

SECOND ASSESSMENT CONSULTATION for Modification Proposal P227

'Extension Of The Definition Of ECVAA Systems to include the centrally provided communications network'

Prepared by: P227Modification Group

For attention of: BSC Parties and other interested parties
Responses due: 5PM on 17 February 2009
(to: modification.consultations@elexon.co.uk)

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This document has been distributed in accordance with Section F2.1.10 of the Balancing and Settlement Code.¹

Proposed Modification P227 seeks to ensure that Parties have the ability to resubmit contracts as a result of a failure of the centrally provided communications network. The solution proposes to introduce the concept of a 'Notification System Incident' to describe the circumstance when the centrally provided communications network² fails.

The boundary of responsibility for communications for Parties and Central Systems will be defined in the Communications Requirements Document. If the boundary of responsibility for communications are changed in future the definition for the boundary of responsibility will be amended in the Communications Requirements Document. The P227 solution is therefore robust to any future changes in the provision of communications by allowing for the definition of 'centrally provided communication network' to be revised.

The **Second Consultation for P227** seeks to understand industry views regarding whether the solution addresses the defect stated in the P227 Proposal, for both the current and any future arrangements for provision of communication services. The solution is dealt with in Part 1 of this document and the attached response proforma (Attachment 1).

This consultation document contains analysis, conducted by the Group and by an independent consultancy, regarding alternative ways to provide communications. This information was requested after the Group had issued the first P227 consultation. The Group concludes that, there are other ways to deliver communications but that this Modification will cater for any changes to provision of communications services. The analysis and Group observations arising from this analysis is contained in Section 2 for information.

CONSULTATION QUESTIONS

This consultation seeks respondents' views regarding P227 and, in particular:

- Whether the further work changes your view as to whether the Proposed Modification should be

¹ The current version of the Code can be found at <http://www.elexon.co.uk/bscrelateddocs/BSC/default.aspx>.

² The centrally provided communications network extends from the participant router to the router at the Central Systems, but does not include a loss of power to the participant router.

made;

- Whether you agree with the Group conclusions arising from the additional analysis that;
 - There will always be a central element for communication services, hence a P227 solution is required; and
 - The ability to revise the definition of the boundary for the centrally provided communication services negates any perceived need for a Sunset Clause
- Whether you agree with the Group's original views that P227 better meets the Applicable BSC Objectives;
- Whether you believe that the Legal Text delivers the solution; and
- Whether there are any substantive issues not considered by the Modification Group which should be brought to the Group's attention for inclusion in its assessment of P227.

You are invited to provide a response to the questions contained in the attached pro-forma.

Please send responses, entitled 'Second P227 Assessment Procedure Consultation', by **5PM** on **17 February 2009** to the following e-mail address: modification.consultations@elexon.co.uk.

Any queries on the content of the consultation pro-forma should be addressed to Bu-Ke Qian (020 7380 4146), e-mail address bu-ke.qian@elexon.co.uk.

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SUMMARY OF IMPACTED PARTIES AND DOCUMENTS

As far as the Modification Group has been able to assess, the following parties/documents would be impacted by P227.

Parties	Sections of the BSC	Code Subsidiary Documents
Distribution System Operators <input type="checkbox"/>	A <input type="checkbox"/>	BSC Procedures <input type="checkbox"/>
Generators <input checked="" type="checkbox"/>	B <input type="checkbox"/>	Codes of Practice <input type="checkbox"/>
Interconnectors <input checked="" type="checkbox"/>	C <input type="checkbox"/>	BSC Service Descriptions <input checked="" type="checkbox"/>
Licence Exemptable Generators <input type="checkbox"/>	D <input type="checkbox"/>	Party Service Lines <input type="checkbox"/>
Non-Physical Traders <input checked="" type="checkbox"/>	E <input type="checkbox"/>	Data Catalogues <input type="checkbox"/>
Suppliers <input checked="" type="checkbox"/>	F <input type="checkbox"/>	Communication Requirements Documents <input checked="" type="checkbox"/>
Transmission Company <input type="checkbox"/>	G <input type="checkbox"/>	Reporting Catalogue <input type="checkbox"/>
Party Agents	H <input type="checkbox"/>	Core Industry Documents
Data Aggregators <input type="checkbox"/>	I <input type="checkbox"/>	Ancillary Services Agreement <input type="checkbox"/>
Data Collectors <input type="checkbox"/>	J <input type="checkbox"/>	British Grid Systems Agreement <input type="checkbox"/>
Meter Administrators <input type="checkbox"/>	K <input type="checkbox"/>	Data Transfer Services Agreement <input type="checkbox"/>
Meter Operator Agents <input type="checkbox"/>	L <input type="checkbox"/>	Distribution Code <input type="checkbox"/>
ECVNA <input checked="" type="checkbox"/>	M <input type="checkbox"/>	Distribution Connection and Use of System Agreement <input type="checkbox"/>
MVRNA <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Grid Code <input type="checkbox"/>
BSC Agents	O <input type="checkbox"/>	Master Registration Agreement <input type="checkbox"/>
SAA <input type="checkbox"/>	P <input checked="" type="checkbox"/>	Supplemental Agreements <input type="checkbox"/>
FAA <input type="checkbox"/>	Q <input type="checkbox"/>	Use of Interconnector Agreement <input type="checkbox"/>
BMRA <input type="checkbox"/>	R <input type="checkbox"/>	BSCCo
ECVAA <input checked="" type="checkbox"/>	S <input type="checkbox"/>	Internal Working Procedures <input checked="" type="checkbox"/>
CDCA <input type="checkbox"/>	T <input type="checkbox"/>	BSC Panel/Panel Committees
TAA <input type="checkbox"/>	U <input type="checkbox"/>	Working Practices <input type="checkbox"/>
CRA <input type="checkbox"/>	V <input type="checkbox"/>	Other
SVAA <input type="checkbox"/>	W <input type="checkbox"/>	Market Index Data Provider <input type="checkbox"/>
Teleswitch Agent <input type="checkbox"/>	X <input checked="" type="checkbox"/>	Market Index Definition Statement <input type="checkbox"/>
BSC Auditor <input type="checkbox"/>		System Operator-Transmission Owner Code <input type="checkbox"/>
Profile Administrator <input type="checkbox"/>		Transmission Licence <input type="checkbox"/>
Certification Agent <input type="checkbox"/>		
Other Agents		
Supplier Meter Registration Agent <input type="checkbox"/>		
Unmetered Supplies Operator <input type="checkbox"/>		
Data Transfer Service Provider <input type="checkbox"/>		

1 SECTION 1 – P227 SOLUTION

1.1 Purpose of Second Consultation

First P227 Consultation

P227 seeks to ensure that Parties have the ability to resubmit contracts as a result of a failure of the centrally provided communications network. The solution proposes to introduce the concept of a 'Notification System Incident' to describe the circumstance when the centrally provided communications network fails, as shown in Figure 1.

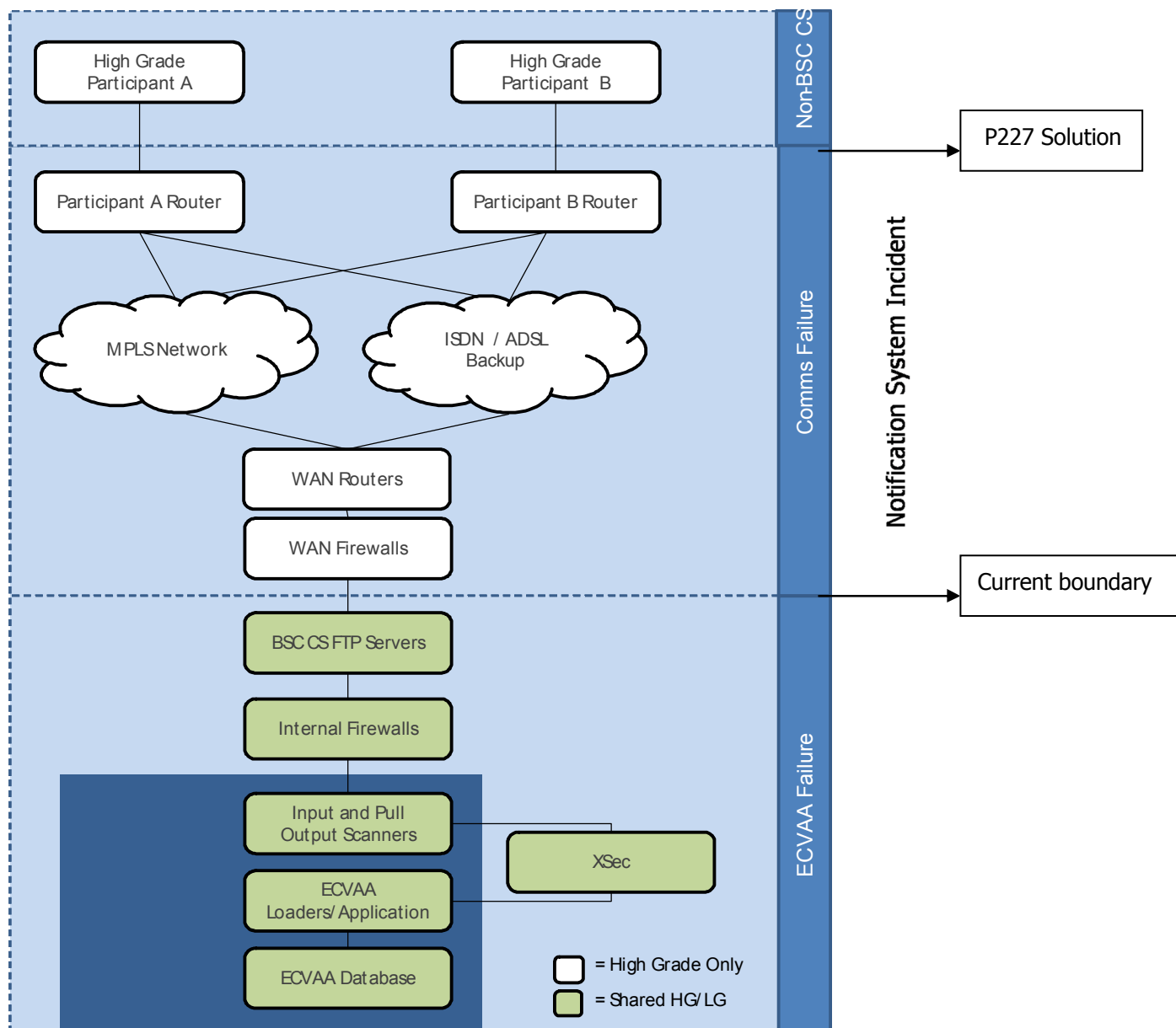


Figure 1 – Communications via the High Grade Service

ELEXON will notify the industry in the event of a communication failure (i.e. a 'Notification System Incident'). Parties would have 1 Working Day (WD) to notify ELEXON if they believe there has been a communications failure that ELEXON has not notified the industry of. ELEXON will investigate and confirm to industry if such a failure occurred. Subject to ELEXON confirmation, Parties will then have the ability to resubmit contracts using the same process currently used for ECVAA System failures.

The solution of P227 **has not been changed** since the [first industry consultation](#). The Group developed other methods for providing communications but agreed those methods do not negate the need to address the defect of P227 and that the P227 solution is robust for any mechanism for delivering communications into the central systems. For the avoidance of doubt, P227 would not prohibit any other communications model from existing and would wholly compliment it.

Ofgem letter to BSC Panel

During the first consultation period Ofgem wrote to the BSC Panel Chairman (please refer to letter in Attachment 2) setting out a number of points which it wished the Modification Group to consider to enable the Authority to fully consider P227 (especially in light of the reasons for the Authority rejecting P1 (lack of greater competition in communications services), which sought to introduce the same solution as P227). The points raised were:

1. To assess the current communication system and management of risk through;
 - a. Examining the impact of changes in the boundary definitions
 - b. Examining best practice and the level of choice for communication services in other markets (preferably from an independent source)
 - c. Identifying potential barriers to industry participants and specialist companies and examine the contractual arrangements between ELEXON and BSC Agent.
2. To request analysis from NGET on the proposal's potential impact on the electricity balancing mechanism and associated balancing costs.

Ofgem believes that without this information it cannot make an informed decision on P227.

Summary of Group conclusions

- The Group has not identified any alternative solution that better facilitates the BSC when compared to the Proposed solution as a result of the analysis undertaken by the Group or from an independent consultant.
- The analysis of all the communication models conceived by the Group and the independent source indicated that there will always be a central element for communication services, hence a P227 solution is required to compliment these models.
- The Group considered the fact that currently the 'Notification System Incident' is robustly defined. Were the boundaries to be redefined in future due to the systems being provided under a different communications model, then the legal text drafting reflects that it is only the centrally provided part that is subject to enabling Party's to resubmit their contract notifications. The exact definition of this boundary in each case is to be included in the Communication Requirements Document (CRD) (please refer to Attachment 3). Therefore the P227 solution allows for any future change in the communications model used and no Sunset Clause³ is necessary.
- The Group conducted its own analysis and considered independent analysis on how else communication services could be provided and concluded that, whilst these services could be

³ Modification Proposal P1 sought to introduce a similar solution to P227. The Authority rejected P1 as it believed that competition in communication services could address the issues raised by P1. The Authority noted that in the absence of a date beyond which the provision of communications services could be revisited, and therefore negate the need for the P1 solution (the Sunset Clause), they could not approve P1.

delivered differently. This information is complimentary to their considerations on P227. This is because the P227 solution supports any of the communication models without bias. The work and conclusions are included in Section 2.

1.2 Description of Modification

The Proposed solution for P227 was detailed as part of the first P227 consultation, which can be accessed from the link in Section 1. The P227 Proposed solution is summarised below.

Proposed Modification

The Proposer suggested developing a definition for the revised boundary of the ECVA system from the one detailed as part of Alternative Modification P1 as follows: "the definition of the ECVA system would be redefined as the boundary for the High Grade Service to include the router at the participant site but not any source of power for the router. The Party System Boundary for the Low Grade Service would be redefined to include the Internet interface of the Internet Portal by which the ECVA System is connected to the Internet."

After consideration, the group agreed to introduce the concept of a 'Notification Failure' to describe the situation when there is a failure in the centrally provided system, rather than extending the boundary of the existing ECVA System Failure. This would avoid the potential need to revise the terms of the agreement with the BSC Central Service Agent in relation to the ECVA System and Communications Services.

The solution also uses the concept of defining the 'party system boundary' as the point at which responsibility for the communication shifts from central provision to the Party. This flexibility would mean that any change in the communications model used which effectively shifts this boundary would not require a modification to the BSC (and therefore negates any perceived need for a Sunset Clause).

In the event of a perceived communications failure ELEXON will investigate and confirm whether a Notification Failure has occurred. ELEXON will then notify participants regarding the period for resubmission (the resubmission process is the same as that for ECVA Failure). A participant may ask ELEXON to investigate if a notification failure has occurred but must do so within one Working Day of the perceived point of failure. ELEXON must investigate and confirm whether a Notification Failure has occurred before the SF run. The Group agreed that ELEXON cannot confirm a Notification Failure if there is no clear evidence to back this up, therefore participants should provide information to support any claim of failure.

The industry responses from the first consultation were unanimous in their support for the solution. The impact assessments from industry determined no implementation cost for Parties, the BSC Agent costs were identified as being approximately £1,800 (to introduce additional monitoring) and £3,240 per annum ongoing operational costs.

1.3 Views Against Objectives

The Group established the following benefits against the Applicable BSC Objectives arising from P227 during the first consultation document. The initial UNANIMOUS view of the Modification Group was that the Proposed Modification **WOULD** better facilitate the achievement of Applicable BSC Objectives (b) and (c) and **WOULD NOT** better facilitate the achievement of Applicable BSC Objective (d) when compared to the current Code baseline. The Group agreed that the Proposed Modification would have a neutral impact on Applicable BSC Objective (a).

- During a communications failure, Parties may be unable to submit notifications, so they may choose not to contract going forward, passing responsibility for balancing onto the System Operator. The

ability to resubmit reduces the burden on the System Operator (SO) and therefore allows more efficient operation of the transmission system (Objective b).

- The inability to submit notifications arising from a failure of the centrally provided communications network means Parties are exposed to imbalance charges and therefore increased risk that they would face potentially substantial costs (though no fault of their own). The ability to resubmit under P227 removes the additional risk burden, better facilitating new entry and competition (Objective c).
- The increased activity that would be undertaken by ELEXON and the BSC Agent in processing and investigating failures means that the processes are marginally less efficient (Objective d).

Overall the Group felt the benefits, particularly under competition, outweighed the concerns over efficiency.

The Group concluded that, as a result of the further work, their views against objectives are that:

- the System Operator analysis (Appendix 6) supported the view that there would be a financial benefit under Applicable BSC Objective (b).
- their view on Objective (c) remain valid.
- the majority of the Group agreed there would be a marginal detrimental impact on Objective (d) but this was substantially outweighed by the benefits under Objectives (b) and (c).
- a minority view was that there would be no detrimental impact against Objective (d) as it cannot be considered inefficient for ELEXON to undertake appropriate measures to process and investigate failures. .

1.4 Legal Text

The boundary of responsibility for communications between Parties and Central Systems will be defined in the Communications Requirements Document (CRD) (please refer to Attachment 3). If the boundary of responsibility for communications is changed in future, the definition for the boundary of responsibility will be amended in the Communications Requirements Document. The P227 solution is therefore robust to any future changes in the provision of communications by allowing for the definition of 'centrally provided communication network' to be revised.

In the draft amended version of Legal Text, the definition of "party system boundary" has been amended so that the definition itself will now fall within the CRD. This is in accordance with the Modification Groups decision to amend the draft legal text (and the CRD) in order to provide greater flexibility and allow future boundary definition changes (i.e. to another service provider) in the comms arrangements without the need for another Modification by placing the definition in the CRD. The Group produced Draft Legal Text in which is included as Attachment 4.

1.5 Implementation Date

The Group agreed that P227 should be implemented 5WDs after an Authority decision. A Group member stated that they disagreed in principle with having open ended decision dates. However there is no material reason why an open ended date should not be used and the Group concluded that 5WDs from the Authority decision was appropriate for this specific change.

2 SECTION 2 – INVESTIGATIONS INTO ALTERNATIVE MODELS FOR DELIVERING COMMUNICATION SERVICES

The purpose of Section 2 is to set out the analysis, conducted by the Group and by an independent consultancy, regarding alternative ways to provide communications. This additional work was requested by the Panel following receipt of a letter from Ofgem indicating that this information was required to allow the Authority to make an informed decision on P227. The Group conclude that, there are other ways to deliver communications but that this Modification will cater for any changes to provision of communications services. In relation to the terms of reference (as altered subsequent to Ofgem's letter to the Panel), the Group believe it to be complimentary to the required assessment.

2.1 Current options for Communicating with Central systems

Currently participants have the choice of connecting to Central Systems either through the Low Grade Service (public internet - for which no charge is payable directly to ELEXON by the participant) or the High Grade Service (secure, dedicated line – for which a charge is payable directly to ELEXON by the participant). A participant may choose to use both options. Additionally a participant may have multiple High Grade connections. As of 1 April 2009 participants have the added choice of selecting the type of High Grade Service they require (based on desired volumes, back up and Disaster Recovery requirements), these are displayed in Appendix 3.

The current numbers of users are:

Low Grade: There are 59 Low Grade users who have Low Grade access only.

High Grade Line: There are 68 participant lines. 16 participants have 2 Lines, 3 participants have 3 lines and 27 participants have a single line.

Group observation: The viability of further competition in provision of communication services is subject to the size of the market. The Group do not believe that individual participants would be likely to secure a better deal as they would simply not have the economy of scale to negotiate with. It is uncertain that a share of the market of the size of 68 users would attract (m)any service providers. Larger players in the industry may be able to use the services of one of their existing comms service providers for little change in cost, but the smaller players may not have such an advantage.

2.2 Alternative Models for Delivery of communications into Central systems

To answer the questions proposed by Ofgem the Group considered some alternative models for delivery of communications into central systems. Four options for providing communications were initially identified. The detailed analysis can be found in Appendix 4. The Group observed that the options are reasonable theoretical models for delivering the communications service, however, none of the options resolve the defect raised by P227, and the current arrangement is still considered to be the most efficient way to deliver communications services between Parties and ECVA.

2.3 Information Drawing Comparison with Other Communications Service

A selection of communications service have been compared in terms of purpose of the service, charges, number of customers, materiality(whether it's time critical), volume of information and whether it is single service provider (please refer to Table 5.1 below).

APX:

The purpose of the Power Exchange (APX)'s communications service is to provide access to its trading system. APX provides connection via a High Grade type service (via a single, dedicated link provided by Cable and Wireless for which a fee is payable by the user) and a Low Grade service (public internet). APX does not currently offer the additional optionality of the types of High Grade Service that are now available under the BSC, but is looking to introduce a similar system in the near future. The receipt of data via these communications is time critical, with a potential material consequence arising from any failure.

Anyone using the frame relay circuit can, as a back-up, connect via the Internet. APX do also provide a service whereby our operations department can act on member instructions, usually received by phone, but backed up with an e-mail/fax, however this is only ever very rarely used.

The Group concluded that the APX communications service is directly comparable to the BSC.

National Grid:

The purpose of the National Grid (NG)'s communications service is to provide time critical data via access to the trading system. Connections into the National Grid NETA Network include EDL and EDT circuits to participant main sites and participant DR sites.

Electronic Despatch & Logging (EDL) is used to describe the National Grid application level protocol used on communication links to Control Points (The point at which a NETA market participant receives balancing market bid and offer acceptances from National Grid. This would normally be a site from which the participant exercises real-time control of demand, or in the case of a power station, the point where this is physically controlled by the Generating Company). This is also used in a more general sense to refer to the communication circuits between National Grid and Control Points.

National Grid chooses the level of EDL redundancy for each control point. In the event of an EDL failure National Grid will issue bid-offer acceptances over the telephone. This is essential to maintain the integrity of the network.

Electronic Data Transfer (EDT) is used to describe the transfer of NETA submission files between Trading Points and National Grid. This is also used in a general sense to refer to the communication links between Trading Points and National Grid.

The Group concluded that the EDT communications service is directly comparable to the BSC and EDL is not.

As the user provides the communication lines, the backup provisions (alternative lines that connect to the EDT routes National Grid's end) are entirely their choice. In the event of an EDT failure the user is required to generate in line with their last physical notification submission, pre failure. The only exception to this being emergencies situations where for example a generator needs to alter its output on safety grounds.

LSE:

The London Stock Exchange (LSE)'s communications service provides access to trading and information system, due to the high time criticality of the stock trading, LSE is also regarded as a suitable model to be compared to the BSC. Extranex is the fully-managed private network used by the London Stock Exchange to provide access to TradElect and Infolect, their trading and information systems. Extranex services provide customers constantly monitored and managed by dedicated Exchange resource and the services are built on a privately managed IP network, giving the most accurate and authentic view of the market. They provide flexible service – low cost 64k and 128 k services while higher speed services up to 100 Mb.

The Group concluded that the LSE communications service is directly comparable to the BSC.

DTS:

Data Transfer System (DTS) supports the competitive electricity retail market by its communications service. It provides a secure means of transmitting data between numerous participants and has a single service provider, procured on behalf of those participants by Electralink. However it does not have the same real-time criticality, thus is not a useful comparison to the BSC model.

Table 5.1 Comparison Table of different communications service

	BSC	APX	NG	LSE	DTS
Purpose	deliver time-critical service to BSC Central system	provide access to trading systems	provide access to trading systems	Provide access to trading and information Systems	Support the competitive electricity retail market (does not have a real-time criticality)
Charges (pcm)	£480 for 256Kb £730 for 512Kb £830 for 1Mb £393 for 2Mb	£400 for 128 Kb	EDL: individual users are not charged for their EDL connections EDT is the user supplied network, users directly contract with communication companies. Consequently, NG has no costs for EDT.	£374 for 64Kb £830 for 128Kb £2,080 for 512Kb £2,580 for 1Mb £3,330 for 2Mb £5,000 for 10Mb £5,830 for 30Mb £7,000 for 100Mb	£1,230 for low vol. £2,170 for high vol.
No. of Customers	59 on LG 80 on HG	61 power members 12 connect via frame relay	60 on EDT 80 on EDL	?	57 companies 74 registered connections
Materiality	Possibly	Yes	Yes	Yes	No
Vol. of Info	7Gb of data downloaded from HG daily 80Mb of data downloaded from LG daily	1TWh pm	EDT: 350k data item changes per day, approx 20MB of data (IN) EDL: 1000 Instructions (BOAs) issued per day (OUT) 700 redeclarations of data items From control points per day (IN)	60-70k trades/month	15-16m data files pm total vol. = 45-50 GB
Single Service Provider	Yes	Yes	Yes	Yes/No	Yes

Group observation: Among all the communications services, BSC and LSE provide more optionality than the rest. BSC provide more economical options for communications service ranged from 256Kb to 2Mb, while LSE have a much wider range of service with higher prices relatively.

BSC, DTS, APX and NG have similar number of customers using their communications service. There is a potentially high materiality associated with failure of those communications services

provided by all but the DTS. All except the DTS have real-time criticality, although the BSC may have a lower materiality than the others it uses the similar mechanisms for delivering communications.

In terms of Information Volume, BSC, NG and DTS are measured by the amount of data downloaded daily/monthly and APX is measured by the amount of the electricity traded monthly.

In terms of the multiple service providers, the Group believe that the more service providers involved, the less efficient communications become.

2.4 National Grid Analysis

National Grid were asked to determine the cost to Balancing Services that may arise from any changes to the way communications are delivered into the BSC Central Systems. Additionally National Grid was asked to identify if there were any security of supply issues associated with such changes. Analysis from National Grid is attached as Appendix 6 and concludes that

- Under the current baseline, in the event of a failure of the centrally provided communication system, the system operator would potentially have to take additional Balancing Services actions in order to meet the exist energy imbalance. Under the specific scenario outlined in Appendix 6 the SO costs were estimated to be in the order of £51K (the maximum cost per settlement period over the assessed period).
- Under P227, it is assumed that the market has confidence that in the event of a failure of the centrally provided communication systems that they can resubmit contracts. Subsequently, generators would be expected to submit PN in line with traded contracts. Consequently, there would be no additional balancing required by the SO.
- This modification is not expected to have any implications on security of supply, as the loss of the ability to submit contracts should not affect the availability of plants to National Grid.

2.5 Independent Analysis

Independent analysis was commissioned into questions raised by Ofgem (please refer to [Ofgem Letter to BSC Chairman](#) in Attachment 2). Analysys Mason was asked to produce a report which is included as Attachment 5 to this report. The questions posed can be summarised as:

- What other models are used for provision of communications services in other markets;
- What are the variations in the types of service on offer; and
- How do these models compare with the communication services for BSC Central Systems (and therefore Party management of risk associated with communications failure).

Analysys Mason agreed a set of criteria with ELEXON against which to assess the requirements for communications with the model for the BSC Central Systems. A number of service provider models for different markets were investigated and from these four were directly compared with the current

communications service. The four models for comparison were; an overseas electricity settlement transaction management service (TMS); an overseas stock exchange settlement and TMS; an online gambling transaction service; and a foreign exchange settlement and TMS.

The independent analysis concluded that when compared to the models assessed:

- The current Central Systems service model provides substantially more choice in its High Grad (HG) offering compared an overseas electricity TMS;
- Central Systems meet the general system availability and redundancy needs;
- A model similar to the overseas Stock Exchange model identified in their analysis was most appropriate model for incorporating multiple service providers into a central system; and
- Users would need to determine if a change is desirable (based on it being more cost effective for them and Central Systems to implement)

Based on the results of the research carried out, Analysys Mason believe that, should it be deemed a requirement to offer greater choice of communication provider to the BSC Central Systems users, a solution based on the stock exchange model is the only one that would satisfy all of the criteria stated. A suggested model for this solution, providing a high-level view of a possible design, is illustrated at Annex G.

The Group considered the independent analysis and concluded that:

- In terms of the multiple service providers, the Group believes that the more service providers involved, the less efficient communications become. Under the current arrangement, if there is a communications failure, only ELEXON needs to be contacted rather than several service providers, who would each have to investigate whether the fault occurred within their network;
- The Group is uncertain whether the communications model used by the stock exchange (SE) would be the most appropriate model for multiple service providers due to the high criticality of the trades of a SE. The Group noted that the nature of the SE and BSC arrangements are fundamentally **different**. For example, if the communications system is down, for BSC Parties who are unable to submit notifications, they may be exposed to the Imbalance Charges. However, for a SE, if the trading system fails, no one can trade at all, they all lose the opportunities to trade for the outage period but are not directly exposed to an equivalent risk such as the Imbalance Charges create. Therefore the Group concluded that the SE model is not directly comparable to how comms are delivered to ECVAAs; and
- The Group believe that the independent report answers the questions posed by Ofgem but remain uncertain if the SE model is the most efficient and economic model for the BSC arrangements.

2.6 Group conclusions regarding other models for delivering communication services

Based on the above analysis, the Group confirmed the following:

- The further work undertaken for P227 did not identify:
 1. any viable Alternative solution that addresses the defect described in P227;
 2. any other model that better delivers communications into Central systems (which the Group continue to perceive as a question that is not directly relevant to P227)

- The Group reiterated their view from the original consultation document that:
 1. Parties have a choice for provision of communications as they can
 - a. Choose to use the Low Grade service
 - b. Choose to use the High Grade service (in conjunction with the Low Grade service if they wish)
 - c. From 1 April 2009 will have additional options with regards to the type of High Grade Service they wish to pay for (speed of line, resilience)
 2. P227 seeks to address a defect in the current arrangements, whereby the inability for Parties to resubmit data as a result of a failure of the Central communications system disadvantages the innocent party.
- The viability of further competition in provision of communication services is subject to the size of the market.
- None of the options resolve the defect raised by P227.
- There is serious concern with regards to how service levels could be established and the ability to secure Disaster Recovery arrangements under other communications models.
- There are increased contract costs for agreeing multiple contracts, implementation costs and operational costs arising from other communications models.
- ELEXON has recently re-negotiated the full BSC Services Agreement (of which the High Grade Services are a part) and it would be costly to exit from that agreement.
- The costs associated with failure increases.
- It seems unlikely that a single Party could easily get agreement from a network provider to back off the risk of communications failure.
- The BSC obliges ELEXON to provide a secure communications network; changing this obligation would require a modification to the code, such a code change is considered to be outwith the scope of the defect identified by P227. Hence no alternative to P227 is able to deliver this change.
- As a Modification Proposal would be required to introduce different communications arrangements, an amendment to, rather than the removal of, the definition of a notification system incident would be required. Hence a sunset clause is not required for P227.

3 TERMS USED IN THIS DOCUMENT

Other acronyms and defined terms take the meanings defined in Section X of the Code.

Acronym/Term	Definition
ECVAA	Energy Contract Volume Aggregation Agent
ECVNA	Energy Contract Volume Notification Agent
MVRNA	Meter Volume Reallocation Notification Agent
SO	System Operator
EDL	Electronic Despatch & Logging
EDT	Electronic Data Transfer
BSUoS	Balancing Service Use of System
BOA	Bid Offer Acceptance
TMS	transaction management service
CRD	Communications Requirements Document
HG	High Grade

4 DOCUMENT CONTROL

4.1 Authorities

Version	Date	Author	Reviewer	Reason for Review
0.1	12/12/08	Bu-Ke Qian	David Jones	For technical review
0.2	18/12/08	Bu-Ke Qian	P227 Modification Group	For Modification Group review
0.7	29/01/09	Bu-Ke Qian	P227 Modification Group	For Modification Group review
1.0	04/02/09	P227 Modification Group	Industry	For industry consultation

4.2 References

Ref.	Document Title	Owner	Issue Date	Version
1	Modification P227 IWA	BSC Panel	03/10/08	1.0
2	P227 First Consultation and Requirement Specification	BSC Panel	03/11/08	1.0
3	Attachment 2 - Ofgem letter to BSC Chairman	BSC Panel	03/11/08	1.0

APPENDIX 1: APPLICABLE BSC OBJECTIVES

For reference the Applicable BSC Objectives, as contained in the Transmission Licence, are:

- (a) The efficient discharge by the licensee [i.e. the Transmission Company] of the obligations imposed upon it by this licence [i.e. the Transmission Licence];
- (b) The efficient, economic and co-ordinated operation of the GB transmission system;
- (c) 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;
- (d) Promoting efficiency in the implementation and administration of the balancing and settlement arrangements.

APPENDIX 2: PROCESS FOLLOWED

Date	Event
24/09/08	Modification Proposal raised by APX
09/10/08	IWA presented to the Panel
13/10/08	First Assessment Procedure Modification Group meeting held
20/10/08	Second Assessment Procedure Modification Group meeting held
21/10/08	Joint Consultation & Requirements Specification issued for BSC Agent/Party/Party Agent/BSCCo impact assessments Request for Transmission Company analysis issued
14/11/08	Consultation and Impact Assessment responses due
19/11/08	Third Assessment Procedure Modification Group meeting held
08/12/08	Forth Assessment Procedure Modification Group meeting held
26/01/09	Fifth Assessment Procedure Modification Group meeting held
04/02/09	Second Consultation issued for BSC Agent/Party/Party Agent/BSCCo impact assessments
17/02/09	Second Consultation responses due

ESTIMATED COSTS OF PROGRESSING MODIFICATION PROPOSAL⁴

Meeting Cost	£3,000
Legal/Expert Cost	£12 K(independent analysis)
Impact Assessment Cost	£ 0
ELEXON Resource	131 man days £28 K

The above costs have changed from those provided in the IWA and First Consultation Document.

MODIFICATION GROUP MEMBERSHIP

Member	Organisation	13/10/08	20/10/08	19/11/08	08/12/08	26/01/09
David Jones	ELEXON (Chairman)	Y	Y	Y	Y	Y
Bu-Ke Qian	ELEXON (Lead Analyst)	Y	Y	Y	Y	Y
Ian Moss	(Proposer)	Y	Y	Y	Y	Y
Andrew Colley	Scottish & Southern Energy	Y	Y	Y	Y	Y
Chris Stewart	Centrica	Y	Y	Y	N	Y
Gary Henderson	SAIC	Y	Y	Y	Y	Y
Claire Maxim	E-ON	Y	Y	N	N	N
Esther Sutton	E-ON	N	N	Y	Y	P
Bill Reed	npower	Y	Y	N	Y	Y
Neil Rowley	National Grid	N	N	Y	Y	Y
Attendee	Organisation					
Florienne Roach	ELEXON (Lawyer)	Y	Y	N	Y	Y
Nicholas Brown	ELEXON (Lawyer)	N	N	N	N	Y
Steve Francis	ELEXON (Design Authority)	Y	Y	N	Y	Y
Tabish Khan	ELEXON (Service	Y	Y	Y	N	N

⁴ Clarification of the meanings of the cost terms in this appendix can be found on the BSC Website at the following link:

http://www.elexon.co.uk/documents/Change_and_Implementation/Modifications_Process_-_Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf.

	Delivery)					
Paul Brodrick	ELEXON (Service Delivery)	N	N	P	P	N
Paul Pettitt	ELEXON (Service Delivery)	N	N	P	N	N
John Guest	LOGICA	Y	Y	Y	Y	N
Richard Holmwood	Ofgem	N	N	Y	N	N
Raihana Braimah	Ofgem	Y	Y	Y	Y	Y
Garry Metcalf	Analysys Mason	N	N	N	N	P
Oisín Fouere	Analysys Mason	N	N	N	N	P

P = PART MEETING

MODIFICATION GROUP TERMS OF REFERENCE

Terms of Reference (Version 2.0)

Appendix for Modification Proposal P227

Modification Proposal P227 will be considered by the Settlement Standing Modification Group in accordance with the SSMG Terms of Reference and the Appendix attached.

P227 – Extension of The Definition Of ECVAAs Systems to include the centrally provided communications network.

Assessment Procedure

- 1.1 The Modification Group will carry out an Assessment Procedure in respect of Modification Proposal P227 pursuant to section F2.6 of the Balancing and Settlement Code.
- 1.2 The Modification Group will produce an Assessment Report for consideration at the BSC Panel Meeting on 11 December 2008.
- 1.3 The Modification Group shall consider and/or include in the Assessment Report as appropriate:
 - Identify the ECVAAs resubmissions process:
 - Benefits and costs of a resubmission process;
 - Confirm if the resubmission process should fully mirror the current resubmission process;
 - Ensure the appropriate assurance that only valid notifications would be resubmitted;
 - Define the boundary for extension of the 'system failure' and describe the definition of the 'system failure'
 - Analyse the impact of historic communications failures;
 - Identify the volume of the contracts which failed to be processed and the resultant Imbalance charges;

- Identify the frequency of such failures occurring;
- Identify impacts on:
 - ECVAA Systems;
 - Party Systems/Party Agents Systems;
 - BSCCo processes;
- Appropriateness and the criteria of a 'Sunset Clause'
- Quantification of the benefits/disadvantages P227;
- Qualitative assessment of impacts on greenhouse emissions;
- Consider the Alternative for broader authority for manual resubmission and other Alternatives;
- Whether the Proposed and Alternative solutions better meet the Applicable BSC Objectives.
- Any impact on contractual terms.
- Analysis and consideration of the additional information set out in the Ofgem letter of 7 November 2008 (see Attachment 2)

APPENDIX 3: DATALINE MONTHLY CHARGE

Technical Specification	Line Options								
	HG1a	HG1b	HG2a	HG2b	HG3a	HG3b	HG4	DR1	DR2
Primary Line Rental:									
256Kb Lease Line	✓	✓	✗	✗	✗	✗	✗	✗	✓
512Kb Lease Line	✗	✗	✓	✓	✗	✗	✗	✗	✗
1Mb Lease Line	✗	✗	✗	✗	✓	✓	✗	✗	✗
2Mb ADSL	✗	✗	✗	✗	✗	✗	✓	✓	✗
Backup Line Rental:									
ISDN Backup	✗	✓	✗	✓	✗	✓	✓	✗	✗
2Mb ADSL Backup	✓	✗	✓	✗	✓	✗	✗	✗	✗
Support:									
5 Hour Fix on Primary Line	✓	✓	✓	✓	✓	✓	✗	✗	✓
24 Hour Fix on Primary Line	✗	✗	✗	✗	✗	✗	✓	✓	✗
1-1 Contention Ratio	✓	✓	✓	✓	✓	✓	✗	✗	✓
20-1 Contention Ratio	✗	✗	✗	✗	✗	✗	✓	✓	✗
One-off Costs									
Installation	£3,255	£3,115	£4,526	£4,386	£5,805	£5,665	£2,235	£1,033	£2,550
Ongoing Annual Costs									
Annual Rental	£5,920	£5,687	£7,692	£7,460	£8,942	£8,710	£3,700	£2,640	£4,577

Technical Specification	Line Options								
	HG1a	HG1b	HG2a	HG2b	HG3a	HG3b	HG4	DR1	DR2
Annual Support (2009/10)	£1,025	£1,025	£1,025	£1,025	£1,025	£1,025	£1,025	£1,025	£1,025
Total Rental + Support (2009/10)	£6,945	£6,712	£8,717	£8,485	£9,967	£9,735	£4,725	£3,665	£5,602

Table 4.1 Dateline Monthly Charge from 1 April 2009 until 31 March 2010

APPENDIX 4: ALTERNATIVE MODELS FOR DELIVERY OF COMMUNICATIONS

How else could Communications into ECVAAs be practically delivered?

To answer the questions proposed by Ofgem the Group considered how else the communications services could practically be delivered between Parties and ECVAAs. Four options for providing communications were initially identified. These are listed below and diagrams are contained in Appendix 5 that identify the boundaries associated with options a, c and d.

- Current baseline – single service provider sourced by ELEXON/Logica
- P227 solution – not applicable (see below)
- Multi providers via ELEXON/Logica – several service providers sourced by ELEXON/Logica
- Party specific Comms – any service provider sourced by Party and connecting to central hub via specified communications portal.

As P227 seeks only to allow Parties to resubmit notifications in the event of a failure of the communications network it cannot be considered to be a different way of delivering the communications service. Indeed the ability to resubmit notifications would logically apply to both the current baseline and a multi-provider option. Therefore only options a, c and d are considered further.

The models described relate to the 'High Grade Service' only. It is assumed that the 'Low Grade Service' (internet) would remain.

Comparison of options

In order to examine the three options listed above, the Group divided the comparison into 6 main areas:

- Give each option an accurate definition
- Define the boundary and responsibilities for each option and display as a diagram (see Appendix 5)
- Establish the activities each Party, the BSC Agent and ELEXON need to undertake to achieve this (contractual, physical activities, system redevelopment)
- Establish any costs associated with each step (based on assumptions on whether cost will be higher/lower than present for any of the necessary activities)
- Describe any perceived benefits to each option
- Describe the Risks associated with each option

Results of comparison

1. Definitions of options

Current

The BSC is obliged to provide a fully managed service which provides a secure private network.

Multi Providers

The BSC is obliged to provide a fully managed service which provides a secure private network, utilising multiple communications vendors. (i.e. The service provider will be the BSC Agent and there can be multiple vendors who provide the physical connections)

Party Specific

Parties are obliged to procure their own communications solution to interface with BSC central services and the BSC is obliged to procure a communications interface to BSC central services.

2. Boundaries and Responsibilities under each option

Boundaries and responsibilities for each model are illustrated by the diagrams in Appendix 5.

For **Current High Grade Arrangements** (please refer to Diagram 5.1), BSCCo has obligation to provide a central network (which we deliver through Multiprotocol Label Switching (MPLS)) and the routers to be used by participants on their premises.

For **Multi Provider Arrangements**, BSCCo would have an obligation to offer participants a range of network options, providing the necessary infrastructure and router hardware for each. It is assumed that these would also be delivered through MPLS.

Diagram 5.2, shows a scenario where there are three vendors (Networks A, B and C), however no participant is using Network C. This means that BSCCo may not have actually established a physical Network C, but BSCCo must ensure the necessary contractual arrangements and access to hardware and software are in place in the event that this option is chosen by a participant.

For **Party Specific Arrangements** (please refer to Diagram 5.3), BSCCo would have an obligation to support the connection of a range of participant-specific networks to the central systems. Each participant that wants a High-Grade Service would be responsible for making their own communication arrangements, though this doesn't preclude participants from sharing a network as shown in the example.

It is assumed that all participant networks will be based upon MPLS and so to avoid having to acquire and configure a large number of different routers, a central MPLS network is established to act as a single point of connection. Outside of this hub, the rest of the communications infrastructure is provided and managed by each participant.

(Note: the BSC Central Systems part of the diagram has been simplified to save space, but remains fundamentally the same as in the other options.)

Group observation: The options are reasonable theoretical models for delivering the communications service. However none of the options resolve the defect raised by P227. The Current and Multi Provider options could still utilise a P227 mechanism (for resubmission of notifications). The Party Specific option 'shifts' the risk in the direction of the Party but there would remain a 'grey area' between a notification leaving a Party router and arriving at Central Systems that is not satisfied by the question of risk allocation .

3. Activities required for each option

The following table sets out the Group's views regarding the activities to be undertaken by ELEXON, the BSC Agent (and their third party communications vendor) and participants. The categories agreed were:

- Contractual – means the requirement for agreements (including changes to the BSC) between ELEXON, the BSC Agent, participants and communications vendors;
- Physical – means where the named body is required to undertake activities to physically ensure a connection is installed and maintained;
- Central Systems Redevelopment – means where the BSC Central Systems would need to change.

	Contractual	Physical	Central System Redevelopment
Current	<ul style="list-style-type: none"> • ELEXON - BSC Agent - Network Vendor *BSC Obliges Party to use central provider if they opt for High Grade 	<ul style="list-style-type: none"> • ELEXON - BSC Agent - Vendor *BSC Obliges Party to use central provider if they opt for High Grade 	None
Multi	<ul style="list-style-type: none"> • BSCCo-BSC Agent-Vendor1/Vendor2/Vendor3...VendorX *BSC Obliges Party to use central provider if they opt for High Grade 	<ul style="list-style-type: none"> • BSCCo-BSC Agent-Vendor1/Vendor2/Vendor3...VendorX *BSC Obliges Party to use central provider if they opt for High Grade 	<ul style="list-style-type: none"> • Contract Change Notice to new contract • Change to Communications Requirement Document(CRD) • Central Configuration work • No new hardware?
Party (Support MPLS only)	<ul style="list-style-type: none"> • BSCCo-BSC Agent-Network Vendor • Party-Network Vendor (per Party) 	<ul style="list-style-type: none"> • BSC Agent establishes Central Network • Party establishes Network 	(For BSC Agent and Party) <ul style="list-style-type: none"> • New contracts • Change BSC/CRD • Service Levels • Central configuration • Procurement • Party installation

Under the current and multi provider arrangements, the BSC obliges Parties to use the centrally provided communications if they wish to use the High Grade Service, while for the Party option, each Party would have its own network vendor.

Group observation: As you would expect there is a large amount of documentation change arising from the Party specific option. Whilst all this is manageable, at a cost, there was serious concern with regards to how service levels could be established and the ability to secure Disaster Recovery arrangements. These are identified further down under risks.

4. Indicative cost implications for options

The table below sets out the areas where there is likely to be a change (increase or decrease as indicated) in costs for ELEXON, the BSC Agent Services and Parties.

	ELEXON	BSC Agent Services	Party
Current	No change	No change	No change
Multi	<ul style="list-style-type: none"> Contract cost increases Implementation cost increases Implementation costs (i.e. putting in place the framework to operate a multi-supplier scenario) Operational costs increase to manage the multi-supplier environment 	<ul style="list-style-type: none"> Contract cost increases Operational cost increases <ul style="list-style-type: none"> new interfaces multi vendor interfaces multi vendor monitoring, SLAs/Support/ Disaster Recovery(DR) Potential Hardware Costs for terminating communications agreements early 	No change (Potential Decrease)
Party	<ul style="list-style-type: none"> Contracted costs are likely to remain the same, as we will be reducing the size of the contract the discounts and economies of scale we have will be reduced Implementation Costs increase: BSC, Code Subsidiary Documents, Service Level Agreements Termination of lines being installed under the BSC Services Agreement (if applicable) 	<ul style="list-style-type: none"> Contract cost same Operational cost increases <ul style="list-style-type: none"> new interfaces multi vendor interfaces multi vendor monitoring, SLAs/Support/ DR Costs for terminating comms agreements early (if applicable) 	Potential/Likely Increase Multiple by Party (68 lines) <ul style="list-style-type: none"> Procurement Contractual Operational Implementation Cost of Failure

Group observation: Compared to the current baseline, it is suggested that given the activities the Multi Providers option and Party specific option will cause the costs to increase for ELEXON, the BSC Agent and Parties. There are increased contract costs for agreeing multiple contracts,, implementation costs and operational costs.

ELEXON has recently re-negotiated the full BSC Services Agreement (of which the High Grade

Services are a part) and it would be costly to exit from that agreement.

The Group observed that the costs associated with failure increases. There are additional points for failure from having a selection (under multi Party) and numerous (Party specific) communications networks.

It seems unlikely that a single Party could easily get agreement from a network provider to back off the risk of communications failure. If the costs of an annual communications service is £3,000-£5,000 but the consequence of a failure is in the order of >£10,000, it is unclear whether a provider would agree to guarantee this cost.

Estimate of Costs

The Group asked ELEXON to try to establish some figures for the potential change in costs, noting that these values were broad estimates. ELEXON provided the following estimates for changes in Operational and Procurement type Costs.

Operational Costs

Current

The time required to investigate a **simple** comms failure, i.e. determine the point of failure and get it resolved, has been estimated to be **0.5** day effort depending on the specific issue (0.5 day is based on the recent issue concerning a Communications failure that led to P227 being raised).

If the point of failure is outside the remit of Central Services, it would be up to the affected Party to resolve the issue. It is important to note that the Central Services Agent may assist in determining the point of failure in this scenario by concluding that there were no problems with the Central Services themselves.

In addition, and also as a rough estimate, BSC Central Systems would likely experience comms issues **once** per quarter (every 3 months). This would require 2 consultants each time (1 from ELEXON and 1 from BSC Agent).

Thus, ELEXON and BSC Agent may spend 4 Mandays ($0.5(\text{day}) \times 4(\text{events}) \times 2(\text{people})$) per year on investigation of comms failure. The associated current cost will be £960 ($\text{£}240 \times 4$, where £240 is a suggested day rate for operational consultants) per year.

Other models

The change in costs arising from multi Party and Party specific models must be based on an assumption that an increased number of points of failure will incur either an equitable potential for failure for each separate network or an increased potential due to the multiple interactions and risk to the resilience of the network.

Multi Party – assuming there are three vendors and the occurrence of failure is proportionate to a single vendor then there will be an **increase in costs of** ($[3 \times 960 = \text{£}2,880] - \text{£}960$) **£1,920**.

Party Specific – assuming all Parties have a separate provider this could mean that 68 separate networks could incur investigations costs (Parties would investigate their own network but it is certain they will also contact ELEXON to enquire if there has been a central failure). However, in theory, there will probably be a limited number of providers. If there were 10 vendor networks this **will result in an increased cost of** ($[10 \times 960 = \text{£}9,600] - \text{£}960$) **£8,640**.

Procurement Costs

These costs are pure estimates based on the assumptions and scenarios detailed and should not be used as any basis for decisions about these options. These costs only factor in the Procurement costs, any associated

costs from external parties should be highlighted by BSC Parties. The costs are based on these setups being put in place post the BSC Agreement and therefore no termination costs have been highlighted. The costs below are based on the procurement of the full BSC Services as a package (of which the High Grade Services are only a part).

Multi-Supplier

Assumptions

- ELEXON procure a framework agreement with 3 external suppliers;
- Orders are bundled into packages of work based on month received;
- Each bundle is 'tendered' within the suppliers on the framework agreement – further assumption is that all the orders could be satisfied by each supplier e.g. geographic location of party does not exclude a supplier due to network coverage.

Estimated Costs

- Framework Agreement Establishment
- Full procurement process inc. Market Engagement, Invitation to Tender, Negotiation
- Pre Selection Phase of 6 months duration – 2 Procurement resources (1.5 x Full Time (FT)), 2 Ops resources (1 FT)
- Contract Drafting & Negotiation 3 Months duration (estimates need to be multiplied by 3 – once for each contract) – 2 Procurement Resources (1.5 FT), 2 Ops Resources (1 FT), 2 Lawyers (1.5 FT)
- Award / Operational Prep 3 months – 1 Procurement Resource FT, 2 Ops Resources FT
- Framework could be put in place with no financial commitment to suppliers. Individual contracts would involve the communication costs. I can't provide an estimate on these costs as would need engagement of suppliers. If figures are needed suggest using the same costs per line for the current contract and add 25%
- Operational Support
- 1 Procurement resource for 1 week per month FT
- Central Contract is likely to increase due to increased number of interfaces and risks.

A suggested figure using the current BSC Fixed Cost as a base (circa £7.5 million) and adding 50% (current variable element is predicted to be 50% increase but this is variable and therefore an estimate in nature)

This cost would then need the individual orders added to this.

Party Supplied Communications

Assumptions

- Parties will procure all communication lines themselves;
- The central contract is expiring and a new one is needed e.g. it doesn't involve exiting out on BSC.

Estimated Costs

- Procurement timescales and requirements would be the same as any other large procurement process. No duplication of work would be required. However there would be significant risks placed on the transition requirements and dependencies associated with this.
- Impossible to put any estimates on the overall cost of a new contract but is unlikely to decrease from current one even by removing scope as the BSC Agent will need to change Central Systems and will either have no Service Levels in this area or charge to back this risk off. Sum >£7.5million for the whole BSC Agreement.

5. Benefits

The following table sets out the Group's view on the benefits for each option in terms of security, resilience, risk and freedom of choice.

Current	<ul style="list-style-type: none"> • No change in cost • No change in Implementation risk • Shared risk of failure for all Parties • Security – Central control of secure network • Disaster Recovery centrally maintained • No change in Resilience
Multi	<ul style="list-style-type: none"> • More choice for Parties • Potential party cost saving? • Still a secure network
Party	<ul style="list-style-type: none"> • Freedom of choice • Operational autonomy for Party comms

6. Risks/Issues

The table below establishes the risks/issues of each option. Overall, more operational, implementation risks are expected to occur for the Multi Provider and the Party Specific option.

Current	<ul style="list-style-type: none"> • Equitable treatment for comms failure
Multi	<ul style="list-style-type: none"> • Increased Operational risk due to increased points of failure • Slower resolution times due to increased points of failure • Implementation risk • Increased complexity of change • Increased Disaster Recovery processes • Reduced Resilience due to increased points of failure • Not single private network • Increase in effort for Change/configuration management • It might prove difficult to receive the economies of scale on multi-vendor frameworks to harness any cost savings
Party	<ul style="list-style-type: none"> • Increase Operational risk due to numerous points of failure • Slower resolution times due to numerous points of failure • Implementation risk • Increased Complexity of change • Increased Disaster Recovery procedures • Reduced Resilience due to numerous points of

	failure <ul style="list-style-type: none"> • Not single private network • Increase in effort for Change/configuration management • Not fully managed • Party must support own comms • Not clear whether you could agree service levels • Security risk increases • Risk of failure • Party is responsible to maintain its own network
--	---

Group observation: For Multi Provider option and Party Specific option, there would be more operational, implementation and risks of failure compared to the current baseline. In addition, for Party Specific option, the Party would be responsible for its own network. The tables set out clearly why the Group feel there are a number of disadvantages and risks associated with moving from the current arrangements with little benefit.

7. Incentives

The Group considered what incentives there were on Parties to ensure contract notifications are submitted. Three scenarios were considered:

- The Current arrangements (Base case);
- P227 Solution; and
- Each Party to procure own comms line to central systems.

For each the Group discussed what is the impact and incentive on parties of a communications failure (assuming they have struck a trade and have submitted their Final Physical Notification (FPN)).

- Current arrangements (no ability to resubmit notifications)

The Party is unable to notify and thus incurs imbalance charges, system balancing costs will be unaffected and all Parties will receive a windfall gain through Residual Cashflow Reallocation Cashflow (RCRC).

There is therefore an incentive for the Party to deviate from their FPN, to avoid imbalance. As a result the Party's credit position with central systems will not reflect their actual traded position.

- P227 Solution (able to resubmit notifications)

The Party is able to notify (through the ex-post manual process) therefore no imbalance charges will be incurred, system balancing costs will be unaffected and other Parties will no longer receive the windfall gain through RCRC.

However there is now no incentive for the Party to deviate from their FPN and the Party's Credit position with central systems accurately reflects actual traded position.

- Each Party to procure own comms line to central system (no ability to resubmit notifications)

The Party is unable to notify and thus incurs imbalance charges, system balancing costs will be unaffected and all parties receive a windfall gain through RCRC.

There is therefore an incentive for the Party to deviate from their FPN, to avoid imbalance. As a result the

Party's credit position with central systems will not reflect their actual traded position.

The Party incurs additional costs in procuring their own communications.

The Group further discussed how the incentive to trade is affected following a communications failure.

a) Current arrangements

There is an incentive not to trade as imbalance charges will be incurred regardless of further trading activity.

Further trading will result in additional settlement charges and reconciliation with counterparty.

b) P227 Solution

Normal incentives to trade are unaffected, as trades can be notified.

c) Each Party to procure own comms line to central system

There is an incentive not to trade as imbalance charges will be incurred regardless of further trading activity.

Further trading will result in additional settlement charges and reconciliation with counterparty.

APPENDIX 5: BOUNDARIES AND RESPONSIBILITIES OF MODELS

Current High Grade Arrangements

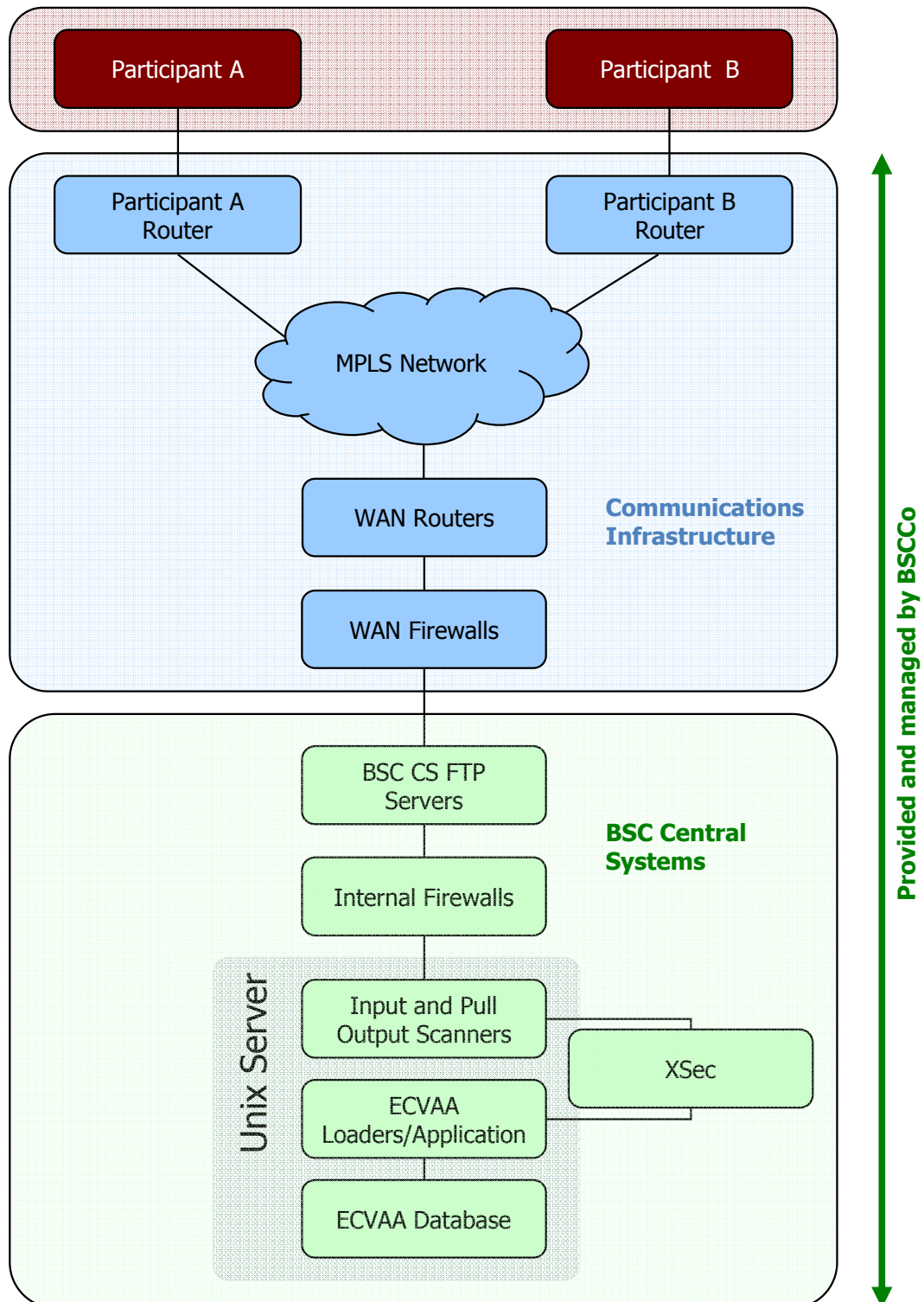


Diagram 5.1 Current High Grade Arrangements

Multi-Provider Arrangements

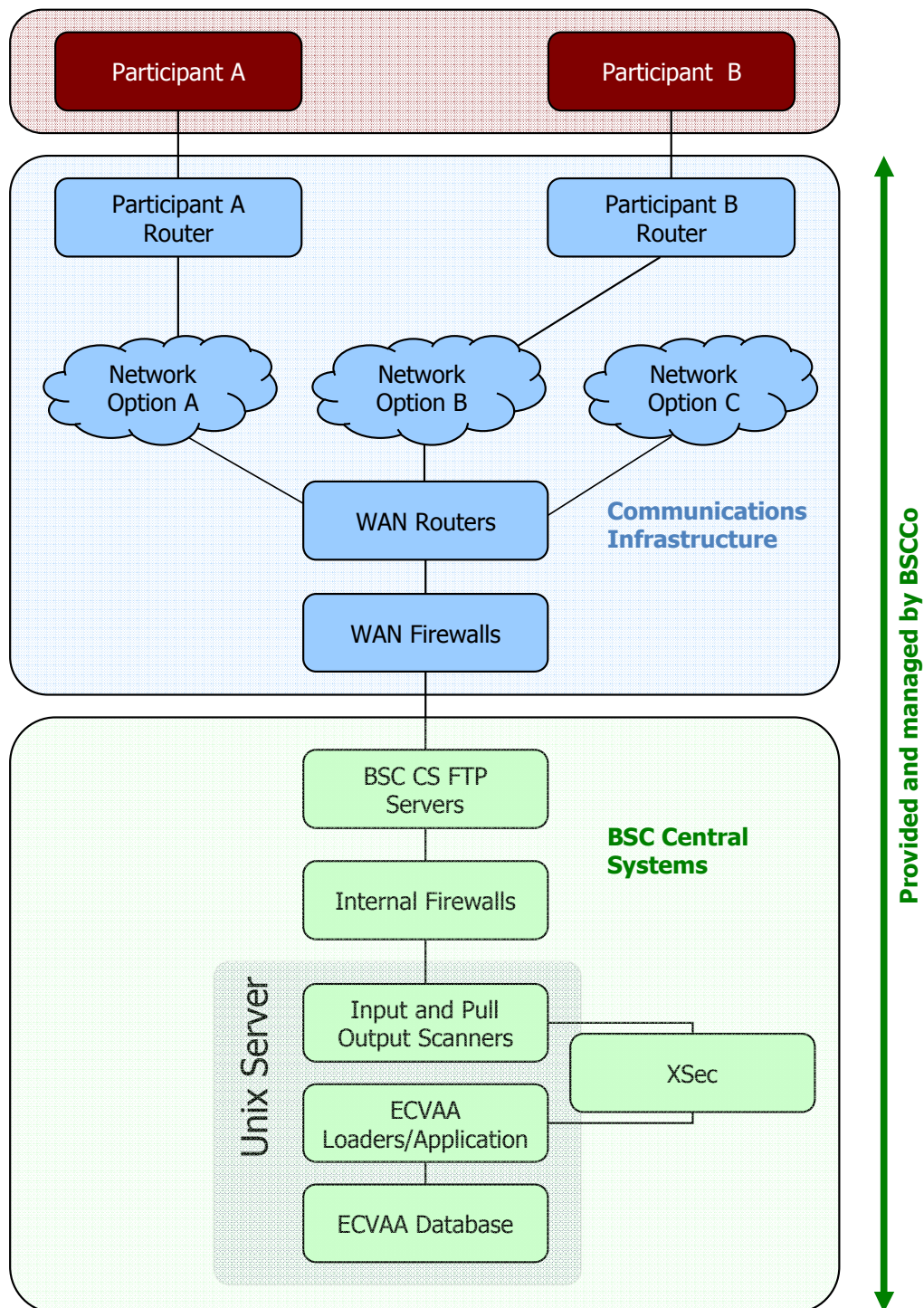


Diagram 5.2 Multi-Provider Arrangements

Party Specific Arrangements

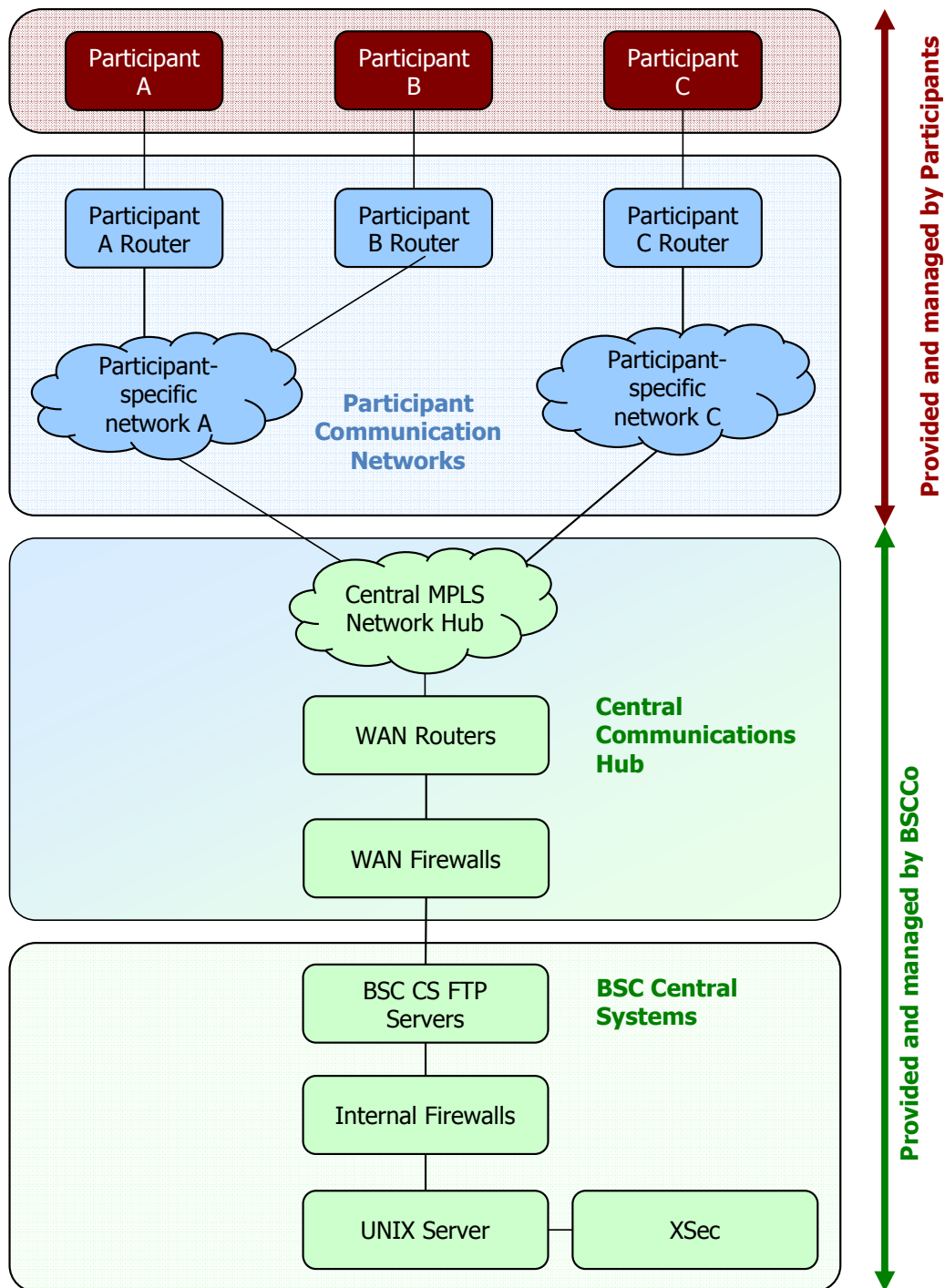


Diagram 5.3 Party Specific Arrangements

APPENDIX 6: NATIONAL GRID ANALYSIS

Potential SO costs resulting from a failure of centrally provided communication network associated with the ECVA

Current Arrangements

Scenario:

The SO costs that could result from a failure of the centrally provided communication network associated with ECVA 30 minutes before gate closure. The resultant average energy volumes per settlement period that would not have been traded over the 14-20th December 2007 have been used as the base (Fig 4 P227 Requirement Spec & Assessment Consultation).

Assumptions:

Given the numerous possibilities that could occur as a result of such a failure the following assumptions have been made:

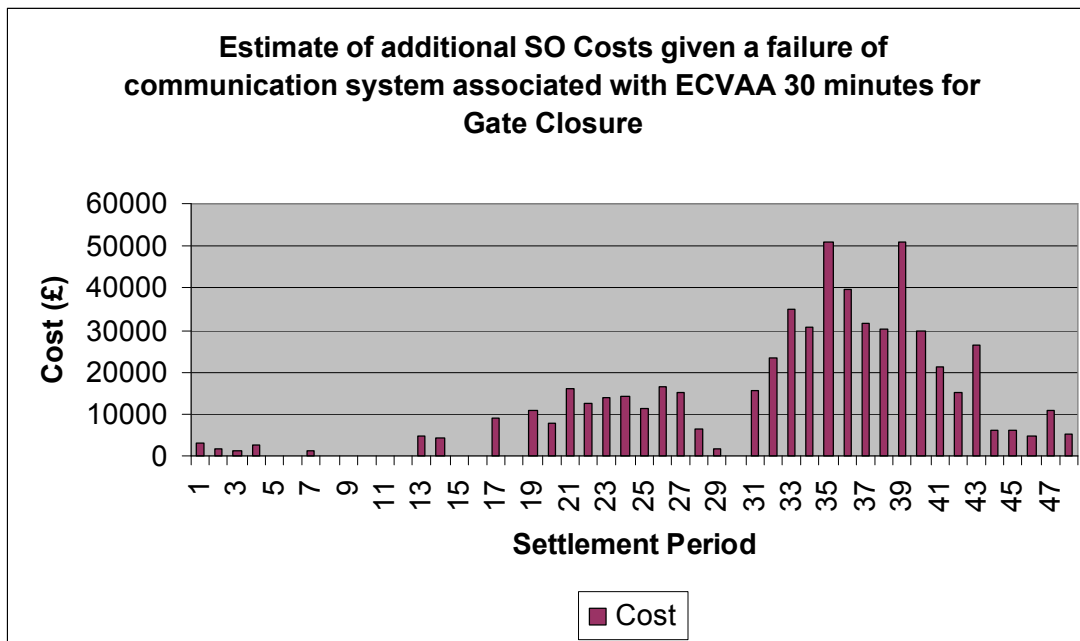
- Physical notification (PNs) volumes are equal to successfully notified contracted volumes
- PNs are updated post contract notification
- The failed contract volumes are therefore not included within PNs
- Average Absolute Volume (taken from Fig 4 P227 Requirement Spec & Assessment Consultation) represents Generators selling to Suppliers
- Plant selling volume 1.5 hours before real time is synchronised to the system or known to be synchronising before real time. As a consequence this scenario does not influence National Grids procurement of sufficient margin
- The communication failure is assumed to be a short term, discrete event.

Methodology for calculating SO Costs:

- Average Net Imbalance Volume (NIV) per settlement period (SP) for December 2007 added to the average absolute volume traded 30 minutes before Gate Closure determines the market length
- The amount the system was short resulting from contract failures is multiplied by Average accepted Offer price for December 2007 per SP
- Given the scenario provided by the modification group and the assumption as described above, an estimate of the potential SO costs is provided below.

Settlement	Average NIV	Average	Scenario NIV	Additional SO
------------	-------------	---------	--------------	---------------

Period	(MWh)	Absolute Volume (Failed) (MWh)		Cost
15	-383 (Long)	215	-168	-
31	-330	482	152	£16K
35	244	286	530	£51K



Security of Supply Implications

- It is assumed that no capacity will be withdrawn as a consequence of the failure to notify contract positions.
- This capacity will still be accessible to the SO in the Balancing Mechanism
- For the short term discrete event articulated there are no security of supply implications.

Under P227

It is reasonable to assume that the market will have confidences in the post event contract re-submission process. Consequentially generators would be expected to submit PNs that would be in line with their contracted volumes rather than with their notified contract volumes. Therefore the risk of additional SO activity to balance the system resulting from failed contract notifications disappears.

APPENDIX 7: INDEPENDENT ANALYSIS

The independent analysis report is included as Attachment 5 to this document.