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ELEXON Requirements Specification To Support Modification P48

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I DOCUMENT CONTROL

a Authorities

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0.2		Emrah Cevik		
1.0		Emrah Cevik		

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Version	Date	Approver	Signature	Responsibility
1.0		John Williamson		

Version	Date	Authorisation	Signature	Responsibility
1.0		Peter Davies		

b Distribution

Name	Organisation
	Modifications Group
	Ofgem
	NGC

c Related Documents

- Reference 1 Initial Written Assessment of Modification Proposal P48 (IWA048)
- Reference 2 BSAD Methodology Statement

d Intellectual Property Rights and Copyright

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1 INTRODUCTION

The primary purpose of this document is to specify the requirements for implementation of Modification Proposal P48 and to enable impact assessments to be carried out by BSC Agents and BSC Parties. Modification Proposal P48 proposes that a half-hourly update to the Balancing Services Adjustment Data (BSAD) be sent by the Transmission Company to the BMRA and published as soon as possible after Gate Closure on the BMRS. It is the Proposer's intent that the Transmission Company will continue submitting and publishing BSAD data at the day-ahead stage, in addition to the proposed half-hourly updates. The post-event update of BSAD data will also continue to be submitted and published by the Transmission Company.

P48 depends extensively on software changes being implemented as part of the enduring solution for P8 under the BSC System Release 2 Project. Information on the BSC Release 2 Project can be obtained from ELEXON by e-mailing bscsr2@elexon.co.uk

It should be noted that P48 is not part of the BSC Systems Release 2 Project.

1.1 Structure of Document

The document is structured in the following manner:

- **Background and Related Issues**
- **Summary of Proposed Modification** – a description of Modification and any associate additional requirements.
- **Changes to BSC and Code Subsidiary Documents**
- **Changes to BSC Systems** – a description of the changes to assets and services required to support the implementation of Modification P48.
- **Other Changes** – a description of the changes required to BSAD Methodology and Party Systems
- **Development Process** – a description of how this workaround is to be developed, tested and implemented.

1.2 Glossary

The following acronyms have been used throughout this document:

BMRA	Balancing Mechanism Reporting Agent
BMRS	Balancing Mechanism Reporting Service
BSAD	Balancing Services Adjustment Data
BSC	Balancing and Settlement Code
NGC	National Grid Company

PIMG	Pricing Issues Modification Group
SAA	Settlement Administration Agent
SBP	System Buy Price
SSP	System Sell Price
SO	System Operator (NGC)
TC	Transmission Company (including the SO)
URS	User Requirements Specification

2 BACKGROUND AND RELATED ISSUES

2.1 Introduction

The BSC currently states that Balancing Services Adjustment Data (BSAD) will be sent to the BMRA by the Transmission Company not later than 17:00 hours at the day-ahead stage, with a post-event update on the day next following the relevant Settlement Day (Section O6.3.1 of the BSC). This means that any pre-Gate Closure actions undertaken by the Transmission Company after 17:00 at the day-ahead stage, which possibly have an impact on BSAD values, will not be included in the calculation of the Indicative System Buy Price and the Indicative System Sell Price. The outcome of such actions is currently processed via a post-event update and does not feed into the calculations until the Interim Information (II) Run.

ELEXON produced an Initial Written Assessment for P48 on 7 November 2001 (Reference 1).

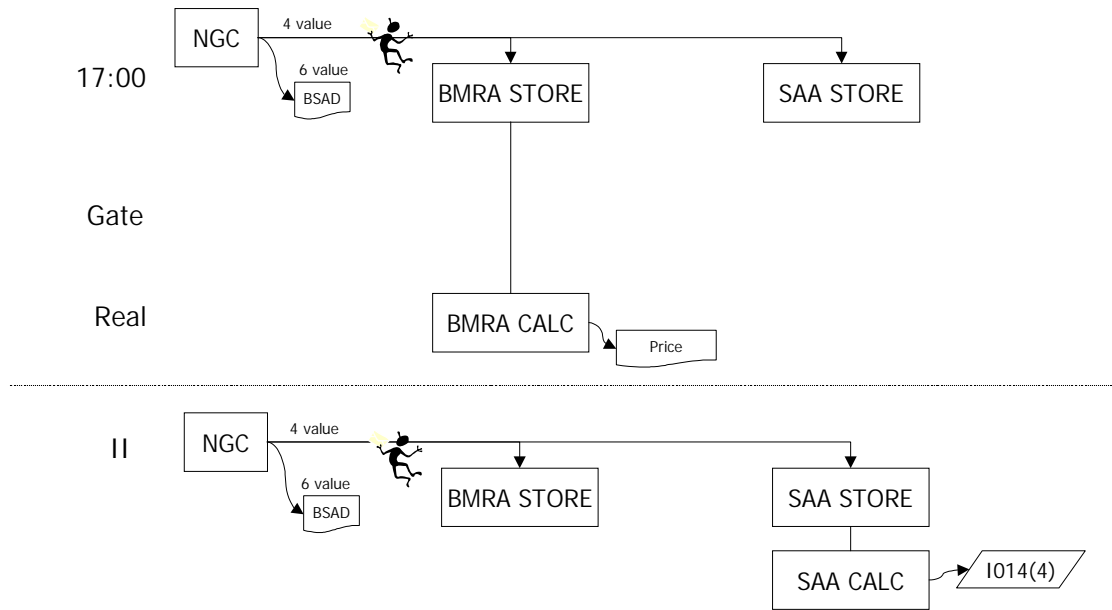
Modification Proposal P48 depends on software changes being implemented for P8 under the BSC Systems Release 2 Project. Phase B of the BSC Systems Release 2 Project will be completed in March 2002 and the final phase of BSC Release 2 will be completed in September 2002. It should be noted that Modifications P8 and P18A have already been implemented within the BSC since 25 September 2002. The software implementation was achieved by Interim Solutions outside of BSC Central Systems. The BSC Systems Release 2 Project will include these Modifications within the BSC Central Systems. P48 is not part of the BSC Systems Release 2 Project.

2.2 Current Baseline of BSC Central Systems (Pre P8)

The current SAA and BMRA systems receive 4-value BSAD data from SO in the form of an e-mail containing a spreadsheet compatible comma separated value (CSV) file. The data file is sent to the BMRA before 17:00 at the day-ahead stage, although the BMRA will always use the latest available version regardless of submission time. The full set of 6 BSAD variables are also published on the NGC website at the same time as the submission. Day-ahead BSAD data is stored by the BMRA and is then used in the calculation of indicative system prices, once all Bid-Offer Acceptance data has been received following real time operation of the system. Prior to the II Run, NGC submit and publish a post-event update to the BSAD variables, which incorporates any NGC trades undertaken after 17:00 at the day-ahead stage. These values are stored and used in calculating energy imbalance prices for the II run. The SAA I014 (Settlement Report) flow for the II run includes only 4 of the BSAD variables, i.e., excluding the price adjusters. The current baseline of the BSC Central Systems Software (not including the effect of P8 and P18A) is illustrated by Figure 2.1

In Figure 2.1, time is assumed to flow downwards starting at "17:00" which refers to the day previous to the Settlement Period in question. "Gate" refers to Gate Closure for that Settlement Period. "Real" refers to end of the Settlement Period and then "II" refers to the day of the Interim Initial Settlement Run. The figure of the man holding an envelope denotes the e-mail from NGC and the manual nature of this interface.

Figure 2.1 The Current Central Systems Baseline

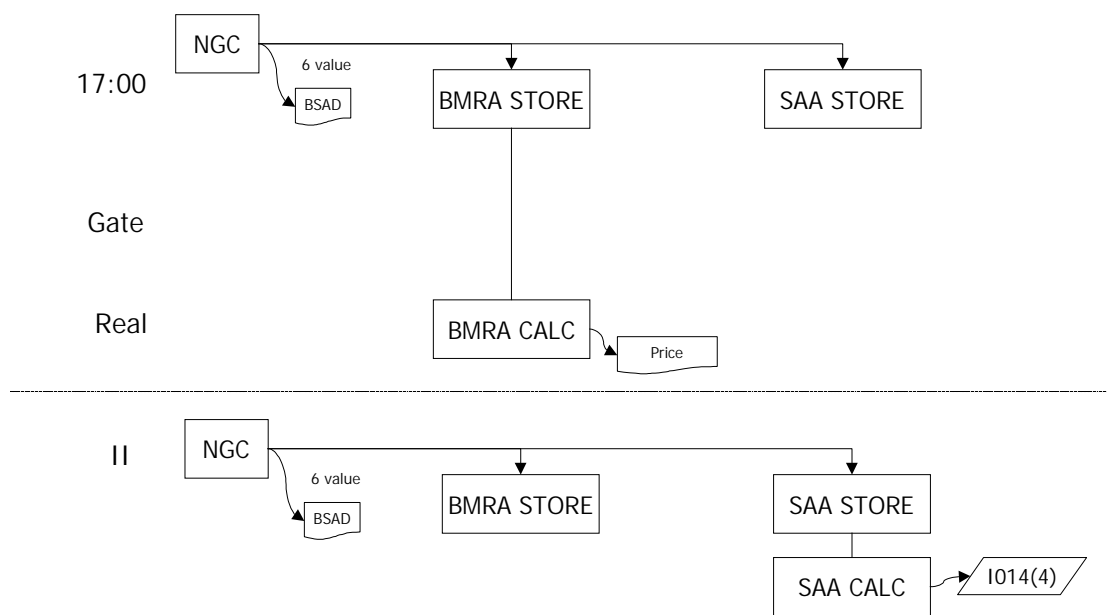


It should also be noted that the P18A was given legal effect on 25 September 2001 and the interim solution for P18A also includes an interim solution for P8. The Transmission Company send 6-variable BSAD data to ELEXON who use these values to calculate P18A/P8 compliant Imbalance Prices, rather than using the mechanism introduced in Work Around W024.

2.3 BSC Systems Release 2 (Phase B)

Modifications P8 and P18 have been included within the scope of the BSC Systems Release 2 Project. The implementation of BSC Systems Release 2 will automate BSAD data transfer between the Transmission Company and Central Services, and include its subsequent reporting on the BMRS. The following diagram shows the effect of P8 within BSC Systems Release 2 Project Phase B which is scheduled for 27 March 2002. Figure 2.2 differs from Figure 2.1 by including the automated interface from NGC. It should also be noted that NGC will start sending 6-variable BSAD data at this stage. I014(4) represents the SAA Settlement Report which contains only 4-value BSAD data.

Figure 2.2 BSC Systems Release 2 (Phase B)



2.4 BSC Systems Release 2 (Final Release)

The final release of BSC Systems Release 2 will complete the implementation of P8 and will be in place by 30 September 2002. At this stage, the BMRS and the SAA service will start reporting BSAD values as shown on Figure 2.3. The shaded parts show the changes from Figure 2.2. Note that BSAD data will be published in three different formats:

- BSAD only – the latest data received. This will be overwritten when new data is received.
- Price + BSAD – the actual BSAD data used in the calculation of indicative imbalance prices together with those imbalance prices.
- BSAD data in the SAA I014 output flow – the actual BSAD data used in the settlement run and hence used in the calculation of imbalance prices. By September, the SAA I014 flow for the II run will also be upgraded to include all 6 BSAD variables.

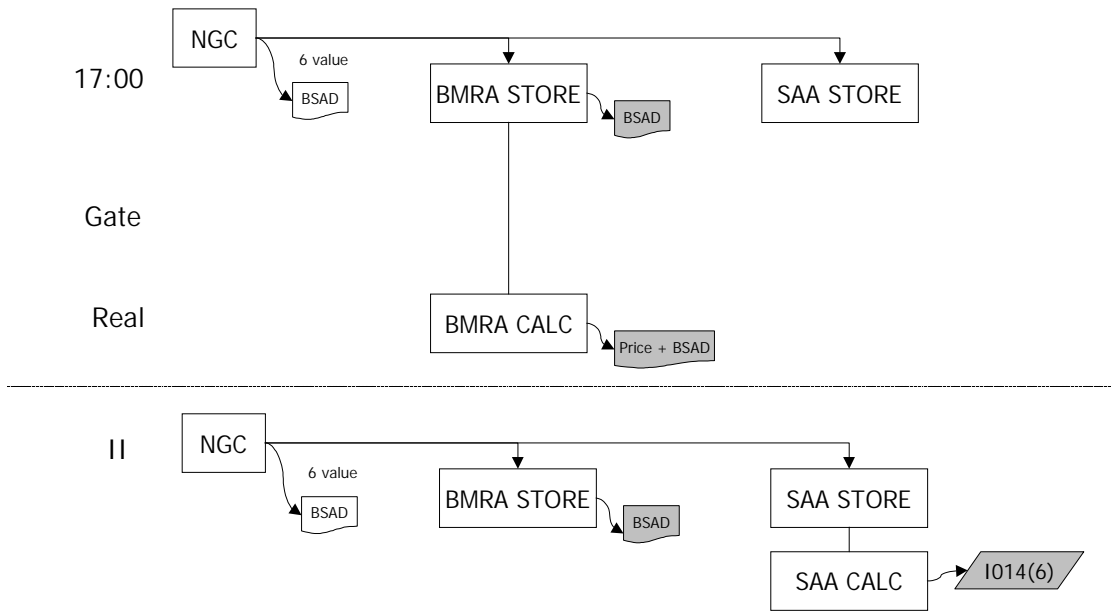


Figure 2.3 BSC Systems Release 2 (Full Release)

2.5 BSC Systems Release 2 Changes to Documentation (Currently in Scope)

The automated interface for receiving BSAD data will be included in the BMRA Service Description as part of the BSC Release 2 Project.

The following NETA Data File Catalogue and Reporting Catalogue sections are already being updated as part of the BSC Systems Release 2 Project.

Table 2.1 Changes to Documentation

Document	Section	Title
NETA Data File Catalogue	A	SAA-I014 (output)
	B	BSAD data item references
Reporting Catalogue	3.1.1 (b), 3.1.1 (h), 3.1.2 (c)	Interim Information Settlement Report

The SAA and BMRA User Requirement Specifications (URS) are already being updated to alter formulae and change the previously described data flows as part of the enduring implementation of P8 under the BSC Systems Release 2 Project.

The BMRA-I014 / SAA-I026 flows are automated flows which will be implemented in March 2002 as part of P8, under the BSC Systems Release 2 Project. (Note that these flows are also capable of using 4-variable BSAD data by setting the two new variables to zero.) The BMRA-I014 is shown below.

Table 2.2 BMRA I014 File Format

Requirement ID: BMRA-I014	Source: System Operator	Title: Price Adjustment Data	ITT reference: P8
Mechanism: Automatic	Frequency: Continuous	Volumes: Each file will contain the data for one Settlement Date (a file may contain data for a single period, or covering multiple dates.) Data for each Settlement Period will normally appear in 2-4 files.	
Interface Requirement: The BMRA Service will receive the following system parameters from the System Operator via an automatic interface: Settlement Date Settlement Period (1-50) BCA _i (the Buy Price Cost Adjustment) (£) BVA _i (the Buy Price Volume Adjustment) (MWh) BPA _i (the Buy Price Price Adjustment) (£/MWh) SCA _i (the Sell Price Cost Adjustment) (£) SVA _i (the Sell Price Volume Adjustment) (MWh) SPA _i (the Sell Price Price Adjustment) (£/MWh)			
Physical Interface Details: This file is in NGC File Format using Group Definition NGC30			

The NGC, BMRA and SAA Interface Specifications are already amended to include the new electronic interface for BSAD data as part of the enduring solution for P8.

3 SUMMARY OF PROPOSED MODIFICATION

3.1 P48

Modification Proposal P48 proposes that a half-hourly update to the BSAD data be sent by the Transmission Company to the BMRA and published on the BMRS as soon as possible after Gate Closure. It is the Proposer's intent that the Transmission Company will continue submitting and publishing BSAD data at the day-ahead and day-following stages, in addition to the proposed half-hourly updates. The following figure shows the outcome of implementing P48 on top of the current BSC Baseline. The shaded areas represent changes from Figure 2.3.

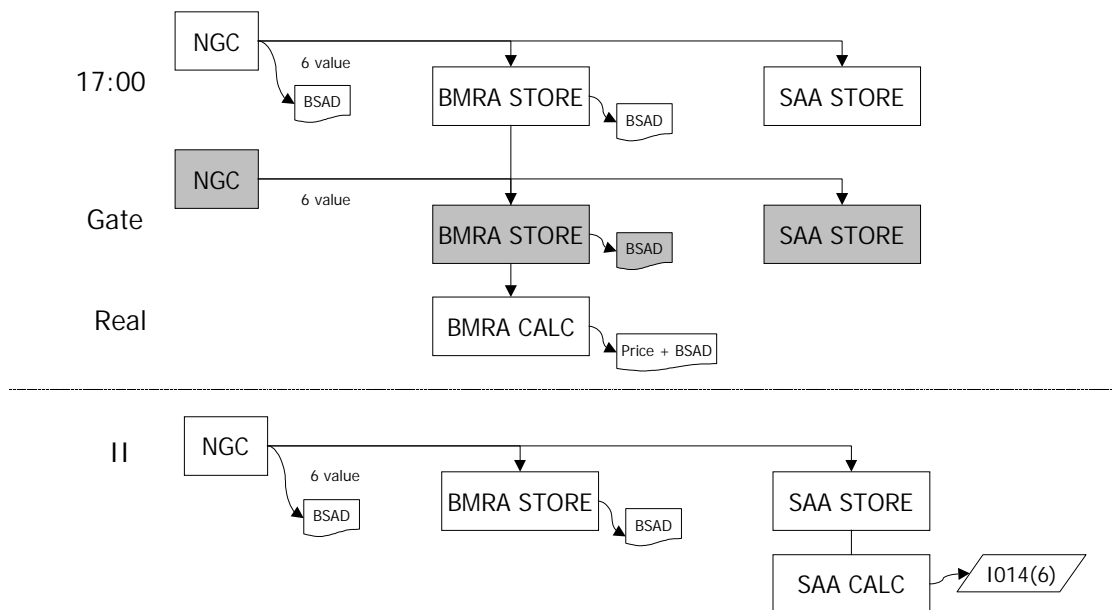


Figure 3.1 What P48 requires

The effect of P48 will also include the reporting of more accurate Indicative Energy Imbalance Prices on the BMRS. It is important to note that P48 will not alter the imbalance prices calculated within SAA and hence used during the settlement process.

Modification P48 is introduced with two immediate aims:

- (1) To allow the most up-to-date Balancing Services Adjustment Data (BSAD) to be published on the BMRS; and
- (2) To allow accurate calculation and prompt reporting of the Indicative System Buy Price and the Indicative System Sell Price.

According to the Proposer, these aims seek to further the following BSC objectives:

- Promoting effective competition in the generation and supply of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity;

- Promoting efficiency in the implementation and administration of the balancing and settlement arrangements.

It is the Proposer's view that a move to half-hourly submission of BSAD data at Gate Closure should be accompanied by the data being published on the BMRS, instead of on the Transmission Company web site. This is already part of BSC System Release 2 Project Final Release (30 September 2002).

The second aim may significantly improve the accuracy of indicative system price information available to BSC Parties on those occasions when Transmission Company actions after 17:00 at the day-ahead stage entail changes to BSAD data.

3.2 Assumption

Modification Proposal P48 is dependent on the software changes already being implemented as part of the BSC Release 2 Project. In fact, BSC Release 2 may implement all software changes required for P48 so that the only impact of P48 should be on the timing and volume of the relevant data flows. This will be confirmed by the Detailed Level Impact Assessment (DLIA) scheduled for 7 January 2002.

4 CHANGES TO THE BSC AND CODE SUBSIDIARY DOCUMENTS

4.1 Modifications To BSC

The main change introduced by Modification Proposal P48 is to section Q.6.3.1 of the BSC. Legal text for this Modification Proposal is currently being drafted. The general requirement will be for the Transmission Company to submit BSAD data to the BMRA, as soon as possible after Gate Closure and before the end of the Settlement Period for which the Gate Closure relates.

Another BSC change was suggested to section Q6.3.4 which specifies how BSAD data will be published. This issue is being resolved under the auspices of the BSC System Release 2 Project.

4.2 Code Subsidiary Documents

There will be no impact on any BSCP's including BSCP 01.

4.2.1 Service Descriptions

The automated interface for receiving BSAD data will already be included in the BMRA Service Description as part of the enduring implementation of P8. The increased volume of data flow due to P48 should also be formalised in the BMRA Service Description. Other Service Descriptions need not be impacted by P48.

4.2.2 NETA Data File Catalogue and Reporting Catalogue

Modification Proposal P48 will not make any further changes to the NETA Data File Catalogue or Reporting Catalogue but will increase the volume and frequency of BSAD data flows as detailed in section 5 of this document.

BMRA-I014 flow is an automated flow which will be implemented in March 2002 as part of the BSC Systems Release 2 Project. The Requirement in the BMRA URS is already consistent with P48 as a result of this release.

4.3 Other Configurable Items

The SAA and BMRA User Requirement Specifications (URS) are already being updated to alter formulae and change the previously described data flows as part of the BSC Release 2 Project. The impact of P48 will be to increase the volume and frequency of the BMRA-I014 and SAA-I026 data flows.

4.4 BMRA, SAA, SO Interface Specifications

The NGC, BMRA and SAA Interface Specification will already be amended to include the new electronic interface for BSAD data as part of the enduring implementation of P8. The impact of P48 will be to increase the volume and frequency of BMRA-I014 data flows as described in section 5 of this Requirements Specification.

5 CHANGES TO CENTRAL SYSTEMS SOFTWARE AND DOCUMENTATION

The Pricing Issues Modification Group (PIMG) agreed that the proposed enduring solution for P8 may deliver all *software* changes required to implement P48, based on statements made by the Central Service Provider representative. In other words, the more dynamic flow of BSAD data envisioned by P48 may only require *process* changes by the Transmission Company and the BMRA. This will be confirmed by the Detailed Level Impact Assessment (DLIA). The associated operational and maintenance costs will also need to be assessed.

5.1 Alternative Implementation Dates and Options

It is to be assumed in this document that software changes to implement P8 within Central Systems are required prior to P48. This assumption is important to set the earliest P48 Implementation Date to be 27 March 2002. The Transmission Company expect to be able to provide the half-hourly data by 1 April 2002. Based on this information, the PIMG identified the following implementation options for Modification P48.

- (1) The approximate Implementation Date would be 30 September 2002. This is the simplest option in terms of getting the processes in place because the enduring solution for P8 is expected to be fully delivered by September 2002. However, until this date, the BMRS would continue reporting day-ahead BSAD values whilst the SAA would settle to half-hourly-submitted values.
- (2) The approximate Implementation Date would be between March and April 2002. An Interim Solution to report BSAD data would be developed until the enduring solution to P8 is fully in place by September 2002. This option would require the establishment of a real-time system only needed for around 6 months.
- (3) The approximate Implementation Date would be between March and April 2002 for the submission of BSAD data but September 2002 for online publication of BSAD data. This option was raised in accordance with the Panel recommendation to separate receipt and publication of BSAD data. This option is consistent with the early implementation of P48 enabling the calculation of indicative system prices to utilise the most recent BSAD values.

It is also important to note that none of these options will alter the imbalance prices calculated within SAA and hence used during settlement. It was the Modification Group view that considering these options did not require the creation of an Alternative Modification. The Modification Group unanimously recommended option 3 as the most appropriate option for implementing P48.

It should also be noted that P48 is not part of the BSC System Release 2 Project. Hence, given the time-scales involved in the modification process, an Implementation Date of 1 April could be considered optimistic and hence of high risk, even if all software changes may be available in March 2002.

6 OTHER CHANGES (NON CENTRAL SYSTEMS)

6.1 BSAD Methodology

Changes to the BSAD Methodology are outside the remit of the Requirements Specification for Modification Proposal P48, which only covers changes to the BSC and BSC Central Services. Changes to the BSAD Methodology will be progressed by the Transmission Company and it is anticipated that these changes will be in place prior to the implementation of P48. NGC believe that these will be in place by 1 April 2002.

6.2 BSC Party Systems

BSC Party systems may need to be aware of increased TIBCO flows and make sure that they can receive the appropriate SAA-I014 files. This is already a requirement for P8. However, P48 will exaggerate the need to handle multiple versions of BSAD records for the same Settlement Period.

7 DEVELOPMENT PROCESS

For the purposes of this assessment, the BSC Central Service Agent should assume that the changes will be implemented as a stand alone development project managed by ELEXON.

Notwithstanding this, ELEXON recognise that responsibility for design, testing and implementation of the system lies with the BSC Central Service Agent, and in order to gain assurance that changes made are consistent with the requirements, ELEXON requires visibility of these processes. The following sections give an indication of the control points required during design, testing and implementation and are supplied to provide a basis on which the BSC Central Service Agent can estimate.

7.1 Design

ELEXON intend that responsibility for the correctness of the design should remain with the BSC Central Service Agent, but that ELEXON should have the opportunity to review it, and identify apparent inconsistencies with the requirements. The following processes are proposed to achieve this:

- ELEXON will review changes to the User Requirement Specifications (URS), and sign the document off once review comments have been addressed.
- ELEXON will review changes to the System Specification and Design Specification, and identify any evident inconsistencies with the URS, but will not sign off the documents.

7.2 Testing

ELEXON intend that responsibility for software testing should remain with the BSC Central Service Agent, but that ELEXON should have some visibility of the process, in order to gain assurance that the integrity of trading and Settlement is maintained. The following processes are proposed to achieve this:

- As part of the response to this document, the BSC Central Service Agent will provide a statement of their proposed testing strategy. This statement will be reviewed by ELEXON, and should explain how the BSC Central Service Agent will demonstrate that the changes are ready for live operation, and that there is no unplanned impact on pre-existing facilities.
- ELEXON will be provided for information with test plans, test scripts and other test documentation that they may request. ELEXON will review these documents, and identify any evident inconsistencies with the agreed testing strategy, but will not sign them off.
- ELEXON will have the option of witnessing appropriate elements of the BSC Central Service Agent's testing.
- The BSC Central Service Agent will provide ELEXON with a test report, summarising the testing carried out, and the results of those tests. The report will also describe any defects found during testing, and the steps taken to resolve them.

7.3 Implementation

ELEXON anticipate the following interaction with the BSC Central Service Agent's implementation process:

- As part of the impact assessment of this document, the BSC Central Service Agent will provide a high-level statement of their proposed implementation approach (describing, for example, whether a phased or patch release approach is proposed). ELEXON will review and sign off this high-level implementation strategy.
- Implementation date(s) for the changes described in this document will be agreed in advance by ELEXON and the BSC Central Service Agent.

ATTACHMENT 1: - MODIFICATION PROPOSAL P48 CONSULTATION QUESTIONS

Name:

Organisation:

Response provided on behalf of the following Parties (Please list all Parties):

Question	Yes/No (with rationale)
Q1 Do you believe that Modification Proposal P48 better facilitates the Applicable BSC Objectives?	
Q2 Do you believe that the BSC should be changed to incorporate Modification P48?	
Q3 Do you agree with the Modification Group's recommendation for implementation option 3, as detailed in Section 5.1 of the Requirement Specification?	
Q4 Do you wish to make additional comments?	

ATTACHMENT 2: - MODIFICATION PROPOSAL P48 IMPACT ASSESSMENT

When responding would you describe the impact on your processes and systems of implementing Modification Proposal P48, in particular the time-scales for implementation of the proposed changes in your organisation, using the forms overleaf.

The implementation of Modification Proposal P48 will / will not impact on our systems and processes.

We would require ___ days notice to implement the necessary changes.

Comments:

Name: _____

Organisation: _____

Response provided on behalf of:

Date: _____

