Rough Order of Magnitude (ROM) Analysis

for

Analysis of initial registration changes to facilitate smart metering and the DCC

This ROM is Xoserve's response to the above Evaluation Service Request. The response is intended to support Networks involvement in the development of industry changes.

Should the request obtain approval for continuance then a Change Order must be raised for any further analysis / development.

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Network reference:	Not Applicable
Xoserve reference:	EVS 2528
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Change Driver / Origin

On 10 February 2011, the Government published a consultation on a draft Statutory Instrument that will enable the licensing of a new national provider of communications (Comms) services to and from gas and electricity smart meters, to be referred to as the Data and Communications Company ("DCC"). The Department of Energy and Climate Change (DECC) has identified existing and new data items that will be required by the DCC to be held in central meter point registration systems and it is the provision of these data items that is the business objective for this ROM.

Analysis

High Level objectives

To enable the DCC to conduct access control and to facilitate competition where there is a SMART meter on site Xoserve registration systems will accept and transmit the new data items (as stated in the ROM request EVS2528 and the Smart Metering Implementation Programme (SMIP) Business Process Design Group (BPDG) Legacy System Changes (enduring) document)

Context diagram
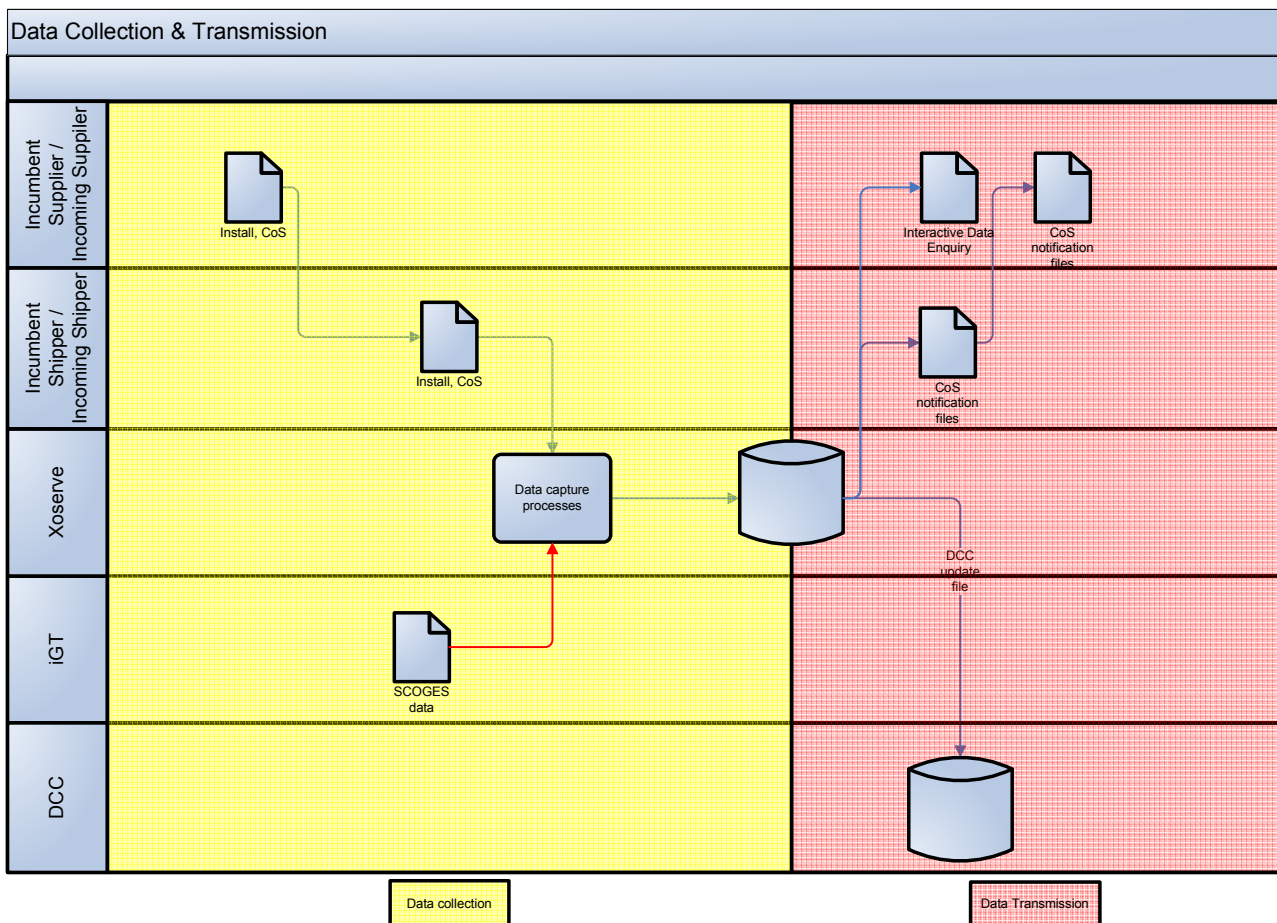
Analysis

1. Full portfolio extract (including new & existing data items) to DCC on migration and then refresh on a quarterly basis.
2. Production of a "daily" update file that will capture the changes to any of the specified data items to DCC since issue of last update file.
3. Receipt, processing and response of amended or new input files and notifications from Suppliers (via Shippers) and DCC.
   a. Data submission by Suppliers via Shippers
   b. Data provision in support of Change of Shipper / Supplier

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4. Maintenance of Supplier history and MAM history.

The following shows the existing data items that will be used and what issues and assumptions have been identified to date.

Field	Issue / Assumption / Comments
MPRN	Dead, Extinct and Unique Site Meter Points will not be included in the Full portfolio extract, daily update file and refresh file.
Supplier id	Supplier history at Supply point level rather than Meter point (MP) , where the MP is not currently registered to a shipper, will be blank
Confirmation effective date (also known as Supplier EFD)	The confirmation effective date is requested in the SMIP specification; however, this is inadequate to show all Supplier changes. Therefore, it is recommended that this data item will be derived from either the Confirmation effective date or dates of within confirmation supplier changes submitted via the SUN file.
Meter Asset Manager id (MAM)	Current MAM history only holds New and current, 2 years history may not be available at implementation. Could be blank.
MAM Effective date	As recorded in Xoserve systems by registered Shipper
Meter Point address	The fields that make up the Meter point address are… 1. Building Number 2. Sub Building name 3. Building name 4. Principle street 5. Dependant location 6. Post town These fields are used in the S70 record. These fields could be blank if UPRN provided
Meter point post code	This is 2 data items: 1. Post code Out code 2. Post code In code Could be blank if UPRN provided
Meter Type	The Meter Mechanism code field will be used. It has been noted that there may be a requirement to extend the field length to 7 (e.g. SMETS2b). This would add considerable cost. Instead, the field length could remain at 3, but allow values that could be used to derive the code (e.g. SMETS2b could be S2b). Blank if no meter is installed.

The following is the issues and assumptions associated with the additional new data items.

Field	Issue / Assumption / Comments
SMS Operating Entity ID	Length of field assumed to be 3 (due to the value 'DCC')i.e. re-use the organisation Short code (aka SMSO-id)
SMS Operating Entity EFD	Date provided by Shipper (aka SMSO – EFD)
DCC Service flag	The DCC Service flag is logically the same as SMS Operating Entity ID and cost savings could be realised by utilising the SMS Operating Entity fields
DCC Service flag EFD	The DCC Service flag EFD is logically the same as SMS Operating Entity EFD and cost savings could be realised by utilising the SMS Operating Entity fields. It is assumed that no end date will be required for the DCC Service flag.
IHD Install status	It is unsure whether a new asset class will be defined. It is assumed the IHD will be an attribute of the Premises.
IHD Install status EFD	It is unsure whether a new asset class will be defined. It is assumed or the IHD will be an attribute of the Premises.
UPRN	Could be blank. Assumed UPRN will be associated with premise

Data design considerations

- Supplier Effective to date (ETD) - Recommended new field to show when a supplier's registration has ended without being superseded. For example when a MP becomes Shipperless

- MAM ETD – An end date for the MAM should be considered as it could be ended if a site becomes meter less and / or Shipperless

- SMSO ETD and DCC ETD may be needed if SMSO and DCC are not logically the same.

- Meter Mechanism Code (Meter type) – DCC to consider if history is required

- Consider opportunity for reusable data definitions and interface design for exchanging information regarding appointment of industry roles / agents

- Details of how history (of data items) is presented is not clear at this time; however, depending on which option (whether all data items for affected MP or just the data item that has changed) is used may significantly change the cost. Depending on resolution, of this issue DCC should consider the rare scenarios where less volatile date changes or ceases to be effective, as follows…

    - Meter type EFD (if DCC requires history)
    - MP status to indicate a Meter point changing to 'Dead' / 'Extinct' after the first data submission
    - MP status EFD e.g. to indicate when a Meter point became 'Dead' / 'Extinct'
    - Address EFD if DCC needs address history
    - Post Code EFD if DCC needs Post Code history
    - UPRN EFD if DCC needs UPRN (i.e. address) history

- Recommend a GT (Gas Transporter) identifier is included, as it is missing from the required attributes. This should be made available as the DCC must be able to know which GT is responsible for access control purposes.

ROM Costs & Timescales

Note: ROM information is not based on any formal systems analysis and should be used with caution.

Estimated costs:

The solution will cost at least £600K, but probably not more than £1m to implement.

This cost can be further broken down to:

Changes in support of UNC will cost at least £500K, but probably not more than £850K

Changes in support of the data service to the DCC will cost at least £100K, but probably not more than £150K.

In addition, for Xoserve to implement a UPRN service and manage the quality of UPRN data mapping through migration will cost between £500k to £1m.

Estimated duration:

Note: durations are subject to Xoserve resources and priorities at the time that documents are received

• The Analysis Phase, will take at least 22 weeks, but probably not more than 28 weeks

• Delivery; including detailed design and development, testing and post implementation support; will take at least 22 weeks, but probably not more than 34 weeks

The total of for the project is therefore in the range of 44-62 weeks.

Timescale guidance:

• The current timescale for implementation is late 2013 early 2014. Xoserve has a code freeze from the middle of December to middle of following January and implementations at this time would be affected.

• For implementation, Q3/4 2013 the latest a Change order for delivery could be received by Xoserve is August / September 2012.

Project costing assumptions:

• It is assumed that a detailed analysis stage will be required to capture and verify all requirements, affected screens and processes, and to confirm the technical design as a basis for robust costing and implementation planning.

• The project has been costed as a single phase, delivering all functionality. DCC interfaces may be delivered before DCC are ready to test, in which case a later industry trial / test project will probably be required.

Scope of costs

Xoserve cost and timescale estimates include:
The following costs to implement the stated scope:
- Application Changes
- Database changes
- Project and Operational support costs
- Capture (from IGT only), storage and data provision cost for IGT data

Xoserve cost and timescale estimates do not include:
Material costs that could significantly increase the estimated costs (if brought into scope):
- Analysis and implementation of the Comms infrastructure required to exchange data with IGTs and with DCC, notably the large migration and refresh files
- Industry testing / trials, possibly in 2 stages
- Infrastructure and performance improvement costs to handle increased read submission volumes as result of SMIP
- Infrastructure costs and performance improvement to handle increased asset update volumes as result of increased volume of meter exchanges as a result of SMIP
- Migration and management of UPRN data using a procured UPRN service

Less material costs:
- Environment costs (Development and Test)
- Any change to RGMA validation dependant on meter mechanism code values
- Solution to enable DCC to set DCC flag for IGT MPs on IGT systems

Assumptions
- Where history is required, 2 years history will be provided if available.
- 2 year history will be required for all new data items except UPRN and address.
- It is assumed that the SMSO data will be captured by Suppliers prior to implementation.
- The ROM cost will include the required changes to the Xoserve iGT dataset. It is assumed that iGTs will make the required changes to their output files.
- Standard SPA file conventions will be adhered to.
- Standard RGMA file conventions will be adhered to.
- The daily update file will be submitted only after Change of Shipper / Supplier (transfer of ownership) processes have completed (on business days only) and ideally, before the next Gas day starts (6am).
- DCC and Xoserve will be informed independently of UPRN. DCC will be informed independently of UPRN for same premises by Electricity industry.
- It is assumed that the new SMSO data items will not be required to be stored on C&D store; however, the existing Meter mechanism code will be stored via current processing.
- SMSO rolls forward on change of Shipper / Supplier
- DCC will procure a UPRN service in order to interpret UPRN values
- IGTs will provide data updates in a timely manner, i.e. daily. The communications between IGTs and Xoserve will be appropriate for this purpose
- On implementation, the rate of catch-up for the population of new data items by suppliers will need to be within agreed daily limits outside which agreed response SLAs and onward data provision SLAs will not apply. If pragmatic limits and or SLAs cannot be agreed, there will be additional unknown costs to deal with the resultant performance risks.

Concerns

- Process sequencing by Xoserve & DCC of daily updates close to bulk refresh
- Careful scheduling of the Initial extract and quarterly refresh is required to ensure that annual periods of intensive AQ processing is not affected.
- Many aspects of the solution will be tactical as they will be embedded in solutions that are likely to be replaced by migration of functions to DCC or other strategic industry developments.
- It will take at least 2 days and probably a lot more from submission of data to iGTs by Suppliers to provision of data updates to DCC by Xoserve.
- Requirements are not stable.
- Periodically, communications between Xoserve and DCC would need to be able to handle massive refresh data volumes far greater than daily update volumes. The comms solution may need to be flexible to minimise costs.
- SLAs must be considered alongside their cost implications.
- Is refresh (a) of all 2 years history, (b) all updates since last refresh and / or (c) all current data values? Cost estimates assume option (c)
- The DECC specification has proposed that (smart) meter type data values are communicated via the meter mechanism code RGMA field. Using this existing field could prevent communication of the meter mechanism data that is relevant / required for smart meters during the foundation period. Any changes needed to conditional validation dependent on specific meter mechanism values would incur extra costs.

Impacts on Xoserve

- IS operational resource to support the systems and testing
- Procurement of UPRN service
- Migration, reconciliation and data quality management of UPRN and address data

Impacts on Gas Transporters

- None identified

Impacts on independent Gas Transporters (iGT)

- File format changes and changes to iGT source systems and databases
- Requirement for Comms network connection with Xoserve
- Accept DCC flag updates directly from DCC

Impacts on Shippers, SMSO and DCC

- Expected to be a User Pays modification
- File format changes and / or New files to be implemented
- Comprehensive industry trials would probably be required

Terms / Definitions

Name	Description	Additional information
SMSO	Smart meter reading Service provider	AKA SMS Operating entity
ISMSO	Independent SMSO	
DCC	Dominant SMSO	
SMS Operating entity ID	Smart Metering Service provider (SMSO) identification	SMART meter, meter reading agency (MRA)
SMS Operating entity ID EFD	Smart Metering Service provider Effective From date	This is the date the SMSO take responsibility for the SMART meter.
DCC Service flag	Data Communication Company flag	The DCC is the organisation (not yet decided who this will be) that will take responsibility for SMETS compliant SMART meters post 2014.
DCC Service flag EFD	The date that the DCC takes responsibility	Standard date format
Meter Mechanism code	Existing data item in Sites & Meters	Will require 2 further options to be added (possibly SMETS1 or SMETS2)
IHD install status	In Home Display installation status	Format not known (assume Text domain, length 12 characters)
IHD install status EFD	In Home Display installation status effective from date	Standard date format
UPRN	Unique Property Reference Number	This fields domain is Number with length of 12