs are included in this BER, as existing systems infrastructure is deemed sufficient to meet the additional user access requirements.

24 Management of the Data Enquiry service shall be as per existing Xoserve management information arrangements. In the event there is an increase in call handling volumes a review of the service will be required.

25 Xoserve shall not be responsible for the routing of data enquiries e.g. where there is no record or an incorrect record of the SMSO ID on the enquiry service.

26 Xoserve will publish data provided via the Data Enquiry service and accept no responsibility for completeness or accuracy.

9 Analysis of Solution Options

Option Overview: Functional consolidation within UK Link, Sites & Meters

The solution option includes the data capture from Shippers / Suppliers, iGT's and the DCC, the associated file flows, data storage and data playback. It also includes provision of information to the DCC (initial data extract, daily extract, and an adhoc (full/partial) refresh of portfolio data).

This change will impact a number of UK Link file formats and the following systems:
- o UK Link – Supply Point Administration (SPA) and Reform of Gas Metering Arrangements (RGMA) files and the Batch Routing Merger (BRM) tool.
- o Information Provision (IP).
- o Data Enquiry (DE).

Data capture, store and playback - Shipper changes:

Of the 14 data items which need to be captured as part of the DCC Day 1 Smart metering regime, 12 are already captured and stored within UK Link systems. These data items will continue to be captured in the same way as current processes. It is proposed that the 2 new data items for Shippers will be captured within existing file flows. Incorporating the new data items into existing SPA and RGMA files will reduce the level of system change and delivery timeline; though some level of regression testing will be required. Also, this will minimise the scale and complexity of change for the UK Link Replacement Programme and the level of file transactions will also be minimised.

Data storage will be within existing UK Link tables.

Data playback will be included in existing UK Link file formats and also via the DE application. This will involve changes to IP and jobs within DE which will extract, transform and load data (ETL). There is no increase in storage capacity to deliver the required changes.

Data capture, store and playback - iGT changes:

The iGT data provision will change from the existing SCOGES file format to a new comma separated variable (csv) file which is compliant with UK Link file format standards. It is proposed to decommission the existing file format and delivery mechanism into IP. Back population of data has also been considered within scope of this option.

Data storage will be within new UK Link tables. This will reduce impacts to existing batch jobs, reduce regression testing and avoid data security implications.

Data playback will be via a new csv file which is compliant with UK Link standards.

The communications method for provision of information between Xoserve and iGTs will be delivered under a separate Change Order and is not part of this delivery.

Data capture, store and playback – DCC: [1]

DCC to Transporter:

In response to the requirement for the DCC to notify Xoserve of any changes to access control, the data will be captured in a csv file format which is compliant with UK Link file format standards. Information will be captured via the Electronic File Transfer (EFT) application, processed by the Batch Router Merger and sent to UK Link for validation. Data playback of the 3 data items provided from the DCC will be to Shippers via existing file flows.

Transporter to DCC:

Initial Extract: 13 data items and history for 3 data items (at least 2 years where available) will be sent to the DCC following the initial request. This data will include all MPRN's held on the Xoserve source system, plus the data provided by the iGTs. Data will be extracted from the DCC consolidated table which contains historical data from both Shippers and iGTs. The initial extract will be in a csv file as per UK Link file format standards. Due to the projected file size (approx. 7 GB), the file will be sent either via:

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[1] The mechanism for transferring files to and from the DSP are part of Change Order COR2006 'DSP Gateway mechanism' project, therefore not in scope for delivery of this change.

1. Each Network split into multiple files with a unique sequence number in the file name. An electronic file acknowledging receipt will be sent at the end of the transfer, which contains the list of files that are transferred.
2. Encrypted data contained in a portable media (DVD/NAS drive), sent through secured courier.

Daily Extract: The delta data will be extracted from the DCC consolidated table and sent in a csv file. The delta extract will be configured to run on a daily basis in co-ordinated universal time (UTC).

Ad-hoc (Full / Partial request): The DCC might request an ad-hoc data refresh for 13 data items and history for 3 data items. This request can be for all MPRN's, a specific set of MPRN's, or a particular Source Registration ID. The partial extracts will also be extracted using initial data scripts by setting up the appropriate parameters. Similar to a full extract, the partial extract file will be sent either as one file or multiple files and will be dependent on the size.

The communication methodology for receipt of files between Xoserve and the DCC is included within the effort and cost for the analysis and design phase for the DCC and the DSP Gateway mechanism. Data storage will be within new UK Link tables.

BRM changes will be required with this option in order to parse and validate incoming files.

Option Cost

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