

# FRC HUB OPERATIONAL TERMS AND CONDITIONS

PREPARED BY: MARKET PERFORMANCE

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## 1. RECITALS

### Definitions

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

*FRC HUB* means the information system provided by AEMO for the transmission of aseXML messages.

### Recitals

- 1.1 AEMO, ~~Distribution Businesses and Market Participants~~ and each *Subscriber* will use their best endeavours to provide the *FRC HUB* services in accordance with these FRC HubUB Operational Terms and Conditions.
- 1.2 For the avoidance of doubt, in deciding whether AEMO, ~~Distribution Businesses and Market Participants~~ or *Subscribers* 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 HubUB 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 ~~(e.g. the Victorian Gas Industry Network)~~ and third party firewalls, all of which are outside the control of AEMO.
- 1.4 Where AEMO, ~~Market Participant or Distributor~~ 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 HubUB~~.
- 1.5 All reference to time in these FRC HubUB 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 and takes into account the adoption of Australian TimeA.

## 2. AEMO RESPONSIBILITIES AS FRC HUB SERVICE PROVIDER

### 2.1 Amending the FRC HubUB Operational Terms and Conditions

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

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

**2.2 Performance**

- 2.2.1 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 messages/sec.
- 2.2.2 AEMO will support an average throughput of 4 approx 5KB messages per second through the *FRC HUB*.
- 2.2.3 AEMO will support a peak throughput of 8 approx 5KB messages per second through the *FRC HUB*.
- 2.2.4 AEMO will deploy a reliable messaging system that will identify the status of all transmitted messages at the *FRC HUB* gateway.

**2.3 Availability / Redundancy**

- 2.3.1 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 less scheduled downtime.
- 2.3.2 AEMO, ~~Distribution Businesses and Market Participant 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 applies to AEMO, Distribution Businesses and Market Participants and each Subscriber with a customer base of greater than 10,000 MIRNs, Table 2 applies to Market Participants Subscribers with a customer base of less than 10,000 MIRNs.~~

**TABLE 1**

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

TABLE 2

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

~~National~~ Public Holidays include National Public Holidays and those are defined as those published in the Victorian Public Holidays Act 1993, Government Gazette (<http://www.gazette.vic.gov.au/>) (Note: this does not include Melbourne Metropolitan holidays such as Melbourne Cup Day).

- 2.3.3 AEMO will synchronise a disaster recovery ~~(DR)~~ 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.
- 2.3.4 AEMO will, in the event of a disaster, invoke fail-over to the ~~DR~~ disaster recovery FRC HUB, such fail-over will be capable of occurring without requiring dynamic configuration changes by Subscribers to their HUB interfaces.
- 2.3.5 In the event of a fail-over to the ~~DR~~ 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.
- 2.3.6 AEMO will ensure that Production and ~~DR~~ disaster recovery hubs will have effective uninterrupted power supplies, and generator facilities.
- 2.3.7 AEMO will test successfully production fail-over to and fail-back from ~~DR~~ disaster recovery at least every six months and report results to Subscribers within one calendar month.

**2.4 Auditing Logging and Archiving**

- 2.4.1 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.

- 2.4.2 AEMO will use XML digital signature technology to provide complete non-repudiation of gateway-to-gateway delivery and receipt, of message and payload data.
- 2.4.3 AEMO will timestamp all messages on transmission by the *FRC HUB* providing complete data on transmission latencies directly to [Subscribers](#).
- 2.4.4 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.
- 2.4.5 AEMO will not store any data that causes a breach of ~~any prevailing Victorian legislative or regulatory instruments in respect of~~ Privacy Laws applicable in a Subscriber's jurisdiction. and confidentiality
- 2.4.6 AEMO will not open the payload of a message in the course of transmitting that message via the *FRC HUB*.
- 2.4.7 AEMO will store logged data, transmitted through the *FRC HUB* online for one week.
- 2.4.8 AEMO will provide a message archiving facility for all messages transmitted through the [FRC HUBhub](#).
- 2.4.9 AEMO will archive logged data after one week. Reasonable costs for recovery of archived data will be paid by the requesting party. AEMO will only provide access to archived data to which the requesting party is entitled.

## 2.5 Security

- 2.5.1 AEMO and each *Subscriber* will, with the exception of error messages, sign all messages transmitted via the *FRC HUB* with X509v3 compliant digital certificates.
- 2.5.2 AEMO will verify messages signed with X509v3 compliant digital certificates.
- 2.5.3 AEMO will reject messages and acknowledgments transmitted to the *FRC HUB* with an unsigned payload.
- 2.5.4 AEMO will use the *FRC HUB* to hold a certificate containing the public key of each *Subscriber*.
- 2.5.5 AEMO will reject any message transmitted to the *FRC HUB* with an invalid digital signature, or that has an incorrectly populated signature block.
- 2.5.6 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.
- 2.5.7 Each *Subscriber* must hold the *FRC HUB*'s public key available in the form of an X509v3 certificate.

- 2.5.8 AEMO, ~~Market Participants and Distributors~~ 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.
- 2.5.9 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.
- 2.5.10 AEMO will house Production and ~~DR-disaster recovery~~ hubs in physically secure environments with strictly controlled access.
- 2.5.11 AEMO will deploy advanced firewall and logical enclave technologies at production and ~~DR-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.
- 2.5.12 AEMO will log all security incidents and report all incidents to affected ~~Participants-Subscribers~~ within one month of the incident.
- 2.5.13 AEMO will separate geographically the Production and ~~DR-disaster recovery~~ hubs by more than two kilometres.
- 2.5.14 AEMO will perform a nightly backup of all hubs (Production, Test and Development) onto removable media.
- 2.5.15 AEMO will store all backup data in a secure off-site location.
- 2.5.16 AEMO will manage backup data under a formal, documented, and physically secure process.

## 2.6 Multiple Environments

- 2.6.1 AEMO will operate hub environments for development, production, test and disaster recovery ~~DR~~.
- 2.6.2 AEMO will provide a testing gateway within the test environment for use by ~~Market Participants and Distributors~~ *Subscribers* which will be available at all times apart from scheduled and unscheduled outages.
- 2.6.3 AEMO will ensure that the testing gateway will provide an aseXML transaction acknowledgement to the initiator of all transactions delivered to the testing environment.
- 2.6.4 AEMO will configure the testing gateway to perform aseXML validations against the ~~agreed~~-interface definitions detailed in the Procedures, or subordinate instrument (e.g. the Gas Interface Protocol or Specification Pack) applicable in a Subscriber's jurisdiction (eg the Gas Interface Protocol for Victorian and Queensland gas; and the Specification Pack for South Australian and Western Australian gas).
- 2.6.5 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.

2.6.6 AEMO will provide a management interface to the testing gateway to allow ~~Market Participants and Distributors~~ Subscribers to validate an aseXML document.

## 2.7 Protocol Support

2.7.1 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.

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

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

~~2.7.4 If a *Subscriber* nominated preferred protocol is unavailable for any reason, AEMO will ensure that the *FRC HUB* will be switchable so that messages are transmitted using the nominated secondary protocol provided that the *Subscriber* has nominated one.~~

~~2.7.5~~ 2.7.4 AEMO will ensure that the *FRC HUB* uses the deployed public key infrastructure and authenticates all message senders as being registered ~~Market Participants or Distributors~~ Subscribers.

~~2.7.6~~ 2.7.5 AEMO will ensure that ~~former 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 ~~revoked non-valid~~ digital certificate.

~~2.7.7~~ 2.7.6 AEMO will ensure that the *FRC HUB* will not modify a message payload (the aseXML document) in any way.

## 2.8 Network Infrastructure

2.8.1 AEMO will ensure that the *FRC HUB* will provide ~~Market Participants or Distributors~~ Subscribers with the ability to communicate with the *FRC HUB* via the Internet, or the electricity market network (MarketNet) ~~or the Victorian Gas Industry Network (VGIN).~~

2.8.2 AEMO will ensure that Production and ~~DR disaster recovery~~ hubs will have redundant and separate network circuits to the ~~internet~~ Internet, or the electricity market network (MarketNet) ~~and to the Victorian Gas Industry Network (VGIN).~~

~~2.8.3 AEMO will ensure that the *FRC HUB* provides a minimum bandwidth connectivity to the Internet of 1Mbps.~~

~~2.8.4~~ 2.8.3 AEMO will ensure that the *FRC HUB* provides a minimum bandwidth connectivity to the FRC HUB ~~VGIN~~ of 1Mbps.

~~2.8.52.8.4~~ AEMO and each ~~Distribution Business/network operator~~ 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.

## 2.9 FRC HUB Administration

- 2.9.1 ~~Upon request,~~ AEMO will provide, ~~to the Subscriber,~~ details of a browser-based management interface with which Market Participants or Distributors ~~Subscriber's can inspect their~~ own FRC HUB profile.
- 2.9.2 The ~~Market Participants or Distributors~~ Subscriber's local management interface will allow ~~Market Participants or Distributors~~ Subscribers to trace validate that messages ~~that they have~~ been sent to intended recipients ~~the~~ FRC HUB.
- 2.9.3 AEMO will monitor, analyse, and report performance levels of the FRC HUB, as set out in Section 2-3, to all ~~Subscribers~~ performance of the FRC HUB on a monthly basis.
- 2.9.4 AEMO will provide detailed reports to ~~Market Participants or Distributors~~ Subscribers about any abnormality that affects FRC HUB availability via the FRC relay notification facility.
- 2.9.5 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 ~~Market Participants or Distributors~~ Subscribers and scheduled appropriately. Changes that require downtime will be scheduled with defined periods.
- 2.9.6 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 ~~Market Participants or Distributors~~ Subscribers.

## 2.10 Certification

- 2.10.1 AEMO will provide a certification gateway, to support the certification of Subscriber compliance with ~~agreed~~ 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 (eg the Gas Interface Protocol for Victorian and Queensland gas).
- 2.10.2 AEMO will ensure that the certification gateway will provide an automated environment whereby a Subscriber may perform an auditable suite of certification routines.
- 2.10.3 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.

2.10.4 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 agreed-interface definitions applicable in that jurisdiction and that apply to all entry points to the system.

**2.11 Help Desk**

2.11.1 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.

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

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

2.11.4 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 <del>subscribers</del> <i>Subscribers</i> . 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 <u>MarketNet or VGIN</u> network at the <i>FRC HUB</i> , causing <del>subscribers</del> <i>Subscribers</i> to use the Internet as an alternative route to the <i>FRC HUB</i> .	1 Hour	8 Hours
Priority 3	Problems that cause minimal loss of a critical service to one or more <del>subscribers</del> <i>Subscribers</i> . 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 <del>participant</del> <i>Subscriber</i> . Problems within this category would be those resolved by negotiation, where there are no formal targets or maximum resolution time.	<u>Nest-Next</u> Business Day	By Negotiation

## 2.12 Digital Certificate and Registration Authority

- 2.12.1 AEMO will register *Subscribers* admitted to the system, verifying the bona fides of those [Subscribers](#).
- 2.12.2 AEMO will deliver and maintain a secure AEMO Certificate Authority (CA) root certificate.
- 2.12.3 As root CA, AEMO will deliver trusted digital certificates to all *Subscribers*.
- 2.12.4 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.
- 2.12.5 AEMO will ~~revoke~~ invalidate and re-issue digital certificates to *Subscribers* as appropriate.
- 2.12.6 Upon approval by AEMO, *Subscribers* will receive 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.
- 2.12.7 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 ~~revocation will be immediately handled at the FRC HUB~~.
- 2.12.8 In the event of *Subscriber* digital certificate ~~revocation~~ invalidation, other [Subscribers](#) will not be required to make system or configuration changes.
- 2.12.9 AEMO will keep confidential the details of *Subscribers'* digital certification.

### 3. SUBSCRIBERS' RESPONSIBILITIES

3.1.1 Each ~~market participant, distribution business~~ 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 <del>National</del> Public Holidays)	1
Non-Business Hours Mon - Fri (excluding <del>National</del> Public Holidays)	2
Sat, Sun, (starting 0:00 Sat and finishing 7:00 am Mon)  <del>National</del> Public Holidays	4

3.1.2 Where a ~~Participant~~ Subscriber becomes aware of any service interruption associated with their gateway, the ~~Participant~~ 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 <del>National</del> Public Holidays)	1
<del>Non-Business Hours—within 1 hour of the commencement of the next business Day</del> Mon – Fri	<u>Within 1 hour of the commencement of the next Business Day</u>
<del>All other times Non-Business Hours not within 1 hour of the commencement of the next business Day (i.e All times not covered in the two rows above)</del>	4

*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).*

- 3.1.3 Each ~~market participant, distribution business~~ *Subscriber* and AEMO (~~"Subscriber"~~) will use the ebXML Message Service Specification, and defined parameter settings thereto, to transport aseXML over HTTP/S.
- 3.1.4 Each ~~market participant, distribution business~~ *Subscriber* and AEMO (~~"Subscriber"~~) 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 ~~Participants~~ *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.
- 3.1.5 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.
- 3.1.6 Each *Subscriber* will provide to AEMO a communications profile defining the protocol of choice and physical address for each *Subscriber*.
- 3.1.7 *Subscribers* will be responsible for the contract to provide their own bandwidth management, either to the Internet ~~or into the VGIN~~.
- 3.1.8 *Subscribers* will be responsible for their contract and business relationship (including fault management) for their connectivity to the ~~MarketNet~~ *VGIN* or the Internet.
- 3.1.9 *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~~ *Subscribers*.
- 3.1.10 *Subscribers* will assist AEMO (as FRC ~~Hub~~ *HUB* Service provider) to coordinate 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.