FRC HUB OPERATIONAL TERMS AND CONDITIONS

PREPARED BY:

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DOCUMENT HISTORY

Version	Date	By	Notes
7.0	17/05/2015	Allan Ng	Revised due to the FRC HUB Update Project

DOCUMENT HISTORY

1. ~~RECITALS~~DOCUMENT PURPOSE

This document sets out the FRC HUB Operational Terms and Conditions for the FRC HUB (**Terms and Conditions**).

If there is any inconsistency between this document and the jurisdictional Retail Market Procedures (as applicable) and the Retail Market Rules in Western Australia, the Retail Market Procedures and Retail Market Rules will prevail to the extent of that inconsistency.

Words and phrases in this document which appear in *italics* have the meaning given to them under the jurisidictional Retail Market Procedures (as applicable) and under the Retail Market Rules in Western Australia unless an intention to the contrary appears.

1.1 Recitals

1.1.1 AEMO and each *Subscriber* will use their best endeavours to provide the *FRC HUB* services in accordance with these FRC HUB Operational Terms and Conditions.

1.1.2 For the avoidance of doubt, in deciding whether AEMO or *Subscriber* have used best endeavours, regard must be had to all relevant factors including whether they have acted in good faith and have done, and continue to do, what is reasonably necessary in the circumstances.

2. DEFINITIONS

~~Definitions~~

FRC HUB means the information system provided by AEMO for the transmission of aseXML messages under the jurisdictional Retail Market Procedures and the Retail Market Rules in Western Australia.

Recovery Point Objective, RPO is defined as the maximum tolerable period in which market data might be lost from an IT service due to a major incident.

Recovery Time Objective, RTO is the targeted duration of time / service level agreement within which market operational processes must be restored by.

Subscriber means any business that sends or receives transactions via the *FRC HUB*.

Recitals

1.1 AEMO and each *Subscriber* will use their best endeavours to provide the *FRC HUB* services in accordance with these FRC HUB Operational Terms and Conditions.

1.2 For the avoidance of doubt, in deciding whether AEMO or *Subscriber* have used best endeavours, regard must be had to all relevant factors including whether they have acted in good faith and have done, and continue to do, what is reasonably necessary in the circumstances.

1.3 All AEMO performance services levels defined under the FRC HUB Operational Terms and Conditions are subject to normal operational availability and optimal performance of third party delivered services such as Internet service connections, private data network connections and third party firewalls, all of which are outside the control of AEMO.

1.4 Where AEMO or a *Subscriber* creates a new, or modifies, an existing system used to generate the format, structure or method of transmission of a transaction that is passed through the *FRC HUB* they must first seek re-certification for those transactions impacted by the changed system, prior to placing the changed or new system in a state such that it sends transactions via the *FRC HUB*

1.5 All reference to time in these FRC HUB Operational Terms and Conditions mean Australian Eastern Standard Time (AEST), with the exception for references to business hours in Tables 1, 3 and 4 which mean the business hours specified in the market for that jurisdiction.

1.3. AEMO RESPONSIBILITIES AS FRC HUB SERVICE PROVIDER

1.13.1 Amending the FRC HUB Operational Terms and Conditions

1.1.13.1.1 Prior to implementing changes to these FRC HUB Operational Terms and Conditions, AEMO must consult on the proposed changes with all *Subscribers*.

1.1.23.1.2 AEMO must allow a reasonable time to receive *Subscriber* responses to the proposed changes to the FRC HUB Operational Terms and Conditions.

1.23.2 Performance

1.2.13.2.1 AEMO will route 99.99% of all messages through the *FRC HUB* within 10 minutes of receipt except:

(a) where the *FRC HUB* is unavailable due to a scheduled outage with a target notification time of at least two business days; or

(b) under a fail over process; or

(c) where the delayed messages are in excess of the peak performance requirement of 8 approx 5KB messages/sec.

1.2.2 ~~AEMO will support an average throughput of 4 approx 5KB messages per second through the *FRC HUB*.~~

~~1.2.3~~3.2.2 AEMO will support a peak throughput of 8 approx 5KB messages per second through the *FRC HUB.*

1.2.4 ~~AEMO will deploy a reliable messaging system that will identify the status of all transmitted messages at the *FRC HUB* gateway.~~

~~1.3~~3.3 Availability / Redundancy

3.3.1 All AEMO performance services levels defined under the FRC HUB Operational Terms and Conditions are subject to normal operational availability and optimal performance of third party delivered services which are outside the control of AEMO.

3.3.2 The AEMO will operate the *FRC HUB* with a Recovery Point Objective (RPO) of 24 hours.

3.3.3 The AEMO will operate the *FRC HUB* with a Recovery Time Objective (RTO) of 4 hours.

~~1.3.1~~3.3.4 AEMO will provide an *FRC HUB* message delivery service that is available ~~24 hours per day by 7 days per week by 52 weeks per year with a minimum of 99.9% availability~~as per Table 1, less scheduled downtime.

3.3.5 All reference to time in these FRC HUB Operational Terms and Conditions mean Australian Eastern Standard Time (AEST), with the exception for references to business hours in Table 1, 3 and 4 which mean the business hours specified in the market for that jurisdiction.

3.3.6 AEMO will test successfully production fail-over to and fail-back from disaster recovery at least every six months and report results to *Subscribers* within one calendar month.

1.3.2 AEMO and each *Subscriber* will provide for their gateway services connected to the *FRC HUB* to be available 24 hours per day by 7 days per week by 52 weeks per year with a minimum availability as set out below, less scheduled downtime. See Table 1.

TABLE 1

PERIOD	UPTIME %
Business Hours Mon -Fri (excluding Public Holidays)	~~98.5~~99.6
Non-Business Hours Mon - Fri (excluding Public Holidays)	98.0
Sat, Sun (starting 0:00 Sat and finishing 7:00 am Mon) Public Holidays	95.0

Business Hours are defined as 7am to 7pm Monday to Friday.
Non-Business Hours are defined as 7pm to 7am Monday to Thursday, 7pm to 11:59pm Friday.
Public Holidays include National Public Holidays and those defined in the ~~Victorian~~ Public Holidays Act 1993 (Vic). (Note: this does not include Melbourne Metropolitan holidays such as Melbourne Cup Day).

1.3.3 AEMO will synchronise a disaster recovery *FRC HUB* environment with the production environment and make available on a 24 hours per day by 7 days per week by 52 weeks per year less scheduled downtime of one hour per month.

AEMO will, in the event of a disaster, invoke fail-over to the disaster recovery *FRC HUB,* such fail-over will be capable of occurring without requiring dynamic configuration changes by *Subscribers* to their HUB interfaces.

In the event of a fail-over to the disaster recovery *FRC HUB* (which will have identical configuration and capacity to the production hub) AEMO will restore the message delivery service within 4 hours of the fail-over.

AEMO will ensure that Production and disaster recovery hubs will have effective uninterrupted power supplies, and generator facilities.

AEMO will test successfully production fail-over to and fail-back from disaster recovery at least every six months and report results to *Subscribers* within one calendar month.

~~1.4~~3.4   Auditing Logging and Archiving

~~1.4.1~~3.4.1   AEMO will maintain detailed logs of all messages transmitted through the *FRC HUB*. These logs will include sufficient information to assist in

resolving disputes that may arise regarding the transmission of a message and its payload.

1.4.23.4.2   AEMO will use XML digital signature technology to provide complete non-repudiation of gateway-to-gateway delivery and receipt, of message and payload data.

1.4.33.4.3   AEMO will timestamp all messages on transmission by the *FRC HUB* providing complete data on transmission latencies directly to *Subscribers*.

1.4.43.4.4   AEMO will ensure that the *FRC HUB* logging facilities will provide time information on receipt and sending times, and be capable of generating complete and accurate data about *FRC HUB* transit times.

1.4.53.4.5   AEMO will not store any data that causes a breach of Privacy Laws applicable in a *Subscriber's* jurisdiction.

1.4.6   AEMO will not open the payload of a message in the course of transmitting that message via the *FRC HUB*.

1.4.73.4.6   AEMO will store logged data, transmitted through the *FRC HUB* online for at least one week.

1.4.83.4.7   AEMO will provide a message archiving facility for all messages transmitted through the *FRC HUB*.

1.4.93.4.8   AEMO will archive logged data after one week. Reasonable costs for recovery of archived data will may be paid by the requesting party. AEMO will only provide access to archived data to which the requesting party is entitled.

1.53.5   Security

1.5.13.5.1   AEMO and each *Subscriber* will, with the exception of error messages, sign all messages transmitted via the *FRC HUB* with X509v3 compliant digital certificates.

1.5.23.5.2   AEMO will verify messages signed with X509v3 compliant digital certificates.

1.5.33.5.3   AEMO will reject messages and acknowledgments transmitted to the *FRC HUB* with an unsigned payload.

1.5.43.5.4   AEMO will use the *FRC HUB* to hold a certificate containing the public key of each *Subscriber*.

1.5.53.5.5   AEMO will reject any message transmitted to the *FRC HUB* with an invalid digital signature, or that has an incorrectly populated signature block.

1.5.63.5.6   AEMO will verify each signed message transmitted to the *FRC HUB*, using the public key of the sending *Subscriber* and re-sign the message with its own private key before forwarding the message to the recipient.

1.5.73.5.7   Each *Subscriber* must hold the *FRC HUB's* public key available in the form of an X509v3 certificate.

1.5.83.5.8   AEMO and each *Subscriber* will ensure that all messages routed through the *FRC HUB* carry transport layer encryption using 128 bit SSL encryption using X509v3 private keys and digital certificates.

1.5.93.5.9   AEMO will set the key pairs used by the *FRC HUB* transport layer encryption to be the same ones used in digital signing and verification.

1.5.103.5.10   AEMO will house Production and disaster recovery hubs in physically secure environments with strictly controlled access.

1.5.11 AEMO will deploy advanced firewall and logical enclave technologies at production and disaster recovery *FRC HUB* sites, insulating these servers from internal or external attack. These servers will not share network enclaves with any other AEMO equipment.

1.5.123.5.11   AEMO will log all security incidents and report all incidents to affected *Subscribers* within one month business day of detection of the incident.

1.5.133.5.12   AEMO will separate geographically the Production and disaster recovery hubs by more than two kilometres.

1.5.143.5.13   AEMO will perform a nightly backup of all Production and Pre-Production hubs (Production, Test and Development) onto removable media.

1.5.153.5.14   AEMO will store all backup data in a secure off-site location.

1.5.16 AEMO will manage backup data under a formal, documented, and physically secure process.

1.63.6   Multiple Testing Environments

1.6.1   AEMO will operate hub environments for development, production, test and disaster recovery.

1.6.23.6.1   AEMO will provide a testing gateway within the test Pre-Production environment for use by *Subscribers* which will be available at all times apart from scheduled and unscheduled outages.

1.6.33.6.2   AEMO will ensure that the testing gateway will provide an aseXML transaction acknowledgement to the initiator of all transactions delivered to the testing Pre-Production environment.

1.6.43.6.3   AEMO will configure the testing gateway to perform aseXML validations against the interface definitions detailed in the Procedures, or subordinate instrument (e.g. the Gas Interface Protocol or Specification Pack) applicable in a *Subscriber's* jurisdiction.

1.6.53.6.4   AEMO will configure the testing gateway to apply applicable business rules defined in the jurisdictional Retail Market Procedures and Retail Market Rules for Western Australia to incoming transactions.

1.6.63.6.5   AEMO will provide a management interface to the testing gateway to allow *Subscribers* to validate an aseXML document.

1.73.7   Protocol Support

3.7.1   AEMO will deploy a reliable messaging system that will identify the status of all transmitted messages at the *FRC HUB* gateway.

1.7.13.7.2   AEMO will ensure that the *FRC HUB* will conform as a routing application in terms of the ebXML Message Service Specification ver 1.0 or as updated by an industry-agreed change management process.

1.7.23.7.3   AEMO will ensure that the *FRC HUB* (Production, Disaster Recovery and Test) will transmit and receive messages using the secure HTTP/S protocol.

1.7.3   AEMO will ensure that the *FRC HUB* maintains a communications profile defining the physical address for each *Subscriber.*

1.7.43.7.4   AEMO will ensure that the *FRC HUB* uses the deployed public key infrastructure and authenticates all message senders as being registered *Subscribers*.

1.7.53.7.5   AEMO will ensure that deregistered or prospective *Subscribers* will not be authenticated to send production messages and that the *FRC HUB* will not transmit messages from such parties, or from any other party attempting to interoperate using a non-valid digital certificate.

1.7.63.7.6   AEMO will ensure that the *FRC HUB* will not modify a message payload (the aseXML document) in any way.

1.83.8   Network Infrastructure

1.8.13.8.1   AEMO will ensure that the *FRC HUB* will provide *Subscribers* with the ability to communicate with the *FRC HUB* via the Internet, or the market network (MarketNet).

1.8.2   AEMO will ensure that Production and disaster recovery hubs will have redundant and separate network circuits to the Internet, or MarketNet.

1.8.33.8.2   AEMO will ensure that the *FRC HUB* provides minimum bandwidth connectivity to the *FRC HUB* of 1Mbps.

1.8.43.8.3   AEMO and each *Subscriber* will ensure the gateway services are connected to the *FRC HUB* via a service based on a minimum bandwidth of 500kbps. This service may be a shared service.

1.93.9   FRC HUB Administration

1.9.13.9.1   Upon request, AEMO will provide, to the *Subscriber,* details of a *Subscriber's* own *FRC HUB* profile.

1.9.23.9.2   The *Subscriber's* local*FRC Hub's* management interface will allow *Subscribers* to validate that messages have been sent to intended recipients.

1.9.33.9.3   AEMO will monitor, analyse, and report performance levels of the *FRC HUB*, as set out in Section 3, to all *Subscribers* on a monthly basis.

1.9.43.9.4   AEMO will provide detailed reports to *Subscribers* about any abnormality that affects *FRC HUB* availability via the FRC relay notification facility.

1.9.53.9.5   AEMO will ensure that the *FRC HUB* environment will be under a controlled change management process. This process will ensure that proposed changes are communicated to *Subscribers* and scheduled appropriately. Changes that require downtime will be scheduled with defined periods.

1.9.63.9.6   AEMO will ensure that the *FRC HUB* change management process will be designed to have maximum protection of *FRC HUB* availability and service quality while providing minimum impact on *Subscribers*.

1.103.10 Certification

1.10.13.10.1   AEMO will provide a certification gateway, to support the certification of *Subscriber* compliance with requirements specified in the Retail Market Procedures and Retail Market Rules for Western Australia, or its subordinate instruments (e.g. the Gas Interface Protocol or Specification Pack) applicable in a *Subscriber's* jurisdiction.

1.10.23.10.2   AEMO will ensure that the certification gateway will provide an automated environment whereby a *Subscriber* may perform an auditable suite of certification routines.

1.10.33.10.3   AEMO will ensure that the certification gateway will provide a *Subscriber* with a management interface to allow the *Subscriber* to schedule certification scripts that cause the certification gateway to send message sets to the *Subscriber* appropriate to their industry role.

1.10.43.10.4   AEMO will upon successful certification by a *Subscriber* issue a certificate indicating to all *Subscribers*, certifying that the *Subscriber* complies with the deployed protocols defined in the interface definitions applicable in that jurisdiction and that apply to all entry points to the system.

1.113.11 Help Desk

1.11.13.11.1   AEMO will provide 24 hours by seven days help desk services to manage *Subscriber* queries and problems. *Subscriber* can use telephone,

~~fax~~ or email to send a helpdesk query~~., with telephone being the preferred method of contact.~~

~~1.11.2 The help desk will log all calls and refer calls to appropriate technical staff for resolution.~~

~~1.11.3 The help desk will answer all telephone calls within 30 seconds.~~

~~1.11.4~~3.11.2   The help desk will categorise calls into one of four priorities and respond in accordance with the following table 2:

TABLE: 2

PRIORITY	EXAMPLE	RESPONSE TIME	TARGET RESOLUTION TIME
Priority 1	Problems that cause total loss of service to one or more *Subscribers*. Resolution activities will continue until the problem is resolved or a temporary solution implemented. An example of a priority one problem is the malfunctioning of network or communications infrastructure.	20 Min	4 Hours
Priority 2	Problems that cause partial loss of a critical service. For example, the loss of the MarketNet network at the *FRC HUB*, causing *Subscribers* to use the Internet as an alternative route to the *FRC HUB*.	1 Hour	8 Hours
Priority 3	Problems that cause minimal loss of a critical service to one or more *Subscribers*. Examples of this category may include hardware, software, or network problems.	4 Hours	5 Days
Priority 4	Problems that cause no loss of critical services to any *Subscriber*. Problems within this category would be those resolved by negotiation, where there are no formal targets or maximum resolution time.	Next Business Day	By Negotiation

~~1.12~~3.12 Digital Certificate and Registration Authority

~~1.12.1~~3.12.1   AEMO will register *Subscribers* admitted to the system in accordance with its registration procedures.~~, verifying the bona fides of those *Subscribers*.~~

~~1.12.2~~3.12.2   AEMO will deliver and maintain a secure AEMO Certificate Authority (CA) root certificate.

~~1.12.3~~3.12.3   As root CA, AEMO will deliver trusted digital certificates to all *Subscribers*.

~~1.12.4~~3.12.4   As root CA, AEMO will satisfy digital certificate-signing requests for *Subscribers* by the end of the next business day following the day on which the request was received.

~~1.12.5~~3.12.5   AEMO will invalidate and re-issue digital certificates to *Subscribers* as appropriate.

~~1.12.6~~3.12.6   Upon approval by AEMO, *Subscribers* will receive the required certificates to operate in the *FRC HUB*.~~three X.509 Certificates - a certificate that contains the subscriber public key, a certificate containing the FRC HUB public key, and the AEMO CA root certificate.~~

1.12.7 3.12.7 The system topology will mean *Subscribers* do not have to take any measures to determine the validity of digital certificates. Upon the discovery of a compromised subscriber private key, AEMO will initiate steps to invalidate and re-issue the digital certificate.

1.12.8 3.12.8 In the event of *Subscriber* digital certificate invalidation, other *Subscribers* will not be required to make system or configuration changes.

1.12.9 3.12.9 AEMO will keep confidential the details of *Subscribers*' digital certification certificate.

2.4. SUBSCRIBERS' RESPONSIBILITIES

4.1.1 Where AEMO or a *Subsriber* creates a new, or modifies, an existing system used to generate the format, structure or method of transmission of a transaction that is passed through the *FRC HUB* they must first seek re-certififcation for those transactions impacted by the changed system, prior to placing the changed or new system in a state such that it sends transactions via the *FRC HUB*.

2.1.14.1.2 Each *Subscriber* and AEMO shall manage their gateway connected to the *FRC HUB* such that any service interruptions are identified and action initiated to rectify the problem within the timeframes set out in Table 3. The period commences from the time a notice is delivered via the FRC relay notification facility.

TABLE 3

PERIOD	RESPONSE TIME (HOURS)
Business Hours Mon -Fri (excluding Public Holidays)	1
Non-Business Hours Mon - Fri (excluding Public Holidays)	2
Sat, Sun, (starting 0:00 Sat and finishing 7:00 am Mon) Public Holidays	4

2.1.24.1.3 Where a *Subscriber* becomes aware of any service interruption associated with their gateway, the *Subscriber* must deliver a notice identifying the issue via the FRC relay notification facility at the earliest opportunity but at least within the timeframes set out in Table 4.

TABLE 4

PERIOD	RESPONSE TIME (HOURS)
Business Hours Mon -Fri (excluding Public Holidays)	1
Non-Business Hours Mon – Fri	Within 1 hour of the commencement of the next Business Day
Sat, Sun, (starting 0:00 Sat and finishing 7:00 am Mon) Public HolidaysAll other times	4

Business Hours are defined as 7am to 7pm Monday to Friday.

Non-Business Hours are defined as 7pm to 7am Monday to Thursday, 7pm to 11:59pm Friday. Public Holidays include National Public Holidays and those defined in the *Public Holidays Act 1993* (Vic). (Note: this does not include Melbourne Metropolitan holidays such as Melbourne Cup Day).

For the avoidance of doubt Business Hours refers to the business hours of the market jurisdiction in which the Subscriber is active and are the business hours specified in the market impacted by the service interruption. For example an issue in a market based on Eastern Standard Time (Vic or Qld) would precede a market based in Central Standard Time (SA).

2.1.34.1.4   Each *Subscriber* and AEMO will use the ebXML Message Service Specification, and defined parameter settings thereto, to transport aseXML over HTTP/S.

2.1.44.1.5   Each *Subscriber* and AEMO will ensure that their gateway is configured to respond to a "HUB ping" periodically initiated by the *FRC HUB* Operator as a monitored connectivity health check. For the avoidance of doubt *Subscribers* should avoid routine and frequent use of Ping connectivity testing point to point between gateways and only use Ping testing to resolve specific connectivity issues.

2.1.54.1.6   Each *Subscriber* will ensure that there will be no payload encryption within an ebXML message transmitted via the *FRC HUB*. All encryption is to be applied at the transport layer.

2.1.64.1.7   Each *Subscriber* will provide to AEMO a communications profile defining the protocol of choice and physical address for each *Subscriber*.

2.1.74.1.8   *Subscribers* will be responsible for the contract to provide their own bandwidth management, either to the Internet.

2.1.84.1.9   *Subscribers* will be responsible for their contract and business relationship (including fault management) for their connectivity to the MarketNet or the Internet.

2.1.94.1.10 *Subscribers* will ensure as part of the messaging infrastructure that all messages are time-stamped on transmission in the gateways, providing complete data on transmission latencies directly to *Subscribers*.

2.1.10 *Subscribers* will assist AEMO (as FRC HUB Service provider) to co-ordinate and manage definition of any changes that they require to B2B transactions and processes. *Subscribers* will work with AEMO to allow AEMO to assess the impact and to design and implement the change.

2.1.114.1.11