



Radio Frequency Propagation Surveys (RFPS) Service Definition



Document title	Radio Frequency Propagation Surveys (RFPS) Service Definition		
Reference No.	IF-SER-029	Version	1.0
Author	Lisa Washer, Head of Cyber		
Reviewed by	Carl Osborne, Managing Director		
Issue date	27/01/2026		



Radio Frequency Propagation Surveys (RFPS) Service Definition

Document Control

Version	Name	Comment	Date
0.1	Lisa Washer	Initial Draft	07/01/2026
0.2	Carl Osborne	Review and amendments	27/01/2026
1.0	Lisa Washer	Final Review and publish	27/01/2026

Correlation Chart

Clause	FSR Code of Practice v2	ISO/IEC 17025:2017	ILAC-G19 :06/2022	ISO 9001:2015	ISO/IEC 27001:2022
Review of Requests, Tenders and Contracts	16	7.1	4.1, 4.7	8	4.2



Radio Frequency Propagation Surveys (RFPS) Service Definition

Contents

Document Control.....	2
Correlation Chart.....	2
Contents	3
1. Radio Frequency Propagation Surveys (RFPS) Service.....	4
1.1 Service Overview	4
1.2 Service Objectives	4
2. Service Features	5
3. Service Benefits	6
4. Scope of Service	7
4.2 In-scope activities	7
4.3 Out-of-scope activities	7
4.4 Assumptions, Dependencies and Constraints	7
5. Service Delivery Model	10
5.2 Engagement Approach	10
5.3 Reporting and Deliverables	10
6. Exit and Offboarding	11
7. Roles and Responsibilities	12
7.1 Service Provider Responsibilities	12
7.2 Client Responsibilities.....	12
7.3 Facilities, IT, and Network Stakeholders (Where Applicable)	12
7.4 Joint Responsibilities.....	13



Radio Frequency Propagation Surveys (RFPS) Service Definition

1. Radio Frequency Propagation Surveys (RFPS) Service

1.1 Service Overview

- 1.1.1 The Radio Frequency Propagation Survey (RFPS) Service provides a structured assessment of the radio frequency (RF) environment within a defined geographic or physical area. The service is used to characterise and document existing RF conditions, including signal strength, coverage, and propagation behaviour, to produce an accurate representation of how RF signals behave within that environment. The survey considers the impact of terrain, buildings, materials, and infrastructure on RF performance and demonstrates how signals would propagate if specific cell sizes or network configurations were deployed. This enables informed planning, design, and assurance of wireless communications systems based on a clear, evidence-based understanding of the RF landscape.
- 1.1.2 RFPS is used to inform the deployment and performance of wireless networks, including Wi-Fi, cellular, private radio, IoT, and other RF-dependent technologies, ensuring coverage, reliability, capacity, and security objectives are met.

1.2 Service Objectives

- 1.2.1 The objectives of the RFPS Service are to:
- a) Assess RF signal coverage and propagation characteristics within the defined area
 - b) Identify coverage gaps, sources of interference, and signal degradation
 - c) Support the design, validation, and optimisation of wireless network deployments
 - d) Validate performance against operational requirements
 - e) Provide evidence-based recommendations for improvement
 - f) Document the RF environment through structured tabular data and visual mapping, providing a clear and auditable representation of signal behaviour and coverage



Radio Frequency Propagation Surveys (RFPS) Service Definition

2. Service Features

2.1.1 Key features of the RFPS Service include:

- a) **Environment-Specific RF Analysis** – Assessment tailored to site conditions
- b) **Multi-Technology Coverage** – Wi-Fi, cellular, private radio, IoT
- c) **Quantitative Measurements** – Signal strength, noise, and interference
- d) **Propagation Modelling** – Visualisation of RF behaviour and coverage
- e) **Defensible Methodology** – Transparent and repeatable survey approach



Radio Frequency Propagation Surveys (RFPS) Service Definition

3. Service Benefits

3.1.1 The service delivers the following benefits:

- a) Improved wireless coverage and performance
- b) Reduced risk of connectivity gaps or interference
- c) Informed infrastructure and technology decisions
- d) Optimised placement of access points and antennas
- e) Evidence-based assurance for stakeholders



Radio Frequency Propagation Surveys (RFPS) Service Definition

4. Scope of Service

- 4.1.1 The RFPS Service is delivered in accordance with applicable radio communications regulations and site access requirements. Surveys focus on the measurement and analysis of RF characteristics and do not involve the interception or decoding of communications.
- 4.1.2 All survey activities are conducted using forensically sound, repeatable methodologies and trusted technical tools, ensuring the integrity, reliability, and evidential robustness of the data collected.

4.2 In-scope activities

- 4.2.1 The RFPS Service includes:
- a) Engagement scoping and definition of survey objectives
 - b) Review of site layout, construction materials, and RF environment
 - c) Measurement of RF signal strength, quality, and noise
 - d) Identification of attenuation, reflection, and interference sources
 - e) Coverage mapping and propagation modelling
 - f) Assessment of indoor and outdoor RF performance
 - g) Evaluation of existing or proposed wireless infrastructure
 - h) Analysis of environmental and structural impacts on RF signals
 - i) Reporting of findings, limitations, and recommendations

4.3 Out-of-scope activities

- 4.3.1 Unless agreed separately, the following are excluded:
- a) Active interception or monitoring of communications content
 - b) Network configuration or installation activities
 - c) Continuous RF monitoring services
 - d) Provision of legal or regulatory advice

4.4 Assumptions, Dependencies and Constraints

- 4.4.1 Delivery of the Radio Frequency Propagation Survey (RFPS) Service is based on the following assumptions:
- a) The client has lawful authority to grant access to all in-scope sites, buildings, and areas where RF measurements are to be conducted.



Radio Frequency Propagation Surveys (RFPS) Service Definition

- b) Survey objectives, intended wireless technologies (e.g. Wi-Fi, cellular, private radio, IoT), coverage requirements, and performance expectations are clearly defined and agreed prior to commencement.
- c) Accurate and up-to-date site information is available, including floor plans, building materials, layouts, and any known RF-relevant infrastructure.
- d) The RF environment at the time of survey is broadly representative of typical operational conditions, unless otherwise agreed.
- e) Existing wireless infrastructure, where present, is operational and accessible for measurement and assessment.
- f) The client will provide timely access to relevant stakeholders, such as facilities, IT, security, or network teams, to support interpretation of findings.

4.4.2 Delivery of the RFPS Service is dependent on the following factors:

- a) Availability of the site(s) for survey activities during agreed times, including access to restricted or sensitive areas where required.
- b) Cooperation from facilities, IT, and network teams to provide information on existing or planned wireless infrastructure.
- c) Stability of the RF environment during the survey period; significant changes to occupancy, equipment usage, or RF sources may affect results.
- d) Availability of suitable survey conditions, including minimal temporary obstructions or construction activity that could distort RF measurements.
- e) Timely decision-making by the client regarding scope changes, additional survey areas, or refinement of requirements.
- f) Availability of specialist RF survey equipment and suitably qualified personnel.

4.4.3 The following constraints may impact the scope, accuracy, or outcomes of the RFPS Service:

- a) RF signal behaviour is inherently variable and may be influenced by transient factors such as human presence, movement, weather conditions, or temporary RF sources.
- b) Building materials, structural features, and environmental conditions (e.g. metal structures, reinforced concrete, glazing) may limit signal propagation and cannot always be mitigated through design alone.
- c) RF congestion or interference from third-party networks or devices outside the client's control may affect survey findings.
- d) Propagation models and predictions are based on measurements and assumptions at the time of survey and may not fully reflect future changes to the environment or network usage.



Radio Frequency Propagation Surveys (RFPS) Service Definition

- e) The survey provides a point-in-time assessment and does not constitute continuous monitoring or long-term performance assurance.
- f) Recommendations are technical in nature; implementation decisions, cost considerations, and operational trade-offs remain the responsibility of the client.
- g) Service delivery is subject to agreed commercial terms, site access constraints, and health and safety requirements.



Radio Frequency Propagation Surveys (RFPS) Service Definition

5. Service Delivery Model

- 5.1.1 The Radio Frequency Propagation Survey (RFPS) Service is provided on an ad-hoc or project basis. Scope, timelines, deliverables, and fees are agreed per engagement.
- 5.1.2 All survey data and findings are handled securely and treated as confidential. Information is retained only for the agreed purpose and duration.

5.2 Engagement Approach

- 5.2.1 The RFPS Service is delivered through a structured approach:
- a) **Engagement Initiation and Scoping** – Definition of objectives, technologies, and environments
 - b) **Site Review and Preparation** – Assessment of layout, materials, and constraints
 - c) **RF Measurement and Survey** – Collection of signal and environmental data
 - d) **Analysis and Modelling** – Interpretation of propagation and performance
 - e) **Validation and Review** – Confirmation of findings and limitations
 - f) **Reporting and Recommendations** – Delivery of survey outputs and guidance
- 5.2.2 Delivery is typically conducted on-site, with supporting analysis performed remotely where appropriate.

5.3 Reporting and Deliverables

- 5.3.1 Deliverables may include:
- a) RF coverage maps and heatmaps
 - b) Signal strength and interference analysis
 - c) Propagation and attenuation assessments
 - d) Summary findings and technical recommendations
 - e) Methodology and limitation statements



Radio Frequency Propagation Surveys (RFPS) Service Definition

6. Exit and Offboarding

- 6.1.1 Upon completion, survey data and reports are securely delivered to the client. Access to sites and systems is revoked and engagement closure confirmed.



Radio Frequency Propagation Surveys (RFPS) Service Definition

7. Roles and Responsibilities

7.1 Service Provider Responsibilities

- 7.1.1 The service provider is responsible for planning, executing, and delivering the Radio Frequency Propagation Survey (RFPS) Service in accordance with the agreed scope, objectives, and recognised RF engineering best practice. This includes advising on appropriate survey methodologies, frequency ranges, and measurement techniques relevant to the wireless technologies under consideration.
- 7.1.2 The service provider will conduct on-site RF measurements using suitable survey equipment to assess signal strength, quality, noise, and interference. Responsibilities include analysing how RF signals propagate within the physical environment, identifying coverage gaps, attenuation effects, and sources of interference, and interpreting the impact of building materials, layout, and environmental factors on RF performance.
- 7.1.3 The service provider is responsible for documenting survey methods, assumptions, limitations, and findings in a clear and transparent manner. Quality assurance checks are performed to ensure accuracy and consistency of measurements and analysis. Where appropriate, the service provider will develop propagation models and coverage maps and provide evidence-based recommendations to support wireless network design, optimisation, or assurance activities.
- 7.1.4 The service provider does not perform network configuration, installation, or operational changes unless separately agreed.

7.2 Client Responsibilities

- 7.2.1 The client is responsible for defining the purpose and objectives of the RFPS engagement, including the intended use of the survey findings and any performance or coverage requirements. The client will provide lawful access to all in-scope sites and areas, along with relevant site information such as floor plans, building materials, and details of existing or proposed wireless infrastructure.
- 7.2.2 The client is responsible for coordinating access with facilities, IT, security, or operational teams and for ensuring that site conditions during the survey are representative of normal operating environments where possible. The client retains responsibility for implementing any recommendations arising from the survey and for making design, investment, or operational decisions based on the findings.

7.3 Facilities, IT, and Network Stakeholders (Where Applicable)

- 7.3.1 Facilities, IT, and network stakeholders may support the engagement by providing technical information on building construction, layouts, and wireless infrastructure,



Radio Frequency Propagation Surveys (RFPS) Service Definition

facilitating access to restricted areas, and advising on operational constraints or future changes that may affect RF performance.

7.4 Joint Responsibilities

- 7.4.1 The service provider and client share responsibility for effective communication, timely coordination of site access and logistics, and escalation of issues that may impact scope, timelines, or survey outcomes. All parties are responsible for maintaining confidentiality, ensuring health and safety compliance during on-site activities, and supporting transparent, auditable delivery of the RFPS Service.

*****END OF DOCUMENT*****