NETA Change Form	ELEXON Reference
	P147

Title	Version No.
Introduction of a Notified Contract Capacity to limit Party liability in event of erroneous contract notifications	0.1
	LogicaCMG Reference
	ICR567

Type of Assessment	Date CP Received	Date IA Issued
Indicative Impact Assessment	22/12/03	12/1/04

Brief Summary of Change

A new parameter will be created Notified Energy Contract Capacity (NECC), such that a Party can specify an upper limit on its contract notification volumes per Energy Account and thus limit its imbalance liability resulting from erroneous or malicious notifications.

This assessment is against the P147 Requirements Specification v0.2 dated 22 December 2003 [P147AS].

LogicaCMG's Proposed Solution

Main Solution
There are 4 aspects to this solution: input flows of NECC values in the system, confirmation flows of NECC values out of the system, check breach of NECC values on receipt of notification, and check breach of NECC values at gate closure.

Registration of NECC values
There are 3 options:
Automatic flow
Tasks involved are:
1. New CRA loader to validate and load NECC values
2. New database table to store NECC values
3. New CRA screen to maintain NECC values

Manual flow – multiple values
Tasks involved are:
1. New database table to store NECC values
2. New CRA screen to maintain NECC values

Manual flow – single value
Tasks involved are:
1. New database table to store NECC values
2. New CRA screen to maintain NECC values

Confirmation of NECC values
There are 3 options:
Automatic flow 1
Tasks involved are:

1. NECC confirmation report (either new flow or new CRA-I014 subflow)
2. Amend CRA-I020 to include NECC values

Automatic flow 2
Tasks involved are:
1. Amend ECVAA-I022 to include NECC values

Manual flow 1
Tasks involved are:
1. New manual process to return BSCP form

Manual flow 2
Tasks involved are:
1. New script to extract NECC values in CSV format
2. New manual process to email data to ELEXON

Application of NECC on receipt of notification
The software changes are as follows:
1. New internal flow from CRA to ECVAA to transfer NECC values
2. New ECVAA loader to load NECC values from CRA
3. New system parameter for number of periods after gate closure to perform NECC check
4. Amend ECVN loader to aggregate contract volumes on receipt
5. New feedback report to warn Party if aggregated volume above 80% / 90% of NECC
6. Modify Notification Rejection Feedback report (new rejection reason 'NECC breached')

This software change will introduce a much higher level of processing to ECVAA. To determine the additional processor requirements that would be required to aggregate contract volumes on receipt of notifications (ECVNs) some timings have been taken from the Live system. Note that the aggregation would be required for both counter-parties' energy accounts. MVRNs have been ignored since the live system typically receives just 1 MVRN per day.

Assume that the aggregation process required for P147 is similar to that implemented currently by the half-hourly ECVAA Credit Check process. Switching on debug for the Credit Check process allows the time taken by the aggregation part of the Credit Check process to be measured (although adjustment is required to counter the delays introduced by the debug commands). From a sample debug log file (using live data for Settlement Day 06-Jan-2004, Period 27), the following measurements were taken:

Credit Check elapsed time (with debug)   = 198 seconds
Aggregation elapsed time (with debug)   = 81 seconds

Average Credit Check elapsed time (without debug) = 150 seconds (from sample live data)

The above aggregation process was for ECVNs only, and covered 92 Energy Accounts. From this data we can estimate the time taken to aggregate ECVN data for one Energy Account and one Settlement Period:

Aggregation time/Energy Account/Period = (150 / 198) * 81 / 92 = 0.67 seconds

Assume that all received notifications become effective within the next 4 periods, and that volumes need to be aggregated for each of these periods. Then, the additional elapsed time required to process an ECVN would be:

Aggregation time/ECVN = 0.67 seconds * 2 Energy Accounts * 4 periods = 5.3 seconds

Assuming that the current elapsed time to process an ECVN is 2 seconds (from sample live data), then the increase in elapsed time is:

Factor increase ECVN processing time = (2 + 5.3) / 2 = 365%

i.e. to maintain processing capacity at current 'live' levels, processing speed needs to be increased by a factor of 3.65.

In reality, it may not be necessary to aggregate volumes for every received ECVN, and time savings may be achievable using multi-threading. However, these calculations support the judgement that the current processing capacity would need to be doubled, as a minimum, in order to implement P147 and retain existing performance levels.

This would require that the Live cluster and DR hardware be replaced with new hardware with twice the processing power. An indicative cost for this hardware is £1.5M.

Other tasks involved include:

- P147 software development and testing
- Upgrade PTS and internal development and test systems to new Unix version to match that of new live hardware
- Regression testing due to change of operating system/hardware architecture
- Migration of live service from old hardware to new hardware

Application of NECC at Gate Closure

The software changes are as follows:

1. Modify ECVAA credit checker to compare aggregated volumes to NECC values
2. New report (email using Credit Default address list) to warn Party of 80% / 90% NECC breach

This software change has the potential to introduce much higher levels of processing to ECVAA. For each extra Settlement Period that the half-hourly Credit Check has to process there will be a proportionate amount of extra processing. Notification loading is suspended whilst the Credit Check process is running so processing of multiple Settlement Periods will have a significant performance impact.

The combinations of pricing options is summarised in the table below:

Confirmation flows	Registration flows		
	Automatic	Manual 1	Manual 2
Automatic 1	1	2	3
Automatic 2	4	5	6
Manual 1	7	8	9
Manual 2	10	11	12

Alternative Solution 1

This solution is to adopt a manual post event rectification process similar to the existing ECVAA System Failure recovery process. The steps in the process would be as follows:

1. Erroneous notification is submitted by Party and is loaded by ECVAA
2. At the earliest opportunity, the Party rectifies the error for settlement periods for which gate closure has not passed
3. Party notifies ELEXON of any periods for which gate closure correction is required
4. ELEXON decide through their own process whether the claim submitted by the Party is valid
5. ELEXON notify ECVAA of the changes required to the Party's notification data prior to the scheduled II, SF or subsequent reconciliation run
6. ECVAA make corrections to notification data via normal Disputes mechanism in time for the next settlement run. Corrections will only be performed during normal business hours
7. SAA runs the next scheduled settlement run using the amended notification data
8. SAA releases settlement results to ELEXON
9. ELEXON calculates any necessary error corrections payments and feeds this information to FAA

This manual process requires no development effort to implement.

Alternative Solution 2

This solution is to restrict the times during which notifications can be accepted (either to allow a Party to specify a rejection period during which only notifications from a nominated ECVNA can be accepted; or to allow a block 'non-operational' period to be specified during which no notifications can be accepted that involve the specified participants). Similar tasks are involved for both variations of this solution:

1. New ECVAA screen to maintain time constrained notification submission
2. Modify ECVN loader to reject notifications in accordance with (1).
3. Modify Notification Rejection Feedback report (new rejection reason 'Out of hours').

Deviation from ELEXON's Solution / Requirements

Pricing is indicative only

Operational Solution and Impact

Alternative Solution 1
The operation of manual post event rectification process will be charged T&M and it is estimated that correction of up to 48 settlement periods of data would take 0.5 days of effort at Programmer grade.

Testing Strategy

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

Other:

Validated Assumptions

None.

Outstanding Issues

None.

Changes to Service

Services Impacted

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

Nature of Documentation Changes

Nature / Size of System Changes

Large

Type of Release Costed:	Standalone Patch
Deployment Issues, eg Outage Requirements:	Outage required.
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

This is assumed to be covered by the acceptance criteria in the "CVA Program – Release Acceptance Criteria" document produced for the Feb03 release.

Any Other Information

None.

Attachments

P147 Price Presentation v0.1
P147 Issues Matrix

PRICING		
Price Breakdown		
Item description	**Remarks**	**Price (ex VAT)**
Change Specific Costs	Option 1 Options 2 or 3 or 4 Options 5 or 6 or 7 Options 8 or 9 Option 10 Options 11 or 12 Alternative Solution 1 Alternative Solution 2	£1,952,262 £1,924,631 £1,888,927 £1,849,683 £1,898,138 £1,871,013 £0 £79,689
Variable Release Costs	Option 1 Options 2 or 3 or 4 Options 5 or 6 or 7 Options 8 or 9 Option 10 Options 11 or 12 Alternative Solution 1 Alternative Solution 2	£22,886 £22,886 £19,346 £14,667 £19,346 £19,346 £0 £6,449
Fixed Release Costs	Option 1 Options 2 or 3 or 4 Options 5 or 6 or 7 Options 8 or 9 Option 10 Options 11 or 12 Alternative Solution 1 Alternative Solution 2	£335,920 £334,150 £332,380 £330,610 £334,150 £332,380 £0 £230,001
Total Price	Option 1 Options 2 or 3 or 4 Options 5 or 6 or 7 Options 8 or 9 Option 10 Options 11 or 12 Alternative Solution 1 Alternative Solution 2	**£2,311,069** **£2,281,667** **£2,240,653** **£2,194,960** **£2,251,634** **£2,222,738** **£0** **£316,139**
Price Tolerance		All these prices are indicative and no tolerance can be given

Project Duration		Cannot give a figure for duration as strategy for replacement of live hardware would need to be agreed before any planning could be done.
Operational Price		The Alternative Solution to be charged as T&M and the remaining Options £0 (to be confirmed)
Rationale		
None.		
Annual Maintenance Price	Option 1	£63,317
	Options 2 or 3 or 4	£59,448
	Options 5 or 6 or 7	£54,450
	Options 8 or 9	£48,956
	Option 10	£55,749
	Options 11 or 12	£51,942
	Alternative Solution 1	£0
	Alternative Solution 2	£11,156
Rationale		
The Annual Maintenance Price is derived as 14% of the Change Specific Price of the software changes.		

Validity Constraints

- These prices are indicative and cannot be used to place a purchase order
- 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 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

This offer is based on the following payment schedule:
- 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