GAS REGISTRY OPERATOR SERVICE PROVIDER AGREEMENT AUDIT

Jade Software Corporation as Gas Registry Operator

Audit date: July - September 2024

Report date: 6 November 2024

Under the Registry Operator Service Provider Agreement, Jade are required to conduct an audit of its systems and processes within 6 years of the commencement of the contract. Jade commissioned Langford Consulting to undertake the audit. The purpose of the audit is to assess compliance with the agreement and the systems and processes put in place to enable compliance.

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Executive Summary

Jade Software Corporation (Jade) have the current contract with the Gas Industry Company (GIC) to provide Registry Operator services under the Gas (Switching Arrangements) Rules 2008. The Registry Operator Service Provider Agreement (ROSPA) commenced on 1 March 2018.

Under the ROSPA 3.9.2, Jade are required to conduct an audit of its systems and processes and Jade requested Langford Consulting undertake the audit.

The audit concluded that Jade's services as gas registry operator are providing a stable system, which meets the functional and service expectations of its stakeholders and is managed in a considered manner with a view to the stability and longevity of the system.

The audit has however identified 5 out of 20 areas where the detailed non-functional requirements are not specifically adhered to. In some of these areas improvement would add value and some other areas of non-compliance a change in behaviour may add to the burden of the service provider without adding any value for the stakeholder community.

The auditor has suggested these areas be acknowledged and discussed with the GIC and, if the GIC are in agreement that although non-compliant Jade's approach is acceptable, the GIC confirm in writing that the non-compliance is acknowledged but that no action is required. This would ensure there is a common understanding of the service provided.

The audit sought input from stakeholders which underlined the need for more consistent communication with users, the desire for users that the electricity and gas registry be as aligned as possible to assist companies using both systems, and a suggestion for system improvement.

The following recommendations are made:

- Complete the internal report relating to the last April 2024 unplanned outage.
- Explain how business continuity is managed within Jade to the GIC, discuss how this differs from what the ROSPA envisages and, if the GIC are happy with the approach, document this point of difference and decide how Jade will report their business continuity activity.
- Discuss with the GIC what they believed was expected by disaster recovery "desk checks" at Sch 2 6.3 and implement any changes required.
- Explain to the GIC Jade's service management processes and, assuming the GIC are content with the approach, document this point of difference and add a section to the monthly report that details statistics on their service management.
- Construct a contact list for all participants and start systematic routine communications regarding
  - Planned outages
  - Urgent corrective maintenance outages
  - Disaster recovery testing
  - Severity level 1 and 2 faults
  - Future functionality

- Discuss the usefulness of the annual consumer survey with the GIC, if it's decided not to proceed this should be documented. Perhaps it is time for a different consumer engagement activity?

- Discuss with the GIC whether the additional documentation detailed in Sch 2 17 should be held by the GIC. If it's decided this would not add value to the service provision, this point of difference should be documented.

- Once the recommendations relating to service management and business continuity have been actioned, the resulting changes should be reflected in the performance standards and the monthly reporting.

- Consider the electricity registry's "reconciliation" page as a possible change for the gas registry

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1. Introduction

Jade Software Corporation (Jade) have the current contract with the Gas Industry Company (GIC) to provide Registry Operator services under the Gas (Switching Arrangements) Rules 2008. The Registry Operator Service Provider Agreement (ROSPA) commenced on 1 March 2018.

It is noted that Jade provide similar services to the Electricity Authority.

Under the ROSPA 3.9.2, Jade are required to conduct two audits of its systems and processes. The first was conducted by Grant Thornton in 2021. The second is required between 5 years and 6 months and 6 years from the commencement of the contract (i.e. March 2024).

Jade requested Langford Consulting undertake the audit, the engagement commenced 19 June 2024 and began with a review of relevant documentation, followed by meetings with relevant staff and discussions with a small sample of stakeholders.

2. General Compliance

2.1 Summary of previous audits

Under the ROSPA 3.9.2, Jade are required to conduct two audits of its systems and processes. The first was conducted by Grant Thornton in 2021 and Jade supplied the auditor with a copy.

The main area of concern from the Grant Thornton audit was that monthly meetings were not occurring with the GIC and that there was no formal capacity planning documented. There were also some documentation recommendations. It was confirmed during this audit that monthly meetings were now occurring and that Jade had a documented capacity planning process. The most recent annual review had not resulted in any capacity concerns.

It is noted that Jade provide similar services to the Electricity Authority and the electricity registry service is audited once a year. The 2024 external electricity audit report confirmed that all the functions per the software specifications were being delivered by the system and had observed Jade staff demonstrating operating each of the electricity registry functions to verify that the software was still delivering all the functions described in the functional specification.

2.2 Provision of information to the auditor

In conducting this audit Jade exhibited a high level of cooperation and provided the auditor with the information requested in a timely manner. The auditor would like to thank the team at Jade for their full cooperation.

3. ROSPA obligations and audit emphasis

The ROSPA contains a detailed requirements specification and a description of non-functional requirements.

It is noted that Jade provide similar services to the Electricity Authority and the electricity registry service is audited once a year. The 2024 external electricity audit report confirmed that all the functions per the software specifications were being delivered by the system and had observed Jade staff demonstrating operating each of the electricity registry functions to verify that the software was still delivering all the functions described in the functional specification.

It is acknowledged that in the context of a long established system, predominantly the same as that used in the electricity industry, which is audited annually, it is likely that any significant departures from the detailed requirements specification would have already been identified.

It was therefore proposed that the audit focus attention on compliance with the non-functional requirements. Compliance with the detailed requirements specification was evidenced using a pragmatic approach:

- Jade evidenced compliance with the detailed requirements specification by:
    - preparing and delivering a presentation of the system functions to the auditor
    - confirming that the electricity registry had been audited by the Electricity Authority annually. The most recent audit report confirmed all the functions per the software specification were still being delivered by the system and that the auditor had observed Jade staff demonstrating the operation of each registry software function to verify that the software was still delivering all the functions described in the functional specification

The auditor therefore focused on reviewing the service against the non-functional requirements of ROSPA Schedule 2.

The GIC suggested the audit also review the 'soft' aspects of service provision as much as the activities themselves. They were interested in how the service is staffed and managed, to ensure a long-term stable service/system. Consequently, audit questions also cover issues like training, cover and succession re. the services provided and system lifecycle issues/planning, as well as ensuring the key activities are occurring in a compliant manner.

4. The audit approach

The auditor took a multi-layered approach using:

- Documentation and reporting
- Review of processes/procedures and controls
- Meetings with key staff
- Input from a small sample of key stakeholders

The auditor started by reviewing and summarising the non-functional requirements in Schedule 2 of ROSPA (see Appendix A). This drove the initial information request and the subsequent meetings with staff and discussions with key stakeholders. It also formed the basis of a matrix for recording the information gathered.

A discussion with the GIC and a sample of two gas retailer representatives (one with a large number of ICPs and one representing only a few ICPs) also occurred.

The auditor also considered the service provided against two broader themes of how the service is staffed/managed and system lifecycle issues/planning to ensure a long-term service/system.

5. Assessment of the non-functional requirements

The main focus of the audit was an assessment of the service provision against the ROSPA Schedule 2 non-functional requirements. Of the 20 requirement areas 5 were assessed as not compliant with the contractual requirements.

It should be noted that not all non-compliant areas are necessarily areas of concern regarding the quality of the service provision, some merely identify that the manner in which Jade provides the service is different from the manner in which the contract envisaged the service provision.

Below is a summary of the ROSPA Schedule 2 non-functional requirements and the auditor's assessment of Jade's compliance with the requirements and the systems and processes put in place to enable compliance.

The issues identified are described after the table.

A summary of the ROSPA Schedule 2 non-functional requirements and the auditor's assessment of compliance against the requirements			
Requirement	**ROSPA schedule 2 Section**	**Compliance Rating**	**Comments**
Application architecture	1	Compliant	Are users aware of availability of UAT? (see 15 User Liaison)
Websites, email addresses and branding	2	Compliant	
Interoperability	3	Compliant	All required interfaces are provided and documented
Service level requirements	4	Compliant	All of the service levels from Table 1 are reported monthly and the reported figures were reviewed and validated back to source There was no evidence of users being notified of planned outages. (see 15 User Liaison)
System availability	5	Compliant	Jade reported high levels of continuous service. There had only been once instance of unavailability during the audit period, which had been detected by Jade's alert system and resolved quickly.
Recoverability and business continuity	6	Not compliant	Jade has a comprehensive backup system and could also demonstrate that recovery procedures are tested monthly. They also undertake DR testing twice a year. There was no evidence of users being notified of disaster recovery tests (see 15 User Liaison) Sch 2 6.3 states that "desk checks" should occur at regular intervals to test components of the DR plan. Jade were unsure of what was expected here.

			Business continuity is done at a Jade business level – not at an individual customer/application level. Therefore, the things expected to occur in the non-functional requirements that envisage specific GIC involvement don't occur. The only unplanned outage since the last audit related to April '24 DR testing, but at the time of the audit the internal Jade report had not yet been completed.
Security and confidentiality	7	Compliant	Jade operate to NZSIM. They identified a gap in 2022 and recommended a CR to meet the NZSIM standard (re passwords). This CR was implemented at the time of the audit.
Capacity	8	Compliant	Jade have alerts for usage approaching disk memory and CPU, as well as an annual process for reviewing capacity. The most recent review did not raise any concerns, capacity on the registry is very steady. If any issues did arise, they could be responded to quickly.
Data management	9	Compliant	
Audit trail/traceability	10	Compliant	
Service management	11	Not Compliant	Table 2 is not adhered to, Jade has its own method for categorising and monitoring response to service desk issues.
Technology currency	12	Compliant	The gas registry is currently using Windows 2022 which is still under support. Servers are on a 5-year lifecycle – changed out on rotation, the purchase includes 24/7 hardware support, including firewall, hosting etc. Jade release 22.0.03 was available from Nov '23 and put into production during the audit. Jade was of the view that if the bug fixes in a Jade release was not of relevance to the gas registry, then upgrading to the latest release was not a priority. No part of the system has been made cloud based.
Changes to the services or system	13	Compliant	Documentation was provided detailing the most recent 3 CRs. The oldest CR had been released in 2021 and the change control notes and release notes were made available. The other two CRs were from 2024 and the documentation were still a WIP.

Design consultation	14	Compliant	
User liaison	15	Not compliant	There was evidence in a number of areas that users were not receiving the required communications. A method for systematic communication should be established. Jade are required to do an annual user survey. The last survey was done in 2022. Only 1 user responded, with favourable marks across all questions and no additional comments.
Training	16	Compliant	Training material is provided on the gas registry website
Documentation	17	Not compliant	Jade supply change request documents to the GIC and publish on the registry Detailed Requirements Specification; User Manual; Web Services; File Formats Should the following be supplied to the GIC? • Backup procedures • Business continuity process manual • Technical documentation for business continuity • Technical documentation in case of loss of key personnel • Technical documentation detailing hardware, infrastructure and software configurations • Business process information The GIC confirmed they haven't asked for these documents.
Third party innovation	18	Compliant	There was an example of a third party innovation occurring, no compliance concerns were identified.
Performance management	19	Not compliant	Current performance management doesn't encompass Table 2 or Sch 2 6.4 re business continuity
Provider contacts, monthly reports and meetings	20,21,22	Compliant	Jade are routinely providing a monthly report, which includes staff contact details and meeting with the GIC.

A description of the issues for the non-compliant areas are as follows:

6. Recoverability and business continuity

The only unplanned outage since the last audit had been a problem with the overrun of the April 2024 DR test. The problem had been determined as a training issue, an incident report was promptly supplied to the GIC but the internal post review report had not yet been completed.

> **RECOMMENDATION**: Jade should complete the internal report relating to the last April 2024 unplanned outage.

Jade Software operates a comprehensive Business Continuity Management process aligned with ISO22301:2019. The cover and contents pages of Jade's BCM policy document suite was made available to demonstrate the existence of a comprehensive set of BCM plans, the oldest of which had last been updated in August 2022.

The central repository for Jade for BCP contact details were confirmed as up to date for the GIC.

Business continuity is done at a Jade business level not at an individual customer/application level. Therefore, the things expected to occur in the non-functional requirements that envisage specific GIC involvement don't occur.

> **RECOMMENDATION**: Jade should explain how business continuity is managed to the GIC, discuss how this differs from what the ROSPA envisages and, if the GIC are happy with the approach, document this point of difference and decide how Jade will report their business continuity activity.

ROSPA 6.3 states that "desk checks" should occur at regular intervals to test components of the DR plan. Jade were unsure of what was expected here.

> **RECOMMENDATION**: Discuss with the GIC what they believed was expected by Disaster Recovery "desk checks" at Sch 2 6.3 and implement any changes required.

11. Service management

ROSPA Schedule 2 contains the following Table 2, detailing service expectations. However, this is not reflected in the manner that Jade actually categorises and responds to service management issues. Service management is also not reported on in the monthly report (see 19 performance management)

> **RECOMMENDATION**: Jade should explain to the GIC their actual service management processes and, assuming the GIC are content with the approach, document this point of difference and add a section to the monthly report that details statistics on their service management.

Table 2: Service management standards

Severity level of Fault	Definition	Service Level response and response time
1	**Business Critical Failures:** An error in, or failure of, the **system** that: (a) materially impacts the operations of the **services**; (b) prevents necessary work from being done; or (c) disables major or critical functions of the **system**.	**Level 1 Response:** Acknowledgment of receipt of a support request within 15 minutes of the support request. **Level 2 Response:** Appropriately skilled person to respond within 1 hour of the support request. **Level 3 Response:** The **Provider** shall work on the problem continuously and implement a solution within 6 hours of receipt of the support request. If the **Provider** delivers a solution by way of a workaround reasonably acceptable to the **user**, the severity level of the fault shall reduce to a severity level 2 or lower.
2	**System Defect with Workaround:** (a) a critical error in the **system** for which a work- around exists; or (b) a non-critical error in the **system** that affects the operations of the **user** service.	**Level 1 Response:** Acknowledgment of receipt of a support request within 2 hours of the support request. **Level 2 Response:** The **Provider** shall, within 1 **business day** after the Level 1 Response time has elapsed, provide an emergency fix or workaround which allows the **user** to continue to use all functions of the **system** in all material respects. **Level 3 Response:** The **Provider** shall provide a permanent fix as soon as practicable and no later than 20 **business days** after receipt of the support request.
3	**Minor Error:** An isolated or minor error in the **system** that: (a) does not significantly affect **system** functionality; (b) may disable only certain non-essential functions; or (c) does not materially impact the **user's** operation of the **system**.	**Level 1 Response:** Acknowledgment of receipt of the support request within 1 **business day** of the support request. **Level 2 Response:** The **Provider** shall provide a permanent fix within 40 **business days** after the Level 1 Response time has elapsed.
4	**Non-disruptive error** An isolated or minor error in the **system** that has agreement from Gas Industry Co and the **user** that reports the error to leave the fix until the next convenient release	**Level 1 Response:** Acknowledgment of downgrade of severity to level 4 within 1 **business day** of downgrade. **Level 2 Response:** The **Provider** shall provide a permanent fix at the next convenient opportunity as agreed with Gas Industry Co.

15. User liaison

It was an ongoing theme through the audit that there was confusion about how users were communicated with. Jade were aware that the GIC had a user group and communicated through that but were unclear of whether that group was comprehensive and what had or hadn't been communicated through it.

The auditor was of the view that Jade should be undertaking systematic communications as required by the contract regardless. Any user group should be there to reinforce or enhance that communication.

There was also a perceived difficulty with how to construct an address list for communicating with users, with a reliance on the GIC to provide a contact list. The auditor suggested Jade could use the participant registry information to construct a contact list (excluding participants that were known to have ceased).

Rather than being noted as a non-compliance in each area this issue was identified, it has been noted once under Sch 2 15 User Liaison

> **RECOMMENDATION**: Jade construct a contact list for all participants and start systematic routine communications regarding
>
> - Planned outages
> - Urgent corrective maintenance outages
> - Disaster recovery testing
> - Severity level 1 and 2 faults
> - Future functionality

The last annual customer survey was undertaken in 2022, so the next survey is overdue. However, the last survey had limited effectiveness with only 1 response, the responder being very positive without any improvement suggestions. Jade also reported that the electricity registry customer survey brought about little value.

> **RECOMMENDATION**: Jade discuss the usefulness of the annual consumer survey with the GIC, if it's decided not to proceed this should be documented. Perhaps it is time for a different consumer engagement activity?

17 Documentation

In non-functional requirements it states the following documents should be supplied to the GIC. It is acknowledged however that the GIC haven't requested them.

- Backup procedures
- Business continuity process manual
- Technical documentation for business continuity
- Technical documentation in case of loss of key personnel
- Technical documentation detailing hardware, infrastructure and software configurations
- Business process information

RECOMMENDATION: Jade and the GIC discuss whether the additional documentation detailed in para 17 should be held by the GIC. If it's decided this would not add value to the service provision, this point of difference should be documented.

19 Performance Management

Sch 2 19 states that the performance standards that are reported that the service provider should be measuring themselves against should include Table 2 and Sch 2 6.4 (see 11 service management and 6 business continuity).

RECOMMENDATION: Once the recommendations relating to service management and business continuity have been actioned, the resulting changes should be reflected in the performance standards and the monthly reporting.

Minor issues identified and dealt with during the audit

The review of the series of monthly reports to the GIC identified the following:

- DR cutover testing reported as 'annual' instead of 'biennial'. Corrected May '24. However, the log shows evidence testing did occur, so this is a reporting issue only.
- Monthly report May 2024: GIC escalation contacts out of date.
- Monthly report May 2024: a number of incorrect "no"s copied from April when the unplanned outage had occurred.

6. Input from stakeholders

The auditor had discussions with three stakeholders. The Gas Industry Company was a key stakeholder as the counterparty to the ROSPA, and the auditor selected two contrasting gas registry users to provide feedback on their experience of the system. A summary of their input follows.

Response from Gas Industry Company

Schedule 2 Non-functional requirements	Request	Your comments
21 Monthly Reports	• Do the monthly reports arrive by 10th business day? • Any thoughts about the content you'd like to raise?	Yes the monthly reports always arrive by BD10 No comments on the content
4.3 Service level – maintenance	• Are planned outages agreed with the GIC? • Are you notified of urgent corrective maintenance? • Are you happy with how they determine the difference	Yes planned outages are always agreed with GIC first Yes Jade always notifies of urgent corrective maintenance and generally seeks consent where possible even for urgent cases.

	between planned outages and urgent corrective maintenance?	There has never been any ambiguity between planned outages and urgent corrective maintenance.
6.3 DR testing	Is GIC approval requested for the date/time?	Yes
7.1 Security and confidentiality policies	• Has the GIC provided Jade with any policies? • If so could you let me have copies?	No policies have been provided to Jade
7.8 Security and Confidentiality Incidents	Have Jade reported any security or confidentiality events?	I'm not aware of any security or confidentiality incidents
11.4 Incident reporting	• Have you received incident reports for level 1 or 2 incidents? • If so were they received within 3 business days? • Does the GIC have access to the incident reporting system?	We are notified of P1/P2 events immediately via Jade Care's Automated Fault Escalation process. In the last few years we have only had 1 incident that required an incident report (in April 2024). The incident report was provided within 24 hours We interact with the incident reporting system via email only
15.1 Operational relationship	• Does Jade maintain close contact with GIC? • Do they provide reasonable access to staff/facilities?	Yes we have monthly meetings with our CSM and operational staff, and also meet in-person with our Account Manager from time to time Yes we have good access to staff. We have never requested access to facilities
17.2 Access to documentation	• Does GIC have access to documentation? • Have GIC been given soft copies for its own use?	Copies of the functional specification, user guide and training materials are available on the gas registry website at all times and are kept up to date. We have not requested any other documentation
19.2 Annual performance	• Is there a set of agreed performance standards for the current period? • Is there a review of their performance for the last period? • If so could I have copies?	The performance standards are as per the table in section 19.1 of the NFRs. We have not agreed any additional standards. The performance standards are assessed monthly, as reported in the monthly report and any issues are discussed in the monthly meeting I will enclose the most recent monthly report

Response from Mercury

Mercury is a long standing user who manages a large number of ICPs and uses both the gas registry and the electricity registry.

In general the staff at Mercury were happy with the registry. The only feedback comments were as follows:

- *It's very easy to find historical retailers details in electricity registry but there isn't the same "reconciliation" page in gas registry and it can be very hard to read.*
- *It would be great if the gas registry could be more aligned with electricity registry as far as ease of use and reading.*

Response from Transgas Ltd/PanPac Forest Product Ltd

Transgas/PanPac are newer retailers who manage a very small number of ICPs, are a frequent user of GIEP for D+1; very infrequent use of registry for switching; don't use the electricity registry.

They found the registry fit for purpose, but reported they couldn't remember receiving any communications about what's happening with the system e.g. notification about outages, changes etc. Maybe one email about a year ago?

The auditor concluded from these stakeholders that the community found the service provided by Jade as reliable and fit for purpose. There were no major concerns expressed by any of the stakeholders and the matters arising were minimal. In conclusion the 2 insights were:

- It was helpful for users who use the electricity and gas registries that the two systems should be as similar as possible (with specific mention of a "reconciliation" page in the electricity registry that doesn't exist on the gas registry)
- Communication with users about the system could be better (a theme picked up elsewhere in the audit)

RECOMMENDATION: That the electricity registry's "reconciliation" page be considered as a possible change for the gas registry

7. Assessment of how the service is provided

In addition to the assessment of the Jade service against the non-functional requirements, and the input from key stakeholders, discussions were also had with Jade staff about how the service was provided at a more general level. The auditor considered the service provided against two broader themes of how the service is staffed/managed and system lifecycle issues/planning to ensure a long-term service/system. A summary of these discussions is provided below. These discussions did not give rise to any particular concerns.

How the service is staffed and managed

The gas registry is a relatively small system with the client funding approximately 4 days work per month. It is managed by a small team which manages a few accounts, including the electricity registry. This means that there are 3 or 4 people who have some exposure to supporting the gas registry.

One team member takes the lead in the analyst/BA space and is part of the Services Development Group, a second team member leads on the CRM front from the Operations area, but others on this team are involved from time to time.

The Helpdesk is a separate team and they manage the support calls and action the routine tasks arising from Tracker, so they also have some system experience.

Jade does have discussions about succession from time to time and management are mindful of the demographics of the team and not leaving systems exposed.

System lifecycle issues/planning

Gas registry doesn't have any dependency on the electricity registry. The 2 systems are independent. If the electricity system finished tomorrow there would be no impact on the gas registry. Neither would the service become more expensive.

Jade is owned by Skipton Building Society, who use Jade software as their core banking system. Jade is also used by 50 or so other clients across multiple industries. This is one reason why the loss of the electricity registry as a client wouldn't impact the gas registry and why there can be confidence that the product will be kept relevant.

Also, over the last 2 years Jade have had a specific focus on modernising their offering to ensure they have a multi-year product development roadmap. There is a particular focus on data in/out and how the system can co-exist in an interconnected environment e.g. event streaming.

No aspect of the gas registry system is nearing end of life and it is being kept relevant.

Jade is also seeking out new opportunities in the New Zealand utilities sector which may deliver additional benefits to the gas sector.

Jade's contract to provide electricity registry services has just been extended for 3 years.

No concerns arose as a result of these wider discussions about how the service was provided.

8. Conclusion

Jade's services as gas registry operator are providing a stable system, which meets the functional and service expectations of its stakeholders and is managed in a considered manner with a view to the stability and longevity of the system.

The audit has however identified 5 out of 20 areas where the detailed non-functional requirements are not specifically adhered to. In some of these areas improvement would add value and some other areas of non-compliance a change in behaviour may add to the burden of the service provider without adding any value for the stakeholder community.

The auditor has suggested these areas be acknowledged and discussed with the GIC and, if the GIC are in agreement that although non-compliant Jade's approach is acceptable, the GIC confirm in writing that the non-compliance is acknowledged but that no action is required. This would ensure there is a common understanding of the service provided.

The input from stakeholders underlined the need for more consistent communication with users, the desire for users that the electricity and gas registry be as aligned as possible to assist companies using both systems, and a specific suggestion for system improvement.

The following recommendations are made:

- Complete the internal report relating to the last April 2024 unplanned outage.
- Explain how business continuity is managed within Jade to the GIC, discuss how this differs from what the ROSPA envisages and, if the GIC are happy with the

Jade approach, document this point of difference and decide how Jade will report their business continuity activity.

- Discuss with the GIC what they believed was expected by disaster recovery "desk checks" at Sch 2 6.3 and implement any changes required.

- Explain to the GIC Jade's service management processes and, assuming the GIC are content with the approach, document this point of difference and add a section to the monthly report that details statistics on their service management.

- Construct a contact list for all participants and start systematic routine communications regarding
  - Planned outages
  - Urgent corrective maintenance outages
  - Disaster recovery testing
  - Severity level 1 and 2 faults
  - Future functionality

- Discuss the usefulness of the annual consumer survey with the GIC, if it's decided not to proceed this should be documented. Perhaps it is time for a different consumer engagement activity?

- Discuss with the GIC whether the additional documentation detailed in Sch 2 17 should be held by the GIC. If it's decided this would not add value to the service provision, this point of difference should be documented.

- Once the recommendations relating to service management and business continuity have been actioned, the resulting changes should be reflected in the performance standards and the monthly reporting.

- Consider the electricity registry's "reconciliation" page as a possible change for the gas registry

Appendix A – Summary of non-functional requirements

Registry Operator Service Provider Agreement – Schedule 2 – Non-functional Requirements			
Reference	**Topic**	**Relevant features**	**Criteria**
1.1	Industry Standard	a. Infrastructure b. operating system c. network topology d. application software e. database f. systems deployment and management g. external security, firewalls, virus protection, web application firewall (WAF) etc.	Resilient and scalable
1.2	Independent Environments	Development User Acceptance Testing Production	UAT, testing and development must not affect production environment UAT environment available for users testing and staff training
1.3	Scalability	a. Retailer access - 100% growth b. Distributor access - 100% growth c. Meter Owner access – 100% growth d. GIEP Exchange access – 500% growth e. Non participant access – 100% growth f. Web services access – 500% growth g. Concurrent user sessions – 100% growth	Accommodate growth in users and transactions from commencement date
1.4	Upgrades and updates	Operating system Database System software	Agreed procedures with GIC Planned, scheduled and notified to GIC and users Agreed timetable with GIC All available, proven upgrades implemented in a timely manner
1.5	Data integrity maintenance	Database Maintenance	Functionality to reload corrected data Assistance to users Recovery of integrity/corruption issues Validation checks to prevent loading of inaccurate data

2.1	Logo	External communication with users and the public including: Websites Templates for notices Documentation (excludes emails)	Logo and position for each communication type, agreed with GIC Logo appears as agreed on each communication type
2.2	Website and email addresses	Not relevant unless agreement terminates or expires	
3.1	Interfaces	Secure web browser for updating viewing and downloading CSV files Facility to transfer CSV files via FTP or SFTP, handle multiple/batch update; requesting/downloading reports Web services using SOAP for downloading	Ensure prescribed interfaces are provided Ensure any other interfaces specified in functional spec are provided
3.2	Extended system interfaces	All inbound and outbound interfaces	Interface is efficient, secure and as documented in functional spec Document all interfaces in the functional spec (source; target; format; mechanism; frequency)
4.1	Continuous service		Available 24 hours daily, 7 days per week
4.2	Service levels reported monthly	Service levels outlined in table 1	Monthly report to GIC outlining any failures, with reasons
4.3	Maintenance	Planned outages Urgent corrective maintenance	No more than 2 planned outages per month (unless agreed otherwise): • Agreed with GIC • No more than 2 hours • Notify users 2 days ahead + 1 hour prior • Doesn't count against service level targets Urgent corrective maintenance: • Notify GIC • Notify users 1 hour prior • Counts against service level targets
5.1	Service delineation	Includes: System host Internal + wide area networks ISP	All service components are covered under availability and outage calculations
5.2	Calculation of availability		Availability= 100-minutes of unplanned outage+urgent corrective maintenance/(days in month*minutes of time from the availability window)*100)

5.3	Categorisation of outages		If the user has caused/materially contributed to the outage, is not included in the calculation of availability
6.1	Back up and restore	Production and hot standby software, data and processed data	Backup taken at least daily and stored in secure offsite location Plan in place to restore backup Plan available to GIC as part of documentation Regularly test the plan and report on test to GIC
6.2	Hot standby system and recovery time		Disaster recovery plan includes a hot standby system: • > 100km away from production • Able to commence within 2 hours • <10mins 10 mins of data lost • Lost data restored with cooperation of users
6.3	Disaster recovery testing		Test the disaster recovery plan and system every 6 months Obtain GIC approval for date/time Notify all users Activate DR system at remote location Verify DR system available to an external user Transfer production to DR system for > 2 business days Test files and updates Transfer production back as agreed (GIC) and as notified to users Provide report to GIC At regular intervals, perform "desk checks" to test components of DR plan
6.4	Business Continuity		Ensure BCP: • is aligned to recognised standard • contains contacts for GIC Agree with GIC which aspects of BCP are regularly tested Results of testing reported to GIC Agree consequential changes to BCP that impact services with GIC before implementing
7.1	Security and confidentiality policies	GIC expectations for managing: Personnel Physical security Information security	Comply with policies as provided by GIC

7.2	Application of NZSIM		Meet the objectives of the NZ Information Security Manual or equivalent standard Use best endeavours to maintain security of the system, data and processed data against unauthorised access or use
7.3	Authentication		Ensure system has a framework for management and authentication of users: • recognise • block • report unauthorised access attempts
7.4	User access provisions	To the registry and its data	Access restrictions are as per the Rules and functional spec Are modified as per GIC reasonable instructions
7.5	Security policy		Security policy in place Mechanisms that enforce: • the password standard • account lock-out • session timeouts initially of 1 hour, but configurable • subsequent sessions terminate previous sessions
7.6	Logs		System maintains audit logs of user interactions Investigate all alerts of repeated unsuccessful logons Provide info for users to analyse their own usage patterns
7.7	Confidentiality		Ensure data remain confidential to provider, GIC and users that provided the data except where the Rules, Compliance Regs require publication or release
7.8	Security and confidentiality incidents		Report any events to the GIC Create a service management event
8.1	Capacity planning strategy		Documented capacity-planning strategy for predicted data and processed data, plus a margin Conduct an annual review
8.2	Management Utilities		Use system management utilities to predict future capacity
8.3	Excess Volumes	If changes in: • transactional volumes • Data volumes • Functionality or • User behaviour Threaten the achievement of service levels	Promptly advise GIC Investigate Make recommendations for mitigation
9	Data Management	History	All data must be available for immediate access unless otherwise agreed Data >3months old may be archived on to DVD and removed from the system

10	Audit trail/traceability	• data and processed data input, added or changed • confirmations delivered • delivery of information to users	Maintain an audit trail to include: • time • user • method to allow full tracking from source to destination
11.1	Industry standard		Employ best practice (e.g. ITIL) including robust quality assurance processes
11.2	Service Management Standards	• helpdesk and registry administration services • software support services • 24x7 infrastructure maintenance services	Required service standards are detailed in Table 2 of Schedule 2
11.3	Communication		Severity level 1 or 2 affects one or more users notify all users. Liaise with GIC and users at least daily, including expected return to service Develop and maintain formal comms channels such as email, website to notify users of outages Provide escalation process for users for ongoing service failures/issues
11.4	Incident reporting		For level 1 or 2, provide detailed incident report to GIC within 3 business days, total no of faults for the relevant month, and resolution status in monthly report provide GIC access to incident reporting system, change and issues register
12	Technology currency		Infrastructure hardware kept current and up to date Operating systems and supporting software at current supported versions Vendor support in place No transition to cloud-based solution without GIC approval
13.1	Change Control		Follow the change control process (Appendix A) Integrate appendix A into internal change management processes
13.2	Change documentation	Change Requests System Delivery Agreements	All changes agreed in writing with GIC in a CR or SDA The correct document should be used, as per guidelines detailed in 13.2

13.3	Industry Standard		Employ industry standard software engineering practices
13.4	Flexibility		Software must have a modular design, to allow for changes to have minimal impact on other parts of the system Must be able to develop custom reports
14	Design consultation		Provide constructive input into proposed changes to the Rules (limited to high level assessment) Proactively propose changes to improve efficiency
15.1	Operational relationship		Maintain close contact with users and GIC Allow GIC reasonable access to staff and facilities
15.2	User satisfaction Survey		Conduct and annual survey of users (survey to be approved by GIC) Consolidate results, report to GIC including proposed actions
16.1	Industry training		Make available structured industry training at the cost of the user
16.2	Online training materials		Provide basic training materials online at no cost
17.1	Required documentation		Develop, maintain and provide to GIC: • Up to date functional spec • User manual • Backup procedures • Business continuity process manual • Technical documentation for business continuity • Technical documentation in case of loss of key personnel • Technical documentation detailing hardware, infrastructure and software configurations • Business process information
17.2	Access to documentation		Ensure all documentation is readily accessible at all times Ensure GIC has soft copies Annotate content that may allow unauthorised access to the system if released
17.3	Software source code	Only relevant if agreement is terminated	
18	Third party innovation		May offer related services to users Require GIC consent for services to non-participants Must be consistent with complying with the Rules Must contract directly with the user

			Must not disclose information other than that normally available to the user or impact service levels If relevant check requirements of 18.5 to 18.9 also complied with
19.1	Performance standards		Must meet the performance standards set out in: • Table 1 + 2 • Para 6.1 to 6.4 • Para 21
19.2	Performance Review		Agree with GIC annual performance standards Perform self-review monthly GIC may review performance annually
20	Provider Contacts		Advise GIC of changes in personnel, contact details and current organisational structure
21	Monthly Report		Provide a monthly report by the 10th business day
22	Meetings		Operational representatives will schedule to meet monthly with the GIC