	ELEXON Reference				
NETA Char	P138				
Title	Version No.				
	0.2				
Contingency arrangements in re	LogicaCMG Reference				
Demand Control medsures pursual	ICR554				
Type of Assessment	Date IA Issued				
N/A 31/10/03		19/11/03			

Brief Summary of Change

A process needs to be developed that will come into operation if Demand Control is invoked. The process will (for each settlement period that occurs within Demand Control) determine and enter new FPN, Bid-offer pair and Acceptance data for each supplier BM Unit impacted by Demand Control.

This DLIA is against the P138 Requirements Specification v1.0 dated 31 October 2003 [P138AS].

LogicaCMG's Proposed Solution

The process is a mixture of automated scripts and manual procedures. Various options are proposed which require varying proportions of manual intervention. A full system solution is also proposed to allow ELEXON to consider all possible solutions to the problem.

Non-System Solutions

An overview of the steps to be performed per settlement period of Demand Control invocation is given below:

- 1. Calculate the demand control price. This will require running the SAA II run (without issuing reports) to calculate acceptance volumes in order to determine the price
- 2. Identify all supplier BM Units in the GSP Group. This requires extraction of volumes for that day and period
- 3. Determine the proportion of demand per BM Unit and demand control volume
- 4. Extract of demand capacity for all affected BM Units
- 5. Derivation of FPN data and Bid-Offer data using the demand control price as the offer price having pair size at least as big as the computed demand control volume and Acceptance
- 6. Manual entry of:
 - Derived FPN
 - New bid-offer pair
 - Acceptance
- 7. Check data after entry

The work involved for each step is described in more detail here:

- Step 1 Perform the II run without issuing the results. Develop script to determine demand control price [select MAX(QPAQ) where QPAQ>DMAT]
- Step 2 Develop a script to identify supplier BM Units (type S or G) that were importing (QM < 0) for the relevant GSP Group for that period on the most recent SF run.

If the equivalent period value is zero, then the prior period (possibly prior day) will be examined. The associated metered volume is recorded against each BM Unit

- Step 3 Develop a script to take the output from step 2 and determine the proportion of demand per BM Unit and demand control volume. The GSP Group demand control volume is the total of the BM Unit metered volumes. The proportion of demand per BM Unit is calculated by dividing the metered volume of each BM Unit by the GSP Group demand control volume. Each BM Unit individual demand control volume is then calculated by multiplying the total demand control volume as supplied by the SO by the BM Unit's proportion of the GSP Group demand
- Step 4 Develop a script to extract the demand capacity for all impacted BM Units
- Step 5 Develop a script to derive FPN data, Bid-offer data (offer price equal to demand control price, offer volume equal to demand control volume) and acceptance data for all impacted BM Units

Note: Steps 2 – 5 would be developed as a single script for efficiency

- Step 6 Manual process to enter generated data from step 5. Expected to be between 50 and 100 BM Units impacted per settlement period per demand control invocation
- Step 7 Develop a script to check data entered in step 6. This takes the data generated in step 5 and reads database to confirm correct data entry

Options

There are many permutations to how these tasks may be performed. These are explained in this section.

Demand Control Price

The calculation of the demand control price (Step 1) could be calculated in 4 ways, which produce the following 4 permutations:

Option 1 Use the marginal price

- Option 2 Use the market index price same development effort as option 1
- Option 3 Use the marginal price with a cap same development effort as option 1

Option 4 Use a fixed price – removes the need for Step 1

BM Unit Deemed Demand

The calculation of the BM Unit Deemed Demand (Steps 2 - 5) could be calculated by SAA or by BSCCo. If BSCCo performs the work, the development effort for these steps is removed. This section doubles the number of permutations to 8.

Data Entry

The data entry (Step 6) could be automated. This has the advantage of reducing the time required to perform the entire process and also removes the need for checking the manual data entry (Step 7). An automated script would add new development effort, but significantly reduce the effort to perform the operation. If Steps 2 - 5 are performed by BSCCo (see above) this automated script would also need to load and validate a CSV file from BSCCo to allow the output of Steps 2 - 5 to be input into Step 6. This section adds a further 8 permutations.

LogicaCMG Alternative

As it currently stands, the BRS does not cover the situation where demand side acceptances

exist prior to Demand Control being invoked. In reality this situation is bound to exist and in order to handle it, the process of calculating the FPN, Bid-offer pair and Acceptance data would need to be modified. A mechanism for determining what acceptance number to use would also be needed. The proposed LogicaCMG Alternative process will be able to handle existing acceptances and also has the advantage of removing the large manual data entry activity, which reduces the execution time and effort of the process. The work involved is as follows:

- 1. Develop script to calculate the demand control price
- 2. Develop script to calculate the BM Unit Deemed Demand
- 3. Manually modify QAS flow so that Demand Control balancing action is taken into account for each impacted BM Unit
- 4. Enter FPN, Bid-offer and Acceptance data against a single dummy 'Demand Control' BM Unit so that the stack is adjusted correctly and NGC are charged for the Demand Control activity
- 5. Develop script to determine the cashflow for each impacted BM Unit relating to the Demand Control activity, taking into account Transmission Loss Multiplier values
- 6. Develop script to identify the parties impacted by the Demand Control action
- 7. Manually modify the relevant SAA-I013 flow to ECVAA so that the position of the impacted parties is corrected
- 8. Send a manual flow to FAA with details of the impacted parties and the related BM Unit prices

If Step 2 is performed by BSCCo, the development effort for this step is removed.

This sections adds a further 8 permutations, which gives a total of 24 possible permutations in this assessment, but because options 1, 2 and 3 for calculation of Demand Control Price require the same development effort, the number of distinct price permutations is reduced to 12. These are labelled A to K and are summarised in the following table:

Other Alternatives	Manual Data Entry		Automated Data Entry			LogicaCMG Alternative						
BM Unit Deemed Demand	SA	A	BSC	CCo	SA	A	BSC	CCo	SA	A	BSC	CCo
Demand Control Price	Option 1, 2 or 3	Option 4	Option 1, 2 or 3	Option 4	Option 1, 2 or 3	Option 4	Option 1, 2 or 3	Option 4	Option 1, 2 or 3	Option 4	Option 1, 2 or 3	Option 4
Option Reference Id	Α	В	С	D	Е	F	G	Н	Ι	J	Κ	L

Full System Solution

This proposed solution involves amending SAA so that the Demand Control calculations would be carried out as part of the Settlement Run process. The loading of GSP Group demand control volume data from the SO would be a manual process, as would the extraction and reporting of demand control data to BSCCo (i.e. SAA-I014 would be unchanged). The tasks involved are as follows:

 Create new tables: DEMAND_CONTROL(Date, Period, GSP GROUP SID, Demand Control Volume, Demand Control Price) DEMAND_CONTROL_BMU(Date, Period, BMU SID, Demand Control Volume, Demand Control Price)

- 2. Amend the Settlement Calculation:
 - a. Ensure that Demand Control processing can be invoked for the II run and only that run
 - b. The demand control price is calculated and populated in the DEMAND_CONTROL table against each GSP Group and period that a volume is in that table for that day. This will only be done for II runs
 - c. The BM Unit Deemed Demand will be calculated for each period and GSP Group in the DEMAND_CONTROL table, and that data will be written to the DEMAND_CONTROL_BMU table. This will only be done for II runs
 - d. Amend F005 module so that the QBS for each BM Unit includes data from the DEMAND_CONTROL_BMU table for all runs
 - e. Amend F009 module so that the Demand Control Volume for each GSP Group is included in the Offer Stack for all runs, where there is data in the DEMAND_CONTROL table
 - f. Amend F007 module so that the calculation for party cashflow (CBM) includes data from the DEMAND_CONTROL_BMU table for all runs as if they were acceptances

Deviation from ELEXON's Solution / Requirements

LogicaCMG has suggested an alternative solution to deal with the situation where demand side acceptances exist prior to Demand Control being invoked (see previous section).

Operational Solution and Impact

Non-System Solutions

Operation of the Demand Control process will involve the following tasks:

- Manual data entry
- Service Delivery support
- Second Line support

These tasks will be charged T&M.

Scheduling of Demand Control Process

In order to meet the existing II Settlement Run timetable the Demand Control Process needs to start on D+3. It is expected that the process of calculating the BM Unit Deemed Demand would take 0.5 days to complete (either by SAA or BSCCo). For those options which require the calculation of the Demand Control Price by performing the II run it would be necessary to carry out the Aggregation Process on the afternoon of D+2 and hence all estimation activity would need to be complete by midday on D+2. Under normal circumstances this is achievable, but there is a risk of the II run being delayed.

Similarly, if more than one settlement period is impacted for a single day by a Demand Control invocation or Demand Control is invoked more than once in a single week there is a risk of the II run being delayed due to the workload generated by the manual data entry. This risk does not apply to the options that remove the need for manual data entry.

Full System Solution

The operational tasks are as follows:

1. The SO would send the GSP Group Demand Control Volumes to SAA via an adhoc

manual flow

- 2. These would be entered into the DEMAND_CONTROL table via an adhoc script
- 3. The II Settlement Run would then be carried out as per normal
- 4. The relevant data would then be extracted from the system database tables using adhoc scripts and be sent to BSCCo as a manual flow for publication to parties

Testing Strategy

Unit	Х	Change Specific	Х	End to End	
Module	Х	Operational Acceptance	Х	Participant Testing	
System	Х	Performance		Parallel Running	
Regression		Volume		Deployment/ Backout	Х

Other:

Validated Assumptions

None.

Outstanding Issues

None.

Changes to Service

Services Impacted

	BMRA	CDCA	CRA	ECVAA	SAA	TAA	Other
Software					Х		
IDD Part 1							
(Docs)							
IDD Part 1							
(S'Sheet)							
IDD Part 2							
(Docs)							
IDD Part 2							
(S'Sheet)							
URS					Х		
SS					Х		
DS					Х		
MSS							
OSM					Х		
LWIs					Х		
RTP	None						
Comms	None						
Other	None						

Non-System Solutions

SAA OSM, SAA LWI <u>Full System Solution</u> SAA URS, SAA SS, SAA DS, SAA OSM, SAA LWI

Nature / Size of System Changes

Medium

Type of Release Costed:	Standalone patch
Deployment Issues, eg Outage Requirements:	None
Impact on Service Levels:	None
Impact on System Performance:	None

Responsibilities of ELEXON

• Within reasonable levels, ELEXON will make available appropriate staff to assist LogicaCMG during the development of this change.

Acceptance Criteria

N/A

Any Other Information

The information imbalance price is currently set to zero. If this values is made non-zero, the processes described in this assessment will not function correctly and this modification must be reassessed.

We have some comments on the P138 BRS and these are attached to this assessment.

Attachments

P138 Price Presentation v0.1 P138 Marked-Up SAA URS v0.1 P138 BRS Review Comments v0.1

PRICING							
Price Breakdown							
Item description	Remarks	Price (ex VAT)					
Development	Non-System Solutions: A B C D E F G J I J K	£22,204 £18,585 £8,573 £6,724 £24,053 £22,204 £23,128 £21,279 £17,660 £15,811 £8,573 £6,724					
Change Specific	Full System Solution	£162,750					
Release Cost	Full System Solution	£307,472					
Total Price		£470,221					
Price Tolerance	Non-System Solutions Full System Solution	15% 20%					
Project Duration	Full System Solution	16 weeks					
Operational Price		T&M					
Rationale							
See Price Presentation. All estimates are based on a single run through the Demand Control process for a single settlement period, for 100 impacted BM Units.							
Annual Maintenance Price	Full System Solution	£22,785					
Rationale							
The Annual Maintenance Price	e is derived as 14% of the Cl	hange Specific Price of the software					

Validity Constraints

- Price excludes provision for indexation of daily rates from 1st April 2004
- Price and duration assume that this change is developed in isolation and the effects of other changes are excluded
- No allowance is included for the final solution being different from the BRS
- Price is for creating DCRs, not a formal documentation issue
- No allowance is included for Information Imbalance price being non-zero
- No allowance is included for supporting PwC activities. Any effort will be charged at contracted T&M rates
- No allowance is included for supporting ELEXON assurance activities. Any effort will be charged at contracted T&M rates
- No allowance is included for End to End/Participant Testing activities. Any effort will be charged at contracted T&M rates
- No allowance is included for Walkthrough activities. Any effort will be charged at contracted T&M rates

The validity period for this quote is 30 days and the offer is based on the following payment schedule:

- For the non-system solutions, LogicaCMG will invoice in full for this change on deployment or within one month of the change being ready for deployment
- For the full system solution, LogicaCMG will invoice 30% on receipt of Purchase Order or authorised start of work, 30% on completion of first build phase, 30% on live implementation and 10% on successful completion of the Success Criteria or one month after live implementation, whichever is sooner
- Maintain charges will be invoiced monthly in arrears with part months charged pro rata.
- Operate charge invoicing will be deferred until the de minimis limit has been reached

Authorised Signature	Date Signed