PUBLIC

P329 'Changes to REMIT Requirements'

Requirements

ELEXON

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P329 'CHANGES TO REMIT REQUIREMENTS'

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1. BACKGROUND

1.1 The BMRS

The Balancing Mechanism Reporting Service (BMRS) is a reporting platform which was developed in 2000/2001 for the New Electricity Trading Arrangements (NETA) Programme. The BMRS is a public website which ELEXON uses to publish and report data about the Balancing Mechanism, the process that enables National Grid (the System Operator) to balance power flows on to and off the electricity Transmission System in Great Britain (GB). The BMRS also includes indicative data relating to Settlement, which is made available shortly after the end of each Settlement Period. Much of the data published on the BMRS is not directly used within Settlement, but its publication helps to facilitate the operation of the GB electricity market. The BMRS is delivered by a BSC Agent (the Balancing Mechanism Reporting Agent, or BMRA) which is prescribed by the BSC.

1.2 REMIT Modification

The Regulation on Wholesale Energy Markets Integrity and Transparency (REMIT) is an EU regulation (1227/2011) that came into force in December 2011 and is aimed at preventing market abuse in the wholesale energy markets.

In 2013, SSE raised Modification P291 'REMIT Inside Information Reporting Platform for GB Electricity'. This made the BMRS the common platform for publishing inside information on the electricity market in GB. P291 allowed participants to submit REMIT data to either of the following two systems with associated interfaces:

1) ELEXON Portal
   - Graphical User Interface (GUI) for manual submissions; or
   - A web Application Programming Interface (API) for Machine to Machine (M2M) submission in Extensible Markup Language (XML) format.
2) National Grid's Market Operation Data Interface System (MODIS)
   - GUI for manual submissions; or
   - File Transfer Protocol (FTP) for M2M submissions in XML format.

The ELEXON Portal and MODIS forwards any REMT information as XML files to the BMRS, which publishes the data via four methods:

- BMRS website interface;
- RESTful APIs;
- Data Push Service; and
- TIBCO Service (High Grade Service).

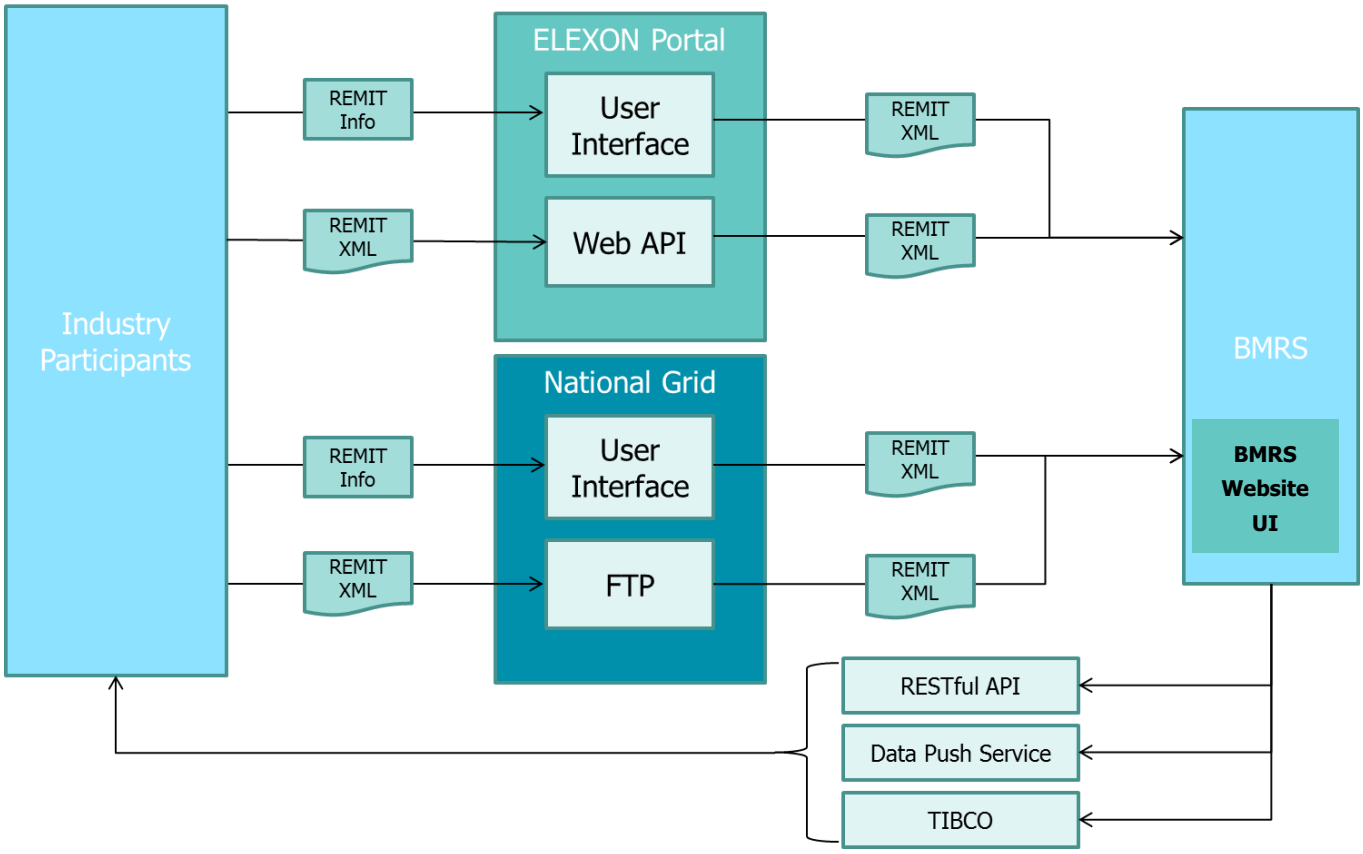

Figure 1: Representation of Current REMIT Interface

1.3 REMIT Implementing Regulation

The EU REMIT Implementing Regulation No 1348/2014 came into force in December 2014 and specifies the reporting of fundamental data and data relevant to Regulation (EU) No 1227/2011. The relevance to ELEXON is specifically Article 10 (1), which requires exposing a web feed for to allow ACER to efficiently collection of inside information.

ACER has set out its expectation for standardised web feeds within its REMIT Manual of Procedures (MoP) on data reporting v3.0 along with the XML Schema Definition (XSD) for the data. ACER states: 'The Agency will start systematically collecting inside information through web feeds on the basis of the standards and electronic formats described in this Manual as of 7 April 2016 and would expect market participants disclosing inside information and service providers disclosing such information on market participants' behalf to report the information through web feeds in the standards and electronic formats described in this Manual by 7 July 2016'.

As the BMRS discloses REMIT inside information, ACER will expect the web feed and data reported to ACER from BMRS to comply with this. The changes (from the new REMIT Modification) seeks to align the Inside information on the BMRS to ACER's XSD.

In summary, the changes required of BMRS to meet these expectations are highlighted in the table below. Detailed analysis on each data field still need to be carried out as the content of each field could be different for example there are variations in Fuel types in the ACER's XSD as compared to current ELEXON's XSD.

New BMRS Header/Data Field	Current BMRS Header/Data Field
Message ID	Message ID
Event Status	Event Status
Type of Unavailability	N/A
Type of Event	Event Type
Publication time/date	Published DateTime
Event Start	Event Start DateTime
Event Stop	Event End DateTime
Unit of Measurement	N/A
Unavailable Capacity	N/A
Available Capacity	Available Capacity (MW)
Installed Capacity	N/A
Reason of the Unavailability	Event Message
Remarks	N/A
Fuel Type	Fuel Type
Bidding Zone	N/A
Affected Asset or Unit	Affected unit
Affected Asset or Unit EIC	Affected unit EIC
Market Participant	Asset ID
Market Participant Code	Participant ID

Table 1: Summary of Changes for data items

2. SCOPE

2.1 In Scope

The scope of changes for P329 'Changes to REMIT inside information reporting' are included below.

2.1.1 Data Flows

The P291 REMIT Urgent Message flow (B2010) is the only flow impacted by this change.

2.1.2 Systems

This change will impact the BMRS System and ELEXON Portal.

2.1.3 Interfaces

The following interfaces will be impacted by this change:

- ELEXON Portal Graphical User Interfaces (GUI) (Amend).
- ELEXON Portal Web API (Amend).
- BMRS Web User Interface (UI) for REMIT (Amend).
- BMRS RESTful API (Amend).
- BMRS Data Push for REMIT Flow (Amend).
- FTP connection from MODIS System (Amend).
- The TIBCO REMIT Flow (Amend).
- Webfeeds to ACER (New).

2.2 Out of Scope

The following aspects will not be in scope of this change.

2.2.1 Data Flows

The Transparency Data flows (Regulation 543/2013) are not impacted by this change. Reporting of Fundamental Data is not within the scope of ELEXON and BMRS.

2.2.2 Systems

Changes to MODIS are not in scope of this change.

2.2.3 Interfaces

The Energy Communications Platform (ECP) and any interfaces to European Network of Transmission System Operators for Electricity (ENTSO-e) are not impacted by this change.

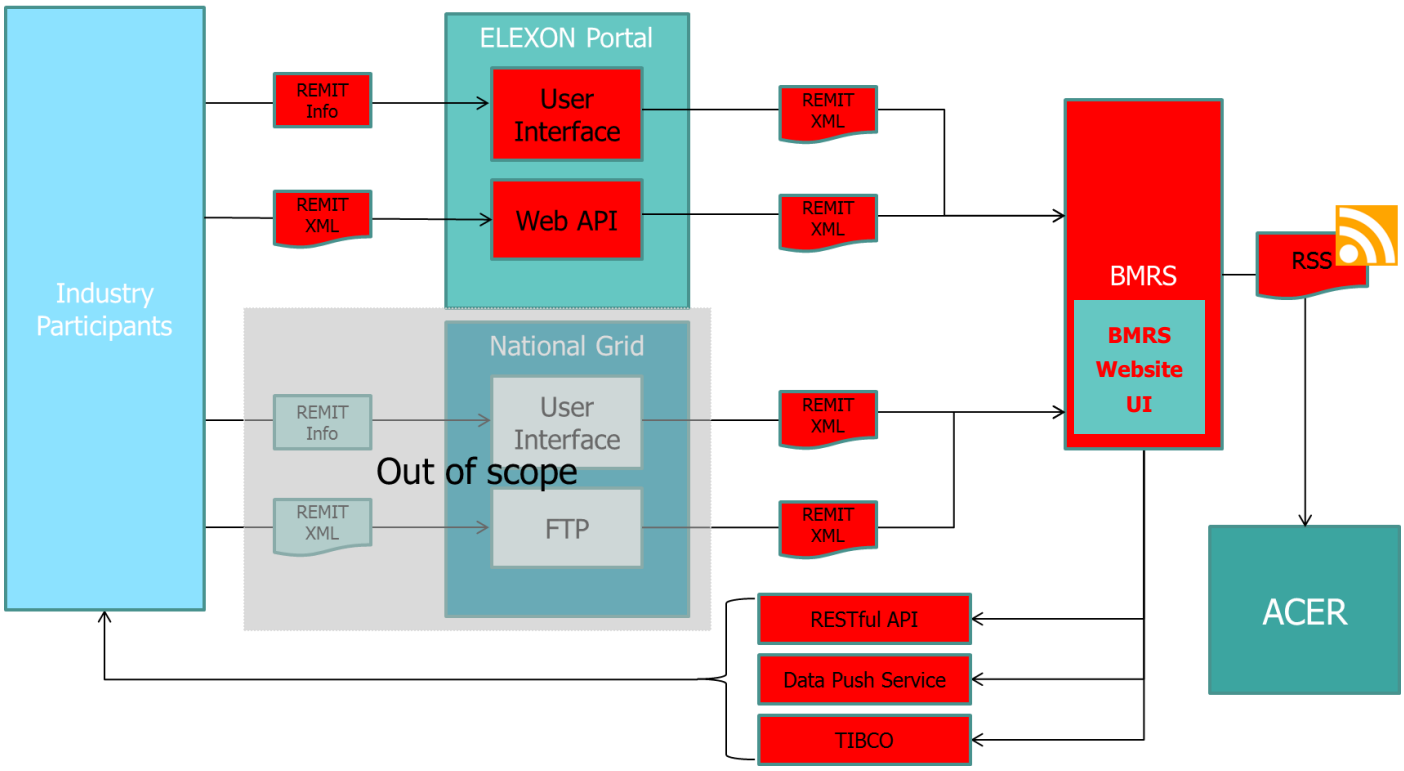

Figure 2: Areas of change for interfaces

2.3 Assumptions

1) Solution design – The existing system, processes and interfaces for supporting publishing of inside information will be maintained where possible.
2) Liability – ELEXON will not be liable for content and effective disclosures of REMIT messages published on BMRS. The parties will be ultimately responsible for both accuracy and timeliness of their REMIT messages.
3) Manipulation of data – ELEXON will publish the data in accordance with the XML Schema Definitions (XSDs).
4) Validations – BMRS will carry out basic structural validations against the XSDs.
5) Authentications – The Portal will use the API Key to authenticate flow.
6) Permissions – Individuals will need to be authorised to be able to submit REMIT data against a particular Assets.
7) Volumetric – To be discussed by a Modification Workgroup during the Assessment Process of the Modification that will take this forward.
8) Standard and Schemas – As above, the incoming XML flow will be structured in accordance with the ACER Schema.

3. HIGH LEVEL REQUIREMENTS

3.1 Functional Requirements

3.1.1 General (EX-01)

Requirement Reference	Description	Priority	Source[1]
EX-01.01	**General**		
EX-01.01.01	The Solution must comply with ACER's requirements as set out in the Manual of Procedures. For avoidance of doubt, all existing requirements still need to be met, even if the solution might need to change	M	P329

3.1.2 Data Flow – BMRS

Requirement Reference	Description	Priority	Source
EX-02.01	**Inbound Data Flow**		
EX-02.01.01	BMRS must be able to receive the REMIT messages (or follow up messages) from MODIS via an FTP interface as an XML file	M	P291
EX-02.01.02	The BMRS must be able to receive the REMIT messages (or follow up messages) from ELEXON Portal via a secure interface as an XML file	M	P291
EX-02.01.03	The XML will conform to either of the XSDs defined in Manual of Procedures: • Unavailabilities of electricity facilities • Other market information	M	P329
EX-02.02	**File Validation**		
EX-02.02.01	The BMRS will carry out structural	M	P329

[1] Items in this column would either be 1) P291 – Requirements that have been in place since P291 Modification which may need to be adapted or enhanced for the new Solution; 2) P329 – New set of requirements not currently fulfilled by the system; or 3) Issue 63 'Improved reporting of event history and profile availability during outage events on the BMRS REMIT pages'.

	validation based onACER's XSD to ensure the data conforms to ACER's standards *If further validations are required, this will be discussed as part of the Assessment Process*		
EX-02.03	**Acknowledgement Messages**		
EX-02.03.01	The BMRS will send an acknowledgement/negative acknowledgment to MODIS if the file passes or fails the structural validation in EX-02.02.01	M	P291
EX-02.03.02	The format of the acknowledgement will be based on the current acknowledgment XSD	S	P291

3.1.3 Data Flow – ELEXON Portal

Requirement Reference	Description	Priority	Source
EX-03.01	**Inbound Data Flow**		
EX-03.01.01	The ELEXON Portal must be able to receive the REMIT messages (or follow up messages) from Participants via an API webservice as an XML file	M	P291
EX-03.02	**File Validation**		
EX-03.02.01	The ELEXON will carry out structural validation based on ACER's XSD to ensure the data conforms to ACER's standards	M	P329
EX-03.02.02	The XML will conform to either of the XSDs defined in Manual of Procedures: • Unavailabilities of electricity facilities • Other market information		P329
EX-03.02.03	The ELEXON Portal will validate submission of the user against the	M	P291

	asset within the submission; i.e. the user is allowed to submit against the specified asset. This will conform to the existing mechanism on the ELEXON Portal which uses Category A signatories as prescribed in in BSCP38 'Authorisations'		
EX-03.02.04	For the automated web API, the ELEXON Portal will validate against a valid API Key	M	P291
EX-03.03	**Acknowledgement Messages**		
EX-03.03.01	The ELEXON Portal will send an acknowledgement/negative acknowledgment to the participant system if the file passes or fails the structural validation in EX-02.02.01	M	P291
EX-03.03.02	The format of the acknowledgement will be based on the current acknowledgment XSD	S	P291

3.1.4 Interfaces

Requirement Reference	Description	Priority	Source
EX-04.01	**Website Presentation**		
EX-04.01.01	In the BMRS website, the REMIT information will sit under REMIT Tab	M	P291
EX-04.01.02	The REMIT landing page will contain a list of all messages that have been published. Presented in reverse chronological order	M	P291
EX-04.01.03	The messages relating to 'Unavailibilities of Electricity facilities' and "Other market information" must be clearly distinguishable	M	P329
EX-04.01.04	For "Unavailibilities of Electricity	M	P329

	facilities", the presentation of data for each message will include the following: • Message ID • Event Status • Type of Unavailability • Type of Event • Publication time/date • Event Start • Event Stop • Unit of Measurement • Unavailable Capacity • Available Capacity • Installed Capacity • Reason of the Unavailability • Remarks • Fuel Type • Bidding Zone • Affected Asset or Unit • Affected Asset or Unit EIC • Market Participant • Market Participant Code		
EX-04.01.05	Where a REMIT event relating to an Asset has a profile (multiple availability changes within the outages that includes reductions and increases), the solution should have the option for participants to articulate the availability changes of that particular event resulting in one XML submission.	C	Issue 63
EX-04.01.06	For "Other market information", the presentation of data for each message will include the following : • Message IS • Event Status	M	P329

	• Publication time/date • Event Start • Event Stop • Remarks • Market Participant • Market Participant Code		
EX-04.01.07	The Web user interface must allow users to search and filter for results. This criteria and fields will be implemented as per the current BMRS REMIT page Note: Where there is a change in the field name in ACER's MoP, the filtering criteria will be updated to the updated/closest matching field name.	M	P291
EX-04.01.08	Data previously published under P291 must be managed so it is still accessible on BMReports. Note: The solution will be subject to feasibility analysis and data could be displayed under the new headings as specified in EX-04-01.04. Where the old data cannot be mapped onto the new headers, these will be left blank.	M	P291
EX-04.02	**RESTful API**		
EX-04.02.01	The current REMIT RESTful API must be amended to adhere to the new standard and contain items as described in EX-04.01.04/05.	M	P329
EX-04.02.02	The user will be able to make specific API requests based on Assets, Type of Events, Market Participant. The criteria will be determined as part of the Modification Group discussion.	S	P329

EX-04.03	**Data Push Service**		
EX-04.03.01	The BMRS will push the raw XML files received through the Data Push Service.	M	P291
EX-04.04	**TIBCO Service**		
EX-04.04.01	The Solution will make the REMIT data available on the High Grade Service via TIBCO.	M	P291
EX-04.05	**Web Feeds**		
EX-04.05.01	The solution will make a web feed available for ACER to collect REMIT Data which conforms to section 7.4 of the Manual of Procedures. Note: further investigation will be required to determine whether ATOM or RSS will be most suitable for the BMRS.	M	P329
EX-04.05.02	The solution will include mechanisms to prevent excessive polling of the webfeeds.	S	P329

3.2 Non Functional Requirement

3.2.1 Non Functional Requirements

Requirement Reference	Description	Priority
EX-05.01	**General**	
EX-05.01.01	The non-functional requirements must conform with ELEXON's Architecture principles where possible. The full list of the Architecture principles is listed in Appendix 1.	M
EX-05.02	**Security**	
EX-05.02.01	The solution shall have access and data management security controls to protect data that is processed, transferred and stored as part of the solution from unauthorised access or corruption.	M
EX-05.02.02	The solution will use the existing authentication mechanism for access to RESTful API and Data Push web services. Further considerations will be given for managing the use of the webfeeds.	M
EX-05.03	**Performance**	
EX-05.03.01	The BMRS must process and publish the REMIT information within two minutes from receipt of the files; with a peak of 100 REMIT XML files received.	M
EX-05.03.02	When more than 100 XML files are received simultaneously, the system must process this within 5 minutes.	M
EX-05.03.03	For the BMRS website (and API requests), the solution must ensure the REMIT page or screen is loaded as fast as reasonably possible in line with typical industry benchmarks for similar complexity pages (under functional internet connection with existing bandwidth).	M
EX-05.04	**Adaptability**	

EX-05.04.01	The architecture supporting the REMIT data must be scalable to accommodate increased usage (inbound/outbound).	M
EX-05.05	**Availability**	
EX-05.05.01	The data published on the BMRS website and RESTful API shall be made available with 24x7 service time at 99.9% availability.	M
EX.05.06	**Recoverability**	
EX-05.06.01	In the event that there is a failure, the BMRS must be able to be recovered such that data loss is minimised.	M
EX-05.07	**Integrity**	
EX-05.07.01	The solution shall ensure data integrity from receipt of source files to arrival at destination to ensure data is not corrupt and remains accurate.	M
EX-05.08	**Data Retention**	
EX-05.08.01	The REMIT data presented on the BMRS website (and the APIs) must be publically available for at least three years after the inside information event is closed or cancelled.	M
EX-05.09	**Usability**	
EX-05.09.01	The Website user interface must easy to use and intuitive. The current REMIT screen will be used as baseline for discussion and potential improvements discussed as part of the assessment process.	M

APPENDIX 1

Business Architecture Principles

The principles below are for general guidance and deemed relevant based on applicability to a given situation

ID	Principle	Statement	Applicability
EBAP01	Maximize Enterprise Benefit	The proposed solutions should provide maximum benefit to the balancing and settlement processes of the industry.	Apply
EBAP02	Measurable business benefits	Transformational change must be driven by business value, using identified performance indicators to measure the business benefits achieved.	Apply
EBAP03	Business Continuity	Enterprise service operations are maintained to ensure systems and people are available in spite of service interruptions.	Apply
EBAP04	IT Adaptability to Business Demands	Business and IT must operate together across the business, discouraging silos, and using adaptive services which are malleable to future business change.	Apply
EBAP05	Common use policy	Business services must be defined with a view to common use wherever practicable.	Apply
EBAP06	Regulatory Compliance	Industry standards for the regulation and processing of data must be adopted and maintained, and operational processes must comply with relevant legislation.	Apply
EBAP07	Unrestricted by Technology	ELEXON business interfaces must be easily adopted and not impose specific technologies or standards which restrict the industry.	Apply
EBAP08	Keeping things simple	ELEXON business architecture must maintain a simple and easy to understand approach.	Apply
EBAP09	Transparency of services	Provide transparency and consistency to customers on how to interact with our business services. Ensure that ELEXON has a clear understanding of the people, processes and	Apply

		technology needed to deliver the service.	
EBAP10	Driven by industry needs	ELEXON business services must fulfil BSC obligations and the demands of the industry.	Apply

Application Architecture Principles

ID	Principle	Statement	Applicability
EAAP01	Service Orientation	All application architecture will be based on Service Orientation and should adopt Service Orientation best practices. These include: • Business value over technical strategy • Strategic goals over project-specific benefits • Intrinsic interoperability over custom integration • Shared services over specific-purpose implementations • Flexibility over optimization • Evolutionary refinement over pursuit of initial perfection.	Apply
EAAP02	Separation of Concern	The IT architecture will support clearly defined, well partitioned, and loosely coupled components, processes, and roles.	Apply
EAAP03	Solution Reusability	It is mandatory to use common components in the architecture to solve common business problems. (These are referred to as *horizontal* services; examples are business workflow and business intelligence).	Apply
EAAP04	Scalability and Extensibility	The architecture should be scalable to accommodate increased usage, and extensible to accommodate new functionality.	Apply
EAAP05	Maintainability	The architecture should be easily maintainable, with an ability to introduce new	Apply

		or changed services without affecting the performance of other services.	
EAAP06	Standards based-design	Applications should be designed throughout following open standards wherever possible.	Apply
EAAP07	Simplicity	Application designs should be well thought through and represented concisely and clearly.	Apply
EAAP08	Electronic Data Interchange (EDI) where practicable	ELEXON will seek to eliminate manual working and adopt automated system transactions, where practicable and cost-effective.	Apply
EAAP09	De-Coupled from physical infrastructure	Solutions should normally ensure that applications do not depend on or require specific physical computing solutions or hardware vendors.	Apply
EAAP10	Reusability of legacy functionality	Redevelopments of current functionality should take the opportunity to expose legacy functionality as a service, so that it can be reused during transition to the target architecture.	Apply
EAAP11	Sun-setting Legacy interfaces	Any new interface should be phased in, and the old interface phased out after an agreed period.	Apply

Information Architecture Principles

ID	Principle	Statement	Applicability
EIAP01	Data Sharing	Subject to the Security Architecture Principles, timely, current and accurate data is shared with all industry participants, in a self-service manner.	Apply
EIAP02	Data Quality	Data quality is managed through agreed industry rules governing who is accountable for the quality of each data item.	Apply

EIAP03	Data Access Configuration	Data in systems is accessible using configuration policies, so that a common data service can meet the needs of different users, and the data is presented in a way that suits the user's access method.	Apply

Security Architecture Principles

ID	Principle	Statement	Applicability
ESAP01	Security standard ISO27001	All elements of ELEXON's architecture must comply with the security policies and procedures ELEXON has defined to meet the standard ISO 27001	Applies for data transferred from NG to ELEXON but not with reference to data security on our public website
ESAP02	Profile User based Access Controls	Secure access to services and data requires services which inspect all requests placed on the architecture.	Apply
ESAP03	Data privacy	Users must only be granted access to data that is relevant to their organisation and their role within it.	Apply
ESAP04	Data Encryption	Sensitive Data is shared or transmitted in a secure environment.	Apply

Infrastructure Architecture Principles

ID	Principle	Statement	Applicability
ETAP01	Tier 3 or higher certification	All applications shall be run in data centres which either: • are certified as at least Tier 3; or • can demonstrate facilities that would satisfy the requirements for Tier 3	Not a necessary requirement for BMRS

		certification.	
ETAP02	Provide Highly Available and Reliable services	Physical assets must ensure systems are available 24x7 where applicable, and are reliable in accordance with service levels of business systems.	Apply
ETAP03	Deliver shared, maintainable and cost effective infrastructure	Physical assets must be capable of providing a deployment architecture which promotes cost effective maintenance.	Apply
ETAP04	Reduce Total Cost of Ownership	Deployment architectures must, where applicable, adopt utility based topologies, to ensure cost efficiencies (but not to the detriment of Quality of Service).	Apply