

Specification

Signalling and Operational Systems competence management

MD-15-105

QUEENSLAND RAIL OFFICIAL

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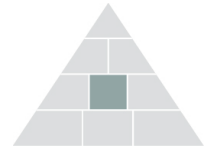
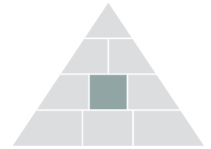


Table of Contents

1	Purpose	4
1.1	Scope	5
1.1.1	What is out of scope	5
2	Requirements of this Specification	6
2.1	Discipline Head	6
2.2	Managerial Responsibilities	6
2.3	Responsibilities of RIWs	7
2.4	Competency assessment	8
2.4.1	Competency Approver	8
2.4.2	Assessment of Queensland Rail employees	8
2.4.3	Assessment of external staff	12
2.4.4	Maintenance of Competency	13
2.4.5	Suspension of competency	13
2.5	Specific skill areas	13
2.5.1	Specific skills and limitations of competency	14
2.5.2	Competencies for ETCS	14
2.5.3	Project Management	15
2.6	Queensland Rail RIW competency matrix	18
2.6.1	Signal Design	19
2.6.2	CADD	21
2.6.3	ETCS	22
2.6.4	Mechanical Design	28
2.6.5	ISAA	29
2.6.6	Management	30
2.6.7	Construction	32
2.6.8	Maintenance	34
2.6.9	Principles Testing	36
2.6.10	Testing	37
2.6.11	Operational Systems	41
2.7	Proficiency Levels	45
2.8	Submission and assessment	47
2.8.1	Queensland Rail employee submission	47
2.8.2	External staff submission	47



2.9	Work educational equivalence	47
2.10	Duration of Experience	49
2.11	Logbook	49
2.11.1	Guidance on Logbook writing	50
2.11.2	Work experience record entry	52
2.11.3	Witnesses	53
2.12	Permission to perform electrical work	54
2.12.1	Electrical mechanic licence	54
2.12.2	Electrical work without electrical mechanic licence	55
2.13	Documentary evidence and audits	55
2.14	IRSE membership and licensing	56
2.15	Queensland Rail MyLearning codes	56
3	Responsibilities	60
3.1	Who does what?	60
4	Terms and definitions	61
5	Document history	64
6	Appendices	66
	Appendix 1 – Related documents	66
	Appendix 2 – Categories and Roles	68
	Appendix 3 – Competency Pathways	69
	Appendix 4 – QLD Electrical Licence Compliance Agreement	81
	Appendix 5 – Obligations of the QR Competency holders	82



1 Purpose

The Work Health and Safety Act 2011 (Qld) requires Queensland Rail to identify, manage and assure that Employees and Contractors performing work for Queensland Rail have adequate competence to carry out the work safely and effectively.

As an accredited rail operator under the Rail Safety National Law (Queensland) and Rail Safety National Law National Regulations 2012 (Qld), Queensland Rail is required to:

- Ensure that individuals performing rail safety work, or whose roles have rail safety-related implications, are competent to perform their duties effectively and safely, and
- Maintain records of competence granted to the rail safety workers.

Additional obligations relating to technical competence requirements are contained within the following legislation:

- Electrical Safety Act 2002 (Qld)
- Professional Engineers Act 2002 (Qld).

The Signalling and Operational System Standards, Signalling - Change Management of Signalling and Operational Systems Infrastructure Standard MD-10-169; Signalling - Management of Externally Delivered Projects Standard MD-13-654; Signalling - Project Delivery Standard MD-14-40; Signalling Engineering Maintenance Standard MD-11-332 specify the competency of workers undertaking signalling and operational systems work for Queensland Rail (QR).

The purpose of this Specification is to outline Queensland Rail's Competence Management and Assurance process for Signalling and Operational Systems, ensuring a robust framework that meets regulatory obligations, accreditation requirements and aligns with applicable standards.

This specification defines the competence management and assurance requirements for the Signalling and Operational Systems discipline, applicable to employees, contractors, and consultants performing rail safety or safety-critical work for QR.

Employee competence at QR is maintained and developed in alignment with the ET&CI Career and Development Framework, and it is systematically tracked through the corporate learning management system, MyLearning. However, certain specialised signalling roles are not defined within the ET&CI framework or standard corporate position descriptions.

Employees undertaking these specialised roles are required to undergo formal assessment to confirm their competence. Furthermore, corporate position descriptions that involve the performance or supervision of technical duties within the signalling and operational systems discipline shall be assessed in accordance with the role requirements of this specification.



1.1 Scope

This Specification covers all QR Signalling and Operational Systems Employees, Contractors and Consultants who carry out rail safety work in support of QR's Signalling and Operational Systems infrastructure. Specifically, all personnel involved in the concept, design, development, construction, testing, commissioning, maintenance and decommissioning of Signalling and Operational Systems infrastructure for both below and above rail assets. It also includes upstream design work and off-line support tools for the application configuration, configuration management and diagnostics of assets under consideration.

All contractors and consultants delivering services to QR shall be designated as Rail Industry Workers (RIW). They are required to comply with the competency management and verification processes outlined by the Australasian Railway Association (ARA) under the RIW Program, in alignment with QR's network competency requirements.

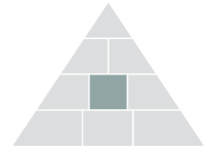
QR roles and proficiency levels identified in this specification are not defined within the ET&CI framework; however, employees are required to be assessed as competent for specialised signalling roles.

The defined roles and competencies within this Specification are specific to QR and are informed by the IRSE licensing framework¹, the ARA National Signalling Assessment Framework, and AS/RISSB 7718 Signal Design Process Management.

1.1.1 What is out of scope

QR employees are not required to register through the RIW program while working on QR infrastructure.

¹ <https://www.irse.org/Licensing/Licensing-Documentation>



2 Requirements of this Specification

2.1 Discipline Head

The accountabilities and responsibilities of the Discipline Head for Signalling and Operational Systems are defined in Discipline Head Accountabilities Standard MD-13-366. This position is a designated internal leadership role and represents the principal technical authority within Queensland Rail for all matters relating to Signalling and Operational Systems.

The Discipline Head is responsible for the final approval and authorisation of all procedures, specifications, and standards governing the design, construction, maintenance, testing, and commissioning of Signalling and Operational Systems. This responsibility includes the endorsement of technical strategic direction, asset management plans, and conceptual frameworks, ensuring all discipline-related activities align with organisational objectives, regulatory obligations, and safety requirements.

The Discipline Head serves as the Competency Approver for the discipline, as defined in Section 2.4.1, ensuring a consistent and competent workforce that meets the required competency standards to undertake discipline-specific roles. The Discipline Head may appoint a qualified deputy to act on their behalf where operationally required.

The Discipline Head shall possess the following qualifications:

- Degree in electrical engineering
- Practising RPEQ in Electrical Engineering
- 10+ years of experience in railway signal design.

2.2 Managerial Responsibilities

QR Managers, Contract Managers, Contracting Organisations and Alliance Partners shall ensure all their employees, alliance members, contractors, and sub-contractors undertaking rail safety work for QR are compliant with this Specification and maintain current evidence of continued practice of competencies. These parties are responsible for identifying the specific Signalling and Operational Systems activities being undertaken, and the corresponding roles involved.

Additionally, QR, Contracting Organisations and Alliance Partners shall ensure that only individuals who have been assessed as competent through QR's approved processes and whose competencies have been formally endorsed in accordance with this Specification are permitted to work on QR infrastructure.



2.3 Responsibilities of RIWs

QR signalling staff and external contractors and consultants working on QR signalling systems and equipment are performing rail safety work, as defined by RSNL. Under RSNL, rail safety workers must be assessed for competency following the Australian Qualifications Framework (AQF).

The Rail Industry Worker (RIW) framework, developed by the Australasian Railway Association (ARA), is a nationally recognised Centralised Competency Management System. It maintains a single electronic record of each rail worker's health, qualifications, and competencies, accessible across projects, employers, and jurisdictions.

The RIW framework supports organisations in meeting their legal obligations under the RSNL, particularly in relation to worker competency and fitness for duty.

The RIW System² is one mechanism used to assess, verify, and manage competencies. QR uses the RIW System for external contractors and consultants to apply and evaluate the competencies outlined Section 2.6 and its own My Learning system for internal staff.

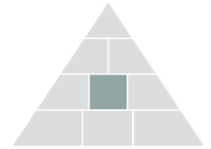
Competencies obtained in other jurisdictions are not directly transferable to QR, primarily due to gaps in domain expertise. These include familiarity with QR signalling principles, circuit conventions, technical specifications, and the operational environment.

The RIW System acts as a public repository of QR assessed competencies. Section 2.9 describes the process for submission through RIW of international and other alternative qualifications.

Employees (QR internal staff) and Contractors and Consultants (external staff) with a signalling competency are responsible for:

- 1) Providing true and accurate documents or information in relation to the assessment of the competency of a person to carry out rail safety work. Under RSNL, Section 117 subsection (6), it is an offence to provide false or misleading information in material particulars; or to omit such information.
- 2) Ensuring full compliance with 0, and where a role requires work within the rail corridor, the worker shall also comply with the medical and track safety competency requirements specified in the Queensland Network Rules and Procedures (QNRP).

² <https://www.rlw.net.au/>



2.4 Competency assessment

QR internal personnel as well as external contractors and consultants shall be assessed against the proficiency, competence and evidence requirements prescribed in this Specification. Individuals who satisfy these requirements shall be formally approved and deemed competent to undertake rail safety work under the designated role classification(s) in accordance with the conditions specified on letter Certificate of Competence.

2.4.1 Competency Approver

The Competency Approver for all Signalling and Operational Systems roles is the Discipline Head, Signal and Operational Systems, as authorised under Delegated Authorities - Financial and Functional Specification MD-12-904. A formally nominated delegate of the Discipline Head may also perform this function.

QR's Competency Approver is authorised to approve, amend, or revoke the approval status of roles whether new or previously approved for QR personnel, external contractors, and consultants, in accordance with the requirements set out in this Specification.

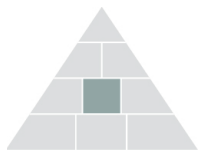
2.4.2 Assessment of Queensland Rail employees

QR personnel shall undergo competency assessment through an internal process and the RIW System is not used for this purpose. Employees shall be assessed by a competent technical supervisor and subsequently approved by the Competency Approver.

The competency roles applicable to QR employees shall be those listed in Section 2.6, in addition to the roles identified in Sections 2.4.2.1, 2.4.2.2 and 2.4.2.3. The roles identified in these latter sections relate exclusively to internal signal testing, electricians and trade roles for QR employees only.

The assessment for QR employees shall be recorded within the enterprise learning and management system, known as MyLearning. The Competency Approver will provide the assessment decision to the technical supervisor, who shall liaise with the Assets Training Delivery's Technical Training team to update the training records, and shall communicate the outcome to the employee.

The proficiency levels specified in Section 2.7 shall apply to all internal staff performing signal and operational systems engineering, design, or testing functions.



2.4.2.1 Tester Asset renewals

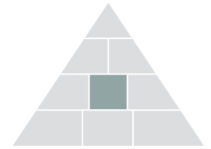
QR has established internal competencies for Functional Tester and Tester-In-Charge that do not directly align with RIW business rules or role descriptors. These roles are critical to the internal delivery of asset renewal programs, particularly in supporting the testing of like-for-like brownfield signalling equipment and associated apparatus. The competency requirements for these roles are presented in Table 1.

2.4.2.2 Signalling Electricians trained by external organisations

This section applies to QR personnel working as Signalling Electricians, who possess a Certificate IV in Rail Signalling, and who undertook the formal training whilst employed at an external organisation, or who do not have continuous service with QR since attaining the qualification.

The signalling equipment used across Australia generally adheres to similar foundational principles. However, there are variations between QR practice and other railway operators, in signalling principles, circuit design, enterprise governance and compliance, operational procedures and systems, and parametric configurations. To ensure that externally trained Signalling Electricians can identify, understand, and adapt to QR practice, additional controls shall be applied.

- The Signalling Electrician shall have obtained a Queensland electrical mechanic licence and a Certificate IV in Rail Signalling.
- The Signalling Electrician shall have a portfolio of evidence in the form of a Logbook (see Section 2.10), supporting their current competency.
- The Signalling Electrician shall work under supervision of a competent QR Signal Electrician possessing a Certificate IV in Rail Signalling, for a probationary period of two months whilst familiarising with QR practice and SEMS.
- The work shall be recorded in a Logbook supplied by QR Assets Training Delivery.
- The Signalling Electrician shall undertake a Recognition of Current Competency (RCC) assessment conducted by the Assets Training Delivery team in the third month prior to the end of probation period. In the RCC Assessment, the candidate shall demonstrate familiarisation with the QR signalling system and enterprise work requirements, using the Logbook as evidence.
- If the RCC Signalling Electrician requires further development, they shall work under supervision until successful completion of the RCC process.
- The RCC process may identify elective units of competency required by QR but not already achieved by the applicant. The applicant shall complete enrolment and training in these units of competency before working unsupervised on the relevant equipment.



- The RCC Assessor will recommend recognition of the Certificate IV in Rail Signalling, to work independently. Based on the RCC recommendation, the Competency Approver will issue a certificate of competency and that competency will be recorded in MyLearning. The candidate shall not commence independent work until the certificate is issued.

The Signalling Electrician role and description is summarised in Table 2.

2.4.2.3 Signalling Electricians without Certificate IV

This section applies to QR signalling staff who are undergoing a Certificate IV in Rail Signalling training but have not yet achieved the qualification.

All electricians appointed to the QR Signalling shall hold a valid Queensland electrical mechanic licence. They shall also be enrolled in a course leading to a Certificate IV in Rail Signalling and may have already completed some units of competency. These signalling electricians shall work under the supervision of a competent QR Signal Electrician possessing a Certificate IV in Rail Signalling.

A signalling electrician in training may perform specific tasks on signalling subsystems or equipment without supervision, provided the relevant unit(s) of competency have been attained and verified by a QR supervisor. The supervisor must ensure that MyLearning records are consistently maintained to reflect all units attained. Where applicable, recognition of equivalency can be applied for any superseded units or awards in accordance with relevant guidelines. Information on equivalency of superseded qualifications and awards can be found at the Australian national training register³ or by contacting the issuing Registered Training Organisation (RTO).

The required UEE Electrotechnology units of competency and the corresponding evidence requirements for each railway signalling sub-systems or the signalling electrical equipment are listed in Table 3.

Assets Training Delivery will provide regular updates to the business groups of the signalling electricians who have successfully attained the units of competency.

Signalling Electricians in training shall not carry out 'set-to-work' procedures following signalling system fault recovery unless under direct supervision. However, as part of their development, trainees are expected to actively support the safe and timely restoration of the signalling system. Valuable learning opportunities arise when trainees assist qualified Certificate IV in Rail Signalling staff with fault rectification, coordination, and documentation. This experience is enriched by reviewing signalling documentation and correlating observed fault conditions with the installed equipment during the remediation process.

³ <https://training.gov.au/>

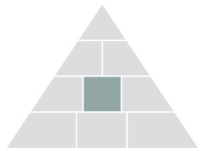


Table 1 - Competency requirements for Queensland Rail internal testing roles

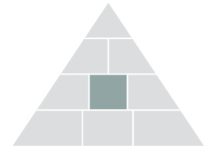
Role title	Role description	Qualification	Evidence Required
Tester In Charge – TIC (Asset Renewal)	Responsible for production of Signalling Test & Commission documentation, testing methodology and testing charts for approval by the Senior Test Engineer for previously certified infrastructure of a like-for-like Asset Renewal only. Note: Tester in Charge activities will include the organisation and management of the testing and commissioning plan, collation of completed testing documentation and the handover to operations.	Degree in electrical engineering which is acceptable for professional membership of Engineers Australia An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma in electrical	Certified copy of engineering qualification (or certified of qualification for the equivalent pathway) Logbook, Portfolio of Evidence
Function Tester (Asset Renewal)	Responsible for undertaking and function testing activities by following signalling documentation and functional test documentation for a particular asset class on a like-for-like basis, where wiring designs are not issued e.g. Pink Test copies not issued by the engineering office.	Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in electrical QLD electrical mechanic licence as required	Certified copy of Qualification QLD electrical mechanic licence Logbook, Portfolio of Evidence

Table 2 Competency requirements for Queensland Rail Signalling Electricians whose qualifications were acquired externally

Role	Role Description	Competency Required	Evidence Required
Signalling Electrician (external)	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Certificate IV in Electrical - Rail Signalling QLD electrical mechanic licence	Certified copy of Qualification QLD electrical mechanic licence Logbook, Portfolio of Evidence

Table 3 Competency requirements for Queensland Rail Signalling Electricians without Certificate IV

Role title	Role description	Current enrolment	UEE competency units completed	UEE competency unit titles	Evidence required
Signalling Electrician Track Circuits	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Nationally accredited Cert IV - Railway Signalling AQF training course.	UEERS0024 UEERS0033	Install and maintain rail track circuit leads and bonds Maintain train detection equipment	Evidence of attainment of UEE units, with QR endorsement QLD electrical mechanic licence
Signalling Electrician Level Crossings	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Nationally accredited Cert IV - Railway Signalling AQF training course.	UEERS0025	Maintain active level crossing equipment	Evidence of attainment of UEE unit, with QR endorsement QLD electrical mechanic licence
Signalling Electrician Point Machines	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Nationally accredited Cert IV - Railway Signalling AQF training course.	UEERS0030	Maintain power-operated point actuating devices	Evidence of attainment of UEE unit, with QR endorsement QLD electrical mechanic licence
Signalling Electrician Signals, warning and protection systems	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Nationally accredited Cert IV - Railway Signalling AQF training course.	UEERS0032	Maintain trackside signal and train protection equipment	Evidence of attainment of UEE unit, with QR endorsement QLD electrical mechanic licence
Signalling Electrician Vital interlockings and non-vital telemetry systems	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Nationally accredited Cert IV - Railway Signalling AQF training course.	UEERS0034 UEERS0027 UEERS0029	Maintain vital relay interlocking systems Maintain computer-based interlocking rail systems Maintain non-vital telemetry systems	Evidence of attainment of UEE units, with QR endorsement QLD electrical mechanic licence
Signalling Electrician Cable Testing / Repairs	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Nationally accredited Cert IV - Railway Signalling AQF training course.	UEERS0037 UEERS0036	Test copper rail signalling cables Repair rail signalling power and control cables	Evidence of attainment of UEE units, with QR endorsement QLD electrical mechanic licence



2.4.3 Assessment of external staff

The competency of contractors and consultants working on the QR Signalling and Operational systems shall be assessed and recorded through the Rail Industry Worker (RIW) System².

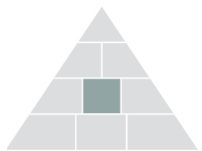
The RIW System roles and competencies are detailed in Section 2.5. Table 5 through Table 15 within that Section outlines the categories, role titles and descriptions, proficiency levels, qualifications, experience and required evidence for all applicable external signalling engineering, operational systems, technical and trade roles.

Job titles and position descriptions assigned by different companies may not align directly with the competency roles defined in QR's competency matrices; either in title or in functional scope. Company–assigned titles or roles shall not be construed as confirmation of equivalent competency by QR. All technical documents shall therefore be endorsed using the role descriptors defined within this Specification to avoid any ambiguity and statutory non-compliances arising from company-assigned titles.

In certain instances, a single organisational position may encompass responsibilities that span multiple competency roles. Where this occurs, each role shall be assessed independently. The differentiation between roles is determined by the specific nature, scope, and sufficiency of evidence required to demonstrate competence in accordance with the QR framework. For example, a worker may hold a Bachelor of Engineering (Electrical) and be employed by their company as a Signals Maintenance Engineer. However, the rail safety work they perform may align with the responsibilities of both a Test Engineer and a Maintenance Engineer. In such cases, the worker shall supply separate, standalone applications through the RIW System for assessment by QR.

Applicants shall provide evidence of competency through the RIW System, regardless of whether the application is for new roles, a renewal, or an upgrade. The evidence may take the form of units of tertiary attainment issued by recognised organisations, such as Registered Training Organisations (RTOs); qualifications awarded by accredited national or international institutions, endorsed by the relevant peak bodies within Australia; and verified professional and trade experience. The evidence of experience shall be provided in the form of a Logbook – see Section 2.11.

There are many competent individuals who are working within the railway signalling and operational systems industry who do not hold the mandated qualifications, having joined the industry prior to the requirement for formal qualifications. An alternate path to recognise such RIW competency for roles may be considered on a case-by-case basis providing the worker has relevant and current Signalling and Operational Systems experience. This is notwithstanding the legislative requirements such as RPEQ and the Queensland electrical licences.



2.4.4 Maintenance of Competency

All contractor or consultant RIWs with one or multiple assessed roles shall resubmit for renewal of competencies prior to RIW expiry, which occurs after 5 years.

A contractor or consultant RIW with an expired role shall not undertake rail safety work for those roles until the deficiencies have been rectified.

When competency is granted based on external accreditation(s) (e.g., RPEQ, IRSE Licence or QLD electrical mechanic licence), those accreditation(s) shall be maintained for the associated QR competency to remain valid. Should the any underpinning external accreditation lapses, the corresponding QR competency shall be deemed suspended.

Evidence demonstrating satisfactory renewal or periodic review of the external accreditation shall be uploaded to RIW System; however, formal reassessment by QR of the associated QR roles is not required.

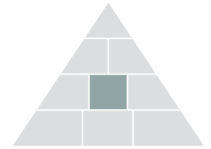
2.4.5 Suspension of competency

Where there is evidence of poor performance from an employee, contractor or consultant RIW, the Competency Approver may remove, suspend or reduce a competency. QR may act at any time, separate from the periodic reassessment described in Section 2.4.4.

2.5 Specific skill areas

Original Equipment Manufacturers (OEMs), Original Equipment Suppliers (OES), and technology-integrator design entities shall be responsible for demonstrating that personnel performing technical and engineering services possess product and technology specific competence commensurate with the complexity and risk of the technology being introduced. Where novel systems or technologies are utilised, these entities shall provide traceable and auditable evidence including, at a minimum, training records and internal competency attestations which demonstrate that their personnel have a high level of skill, product knowledge, and professional capability necessary to develop, integrate, test, and commission safe and reliable systems.

Sole reliance on QR-granted competency for personnel based on systems already implemented on the QR network shall not be construed as sufficient evidence of product-specific competence for novel systems or technologies. Such reliance is contrary to the guiding principles and safety duty obligations established under RSNL and does not discharge the obligations of OEMs, OES, or systems integrators under this Specification. Accordingly, it shall be deemed a non-compliance by QR.



2.5.1 Specific skills and limitations of competency

The range of projects undertaken by Signalling Engineering applies diverse specialist skills and types of work and equipment. It is not expected that an individual approved for a role at a specific proficiency level (e.g. L2) will be competent to perform a full spectrum of activities at that level. The QR competency management framework does not provide an assessment of specialist skills and equipment types. It is RIW parent company's prime responsibility to allocate work commensurate with the RIW's skills and training, and to supervise and manage the acquisition of new skills.

The competencies and skills (specialities and equipment) needed to undertake project works shall be assessed and documented in the project resource planning, governance and reporting documents (e.g. Design Management Plan / Report as per GSS Part 14 - Design and Drawings MD-15-75, Test & Commissioning Strategy and Test & Commissioning Plan as per GGSS Part 13 - Test and Commissioning Planning MD-15-72 and Delegated Authorities - Financial and Functional Specification MD-12-904 respectively).

Individuals undertaking the works shall be responsible for ensuring they have the necessary experience and skillset for undertaking the assigned tasks and seek mentoring and oversight in developing skillsets. For example, an individual who has not had exposure to interlocking application logic design, or a particular Audio Frequency Track Circuit, or the QR's approach to Low Voltage (LV) power distribution and electrical safety should seek guidance from a qualified person with recognised skills in the subject. This applies at proficiency levels L2 and L3 as well as at L1.

2.5.2 Competencies for ETCS

The ETCS L2 signalling system uses digital radio communication between the train and the trackside equipment to provide a movement authority to the train, in place of lineside signals. This is an addition to QR's existing signalling principles.

Signalling personnel working on ETCS L2 systems shall demonstrate specialist skills in the principles, methods and application of ETCS systems and equipment. This includes, design, construction, testing, verification and validation, and maintenance activities. These staff shall have the corresponding conventional signalling competencies as a prerequisite.

The ETCS specification is described in a set of comprehensive EU standards. Applicants for ETCS competency shall demonstrate familiarity with these standards. ETCS competencies, for design, systems, safety and validation are presented in Table 5 to Table 15 and illustrated in ETCS competency pathways.



A Signal Design Engineer / Signal Designer, L2 or higher, may acquire a specific skill for ETCS L1 design as an overlay on Queensland Rail conventional signalling. Work which entails modifying the principles of ETCS L1 application shall be undertaken by an ETCS Design Engineer. A Signal Design Engineer / Signal Designer with an ETCS L1 skill may acquire an ETCS L2 Design Engineer / Designer competency, when other prerequisites are met.

Competencies in the digital radio communications used by ETCS L2 are covered by Telecommunications - Competence Management Specification MD-15-191 and are outside the scope of this Specification.

2.5.3 Project Management

Major signalling works are typically developed as part of a larger, complex, multi-disciplinary rail engineering project where substantial elements of the signalling works are undertaken by external contractors or collaborative organisations. Strong controls are needed to ensure that the signalling design and implementation is safe, effective, meets operational and performance requirements, meets stakeholder expectations, and complies with QR and industrial standards and legislative obligations including RSNL. Personnel engaged in the signalling works for such projects require project management skills in addition to core signalling competencies.

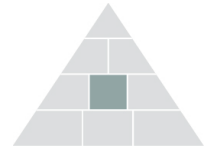
In support of these obligations, the following three competencies shall be required for the delivery of major, complex, or large-scale multi-disciplinary signalling projects.

2.5.3.1 Signal Project Design Manager

The Signal Project Design Manager (proficiency level 3) is a critical competency for the management of engineering activities across the full lifecycle of railway projects, ensuring compliance with safety, technical, and quality standards. It manages the delivery of QR signal engineering activities within a complex, integrated, multi-disciplinary rail infrastructure works programme.

This role requires extensive domain knowledge with deep understanding of QR signalling principles, systems architectures, relevant standards and legislative frameworks including regulatory compliance under RSNL.

The Signal Project Design Manager shall possess an understanding of QR signalling design processes and phases as specified in GSS Part 14 - Design and Drawings MD-15-75, as well as the testing and commissioning processes outlined in GGSS Part 13 - Test and Commissioning Planning MD-15-72.



The responsibilities include:

- Lead the delivery and deployment of signal engineering designs, ensuring full alignment with stakeholder requirements and project objectives.
- Perform the 'Approve' function for signalling designs, ensuring adherence with safety assurance and Quality Management System in strict compliance with QR design management processes.
- Ensure design resource allocation meets competency and independence requirements, supporting robust engineering governance.
- Ensure all design work is performed under configuration management.
- Manage the design schedule to allow sufficient time for thorough review of engineering artefacts.
- Ensure all safety-related decisions are supported by documented evidence providing full traceability, in accordance with the RSNL and ISO 9001:2015 Quality Management Systems.

Internal role alignment: Manager Signalling Design shall discharge all responsibilities associated with this role, when works are delivered internally by Queensland Rail and enforce compliance for external works.

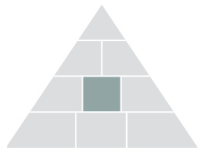
2.5.3.2 Signal Project Engineer

The Signal Project Engineer (proficiency level 2) is a key competency which manages the engineering activities across the lifecycle of a railway signalling project, including design, construction and testing and commissioning.

This role requires experience in signalling engineering in multidisciplinary projects for Queensland Rail, combined with project management skills in phasing and delivery of activities. Staff performing this role shall possess an understanding of QR enterprise processes to enable planning of work for each signalling project phase, as described in GSS Part 14 - Design and Drawings MD-15-75, including any concurrent development.

The responsibilities include:

- Deliver signalling engineering solutions for new schemes, asset renewals, and customer projects, ensuring collaboration with internal QR teams, external engineering partners, stakeholders, and delivery partners.
- Collaborate with QR technical authority and asset managers, and project stakeholders to develop project plans, scope documents, schedules, budgets, and risk management strategies.
- Coordinate and manage technical interfaces between construction, testing, and commissioning activities for new and modified signalling assets and asset protection systems.



- Interpret technical scope and requirements, providing clear technical direction to enable effective delivery of signalling engineering works.
- Provide project management oversight to ensure seamless integration between the design, construction and commissioning
- Ensure that the signalling systems satisfies safety, technical specifications, quality standards and regulations, and operational needs.
- Review and interpret test logs, recommending remediation actions to support progression of engineering design and testing activities.
- Process Requests For Information (RFIs) and Technical Queries (TQs) in collaboration with QR technical authorities.

Internal role alignment: Signalling Technical Coordinator shall perform the Signal Project Engineer role, when works are delivered internally by Queensland Rail and enforce compliance for external works.

2.5.3.3 Signal Project Lead

The Signal Project Lead (proficiency level 2) is a technical coordination and management role in the delivery of signalling systems within an integrated, multi-disciplinary rail project.

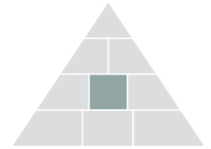
The Signal Project Lead combines knowledge of the signalling design, construction, and testing and commissioning processes with project management capability, and stakeholder coordination to manage the signalling system development and its integration with other engineering disciplines throughout the project lifecycle.

The Signal Project Lead acts as the point of contact for interfaces between signalling and other disciplines.

The Signal Project Lead shall possess comprehensive knowledge and understanding of all regulatory and certification requirements applicable to the project, including relevant Queensland Rail and broader rail industry standards.

Individuals who meet the core competency requirements for the Signalling Project Lead role are authorised to undertake project management responsibilities for the delivery of signalling system infrastructure.

Internal role alignment: the Signal Project Coordinator shall perform the Signal Project Lead role, when works are delivered internally by Queensland Rail and enforce compliance for external works.

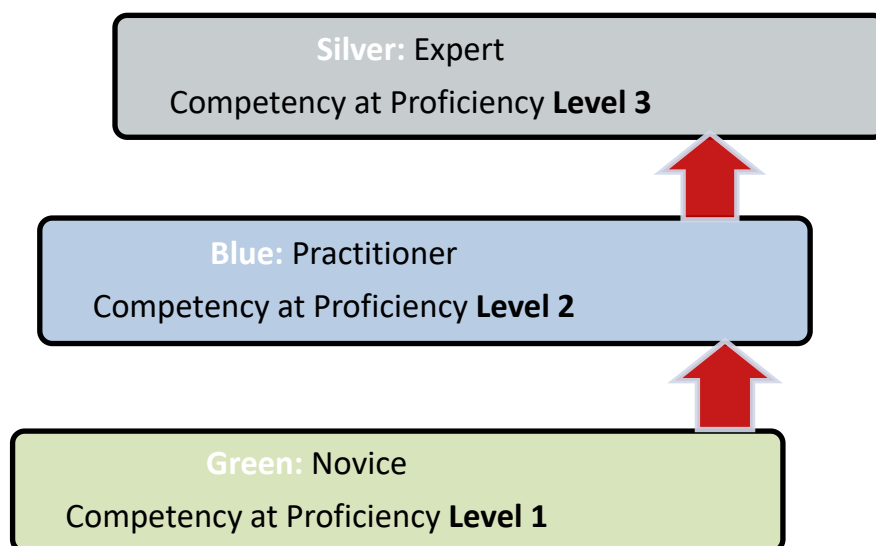


2.6 Queensland Rail RIW competency matrix

Table 5 to Table 15 in this section describes the roles defined within the RIW System for QR signalling activities, with the requisite qualifications, experience and evidence. The roles cover signalling engineering, design, testing, assurance, construction, maintenance, and operational systems and technician activities. Internal staff, consultants, and contractors must demonstrate competency to perform these roles in QR Network.

Appendix 3 provides a summary of the qualifications required for each role. Appendix 3 presents a graphical representation of the relationships between roles and proficiency levels pathways.

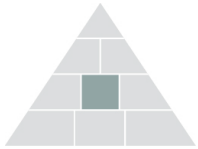
The following colour coding is applied in Table 5 to Table 15 and Appendix 3. Proficiency levels are detailed in Section 2.7.



The definitions provided in Table 4 apply to Table 5 through Table 15.

Table 4 - Signalling works complexity

Works complexity	Definition
Major Works	Works which are multi-disciplinary, multi-staged, which require integration of multiple subsystems across interlocking boundaries, or which introduce new technology to the network. All other works not falling in Simple or Complex category.
Complex Works	Works where the signalling scheme creates or modifies a new Signal Control Area, or where the control area contains Level Crossings, or where there is Principles Testing involved. Works where there are many Simple jobs or stages combined.
Simple Works	Works where the proposed signalling scheme does not create or abolish a Signal Control Area or involves the Principles Testing of two or fewer routes.



2.6.1 Signal Design

Table 5 - Queensland Rail Signal Design Competencies

Role	Levels	Role Description	Qualification	Evidence Required
Senior Signal Design Engineer	Proficiency Level 3	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements. Producing and conducting the final sign-off of signalling principles. Competent to perform the "Pass" role for Signalling Design. Competent to act as an Independent Certifier for Signalling Design, in accordance with Independent Certification Standard MD-22-50. Provide guidance and interpretation of Queensland Rail's signalling principles, standards and practice, based on deep experience and understanding.	Degree in electrical engineering ⁴ Practising RPEQ in Electrical Engineering 10+ years of experience in railway signal design, including 2+ years experience with Queensland Rail principles and practice	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records
Signal Design Engineer	Proficiency Level 2	Responsible for production of signal designs, design related calculations and final checking against the signalling principles, standards and functional design specifications/documentation. Competent to perform the "Pass" role for simple Signalling Designs. This is a Professional Engineering Service. Competent to perform the "Check" role for Signalling Design. This is a Professional Engineering Service. Preparation of Signal Engineering Management Plans, Project & Technical Specifications, Standards Undertake independent review of designs, as a Professional Engineering Service. If the Signal Design Engineer is not RPEQ, then any work considered to be a Professional Engineering Service must be under direct supervision of a Signal Design Engineer, L2 or higher, with RPEQ accreditation. Applicants for this role are expected to demonstrate: - Comprehensive understanding of QR signalling principles, standards, signalling plans, and signal control tables. - Advanced knowledge of level crossing system, signalling design and operational requirements. - High-level applied skill in PBI interlocking systems (MicroLok, Westrace, Westlock, VPI, SSI), including data structures and data preparation processes. - Advanced capability in relay-based interlocking design and application. This role is authorised to perform ETCS Level 1 overlay design upon successful completion of OEM/OES ETCS-specific product training and demonstration of practical competence in applying ETCS design principles, safety requirements, and relevant EN standards, including TSI. Competency evidence must be documented in the design logbook, formally verified, and managed in accordance with the Design Management Plan.	Degree in electrical engineering 5+ years of experience in railway signal design, including 1+ years with Queensland Rail principles and practice Optionally, Practising RPEQ in Electrical Engineering	Certified copy of engineering qualification BPEQ Certificate of Registration, as applicable Logbook demonstrating currency Training records
Signal Design Engineer	Proficiency Level 1	Responsible for production of signal designs, design related calculations and final checking against signalling principles, standards and functional design specifications/documentation, under mentoring. This role builds upon the foundational competencies developed as a Signal Design Assistant All work shall be mentored by a Signal Design Engineer or Signal Designer Level 2 or higher. Any work considered to be a Professional Engineering Service must be under direct supervision of a Signal Design Engineer, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Prerequisite qualification: Signal Design Assistant with 1+ years of experience in railway signalling, - or 1+ years signalling design experience with another railway, - or IRSE Signalling Designer licence.	Certified copy of engineering qualification Logbook demonstrating currency Training records
Signal Designer	Proficiency Level 2	Responsible for drafting and initial production of signal designs, design related calculations by implementing principles, standards and functional design documentation. Perform the "Check" role for designs. Preparation of Signalling Concept documents, Technical and User Requirement Specifications. Any work considered to be a Professional Engineering Service must be under direct supervision of a Signal Design Engineer, L2 or higher, with RPEQ accreditation. Applicants for this role are expected to demonstrate: - Comprehensive understanding of QR signalling principles, standards, signalling plans, and signal control tables. - Advanced knowledge of level crossing system, signalling design and operational requirements. - High-level applied skill in PBI interlocking systems (MicroLok, Westrace, Westlock, VPI, SSI), including data structures and data preparation processes. - Advanced capability in relay-based interlocking design and application.	Diploma or Advance Diploma or higher in electrical discipline, - or Graduate Diploma in Railway Signalling⁵ - or Railway Signalling Certificate IV, - or IRSE Signalling Designer licence, 5+ years of experience in railway signalling including 1+ years with Queensland Rail principles and practice	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records

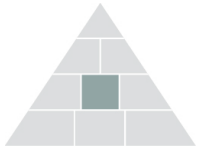
⁴ See Section 2.9 for alternative degree qualifications.

⁵ <https://www.educaedu.com.au/graduate-diploma-of-railway-signalling-postgraduate-634.html>



Role	Levels	Role Description	Qualification	Evidence Required
Signal Designer	Proficiency Level 1	Responsible for drafting and initial production of signal designs, design related calculations by implementing principles, standards and functional design documentation. This role builds upon the foundational competencies developed as a Signal Design Assistant. All work shall be mentored by a Signal Design Engineer L2, or Signal Designer L2. Any work considered to be a Professional Engineering Service must be under direct supervision of a Signal Design Engineer, L2 or higher, with RPEQ accreditation.	Diploma or Advance Diploma or higher in electrical discipline, • or Graduate Diploma in Railway Signalling⁶ • or Railway Signalling Certificate IV, • or IRSE Signalling Designer licence, Prerequisite qualification: Signal Design Assistant with 1+ years of experience, • or 1+ years signalling design experience with another railway, • or IRSE Signalling Designer licence.	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records
Signal Design Assistant	Proficiency Level 1	This is a developmental role designed to build foundational skills and knowledge in railway signalling system design and associated processes. Individuals in this role are expected to assist in the preparation of preliminary signalling design documentation, the preparation of signal design drawings using MicroStation drafting tools, the preparation of AS plans, Bonding Plans, circuit designs and layout drawings The worker shall undertake formal and practical training in the use of signalling design tools such as train braking, power and headway calculations, along with other engineering calculations. Individuals in this role are expected to complete structured formal and practical training in the application of signalling design tools, including train braking, power, and headway calculations, as well as other essential engineering computations. Expected learning may include: • Circuit analysis and documentation. • Maintain and update signalling engineering documentation, databases, and bills of materials of type-approved equipment lists. • Incorporate field changes into original signal designs and update as-built documentation. • Revise existing signal documents as directed. • Participate in feasibility studies, risk assessments, and design reviews. • Provide design support to field teams during implementation and troubleshooting. All work shall be mentored by a Signal Design Engineer L2, or Signal Designer L2. This role provides a structured pathway for progression into more advanced roles, such as Signal Designer Level 1 or Signal Design Engineer Level 1.	Graduates in training • or Enrolment in accredited tertiary education institution, with successful completion of 50% or more of the academic requirements toward one of the following qualifications: – Bachelor of Electrical Engineering – or Graduate Diploma in Railway Signalling⁶ – or Diploma or Advanced Diploma in Electrical engineering – or IRSE Signalling Designer Assistant Licence	Certified copy of qualification Certified copy of Academic Transcripts Enrolment Letters or Certificates Logbook demonstrating currency Training records

⁶ <https://www.educaedu.com.au/graduate-diploma-of-railway-signalling-postgraduate-634.html>



2.6.2 CADD

Table 6 - Queensland Rail CADD Competencies

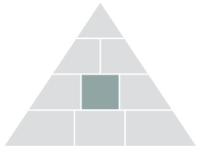
Role	Levels	Role Description	Qualification	Evidence Required
Lead CADD Operator	Proficiency Level 3	Responsible for providing oversight and leadership in coordinating all technical drafting activities and resources for assigned projects, ensuring seamless collaboration with design teams. This encompasses managing communication with clients and contractors to uphold quality and compliance in all technical drafting deliverables across diverse projects Provides expert guidance to design teams on Queensland Rail's design documentation standards, while advising on the effective use of graphics software for Computer-Aided Design (CAD). This includes establishing requirements for the development and implementation of standardised MicroStation cell libraries and automation constructs to ensure consistency and compliance across projects. Define, document, and maintain advanced drafting and document control standards for safety-critical railway signalling systems, incorporating automation and intelligent features within CAD artifacts to ensure consistency, compliance, and enhanced efficiency across all business operations	Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline Qualification in Promis.E and MicroStation. 5+ years of experience in railway signalling.	Certified copy of Qualification Certified copy of Promis.E and MicroStation certificates Logbook demonstrating currency Training records
CADD Operator	Proficiency Level 2	Responsible for drafting signalling system design documentation using predefined cell libraries following the design process for specific elements of the overall signalling design under the supervision of a Signal Designer or Signal Design Engineer. The role is expected to draft initial signalling design documentation using existing designs and specifications of the equipment to produce the relevant wiring diagrams, supporting information and analysis sheets to the required standards which include producing updates to existing records and As-builts.	Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline Training in MicroStation (and preferably Promis.E) either verified structured in-house training or OEM provided (excludes OEM-sponsored online training) 3+ years of experience in railway signalling	Certified copy of Qualification Certified copy of Promis.E and MicroStation certificates Logbook demonstrating currency Training records
CADD Operator	Proficiency Level 1	Responsible for drafting signalling system design documentation using predefined cell libraries following the design process for specific elements of the overall signalling design under the supervision of a Signal Designer or Signal Design Engineer. The role is expected to draft initial signalling design documentation using existing designs and specifications of the equipment to produce the relevant wiring diagrams, supporting information and analysis sheets to the required standards which include producing updates to existing records and As-builts. All work shall be mentored by a CADD Operator L2, or Signal Design Engineer L2, or Signal Designer L2.	Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline Training in MicroStation (and preferably Promis.E) either verified structured in-house training or OEM provided (excludes OEM-sponsored online training)	Certified copy of Qualification Logbook demonstrating currency CADD training records



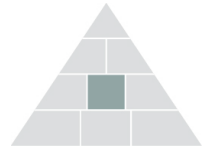
2.6.3 ETCS

Table 7 - Queensland Rail ETCS Competencies

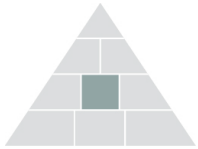
Role	Levels	Role Description	Qualification	Evidence Required
Senior ETCS System Engineer	Proficiency Level 3	A Senior ETCS System Engineer is an SME responsible for developing ETCS Level 2 signalling solutions through the integration of railway engineering, computer science, IT, and hardware/software development across the system lifecycle, ensuring safe, reliable, efficient, and cost-effective operations. The role is responsible for providing signalling systems engineering services within a multidisciplinary railway environment, focusing on interpreting designs for the development and integration of large-scale complex systems and processes. It applies engineering, technology, and data analysis principles to support operations and continuous innovation, aligning with the organisation's objectives. The role will: - Define Level 2 ETCS system requirements, including principles, design, integration, data usage, and software and hardware components. - Develop and implement risk-based Level 2 ETCS design principles, allocating functionality to components to mitigate hazards. - Assist engineers in planning system designs and troubleshooting system processes. - Devise methods to integrate new systems with existing systems, structures, processes, programs, machines, and operations. - Document system requirements, project specifications, and installation procedures. - Conduct final evaluations of system architecture for functionality and security, verifying scalable designs. - Apply innovative technologies and solutions to enhance system usability, security, and compatibility. - Monitor systems and processes to identify and mitigate operational risks. - Develop automated processes within system designs for specialised operations. - Establish guidelines and implementation standards to ensure system security and design compatibility. - Approve specific plans related to systems engineering.	Degree in electrical engineering Practising RPEQ in Electrical Engineering 10+ years of experience in ETCS/ERTMS systems	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records
ETCS System Engineer	Proficiency Level 2	Responsible for providing Level 2 ETCS signalling systems engineering services in a multidisciplinary railway environment for the development and integration of complex railway systems and processes, by applying principles of engineering, technology and data analysis to support operations and continuous innovation to meet organisational objectives. This role discharges the following responsibilities by combining skills with the principles of engineering, computer science, information technology and hardware and software development to provide safe system outcomes. - Collaborating with teams to implement system requirements, including design, integration, data usage and software and hardware components. - Apply principles of the risk-based design approach and allocation of functionality to components to mitigate the hazards. - Assisting engineers with planning system designs and troubleshooting system processes. - Apply agreed mechanisms to adapt new systems to existing systems, structures, processes, programs, machines and operations. - Documenting system requirements, project specifications and installation procedures. - Evaluating system architecture for functionality and security and verifying scalable designs for system architecture. - Applying innovative technology and solutions to improve system usability, security and compatibility. - Monitor systems and processes to identify and mitigate risks to operations. - Implement automated processes within system designs engineers for specialised operations. - Apply guidelines and implementation standards for ensuring system security and design compatibility. - Draft Systems Engineering specific plans. If the ETCS System Engineer is not RPEQ, then all work considered to be a Professional Engineering Service must be under direct supervision of an ETCS System Engineer, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Optionally, Practising RPEQ in Electrical Engineering 5+ years of experience in ETCS/ERTMS systems	Certified copy of engineering qualification BPEQ Certificate of Registration, as applicable Logbook demonstrating currency Training records
ETCS System Engineer	Proficiency Level 1	Responsible for providing signalling systems engineering services in a multidisciplinary railway environment for the development and integration of complex railway systems and processes, by applying principles of engineering, technology and data analysis to support operations and continuous innovation to meet organisational objectives. This role works under direct supervision ETCS System Engineer L2 or L3 to assist discharging of responsibilities of L2 and L3 by combining skills with the principles of engineering, computer science, information technology and hardware and software development to provide safe system outcomes.	Degree in electrical engineering 5+ years of experience in railway signalling systems, including 3+ years of experience in ETCS/ERTMS systems	Certified copy of engineering qualification Logbook demonstrating currency Training records



Role	Levels	Role Description	Qualification	Evidence Required
Senior ETCS Design Engineer	Proficiency Level 3	A Senior ETCS System Engineer is an SME who provides Level 2 ETCS design leadership by developing and combines the deep expertise in legacy rail signalling systems and modern ETCS digital control technologies. The role integrates principles of signalling engineering, computer science, and hardware to deliver safe and effective system outcomes. The role leverages the National Train Control Technology Interoperability Requirements, contributing to the modernisation and enhancement of signalling safety, capacity, and interoperability across the Queensland Rail and national networks. The role will: - Lead the design, integration and implementation of Level 2 ETCS systems. - Design, develop and interpret Level 2 ETCS principles and configurations for QR, including interoperation with Queensland Rail conventional (non-ETCS) principles. - Develop RAM and system performance requirements for ETCS systems. - Perform the “Pass” function of ETCS designs. - Provide expert engineering advice and oversight for ETCS programmes, ensuring safety, reliability, and performance. - Provide input to the development and implementation of operational readiness strategy, including deployment planning, training, maintenance procedures development to ensure smooth transition to ETCS operations. - Develop and interpret system requirements and integration documentation to support operational readiness. - Act as a key interface between engineering, suppliers, and business units, shaping project plans and managing dependencies. - Develop ETCS system architecture, including Eurobalises, LEUs, RBCs, interlockings, trackside and non-vital systems, interfaces with existing railway infrastructure, including TMS, UTC and conventional signalling, and GSM-R or FRMCS-based communications in collaboration with telecommunication engineering team. - Provide expertise in fault diagnosis and resolution, to support system validation, and performance optimization to support reliable and efficient system operations. - Provides formal final sign-off on design outcomes, ensuring they meet operational, safety, and regulatory requirements within the Queensland Rail context. Competent to act as an Independent Certifier for ETCS Design, in accordance with Independent Certification Standard MD-22-50.	Degree in electrical engineering Practising RPEQ in Electrical Engineering 10+ years of experience in ETCS L2 design 5+ years of experience in Railway signalling design	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records
ETCS Design Engineer	Proficiency Level 2	The role is responsible for the production of ETCS signalling systems designs and provision of ETCS-related engineering services, including final checking against system requirements, URS, TRS, principles, standards and regulatory requirements. - Undertake ETCS L1 and L2 designs to the system architecture, including Eurobalises, RBCs, LEUs, GSM-R or FRMCS-based communications, and interfaces with TMS, UTC and conventional signalling. - Perform the “Check” function of ETCS L2 designs. - Perform the “Check” function for ETCS L1 designs and transitions between conventional and ETCS L2 systems, provided the worker holds a minimum co-competency of Signal Design Engineer at proficiency level 2. - Provide design advice for ETCS projects, ensuring safety, reliability, and performance. - Ensure that ETCS designs complies with applicable safety, RAM and system performance requirements. - Provide input to the development and implementation of operational readiness strategy, including deployment planning, training, maintenance procedures development to ensure smooth transition to ETCS operations. - Act as an interface between engineering, suppliers, and business units, shaping project plans and managing dependencies. - Support fault diagnosis and resolution, system validation, and performance optimization to support reliable and efficient system operations. If the ETCS Design Engineer is not RPEQ, then all work considered to be a Professional Engineering Service must be under direct supervision of an ETCS Design Engineer, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Optionally, Practising RPEQ in Electrical Engineering Prerequisite qualification: Signal Design Engineer Level 2 with ETCS L1 design skill Or 5+ years of experience in ETCS L2 design	Certified copy of engineering qualification Logbook demonstrating currency Training records
ETCS Design Engineer	Proficiency Level 1	Responsible for production or review of Level 2 ETCS designs in accordance with signalling principles and standards, and functional design documentation. All work shall be mentored by an ETCS Design Engineer L2 or ETCS Designer L2. Any work considered to be a Professional Engineering Service must be under direct supervision of an ETCS Design Engineer, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Prerequisite qualification: Signal Design Engineer Level 2 Or 3+ years of experience in ETCS L2 design	Certified copy of engineering qualification Logbook demonstrating currency Training records



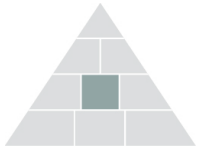
Role	Levels	Role Description	Qualification	Evidence Required
ETCS Designer	Proficiency Level 2	Responsible for production or independent review of Level 2 ETCS designs and final checking against signalling principles and standards, and functional design documentation. - Undertake ETCS L1 and L2 designs to the system architecture, including Eurobalises, RBCs, LEUs, GSM-R or FRMCS-based communications, and interfaces with TMS, UTC and conventional signalling. - Perform the “Check” function of ETCS L2 designs. - Perform the “Check” function for ETCS L1 designs and transitions between conventional and ETCS L2 systems, provided the worker holds a minimum co-competency of Signal Designer at proficiency level 2. - Provide design advice for ETCS projects, ensuring safety, reliability, and performance. - Ensure that ETCS designs complies with applicable safety, RAM and system performance requirements. - Provide input to the development and implementation of operational readiness strategy, including deployment planning, training, maintenance procedures development to ensure smooth transition to ETCS operations. - Act as an interface between engineering, suppliers, and business units, shaping project plans and managing dependencies. - Support fault diagnosis and resolution, system validation, and performance optimization to support reliable and efficient system operations. Any work considered to be a Professional Engineering Service must be under direct supervision of an ETCS Design Engineer, L2 or higher, with RPEQ accreditation.	Railway Signalling Certificate IV, or Diploma or Advance Diploma or higher in relevant discipline, or IRSE Signalling Designer licence. Demonstrated experience in ETCS/ERTMS signalling design. Prerequisite qualification: Signal Designer Level 2 with ETCS L1 design skill	Certified copy of qualification Current licence(s), including endorsement certificates Logbook demonstrating currency Training records
ETCS Designer	Proficiency Level 1	Responsible for production or review of Level 2 ETCS designs and final checking against signalling principles and standards, and functional design documentation. All work shall be mentored by an ETCS Design Engineer L2 or ETCS Designer L2. Any work considered to be a Professional Engineering Service must be under direct supervision of an ETCS Design Engineer, L2 or higher, with RPEQ accreditation.	Railway Signalling Certificate IV, or Diploma or Advance Diploma or higher in relevant discipline, or IRSE Signalling Designer licence. Prerequisite qualification: Signal Designer Level 2	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records
Senior ETCS Safety Engineer	Proficiency Level 3	A Senior ETCS Safety Engineer is an SME who provides ETCS Safety Engineering service pursuant to CENELEC standards. The role is pivotal role to defining the safety and reliability requirements of ETCS system, ensuring safe integration and operation of ETCS technologies throughout the development and implementation phases to deliver a robust and dependable ETCS solution. The role has overall accountability of ETCS system safety and provides final system safety certification/signoff required for revenue train operations. Responsibilities include: - Implementing and overseeing the engineering safety management process for ETCS systems, including: - Conducting hazard identification and risk assessments - Deriving safety requirements - Determining appropriate safety integrity levels - Managing hazard records - Ensure compliance with relevant safety standards and regulations, including: - CENELEC standards (e.g., EN 50126, BS EN 50716, EN 50129) - Common Safety Method for risk evaluation and assessment - Legal and regulatory frameworks for safe SFAIRP railway operations - Contribute to the safe system design process by: - Developing system architecture with safety considerations - Ensuring integration of subsystems meets safety requirements - Providing input on safety-related aspects of the system - Ensure system test and verification strategy meets safety and performance requirements, including - Preparing and performing software module tests - Verifying deliverables through "Designer" tests - Collaborating with dedicated Verification & Validation teams - Creating and reviewing critical documentation: - Writing and reviewing safety plans - Developing safety cases and safety justification reports and supporting ISA activities. - Providing technical input for safety-related documentation	Degree in electrical engineering Practising RPEQ in Electrical Engineering. 10+ years of experience in railway signalling systems, and 10+ years of experience ETCS/ERTMS	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records



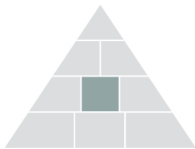
Role	Levels	Role Description	Qualification	Evidence Required
ETCS Safety Engineer	Proficiency Level 2	This role plays implements the safety and reliability requirements of ETCS system, ensuring safe integration and operation of ETCS technologies throughout the development and implementation phases to deliver a robust and dependable ETCS solution. This role provides engineering services for ETCS system safety in a complex, multidisciplinary railway environment to ensure overall system safety. - Implementing the engineering safety management process for ETCS systems which at a minimum involves: - Conducting hazard identification and risk assessments - Deriving safety requirements - Complying to appropriate safety integrity levels - Managing hazard records - Ensure compliance with relevant safety standards and regulations, including: - CENELEC standards (e.g., EN 50126, EN 50716, EN 50129) - Common Safety Method for risk evaluation and assessment - Legal and regulatory frameworks for safe SFAIRP railway operations - Contribute to the safe system design process by: - Providing input to the system architecture with safety considerations - Ensuring integration of subsystems meets safety requirements - Providing input on safety-related aspects of the system - Review tests and verifications to ensure the ETCS system meets safety and performance requirements, including - Performing software module tests - Verifying deliverables through "Designer" tests - Collaborating with dedicated Verification & Validation teams - Creating and reviewing critical documentation: - Writing and reviewing safety plans - Providing input to safety cases and safety justification reports and supporting ISA activities. - Providing technical input for safety-related documentation If the ETCS Safety Engineer is not RPEQ, then any work considered to be a Professional Engineering Service must be under direct supervision of a ETCS Safety Engineer, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Optionally, Practising RPEQ in Electrical Engineering. 5+ years of experience in railway signalling systems and 5+ years of experience ETCS/ERTMS	Certified copy of engineering qualification Logbook demonstrating currency Training records
ETCS Safety Engineer	Proficiency Level 1	This role implements the safety and reliability requirements of ETCS system, ensuring safe integration and operation of ETCS technologies throughout the development and implementation phases to deliver a robust and dependable ETCS solution. This role operates under the direct supervision of the ETCS Safety Engineer L2 or higher with RPEQ, providing engineering services for ETCS system safety in a complex, multidisciplinary railway environment to ensure overall system safety. This role assists with discharging of responsibilities of L2 and L3 by combining skills with the principles of engineering to provide engineering services for ETCS system	Degree in electrical engineering Optionally, Practising RPEQ in Electrical Engineering 5+ years of experience in railway signalling systems 3+ years of experience ETCS/ERTMS	Certified copy of engineering qualification Logbook demonstrating currency Training records



Role	Levels	Role Description	Qualification	Evidence Required
Senior ETCS Validation Engineer	Proficiency Level 3	A Senior ETCS Validation Engineer is an SME who is responsible for confirmation, through the provision of objective evidence, that the stakeholder requirements of the ETCS application have been fulfilled. The role requires a strong technical background in electronics, software, and railway signalling as well as high level of familiarity with ETCS and CENELEC standards and testing methodologies coupled with demonstrated skill and knowledge of Queensland Rail principles and operational procedures as applicable to ETCS and conventional signalling. The key responsibility of the roles includes: Testing and Validation - Reviews the ETCS system and subsystem specification to validate the features and requirements - Exercise engineering judgement and Approve validation plans and test plans in coordination with the Lead Principles Tester - Develop and verify tests conducted on emulation platforms, SI Lab or target equipment. - Lead various types of testing, including equipment qualification, process validation, and computer systems validation - Conduct rigorous testing of integrated ETCS systems and components to ensure defect free, high-quality and a fail-safe system. - Reviewing on-board logs to assess EMI, Continuous Transmission Equipment (CTE) alarms, and Balise Transmission Module (BTM) blind occurrences. - Troubleshoot abnormal test results and address issues identified during validation testing and provide SFAIRP engineering justification for the position adopted in addressing test logs or Principles Test Logs. Compliance and Standards - Develop and scrutinise validation protocols for ETCS systems, equipment and processes. - Develop and validate test protocols - Analyse test results and provide justification for SFAIRP argument. - Manage validation artifacts through the entire lifecycle - Identify evidence of regulatory compliance - Lead regulatory inspections, audits and submissions related to ETCS implementation. Technical Responsibilities - Develop framework to address compliance to regulatory requirements like safety standards, CENELEC standards such as EN 50126, EN 50716, EN 50129.	Degree in electrical engineering Practising RPEQ in Electrical Engineering. 10+ years of experience in ETCS/ERTMS V&V 10+ years of experience in railway signalling systems	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records



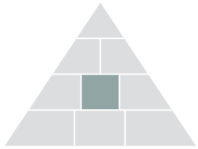
Role	Levels	Role Description	Qualification	Evidence Required
ETCS Validation Engineer	Proficiency Level 2	An ETCS Validation Engineer is an SME who is responsible for confirmation, through the provision of objective evidence, that the stakeholder requirements of the ETCS application have been fulfilled. The role requires a strong technical background in electronics, software, and railway signalling as well as high level of familiarity with ETCS and CENELEC standards and testing methodologies coupled with demonstrated skill and knowledge of Queensland Rail principles and operational procedures as applicable to ETCS and conventional signalling. The ETCS Validation Engineer will provide evidence to the Senior ETCS Validation Engineer to support validation. Activities include: Testing and Validation • Draft validation strategy, validation plans and test plans in coordination with Principles Tester • Determine the features of the ETCS system and subsystems requiring validation • Review completion of tests conducted on emulation platforms, SI Lab or target equipment. • Conduct additional validation procedures, including equipment qualification, process validation, and computer systems validation • Conduct testing of integrated ETCS systems and components. • Review ETCS on-board system for validation issues to assess EMI issues, Continuous Transmission Equipment (CTE) alarms, and Balise Transmission Module (BTM) events. • Troubleshoot abnormal test results identified during validation testing and recommend treatments Compliance and Standards • Implement validation protocols for ETCS systems, equipment and processes. • Execute validate test protocols • Analyse test results to develop justification for SFAIRP argument. • Manage validation artifacts through the entire lifecycle • Consolidate evidence of regulatory compliance • Supporting regulatory inspections, audits and submissions related to ETCS implementation. Technical Responsibilities • Adhere to regulatory compliance requirements like safety standards, CENELEC standards such as EN 50126, EN 50716, EN 50129. If the ETCS Validation Engineer is not RPEQ, then any work considered to be a Professional Engineering Service must be under direct supervision of a ETCS Validation Engineer, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Optionally, Practising RPEQ in Electrical Engineering 5+ years of experience in ETCS/ERTMS V&V 5+ years of experience in railway signalling systems	Certified copy of engineering qualification Logbook demonstrating currency Training records
ETCS Validation Engineer	Proficiency Level 1	This role is responsible for ensuring that ETCS equipment and systems comply with specifications, requirements and perform the intended functionality. The role requires a strong technical background in electronics, software, and railway signalling as well as high level of familiarity with ETCS, CENELEC standards and testing methodologies. This role ensures the safety, reliability and interoperability of ETCS systems, contributing to the certification process which ensures system(s) under test are fit for purpose and are safe SFAIRP. This role works under direct supervision ETCS Validation Engineer L2 or L3 to assist with discharging of responsibilities of L2 and L3 to provide engineering services for ETCS system to operate safely in a complex, multidisciplinary railway environment to ensure overall system safety. Any work considered to be a Professional Engineering Service must be under direct supervision of an ETCS Validation Engineer, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Optionally, 5+ years of experience in railway signalling systems 3+ years of experience in railway signalling systems	Certified copy of engineering qualification Logbook demonstrating currency Training records



2.6.4 Mechanical Design

Table 8 - Queensland Rail Mechanical Design Competencies

-	Levels	Role Description	Qualification	Evidence Required
Senior Signal Mechanical Design Engineer	Proficiency Level 3	Responsible for checking / verification and including the final sign-off of mechanical designs.	Degree in mechanical engineering ⁴ Practising RPEQ registered in Mechanical Engineering 10+ years of experience in railway signal mechanical engineering 2+ years experience with Queensland Rail signalling principles and practice	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records
Signal Mechanical Design Engineer	Proficiency Level 2	Responsible for production of signal mechanical designs and final checking against signalling mechanical requirements and standards, and functional design documentation. May include the independent review of designs. If the Signal Mechanical Design Engineer is not RPEQ, then all work considered to be a Professional Engineering Service must be under direct supervision of a Signal Mechanical Design Engineer, L2 or higher, with RPEQ accreditation.	Degree in mechanical engineering ⁴ 5+ years of experience in railway mechanical signalling 1+ years experience with Queensland Rail signalling principles and practice Optionally, Practising RPEQ registered in Mechanical Engineering	Certified copy of engineering qualification BPEQ Certificate of Registration, as applicable Logbook demonstrating currency Training records
Signal Mechanical Design Engineer	Proficiency Level 1	Responsible for drafting and initial production of signal mechanical designs by implementing principles, standards and functional design documentation under supervision. Any work considered to be a Professional Engineering Service must be under direct supervision of a Signal Mechanical Design Engineer, L2 or higher, with RPEQ accreditation. All work shall be mentored by a Signal Mechanical Design Engineer L2, or Signal Mechanical Designer L2.	Degree in mechanical engineering ⁴	Certified copy of engineering qualification Logbook demonstrating currency Training records
Signal Mechanical Designer	Proficiency Level 2	Responsible for production of signal mechanical designs and final checking against signalling mechanical requirements and standards, and functional design documentation. May include the independent review of designs. Any work considered to be a Professional Engineering Service must be under direct supervision of a Signal Mechanical Design Engineer, L2 or higher, with RPEQ accreditation.	Qualification Mechanical Cert IV, Diploma, Adv. Diploma. 5+ years of experience in railway mechanical signalling 1+ years experience with Queensland Rail signalling principles and practice	Certified copy of qualification Logbook demonstrating currency Training records
Signal Mechanical Designer	Proficiency Level 1	Responsible for drafting and initial production of signal mechanical designs by implementing principles, standards and functional design documentation under supervision. Any work considered to be a Professional Engineering Service must be under direct supervision of a Signal Mechanical Design Engineer, L2 or higher, with RPEQ accreditation. All work shall be mentored by a Signal Mechanical Design Engineer L2, or Signal Mechanical Designer L2.	Qualification Mechanical Cert IV, Diploma, Adv. Diploma	Certified copy of qualification Logbook demonstrating currency Training records



2.6.5 ISAA

Table 9 - Queensland Rail ISAA Competencies

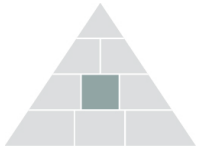
Role	Levels	Role Description	Qualification	Evidence Required
Senior Independent Safety Assessor & Auditor	Proficiency Level 3	Responsible for providing specialist systems safety engineering services related to the introduction of new signalling installations and of new signalling products into Queensland Rail. This will include providing advice relating to Safety Systems Engineering and relevant standards (EN50126/8/9), safety cases and ISA activities; and scoping and specifying activities related to Safety Assurance of Electrical, Electronic and Programmable Electronic Systems.	Degree in electrical engineering Practising RPEQ registered in Electrical discipline. 10+ years of experience in engineering auditing of safety critical systems. 5+ years of experience in railway signalling systems	Certified copy of engineering qualification. BPEQ Certificate of Registration CV with 5+ years certified record in a lead role Training records
Independent Safety Assessor & Auditor	Proficiency Level 2	Responsible for providing specialist systems safety engineering services related to the introduction of new signalling installations and of new signalling products into Queensland Rail. This will include providing advice relating to Safety Systems Engineering and relevant standards (EN50126/8/9), safety cases and ISA activities; and scoping and specifying activities related to Safety Assurance of Electrical, Electronic and Programmable Electronic Systems. Individuals shall possess the relevant experience, skills, and knowledge appropriate to the tasks, and must possess foundational understanding of the applicable engineering discipline which may include systems engineering, software development, or testing, to ensure the competent performance of safety-related activities. A non-engineering degree candidate with extensive experience may be approved up to Level 2. Such a candidate shall be supervised by RPEQ with L2/L3 QR Independent Safety Assessor & Auditor proficiency. If the ISAA is not RPEQ, then all work considered to be a Professional Engineering Service must be under direct supervision of an ISAA, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Practising RPEQ registered in Electrical discipline. 5+ years of experience in engineering auditing of safety critical systems, including railway experience. An equivalent pathway may be considered for non-engineering degrees candidate. 5+ years of experience in railway signalling systems	Certified copy of engineering qualification. BPEQ Certificate of Registration CV with 5+ years certified record Training records
Independent Safety Assessor & Auditor	Proficiency Level 1	Responsible for providing specialist systems safety engineering services related to the introduction of new signalling installations and of new signalling products into Queensland Rail. This will include providing advice relating to Safety Systems Engineering and relevant standards (EN50126/8/9), safety cases and ISA activities; and scoping and specifying activities related to Safety Assurance of Electrical, Electronic and Programmable Electronic Systems. Individuals shall possess the relevant experience, skills, and knowledge appropriate to the tasks, and must possess foundational understanding of the applicable engineering discipline which may include systems engineering, software development, or testing, to ensure the competent performance of safety-related activities. A non-engineering degrees candidate with extensive experience may be approved up to Level 2. Such a candidate shall be supervised by RPEQ with L2/L3 QR Independent Safety Assessor & Auditor proficiency. Any work considered to be a Professional Engineering Service must be under direct supervision of an ISAA, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Practising RPEQ registered in Electrical discipline. 3+ experience in engineering auditing of safety critical systems. An equivalent pathway may be considered for non-engineering degrees candidate.	Certified copy of engineering qualification. BPEQ Certificate of Registration CV with 5+ years certified record Training records



2.6.6 Management

Table 10 - Queensland Rail Signalling Project Management Competencies

Role	Levels	Role Description	Qualification	Evidence Required
Signal Project Design Manager	Proficiency Level 3	The Signal Project Design Manager is a critical competency for the management of engineering activities across the full lifecycle of railway projects, ensuring compliance with safety, technical, and quality standards. It manages the delivery of QR signal engineering activities within a complex, integrated, multi-disciplinary rail infrastructure works programme. This role requires extensive domain knowledge with high skill and understanding of QR signalling principles, systems architectures, relevant standards and legislative frameworks including regulatory compliance under RSNL. The Signal Project Design Manager shall possess domain knowledge of QR signalling design processes and phases as specified in GSS Part 14 MD-15-75, as well as the testing and commissioning processes outlined in GSS Part 13 MD-15-72. The responsibilities include: - Lead the delivery and deployment of signal engineering designs, ensuring full alignment with stakeholder requirements and project objectives. - Perform the ‘Approve’ function for signalling designs, ensuring adherence with safety assurance and Quality Management System in strict compliance with QR design management processes. - Ensure design resource allocation meets competency and independence requirements, supporting robust engineering governance. - Ensure all design work is performed under configuration management. - Manage the design schedule to allow sufficient time for thorough review of engineering artefacts, ensuring application of sound engineering judgment to fulfil safety obligations associated with safety-critical signalling designs. - Ensure all safety-related decisions are supported by documented evidence providing full traceability, in accordance with the RSNL and ISO 9001:2015 Quality Management Systems. Any work considered a Professional Engineering Service shall be under the direct supervision of a Signal Project Engineer, Level 2 or higher, with RPEQ accreditation. Internal role alignment: Manager Signalling Design shall perform the Signal Project Design Manager role, when undertaken internally within Queensland Rail.	Degree in electrical engineering, or Diploma or Advance Diploma in electrical discipline, or Graduate Diploma in Railway Signalling, or IRSE Licence: – 7.8.110E – Eng Mgr (Design) or – 7.8.110F – Eng Mgr (Project Engineering), An equivalent pathway may be considered for this role based on domain and industry experience. 10+ years of experience in railway signalling, including 2+ years managing Queensland Rail signalling projects Prerequisite: QR Signal Design Engineer L2 or Signal Designer L2	Certified copy of engineering qualification Logbook demonstrating currency Training records
Signal Project Engineer	Proficiency Level 2	The Signal Project Engineer is a key competency which manages the engineering activities across the lifecycle of a railway signalling project, including design, construction and testing and commissioning. This role requires experience in signalling engineering in multidisciplinary projects for Queensland Rail, combined with project management skills in phasing and delivery of activities. Staff performing this role shall possess an understanding of QR enterprise processes to enable planning of work for each signalling project phase, as described in GSS Part 14 MD-15-75, including any concurrent development. The responsibilities include: - Deliver signalling engineering solutions for new schemes, asset renewals, and customer projects, ensuring collaboration with internal QR teams, external engineering partners, stakeholders, and delivery partners. - Collaborate with QR technical authority and asset managers, and project stakeholders to develop project plans, scope documents, schedules, budgets, and risk management strategies. - Coordinate and manage technical interfaces between construction, testing, and commissioning activities for new and modified signalling assets and asset protection systems. - Interpret technical scope and requirements, providing clear technical direction to enable effective delivery of signalling engineering works. - Provide project management to ensure the design, construction and commissioning of signalling systems satisfies safety, technical, and quality standards and regulations, and operational needs. - Review and interpret test logs, recommending remediation actions to support progression of engineering design and testing activities. - Process Requests For Information (RFIs) and Technical Queries (TQs) in collaboration with QR technical authorities. This role is considered a Professional Engineering Service. Internal role alignment: the Signalling Technical Coordinator shall perform the Signal Project Engineer role, when undertaken internally within Queensland Rail.	Degree in electrical engineering 5+ years of experience in Signal Design or Testing 2+ project management experience railway signalling. Practising RPEQ registered in Electrical Engineering. Prerequisite: Signal Design Engineer L2 or Test Engineer L2	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records



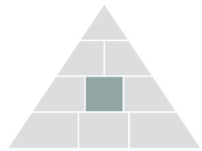
Role	Levels	Role Description	Qualification	Evidence Required
Signal Project Lead	Proficiency Level 2	The Signal Project Lead is a technical coordination and management role in the delivery of signalling systems within an integrated, multi-disciplinary rail project. The Signal Project Lead combines knowledge of the signalling design, construction, and testing and commissioning processes with project management capability, and stakeholder coordination to manage the signalling system development and its integration with other engineering disciplines throughout the project lifecycle. The Signal Project Lead will have an understanding of the regulatory and certification requirements applying to the project, including applicable Queensland Rail and rail industry standards. The Signal Project Lead shall • demonstrate substantial technical judgment for developing construction and staging strategies for delivery of brown-field railway signalling infrastructure. • oversee the planning, execution, and delivery timeline of signalling engineering activities across the project lifecycle. • identify risks, manage scope, schedule changes, and implement mitigation strategies to keep projects on track. • liaise with internal and external stakeholders including project managers, technical authorities, and regulatory bodies. • Ensure project resources competency and independence is maintained, and schedules allow sufficient time for thorough review, implementation, and completion. • Coordinates interfaces between Signal Engineering teams, and other railway engineering disciplines (Track & Civil, Mechanical, Telecommunications, Electrical LV, Traction, Train Control, Condition Monitoring, Cybersecurity) • Support project governance, risk assessments SiD, across projects, integrating safety, quality, environmental, commercial, and pricing controls to ensure successful delivery. • Oversee implementation of signalling works, monitor work programs, support testing and commissioning readiness reviews, and manage scope and schedule changes to maintain alignment with delivery objectives. Individuals who meet the core competency requirements for the Signalling Project Lead role are authorised to undertake project management responsibilities for the delivery of signalling system infrastructure. Any work considered a Professional Engineering Service shall be under the direct supervision of a Signal Project Engineer, Level 2 or higher, with RPEQ accreditation. Internal role alignment: the Signalling Project Coordinator shall perform the Signal Project Lead role, when undertaken internally within Queensland Rail.	Degree in electrical engineering, or Diploma or Advance Diploma in electrical discipline, or Graduate Diploma in Railway Signalling, or IRSE Licence: – 7.8.110M – Eng Mgr (Studies) or – 7.8.110E – Eng Mgr (Design) or – 7.8.110F – Eng Mgr (Project Engineering), An equivalent pathway may be considered for this role based on domain and industry experience. 5+ years of experience in Signal Design or Testing 2+ experience in lead role on complex or major Queensland Rail signalling project Optionally, Practising RPEQ registered in Electrical Engineering. Prerequisite: Signal Design Engineer L2 or Test Engineer L2 or Signal Designer L2 or Tester-in-Charge L2	Certified copy of engineering qualification BPEQ Certificate of Registration, as applicable Logbook demonstrating currency Training records



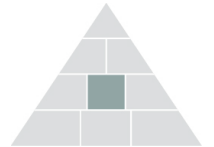
2.6.7 Construction

Table 11 - Queensland Rail Construction Competencies

Role	Levels	Role Description	Qualification	Evidence Required
Senior Signalling Constructor	Proficiency Level 3	The role is responsible for developing and implementing robust methodologies for managing and organising signalling construction activities across multi-disciplinary projects, encompassing minor, complex, and major works. Exercise accountability for the final sign-off of wayside signalling construction, ensuring adherence to project and organisational standards. Ensure that all constructed signalling infrastructure meets safety requirements and complies fully with applicable legislation, standards, procedures, specifications, and assurance governance frameworks. Provide final construction certification sign-off using Inspection and Test Plans (ITPs). Issue Signalling Construction Handover certification to TIC/TCC to enable testing commencement and support pre-testing and testing activities. Ensure all construction-related tasks and activities are executed by personnel competent in signalling construction practices. Maintain strict compliance with safety, legislative, and assurance governance requirements throughout all phases of construction. Competent to act as an Independent Certifier for Signalling Construction, in accordance with Independent Certification Standard MD-22-50. Any work considered to be a Professional Engineering Service must be under direct supervision of a RPEQ in the relevant engineering discipline.	Degree in electrical engineering ⁴ An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma (Diplomas in relevant field) 10+ years of experience in railway signal engineering 5+ years in responsible position of signal construction management	Certified copy of engineering qualification, or Certified copy of qualification for equivalent pathway Logbook demonstrating currency Training records
Signalling Constructor	Proficiency Level 2	Responsible for the construction of the wayside signalling infrastructure. This involves applying construction methodologies to manage and organise activities in multi-disciplinary signalling projects, the execution of construction works in accordance with signalling design plans, construction standards and functional construction documentation, and the development of signalling construction ITPs. Ensure that all constructed signalling infrastructure meets safety requirements and complies fully with applicable legislation, standards, procedures, specifications, and assurance governance frameworks. Provide construction certification sign-off using Inspection and Test Plans (ITPs). Ensure all construction-related tasks and activities are executed by personnel competent in signalling construction practices. Liaise with TIC /TCC to support the Signalling Construction Handover certificate process and enable testing to commence during the pre-testing/testing phase of the works. Any work considered to be a Professional Engineering Service must be under direct supervision of a RPEQ in the relevant engineering discipline.	Degree in electrical engineering ⁴ Or, an equivalent pathway which is one of: - Railway Signalling Certificate IV, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Signalling Installation Supervisor licence. 5+ years of experience in railway signal engineering 5+ years in responsible position of signal construction management	Certified copy of engineering qualification, or Certified copy of qualification for equivalent pathway Logbook demonstrating currency Training records
Signalling Constructor	Proficiency Level 1	Facilitate the construction of the wayside signalling infrastructure. This involves applying construction methodologies to organise activities in multi-disciplinary signalling projects, the execution of construction works in accordance with signalling design plans, construction standards and functional construction documentation, and the use of signalling construction ITPs. The role ensures that the built signalling system infrastructure is safe and is constructed to applicable standards, procedures, specifications, and that meets the construction assurance requirements. Ensure that construction related tasks and activities are performed by staff competent in signalling construction. All work shall be mentored by a Signal Constructor L2.	Degree in electrical engineering ⁴ Or, an equivalent pathway which is one of: - Railway Signalling Certificate IV, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Signalling Installation Supervisor licence. 2+ years worksite experience in railway signalling construction. Prerequisite: Signal Installer Construction L2 Or Functional Tester L2 Or Signal Designer L2 or Signal Design Engineer L2	Certified copy of engineering qualification, or Certified copy of qualification for equivalent pathway Logbook demonstrating currency Training records
Signal Electrician Construction	Proficiency Level 2	Responsible for the signal trade / site construction for undertaking the physical construction activities by interpreting signalling documentation, functional construction documentation and 'set to work'.	Certificate IV in Rail Signalling Experience in railway signalling construction. 3+ years of experience in railway signalling QLD electrical mechanic licence.	Certified copy of Qualifications / Licences Logbook demonstrating currency



Role	Levels	Role Description	Qualification	Evidence Required
Signal Electrician Construction	Proficiency Level 1	Responsible for the signal trade / site construction for undertaking the physical construction activities by interpreting signalling documentation, functional construction documentation and 'set to work'. All work shall be mentored by a Signal Electrician Construction L2.	QLD electrical mechanic licence.	Certified copy of Qualifications / Licences Logbook demonstrating currency Training records
Signal Installer Construction	Proficiency Level 2	Responsible for undertaking the physical construction activities under the direction of a Signal Electrician Construction, L2. The worker will be permitted to assist the Signal Electrician Construction under supervision in the physical works and has a basic understanding of signalling construction drawings, electrical system installations and construction standards. They may support track renewal activities by disconnecting and reconnecting equipment but may not perform any specific testing, adjustment, and/or certification.	QLD electrical mechanic licence. 3+ years of experience in railway signalling	Certified copy of Qualifications / Licences Logbook demonstrating currency Training records
Signal Installer Construction	Proficiency Level 1	Responsible for undertaking the physical construction activities under the direction of a Signal Electrician Construction L2, or Signal Installer Construction L2. The worker is permitted to assist the Signal Electrician Construction under supervision in the physical works and has a basic understanding of signalling construction drawings, electrical system installations and construction standards. The worker may support track renewal activities by disconnecting and reconnecting equipment but may not perform any specific testing, adjustment, and/or certification.	QLD electrical mechanic licence.	Certified copy of Qualifications / Licences Logbook demonstrating currency Training records
Signal Mechanical Construction	Proficiency Level 2	Responsible for undertaking the physical construction activities as required by the mechanical signalling documentation, functional construction documentation. Undertaking 'set to work' activities and complete associated ITPs and Testing Certificates.	Certificate III in Rail Signalling for Mechanical including the unit(s) specific to the tasks being performed. 5+ years of experience in railway signalling	Certified copy of Qualifications / Licences Logbook demonstrating currency Training records
Signal Mechanical Construction	Proficiency Level 1	Responsible for undertaking the physical construction activities as required by the mechanical signalling documentation, functional construction documentation and 'set to work' activities. All work shall be mentored by a Signal Mechanical Construction L2.	Certificate III in Rail Signalling for Mechanical including the unit(s) specific to the tasks being performed.	Certified copy of Qualifications / Licences Logbook demonstrating currency Training records
Signal Trade Assistant	Proficiency Level 2	This role covers workers with AQF industry-based training for a rail specific skill that is applied in the construction of railway infrastructure. This role is limited to signalling construction works, and labouring works requiring signalling skills, all under direct supervision.	AQF certificate, with qualification and experience specific to the railway tasks being performed.	Certified copy of Trade Certificates Logbook demonstrating currency Training records
Signal Trade Assistant	Proficiency Level 1	This covers workers with AQF industry-based training for a rail specific skill that is applied in the construction of railway infrastructure. This role is limited to signalling construction works, and labouring works requiring signalling skills, all under direct supervision.	Currently enrolled in nationally accredited AQF training course in work relevant to railways, with demonstrated experience in tool handling for the role.	Certified copy of Trade Certificates Logbook demonstrating currency Training records



2.6.8 Maintenance

Table 12 - Queensland Rail Maintenance Competencies

Role	Levels	Role Description	Qualification	Evidence Required
Senior Maintenance Engineer	Proficiency Level 3	Responsible for maintenance of the signalling system. Produce and manage maintenance plans, check sheets and service intervals. Perform FMEAs and approve SA forms in emergency Sign-off for signalling maintenance documentation or works. May require undertaking testing roles as defined under the Signal Testing Roles.	Degree in electrical engineering ⁴ 10+ years of experience in rail signalling engineering including 2+ years experience with Queensland Rail 5+ years of experience in responsible signal maintenance management position	Certified copy of engineering qualification, or Certified copy of qualification for equivalent pathway Logbook demonstrating currency Training records
Maintenance Engineer	Proficiency Level 2	Responsible for the production of signal technical maintenance plans, in accordance with signalling and functional maintenance documentation. Execute maintenance plans and assist with updating of maintenance check sheets. Assist with FMEAs and preparing SA forms for sign-off Undertake 1 st line assurance activities May require undertaking testing roles as defined under the Signal Testing Roles.	Degree in electrical engineering ⁴ 5+ years of experience in railway signalling including 1+ years experience with Queensland Rail 5+ years of experience in responsible signal maintenance management position	Certified copy of engineering qualification Logbook demonstrating currency Training records
Maintenance Engineer	Proficiency Level 1	Responsible for the production of signal technical maintenance plans, in accordance with signalling and functional maintenance documentation. Execute maintenance plans and assist with updating of maintenance check sheets. May require undertaking testing roles as defined under the Signal Testing Roles. All work shall be mentored by a Maintenance Engineer L2 or Signal Maintenance Technician L2 or Signal Maintenance Electrician L2	Degree in electrical engineering ⁴ 1yr experience in railway signalling	Certified copy of engineering qualification Logbook demonstrating currency Training records
Signal Maintenance Technician	Proficiency Level 2	Responsible for the production of signal technical maintenance plans, in accordance with signalling and functional maintenance documentation. Execute maintenance plans and assist with updating of maintenance check sheets. Assist with FMEAs and preparing SA forms for sign-off Undertake 1 st line assurance activities May require undertaking testing roles as defined under the Signal Testing Roles.	Certificate IV in Railway Signalling or Diploma or Advance Diploma in relevant field QLD electrical mechanic licence 5+ years of experience in railway signalling in Queensland Rail	Certified copy of qualification Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records
Signal Maintenance Technician	Proficiency Level 1	Responsible for the production of signal technical maintenance plans, in accordance with signalling and functional maintenance documentation. Execute maintenance plans and assist with updating of maintenance check sheets. May require undertaking testing roles as defined under the Signal Testing Roles. All work shall be mentored by a Maintenance Engineer L2 or Signal Maintenance Technician L2 or Signal Maintenance Electrician L2	Certificate IV in Railway Signalling or Diploma or Advance Diploma in relevant field Prerequisite qual: Signal Maintenance Electrician L2 QLD electrical mechanic licence	Certified copy of qualification Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records
Signal Maintenance Electrician	Proficiency Level 2	Responsible for undertaking the physical maintenance activities by implementing signalling technical maintenance plans.	Certificate IV in Rail Signalling for Electrical including the unit(s) specific to the tasks. QLD electrical mechanic licence 5+ years of experience in railway signalling in Queensland Rail	Certified copy of qualification Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records
Signal Maintenance Electrician	Proficiency Level 1	Responsible for undertaking the physical maintenance activities by implementing signalling technical maintenance plans. All work shall be mentored by a Maintenance Engineer L2 or Signal Maintenance Technician L2 or Signal Maintenance Electrician L2.	QLD electrical mechanic licence	Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records
Signal Maintainer (Mechanical Works)	Proficiency Level 2	Responsible for undertaking the physical mechanical maintenance activities by implementing signalling technical maintenance plans.	Certificate III in Mechanical Rail Signalling 3+ years of experience in railway signalling in Queensland Rail	Certified copy of qualification Logbook demonstrating currency



Role	Levels	Role Description	Qualification	Evidence Required
Signal Maintainer (Mechanical Works)	Proficiency Level 1	Responsible for undertaking the physical mechanical maintenance activities by implementing signalling technical maintenance plans. All work shall be supervised by a Maintenance Engineer L2 or Signal Maintenance Technician L2 or Signal Maintenance Electrician L2 or Signal Maintainer (Mechanical Works) L2.	Certificate III in Mechanical Rail Signalling	Certified copy of qualification Logbook demonstrating currency Training records



2.6.9 Principles Testing

Table 13 - Queensland Rail Principles Testing Competencies

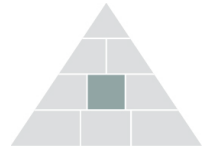
Role	Levels	Role Description	Qualification	Evidence Required
Senior Principles Test Engineer	Proficiency Level 3	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements. Oversee Principles Testing of Major Works . Undertaking Principles Testing. Final sign-off of Principles Testing plans, activities and reports, both on-site and off-site. Endorse the T&C Plans. Provide independent validation of signalling principles.	Degree in electrical engineering ⁴ Practising RPEQ in Electrical Engineering 10+ years of experience in railway signal engineering including 2+ years experience with Queensland Rail principles and practice	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records
Principles Test Engineer	Proficiency Level 2	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements. Oversee Principles Testing of Complex or Simple Works . Prepare Principles Testing plans. Final sign-off of Complex and Simple Principles Testing plans, activities and reports, both on-site and off-site, and endorsement of the T&C Plans (only if RPEQ). Undertaking Principles Testing and be able to develop signalling principles. All work is a Professional Engineering Service. If the Principles Test Engineer is not RPEQ, the work must be under the direct supervision of a Principles Test Engineer L2 or L3 with RPEQ accreditation.	Degree in electrical engineering ⁴ Optionally, Practising RPEQ in Electrical Engineering 5+ years of experience in railway signal engineering including 1+ years experience with Queensland Rail principles and practice	Certified copy of engineering qualification BPEQ Certificate of Registration, as applicable Logbook demonstrating currency Training records
Principles Test Engineer	Proficiency Level 1	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements. Undertaking Principles Testing. If the Principles Test Engineer is not RPEQ, then all work must be under direct supervision of a Senior Principles Test Engineer or Principles Test Engineer with RPEQ accreditation. A candidate shall be mentored in Queensland Rail Principles Testing practice until sufficient experience has been acquired. A Mentoring Plan (MP) shall document activities during the mentoring period.	Degree in electrical engineering ⁴ A Principles Test Engineer L1 must have the following prerequisite competencies: Functional Tester L2 or Signal Design Engineer L2	Certified copy of engineering qualification Logbook demonstrating currency Training records
Principles Tester	Proficiency Level 2	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements. Prepare Principles Testing plans. Oversee Principles Testing of Complex or Simple Works . Undertaking Principles Testing and be able to develop signalling principles. All work is a Professional Engineering Service. Hence, it must be under the direct supervision of a Principles Test Engineer L2 or L3 with RPEQ accreditation.	Railway Signalling Certificate IV, or Diploma or Advance Diploma in relevant field, or IRSE Principles Testing licence. 5+ years of experience in railway signal engineering including 1+ years experience with Queensland Rail principles and practice	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records
Principles Tester	Proficiency Level 1	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements. Undertaking Principles Testing. All work is a Professional Engineering Service. Hence, it must be under the direct supervision of a Principles Test Engineer L2 or L3 with RPEQ accreditation. A candidate shall be mentored in Queensland Rail Principles Testing practice until sufficient experience has been acquired. A Mentoring Plan (MP) shall document activities during the mentoring period.	Railway Signalling Certificate IV, or Diploma or Advance Diploma in relevant field, or IRSE Principles Testing licence. 3+ years of experience in railway signal design A Principles Tester L1 must have the following prerequisite competency: Functional Tester L2 Or Signal Designer L2	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records



2.6.10 Testing

Table 14 - Queensland Rail Testing Competencies

Role	Levels	Role Description	Qualification	Evidence Required
Senior Test Engineer	Proficiency Level 3	Responsible for determining the Testing and Commissioning Strategy and Testing Plans for a project. Responsible for approval of the Testing and Commissioning Strategy and Testing Plans for a project. This includes construction testing, function testing, principles testing, design acceptance testing and commissioning into service. Ensures that the testing and commissioning team has technical competence and is capable of performing the T&C activities in accordance with applicable legislation and regulation, and all applicable standards, procedures and specifications. Verifies that all tests have been completed as per the Testing Plan. The Senior Test Engineer may undertake the role of TIC for Major Works and discharge responsibilities for signalling system certification and handover to QR TCC or nominated person. Competent to act as an Independent Certifier for Signalling Testing & Commissioning, in accordance with MD-22-50. Provides RPEQ supervision for Professional Engineering Services for testing and commissioning activities.	Degree in electrical engineering Practising RPEQ in Electrical Engineering 10+ years of experience in railway signal engineering, including 5+ years of QR domain experience.	Certified copy of engineering qualification BPEQ Certificate of Registration Logbook demonstrating currency Training records
Test Engineer	Proficiency Level 2	Responsible for production of Signalling Testing & Commissioning documentation, testing methodology and testing charts for approval by the Senior Test Engineer or Principles Tester L3. This role ensures that the team is competent and fully prepared to perform the testing and commissioning works in accordance with all applicable and appropriate legislation, standards, procedures, specifications and assurance governance requirements. The Test Engineer will liaise and support the Major Works TIC, provide expertise for testing and undertake fault investigations to ensure safe and successful commissioning outcome. The Test Engineer L2 may perform TIC duties for Simple Works and Complex Works to discharge responsibilities for signalling system certification and handover to QR TCC or nominated person. When the testing and commissioning activities do not follow prescribed testing procedures or do require a Professional Engineering Service, then the Test Engineer shall be an RPEQ or have RPEQ direct supervision.	Degree in electrical engineering Optionally, Practising RPEQ in Electrical Engineering 10+ years of experience in railway signalling, including 5+ years of QR domain experience.	Certified copy of engineering qualification BPEQ Certificate of Registration, as applicable Logbook demonstrating currency Training records
Test Engineer	Proficiency Level 1	Under mentorship of a Test Engineer or TIC, L2 or higher, the Test Engineer L1 shall undertake the following duties: - produce signalling Testing & Commissioning documentation, testing methodology and testing charts. - perform testing duties as directed; - supports the Test Engineer / TIC roles; - undertake fault investigations during commissioning; - undertake shift TIC duties. Any work that does not follow prescribed testing procedures is deemed a Professional Engineering Service; therefore, It shall be under direct supervision of a Test Engineer, L2 or higher, with RPEQ accreditation.	Degree in electrical engineering Prerequisite Competency: Functional Tester Level 2	Certified copy of engineering qualification Logbook demonstrating currency Training records
Tester In Charge	Proficiency Level 3	Responsible for production of the Testing and Commissioning Strategy and Testing Plans for a project, including Complex or Major Works. This role ensures that the team is fully ready, capable and competent to perform the testing and commissioning works in accordance with all applicable and appropriate legislation, standards, procedures, specifications and assurance governance requirements. May undertake the role of Tester in Charge (TIC) and commissioning coordinator. When the test and commissioning activities do not follow prescribed procedures, or if they require a Professional Engineering Service, then the TIC shall have RPEQ direct supervision. Complex or Major Works shall employ a Senior Test Engineer Level 3 to discharge RPEQ and legislative obligations. Performs the role of the Tester in Charge for the certification and handover process. For Complex or Major Works, act as the Testing and Commissioning Coordinator (TCC) to undertake audit and assurance activities. Note: Tester in Charge activities will include the organisation and management of the testing and commissioning plan, collation of completed testing documentation and the handover to operations or the nominated QR person.	Diploma or Advance Diploma in electrical engineering or Railway Signalling Certificate IV 10+ years of experience in railway signalling, including 5+ years of QR domain experience. QLD Electrical Mechanic Licence	Certified copy of qualification Certified copy of QLD electrical mechanic licence, as applicable Logbook demonstrating currency Training records



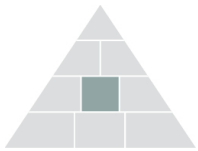
Role	Levels	Role Description	Qualification	Evidence Required
Tester In Charge	Proficiency Level 2	Responsible for production of Signalling Testing & Commissioning documentation, testing methodology and testing charts for approval by the Senior Test Engineer or Senior Principles Test Engineer L3. This role ensures that the team is competent and fully prepared to perform the testing and commissioning works in accordance with all applicable and appropriate legislation, standards, procedures, specifications and assurance governance requirements. The Tester In Charge L2 will liaise and support the Major Works TIC, provide expertise for testing and undertake fault investigations to ensure safe and successful commissioning outcome. The Tester In Charge L2 may perform TIC duties for Simple or Complex Works to discharge responsibilities for signalling system certification and handover to QR TCC or nominated person. The Tester In Charge L2 may perform QR TCC duties for Simple or Complex Works where appointed. When the testing and commissioning activities do not follow prescribed testing procedures or do require a Professional Engineering Service, then the Tester In Charge shall have RPEQ direct supervision. A TIC without an electrical licence shall have access to a QTP.	Diploma or Advance Diploma in electrical engineering or Railway Signalling Certificate IV or IRSE Tester in Charge licence 10+ years of experience in railway signalling, including 5+ years of QR domain experience. QLD Electrical Mechanic Licence preferred	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records QLD Electrical Licence Compliance Agreement (if no Electrical Licence) Form MD-25-190
Tester In Charge	Proficiency Level 1	Under mentorship of a Test Engineer or TIC, L2 or higher, the TIC L1 shall undertake the following duties: - produce signalling Test & Commission documentation, testing methodology and testing charts. - perform testing duties as directed; - supports the Test Engineer / TIC roles; - undertake fault investigations during commissioning. - undertake shift TIC duties. Any work which does not follow prescribed testing procedures or which is a Professional Engineering Service shall be under direct supervision of a Test Engineer, L2 or higher, with RPEQ accreditation. A TIC without an electrical licence shall have access to a QTP.	Diploma or Advance Diploma in electrical engineering or Railway Signalling Certificate IV or IRSE Tester in Charge licence Prerequisite Competency: Functional Tester Level 2 10+ years of experience in railway signalling QLD Electrical Mechanic Licence preferred	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records QLD Electrical Licence Compliance Agreement (if no Electrical Licence) Form MD-25-190
Functional Tester <i>Formerly: Signal Testing Officer</i>	Proficiency Level 3	Responsible for undertaking testing activities by following signalling design and testing documentation and functional test documentation. Responsible for undertaking and leading site-based inspections and testing (Verification, Set to Work and Function Testing) of signalling systems, including level crossings, relay, PBI and distributed signalling interlockings, non-vital traffic management and communications systems, and ETCS and Signalling Electrical Power systems. Performing site-based signalling testing as directed by the Tester in Charge (TIC), supporting the development of test plans and work instructions. Liaise and support the TIC in the investigation of faults and failures throughout the project lifecycle providing input as required.	Degree in electrical engineering, or - Certificate IV in Rail Signalling, or - Diploma or Advance Diploma or higher in relevant discipline QLD electrical mechanic licence 10+ years of experience in railway signalling Note: The Electrical Safety Act 2002 (Qld) allows a person with a degree in electrical engineering to undertake testing. Other qualifications require the electrical licence.	Certified copy of Qualification Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records
Functional Tester	Proficiency Level 2	Responsible for undertaking testing activities by following signalling design and testing documentation and functional test documentation. Responsible for undertaking site-based inspection and testing (Verification, Set to Work and Function Testing) of wayside equipment or modified signalling installations. A Functional Tester L2 may undertake site-based inspection and testing of new relay, PBI and distributed signalling interlockings, ETCS installations and level crossing installations, depending on their recognised skillset, under the supervision of a Functional Tester L3, or a Test Engineer, or a Tester in-Charge. A Functional Tester L2 with an QLD electrical mechanic licence is permitted to perform site-based testing of signalling power systems for AS 3000 compliance. Perform site-based signalling testing as directed by the Tester in Charge (TIC), supporting the development of test plans and work instructions. Liaise and support the TIC in the investigation of faults and failures throughout the project lifecycle providing input as required.	Degree in electrical engineering, or - Certificate IV in Rail Signalling, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Signalling Functional Tester licence. QLD electrical mechanic licence, or QLD Electrical Licence Compliance Agreement Form MD-25-190 Working knowledge of electrical safety principles 1+ years of experience in Queensland Rail function testing. Note: The Electrical Safety Act 2002 (Qld) allows a person with a degree in electrical engineering to undertake testing. Other qualifications require the electrical licence.	Certified copy of Qualification Current IRSE licence(s) Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records QLD Electrical Licence Compliance Agreement (if no Electrical Licence) Form MD-25-190



Role	Levels	Role Description	Qualification	Evidence Required
Functional Tester	Proficiency Level 1	Responsible for undertaking testing activities by following signalling design and testing documentation and functional test documentation. Responsible for undertaking site-based inspections and testing (Verification, Set to Work and Function Testing) of signalling installations, as directed by the Tester in Charge (TIC), in accordance with Testing Plans and work instructions. A Functional Tester L1 with an QLD electrical mechanic licence is permitted to perform site-based testing of signalling power systems for AS 3000 compliance, as directed by the Tester in Charge (TIC). Liaise and support the TIC in the investigation of faults and failures throughout the project lifecycle providing input as required. All work shall be mentored by a Test Engineer L2 or TIC L2 or Functional Tester L2.	Degree in electrical engineering, or - Certificate IV in Rail Signalling, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Signalling Functional Tester licence. QLD electrical mechanic licence, or QLD Electrical Licence Compliance Agreement Form MD-25-190 Working knowledge of electrical safety principles Note: The Electrical Safety Act 2002 (Qld) allows a person with a degree in electrical engineering to undertake testing. Other qualifications require the electrical licence.	Certified copy of Qualification Current IRSE licence(s) Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records QLD Electrical Licence Compliance Agreement (if no Electrical Licence) Form MD-25-190
Verification Tester	Proficiency Level 2	Responsible for undertaking and leading tests on signalling components and equipment in accordance with the test specifications and plans in preparation for Functional Testing in the operational railway environment (brown field). The Verification Tester uses approved test plan with defined scope for the works. See examples for Level 1. Performing verification duties as directed by the Tester in Charge (TIC). A person without an QLD electrical mechanic licence shall be accompanied on site by a licenced electrician. May perform field and circuit correlation activities under direct supervision of Functional Tester L2.	Degree in electrical engineering, or - Certificate IV in Rail Signalling, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Licence 1.3.155X Verification Tester (Operational Railway). QLD electrical mechanic licence, or QLD Electrical Licence Compliance Agreement Form MD-25-190	Certified copy of Qualification Current IRSE licence(s) Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records QLD Electrical Licence Compliance Agreement (if no Electrical Licence) Form MD-25-190
Verification Tester	Proficiency Level 1	Responsible for undertaking tests on signalling components and equipment in accordance with the test specifications and plans in preparation for Functional Testing in a factory environment or non-operational railway (green field). The Verification Tester uses an approved test plan with defined scope for the works. Performing verification duties as directed by the Tester in Charge (TIC). Examples of testing: - Documentation Check - Correlation activity - Apparatus Inspection (Relay/Equipment/Wire/Pin coding) - Wire Count - Null Count - Insulation Test - Bell Continuity Test - Hand Trace - Equipment layout - Standards Compliance Checks A person without an QLD electrical mechanic licence shall be accompanied on a railway site by a licenced electrician. All work shall be mentored by a Verification Tester L2.	Degree in electrical engineering, or - Certificate IV in Rail Signalling, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Licence 1.3.155Y Verification Tester (Factory) QLD electrical mechanic licence, or QLD Electrical Licence Compliance Agreement Form MD-25-190	Certified copy of Qualification Current IRSE licence(s) Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records QLD Electrical Licence Compliance Agreement (if no Electrical Licence) Form MD-25-190



Role	Levels	Role Description	Qualification	Evidence Required
Signal Test Assistant	Proficiency Level 1	Responsible for assisting with testing of signalling components and equipment in accordance with the test specifications and plans. The Signal Test Assistant shall only perform tasks under direction of a Test Engineer L2 or TIC L2 or Functional Tester L2.	Degree in electrical engineering, or - Certificate IV in Rail Signalling, or - QLD electrical mechanic licence, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Licence 1.3.150 Signalling Test Assistant Prerequisite qualification: Signal Design Engineer Level 1 or Signal Designer Level 1 An individual who is in training for an AQF electrical qualification through a nationally accredited institution may be engaged as Signal Test Assistant.	Certified copy of Qualification Current IRSE licence(s) Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records QLD Electrical Licence Compliance Agreement (if no Electrical Licence) Form MD-25-190



2.6.11 Operational Systems

Table 15 - Queensland Rail Operational Systems Competencies

Role	Levels	Role Description	Qualification	Evidence Required
Senior Operational Systems Engineer	Proficiency Level 3	The Senior Operational Systems Engineer is an SME who provides leadership in the design / development / testing / assurance of Train Control, Asset Monitoring and Passenger Information systems, by combining deep expertise in legacy software information and control systems with the latest technologies and tools. The role primarily focuses on Software and Systems engineering but integrates principles of signalling engineering, telecommunications engineering, traction power, cyber security, data collection / analytics and operational process/safety to deliver safe effective system outcomes. Design and Implementation - Lead the design, integration and implementation of software systems for use in the operational railway environment. - Assure RAM and system performance requirements of software systems in the operational railway environment. - Approve software system designs/releases that are deemed as Professional Engineering Services. - Provide expert engineering advice and oversight for software / system projects, ensuring safety, reliability, availability maintainability and performance. - Provide input to the development and implementation of operational readiness strategy, including deployment planning, training, maintenance procedures development to ensure that it is supported by the technical solution. - Develop and interpret system requirements and integration documentation to support operational readiness. - Act as a key interface between engineering, suppliers, and business units, shaping project plans and managing dependencies. - Develop software and system architecture for operational or control and monitoring systems. This will address interfaces to interlockings, trackside and non-vital systems, existing or new railway infrastructure, and also Train Radio, LTE, and data networking and transmission communications in collaboration with telecommunication engineering team. - Provide expertise in fault diagnosis and resolution, to support system validation, and performance optimization to support reliable and efficient system operations. - Provide formal final sign-off on design outcomes, ensuring they meet operational, safety, and regulatory requirements within the Queensland Rail context. Testing and Validation - Reviews the system and subsystem specification to validate the features and requirements. - Exercise engineering judgement and approve validation plans and test plans. - Develop and verify tests conducted on emulation platforms, SI Lab or target equipment. - Lead various types of testing, including equipment qualification, process validation, and computer systems validation. - Evaluate results and test logs and justify engineering decisions and propose remedial actions to address issues identified during validation testing. Compliance and Standards - Develop and scrutinise validation protocols, equipment and processes. - Develop and validate test protocols. - Analyse test results and validate against standards. - Manage validation artifacts through the entire lifecycle - Develop framework to address compliance to regulatory requirements and applicable safety standards including EN 50126, EN 50716, EN 50129.	Degree in engineering Practising RPEQ registered in relevant area 10+ years of experience in railway operational systems and/or control and monitoring including 3+ years with Queensland Rail systems.	Certified copy of engineering qualification BPEQ Certificate of Registration Certificate and evidence of currency Logbook demonstrating currency Training records



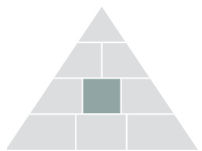
Role	Levels	Role Description	Qualification	Evidence Required
Operational Systems Engineer	Proficiency Level 2	The Operational Systems Engineer L2 provides design / development / testing / assurance input for Train Control, Asset Monitoring and Passenger Information systems by combining expertise in legacy software information and control systems with the latest technologies and tools. The role primarily focuses on Software and Systems engineering but interfaces to principles of signalling engineering, telecommunications engineering, traction power, cyber security, data collection/analytics and operational process/safety to deliver safe effective system outcomes in the areas of Train Control, Asset Monitoring and Passenger Information. The role will: - Undertake the design, integration and implementation of software systems in the operational railway environment - Develop RAM and system performance requirements of software systems in the operational railway environment - Review software system designs/releases. - Provide engineering advice for software/system projects, ensuring safety, reliability, availability maintainability and performance. - Provide input to the development and implementation of operational readiness strategy, including deployment planning, training, maintenance procedures development to ensure that it is supported by the technical solution. - Develop and interpret system requirements and integration documentation to support operational readiness. - Act as an interface between engineering, suppliers, and business units, shaping project plans and managing dependencies. - Provide input into software and system architecture, interlockings, trackside and non-vital systems, interfaces with existing railway infrastructure, including TMS, UTC and conventional signalling, and Train Radio, LTE, data networking and transmission communications in collaboration with telecommunication engineering team. - Support fault diagnosis and resolution, system validation, and performance optimization to help deliver reliable and efficient system operations. Testing and Validation - Draft the system and subsystem specification to validate the features and requirements. - Draft validation plans and test plans. - Review completion of tests conducted on emulation platforms, SI Lab or target equipment. - Review completion of tests conducted on emulation platforms, SI Lab or target equipment. - Conduct additional validation procedures, including equipment qualification, process validation, and computer systems validation - Evaluate results and test logs and recommend treatments. Compliance and Standards - Implement validation protocols, equipment and processes. - Execute validation test protocols. - Analyse test results to help develop justification for SFAIRP argument. - Manage validation artifacts through the entire lifecycle. - Adhere to regulatory requirements and applicable safety such as EN 50126, EN 50716, EN 50129. If the Operational Systems Engineer is not RPEQ, then all work considered to be a Professional Engineering Service must be under direct supervision of a Senior Operational Systems Engineer L2 or higher, with RPEQ accreditation. Any work considered to be a Professional Engineering Service must be under direct supervision of an Operational Systems Engineer, L2 or higher, with RPEQ accreditation.	Degree in engineering 5+ years of experience in railway operational systems and/or control and monitoring including 1+ years with Queensland Rail systems..	Certified copy of engineering qualification Logbook demonstrating currency BPEQ Certificate of Registration, as applicable Certificate and evidence of currency Training records
Operational Systems Engineer	Proficiency Level 1	The Operational Systems Engineer L1 provides design / development / testing work in accordance with the prescribed architecture, designs, test plans and specifications combining practical knowledge in legacy software information and control systems with the latest technologies and tools. The role primarily focuses on Software and Systems engineering but will have some cross pollination with principles of signalling engineering, telecommunications engineering, traction power, cyber security, data collection/analytics and operational process/safety to deliver safe effective system outcomes in the areas of Train Control, Asset Monitoring and Passenger Information. Any work considered to be a Professional Engineering Service must be under direct supervision of an Operational Systems Engineer, L2 or higher, with RPEQ accreditation.	Degree in engineering	Certified copy of engineering qualification Logbook demonstrating currency Certificate and evidence of currency Training records



Role	Levels	Role Description	Qualification	Evidence Required
Senior Operational Systems Developer	Proficiency Level 3	Responsible for working at system architect level, deliver new and novel operational systems solutions in a complex rail signalling and communication environment. Responsible for Operational Systems designs and commissioning works; and undertaking testing and commissioning. Any work considered to be a Professional Engineering Service must be under direct supervision of an Operational Systems Engineer, L2 or higher, with RPEQ accreditation.	Tertiary Qualification in relevant field 5+ years of experience in railway operational or control and monitoring systems including 3+years with Queensland Rail systems.	Certified copy of qualification Logbook demonstrating currency Training records
Operational Systems Developer	Proficiency Level 2	Responsible for production of Operational Systems designs and final checking to control systems rail standards and communication principles, standards and protocol and a full understanding of the functional Operational Systems design documentation. Any work considered to be a Professional Engineering Service must be under direct supervision of an Operational Systems Engineer, L2 or higher, with RPEQ accreditation.	Tertiary Qualification in relevant field 5+ years of experience in railway operational or control and monitoring systems including 1+years with Queensland Rail systems.	Certified copy of qualification Logbook demonstrating currency Training records
Operational Systems Developer	Proficiency Level 1	Responsible for production of Operational Systems designs and final checking to control systems rail standards and communication principles, standards and protocol and a full understanding of the functional Operational Systems design documentation. All work shall be mentored by an Operational Systems Engineer L2 or Operational Systems Developer L2. Any work considered to be a Professional Engineering Service must be under direct supervision of an Operational Systems Engineer, L2 or higher, with RPEQ accreditation.	Tertiary Qualification in relevant field	Certified copy of qualification Logbook demonstrating currency Training records
Operational Systems Technician	Proficiency Level 2	Responsible for undertaking the physical activities by interpreting functional Operational Systems documentation or other work prescribed via checklist, manuals and instructions.	Qualification (Cert IV, Diploma, Adv. Diploma) in a relevant discipline QLD electrical mechanic licence as required. 3+ years of experience in railway operational systems and/or control and monitoring.	Certified copy of qualification Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records
Operational Systems Technician	Proficiency Level 1	Responsible for undertaking the physical activities by interpreting functional Operational Systems documentation or other work prescribed via checklist, manuals and instructions. All work shall be mentored by an Operational Systems Engineer L2, or Operational Systems Developer L2, or Operational Systems Technician L2.	Qualification (Cert IV, Diploma, Adv. Diploma) in a relevant discipline QLD electrical mechanic licence as required	Certified copy of qualification Certified copy of QLD electrical mechanic licence Logbook demonstrating currency Training records
Electronic Systems Tester	Proficiency Level 2	The electronic systems within scope include Traffic Management Systems, Asset Protection Systems, and Passenger Information Systems, along with their interfaces to signalling systems across both relay-based and processor-based architectures. The Electronic Systems Tester is responsible for set-to-work of the system, configuration of test equipment, and execution of tests in accordance with test plan and prescriptive test scripts as approved by a RPEQ accredited Operational Systems Engineer Level 2 or higher. Activities include: - Set system to work; - Load and confirm application, configuration and authentication data; - Load and execute tests in accordance with the test plan and test scripts; - Record results verbatim in official test record; - Observe and record system behaviour; - Download system data and event logs; - Support development and modification of test scripts; - Assist with preparation of systems test report.	Degree in electrical or computing discipline, or - Cert IV in Railway Signalling, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Electronic Systems Tester licence 5+ years of experience in Operational Systems Engineering with demonstrated experience in electronic systems testing including 1+years with Queensland Rail systems.	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records



Role	Levels	Role Description	Qualification	Evidence Required
Electronic Systems Tester	Proficiency Level 1	The electronic systems within scope include Traffic Management Systems, Asset Protection Systems, and Passenger Information Systems, along with their interfaces to signalling systems across both relay-based and processor-based architectures. The Electronic Systems Tester is responsible for set-to-work of the system, configuration of test equipment, and execution of tests in accordance with test plan and prescriptive test scripts as approved by a RPEQ accredited Operational Systems Engineer Level 2 or higher. The Tester will work under the direction of an Electronic Systems Tester L2. The Tester will be capable of executing the tests within the testing framework and parameters. Activities include: - Support loading of application and configuration data; - Support execution of tests in accordance with the test plan and test scripts; - Support the downloading of system data or logs.	Degree in electrical or computing discipline, or - Cert IV in Railway Signalling, or - Diploma or Advance Diploma or higher in relevant discipline, or - IRSE Electronic Systems Tester licence 12 months experience in Operational Systems Engineering with demonstrated experience in electronic systems testing.	Certified copy of qualification Current IRSE licence(s), including endorsement certificates Logbook demonstrating currency Training records



2.7 Proficiency Levels

The proficiency required to work on signalling infrastructure is dependent upon the complexity and range of work, and therefore the acquired proficiency shall vary according to training and experience.

The knowledge, understanding and experience in each of these may vary within the same role. These skills are assessed individually and are separately identified on the respective role. Skills may be attained through formal, industry based or on-the-job training and work experience.

The individual may progress from one proficiency level to a higher level. In such cases, the individual must provide evidence of work undertaken at the higher level, endorsed by a mentor who already holds that level of proficiency. The individual must also have completed all prerequisite qualifications for the lower proficiency levels associated with the role. Over the nominated minimum period, the individual is required to demonstrate the experience, behaviours, skills, and knowledge expected at the higher proficiency level.

Evidence shall be presented in a logbook that documents the individual's mastery of railway equipment, signalling systems, processes, and/or information sources relevant to the role.

The individual is expected to demonstrate frequent and competent use of tools, technologies, products, equipment, and information provided by the Engineering Office, original equipment manufacturers (OEMs), statutory or regulatory authorities, or as directed by the Technical Authority. The individual must maintain an in-depth understanding of applicable technologies, systems, processes, and information sources, and will often be relied upon as a technical resource by others.

Furthermore, the individual is required to demonstrate a broad and comprehensive range of experience gained from working on large, complex, and multidisciplinary signalling projects. This includes applying expertise to manage complex issues, articulate technical matters clearly, and develop SFAIRP solutions that support others or prevent outcomes that could compromise the safety of the operating railway.

The signalling and operational systems proficiency levels in Table 16 shall be used in compiling and assessing the role proficiency:

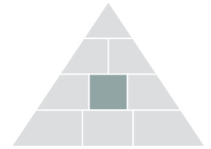


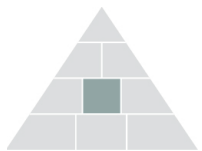
Table 16 - Proficiency Levels

Level	Definition
Level 3: Expert	The person has a level of competence to perform independently and without supervision in all activities, and in degraded and emergency operations. The person can be a team leader who can coach and develop others and is able to explain technical matters. The person is considered a Subject Matter Expert (SME) with in-depth knowledge and understanding of Queensland Rail's signalling engineering standards, practices, processes and operational requirements (referred to as Domain Knowledge). The person has in-depth experience working in large, complex and multidisciplinary signalling projects and has applied their expertise to deal with complex problems and their resolution to ensure the safety of the operating railway.
Level 2: Practitioner	The person has a level of competence to perform independently and without supervision in routine work procedures. The person must have Domain Knowledge and be able to perform complex activities under the supervision of a person holding proficiency at Level 3. The person, if RPEQ qualified, can provide professional engineering services without supervision.
Level 1: Novice	Training exposure only. The person has a basic competence related to their knowledge and understanding of the work procedures. The person requires coaching and shall be under supervision when performing the work. The Level 1 proficiency holder shall have an endorsed Mentoring Plan (MP) in place for the work to be performed. The actual work performed shall be documented in a Logbook and endorsed by the mentor at the completion of work. The MP shall address how supervision, legislative compliance, further training and development is/was performed/acquired and may be used to substantiate and support the applicant's experience to progress their proficiency level.
Level 0: Not Competent	No certified competence in the subject

A applicant with comparable experience in signalling systems from other rail networks may be approved up to Level 2 Practitioner. To ensure alignment with Queensland Rail standards, the applicant shall operate under the supervision of a Level 3 Expert until sufficient QR-specific experience is gained to seek formal endorsement.

An individual may be engaged as a Signal Test Assistant if they are actively and continuously undertaking an AQF-recognised electrical qualification (e.g., Certificate III in Electrotechnology) through a nationally accredited RTO. Their engagement must align with the scope of their training and be directly supervised in accordance with the Electrical Safety Act 2002 (Qld) and Electrical Safety Regulation 2013 (Qld), the Rail Industry Worker (RIW) competency and the WH&S requirements.

An individual may be engaged as a Signal Trade Assistant if they have completed a trade qualification relevant to signalling, electrical disciplines, or the trade specifically related to Signalling infrastructure which is acquired through a nationally accredited RTO. Their duties must be consistent with their level of their training and must be performed under direct supervision, ensuring compliance with the Electrical Safety Act 2002 (Qld) and Electrical Safety Regulation 2013 (Qld), the Rail Industry Worker (RIW) competency and the WH&S requirements.



An individual may be engaged as a Signal Design Assistant if they are enrolled in a tertiary engineering qualification recognised under the “Washington Accord” agreement or a TAFE, through an accredited institution. Their engagement shall be limited to tasks appropriate to their academic progression and direct supervision by a qualified signals professional in accordance with the RIW Framework, the statutory and regulatory compliance requirements.

2.8 Submission and assessment

Queensland Rail, as both the Railway Infrastructure Manager (RIM) and Railway Transport Operator (RTO), is the sole authority responsible for approving individuals as competent to perform safety-related and rail safety work.

2.8.1 Queensland Rail employee submission

Each Queensland Rail employee shall submit a separate stand-alone application for each role with supporting evidence and technical manager endorsement. The applicant shall state the preferred proficiency level where applicable.

For trade roles, the Technical Rail Trainer shall submit and endorse the application to the Competency Approver.

Queensland Rail will evaluate the application and determine the appropriate competency level for each role. Only when approval is given shall the employee be permitted to undertake rail safety work within the proficiency level of that role.

2.8.2 External staff submission

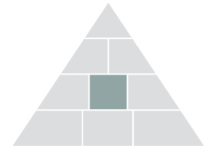
All consultants, contractors and subcontractors engaged in signalling work for Queensland Rail are required to hold valid Rail Industry Worker (RIW) accreditation.

To obtain a Queensland Rail signalling competency, as specified in this document, an Applicant shall submit their request through the Rail Industry Worker System². The application will be reviewed by a Queensland Rail assessment panel to determine the Applicant’s suitability based on experience, qualifications and accreditation.

Where the Applicant holds a Professional Engineering Registration, electrical licence, IRSE Licence, or RIW ID, these credentials should be included as part of the submission.

2.9 Work educational equivalence

Applicants with tertiary educational qualifications obtained internationally must satisfy the Overseas Business Rules for International Qualifications, Stage 1 Competency Assessment from Engineers Australia (EA).



Tertiary educational qualifications obtained outside Australia shall be submitted with an AQF assessment of equivalence undertaken by an assessing authority approved by the Australian Government.

For engineering qualification, the Stage 1 Competency Assessment conducted by Engineers Australia (EA) must be submitted in support of the application or EA professional membership certificate. This assessment is critical for determining whether an individual meets the entry-level competency standards required for engineering practice.

It is important to note that a Migration Skills Assessment, even when conducted by a government-endorsed agency, is not appropriate for this purpose and does not replace the EA Stage 1 Competency Assessment.

Where a competency requires a degree in Electrical Engineering, a degree in a related engineering discipline may be considered acceptable, provided the curriculum includes substantial coverage of core electrical engineering principles relevant to the competency. Acceptable related disciplines may include, but are not limited to:

- Mechatronics Engineering
- Aerospace / Avionics Engineering

Where an engineering degree or equivalent engineering qualification listed as a requirement for a role in Section 2.6, it refers to a bachelor's degree or higher qualification that meets the eligibility criteria for membership of EA.

Applicants are advised to consult EA to confirm the acceptability of their qualification.

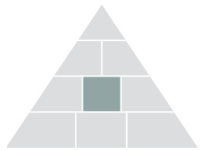
Where a competency requires RPEQ accreditation, it shall mean a Practising Registered Professional Engineer, as assessed by the Board of Professional Engineers of Queensland.⁷

Trade-based education and qualifications obtained outside Australia must be accompanied by an assessment of equivalence to the AQF, conducted by Trades Recognition Australia (TRA). TRA is the official government agency, peak professional body, and regulatory authority responsible for assessing trade occupations.

Trade qualifications obtained in New Zealand may be eligible for recognition under the Trans-Tasman Mutual Recognition Arrangement (TTMRA), which facilitates mutual recognition of occupational registrations between Australia and New Zealand. However, such recognition requires the trade licence to be supported by a valid TTMRA endorsement.

When a competency role is granted based on accreditation from a professional body or licensing authority (e.g., IRSE), that accreditation shall remain valid while performing the

⁷ <https://bpeq.qld.gov.au/>



role. Any future upgrades or pathway changes shall require equivalent accreditation from the relevant body or proof of AQF alignment is demonstrated.

2.10 Duration of Experience

Where a competency requires a period of industry experience, this refers to the total period of relevant industrial work performed in the applied role after the formal completion and award of an accredited academic or trade qualification, as recognised under applicable education and vocational standards. Industrial work undertaken as part of the qualification may be counted toward the required experience period, provided that the individual can demonstrate independent responsibility for tasks performed during that time.

2.11 Logbook

In the rail industry, much of the skills and knowledge are acquired through work-based, non-accredited experience. Capturing this information is essential for verifying practical experience and certifying task performance.

To support this, all work-based training shall be recorded in a Work Logbook. The Logbook serves as supporting evidence for maintaining or upgrading proficiency within a role or qualifying for a new role. Therefore, it is a critical tool for documenting mentoring and supervision throughout career progression.

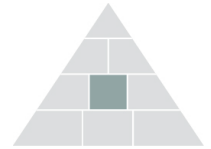
QR endorses the structured IRSE Logbook format⁸ for documenting, compiling, and validating training and experience. This format is used for preparation of an IRSE licence application and is widely recognised as a benchmark for demonstrating competency in the railway signalling profession.

The IRSE format includes guidance on documenting work experience evidence. While this guidance is advisory and does not guarantee competency approval, it helps strengthen an Applicant's submission by outlining the minimum required information and expected level of detail in logbook entries.

Additional documentation (e.g., actual example of work performed) may be required to support a submission. QR approvers must be satisfied that the provided work experience and logbook evidence sufficiently demonstrate competency for a defined QR role, at the appropriate proficiency level, across QR-specific technologies and equipment.

A career CV does not typically contain the detail and veracity of a Work Logbook and is not an acceptable alternative for submission. A certified CV may be acceptable for non-signalling roles, such as safety engineering.

⁸ <https://www.irse.org/Licensing/Licensing-documentation/Logbooks>



2.11.1 Guidance on Logbook writing

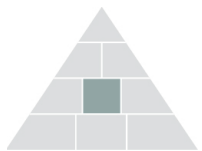
The Applicant should apply a consistent structure across similar roles (e.g., designer, tester, etc.) and should map their experience against the relevant competencies. Use of the IRSE Logbook format⁸ will facilitate this.

Considerations when preparing the Logbook include:

- **Structured Role Alignment,**
ensuring that the documented experience corresponds with the role definitions of this specification (e.g., Designer, Tester).
- **Performance Criteria Addressing,**
which demonstrates how each activity meets specific performance criteria.
- **Reflective Commentary,**
which provides a personal, first-person narrative explaining how you fulfilled each criterion, including decision-making processes and professional judgement.
- **Evidence Referencing,**
which links each competency to supporting documentation, which may include reface items such as:
 - Design drawings
 - Technical reports
 - Meeting minutes
 - Emails or formal correspondence
 - Witness statements or third-party validations

The Logbook should show evidence of effective collaboration and leadership within project environments, which:

- demonstrates team interaction, engagement and collaboration with multidisciplinary teams, including engineers, project managers, and clients.
- highlights contributions to team outcomes, communication strategies, and coordination efforts.
- describes any mentoring, coaching or leadership roles. This may include guiding junior staff, leading design reviews, or contributing to professional development within the team. It should be clear whether you are being mentored or mentoring another person.



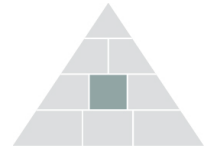
The Logbook should demonstrate a commitment to ongoing professional growth and industry engagement, in alignment with the expectations of RPEQ and other recognised professional bodies such as ARA and IRSE. To this end, the Logbook should document and evidence:

- training and learning activities in which the Applicant participated in structured learning, for example accredited courses, webinars, workshops, or formal training programs relevant to signalling and operational systems.
- knowledge sharing and contribution, through active involvement in technical knowledge dissemination, including presentations, authored papers, peer discussions, or contributions to industry forums.
- industry engagement, where the Applicant has attended and participated in technical workshops, seminars, and other recognised CPD events that contribute to professional competence and industry awareness, for example IRSE meetings, conferences, RISSB seminars.

To ensure transparent validation of professional experience and to reinforce alignment with recognised engineering standards and licensing requirements.

- Logbook entries shall be reviewed and signed off by a qualified supervisor or assessor who possesses demonstrable competency in the specific technical domain of the work performed. Endorsements should reflect actual role-based expertise rather than organisational titles. Logbook entries endorsed based on organisational titles will be ignored, as the veracity of such endorsements cannot be validated.
- Experience gained in other networks or jurisdictions, whether within different operational systems or under varying regulatory frameworks, shall be supported by appropriate evidence and verification. The verifier shall clearly outline the criteria used to validate each logbook entry and describe the mechanism or the rationale for the endorsement. All supporting evidence shall be submitted alongside the logbook. Unsupported logbook entries will not be accepted as validated experience. The applicant shall also provide documentation that demonstrates traceability of the gazetted position held during the relevant period. This includes membership details of any professional organisations held at the time of the work experience.

Applicants shall maintain current, up-to-date records of their work. Logbook entries should be updated regularly to reflect current activities, ensuring relevance and accuracy in competency assessment.



2.11.2 Work experience record entry

The Logbook shall contain a work experience record which is a clear and structured record of each task undertaken by the Applicant. The record shall include:

Dates from/to

Each record entry shall give the start and end dates of the task being described, not the project. Tasks should not exceed three (3) months duration. Tasks shall be listed in reverse chronological order, from most recent to oldest, noting the month and year the work started and finished.

Employer / RTO Client

Each record entry shall identify the RTO (RIM or RSO) under whose jurisdiction the work was performed, along with the Applicant's employer. This provides context regarding the complexity and scale of the network within which the work was undertaken. For example, the work was executed by the Applicant as part of their role at Hitachi Rail STS, under contract to Queensland Rail as the RIM.

2.11.2.1 Description of Work

Project Title and Description

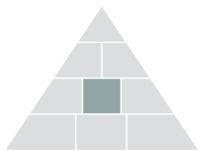
Each record entry shall state the title of the project for which the task was undertaken and shall briefly describe its scope and objectives.

A concise summary should be provided to reviewer to establish context. While the project background helps frame the entry, the emphasis should remain on the specific tasks performed by the Applicant, as these are the primary indicators of competency and professional capability.

Employer / RIM approved competency

The entry shall explicitly state that the tasks described were performed within the boundaries of authorised competencies. When the work is performed for a specific railway jurisdiction, the authorised competencies shall be defined by the client organisation, which shall be identified (e.g., Employer = Signal & Giggles Railway Ltd, RIM = Queensland Rail).

To substantiate this, reference documentation such as Statement of Competence (SoC) should be provided which clearly outline the scope of the Applicant's authorised activities can be submitted as an additional document. This shall be clearly referenced within the narrative of the logbook entry to ensure transparency and traceability.



Detailed description of task

The record entry shall describe a specific task undertaken by the Applicant, to demonstrate proficient and competent practice. It should include process steps, deliverables produced by the Applicant, the rationale behind key decisions, the technology used and the methods to ensure compliance with Queensland Rail or other jurisdiction's standards.

Role definition and applicable licence category

The entry shall state the Applicant's position and responsibilities within the project organisational structure and the duty being discharged (e.g., Signalling Design Engineer), ensuring alignment with recognised industry roles.

Where applicable, the entry should state the relevant IRSE Licence category and alignment to RIW framework.

Comments

The Applicant should provide commentary on each work entry, which:

- shows technical understanding the task;
- highlights the complexity of the task and novel issues;
- provides an interpretation of relevant standards and application of practices;
- demonstrates their level of proficiency;
- presents feedback received from colleagues, supervisors, or managers.

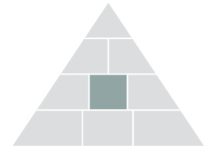
2.11.2.2 Witness signature

The Witness of a logbook entry plays a critical role in confirming the authenticity and accuracy of the evidence recorded by the candidate. Therefore, each task entry shall have a designated witness (known in the IRSE framework as a Verifier). The Witness statement shall contain the following information:

- Name;
- Signature;
- Date;
- Competency (e.g., TiC or Signal Project Engineer) instead of a job title.

2.11.3 Witnesses

A Logbook shall be validated by the technically competent direct supervisors who had oversight of the work performed. The validation serves as evidence of applied skills and experience, supporting qualification for a new role, the maintenance or advancement of role proficiency per QR competency framework requirements.



The Applicant shall provide a Witness Status List with the submission. The Witness Status List shall identify all Witnesses to the Applicant's tasks listed in the Logbook.

The Witness Status List shall include, for each Witness:

- Full name;
- Competency instead of a job title;
- RPEQ registration number, RIW number, and/or IRSE licence number, if applicable;
- Contact details;
- Managerial relationship to Applicant;
- Signature and the date of verification.

All fields shall be completed in full to provide credibility and to enable traceability. QR may wish to contact the Witness to verify any aspect of the submitted work experience. The IRSE licensing documentation provides an example of a Witness Status List⁸.

A Witness is a competent, senior signalling staff member who has the responsibility of supervising and verifying the work of the Applicant. The Witness' signature and RPEQ registration number is essential to ensure the integrity and professional standard of the work experience evidence. Its value is diminished if the reviewer lacks context regarding Witness credibility.

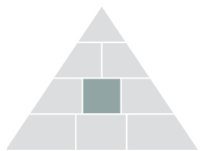
2.12 Permission to perform electrical work

2.12.1 Electrical mechanic licence

Queensland Rail requires many signalling roles to hold a valid electrical licence in accordance with the Electrical Safety Act 2002 (Qld). These competencies are defined in Sections 2.4.2 and 2.6. This requirement stems from the need for Queensland licenced electricians to perform certification, testing, and installation of signalling electrical work. Only Queensland licenced electricians are authorised to supervise electrical workforce and to work on electrical equipment operating above Extra Low Voltage thresholds, which are defined in AS 3000 as 50V or less AC RMS, or 120V or less ripple-free DC. The Queensland electrical licence requirement ensures compliance with safety regulations and maintains the safety integrity of signalling systems.

Where a signalling competency requires possession of a Queensland electrical licence, this shall refer to a Queensland electrical mechanic licence, issued by the Queensland Electrical Safety Office⁹.

⁹ <https://www.worksafe.qld.gov.au/licensing-and-registrations/electrical-licences/classes-of-licences>



The Queensland Electrical Safety Office will issue an Queensland electrical mechanic licence on completion of relevant training, e.g. Certificate III in Electrotechnology Electrician and industrial experience.

2.12.2 Electrical work without electrical mechanic licence

A worker who does not possess a Queensland electrical mechanic licence may apply for a QR testing competency, **only** to work within the scope of testing with licenced electrician supervision using QLD Electrical Licence Compliance Agreement Form MD-25-190. The form may be found on the Queensland Rail RIW site¹⁰; a facsimile is shown in Appendix 4. The applicant shall complete the form and submit through the RIW System. A worker holding a testing competency with QLD Electrical Licence Compliance Agreement Form MD-25-190 may perform limited signal testing on QR network, in accordance with the following conditions:

- 1) The testing process does not interfere with the system's integrity.
- 2) The equipment is Extra Low Voltage, as defined in AS 3000.
- 3) The worker complies with the safe system of work for the worksite and electrical installation.
- 4) The work is under the supervision of a Queensland licenced electrician.

The Electrical Safety Regulation 2013 (Qld) provides clear examples of testing requirements, such as:

- Operating a test button on a safety switch within a domestic electrical installation.
- Utilising an appropriate voltmeter to measure voltage.

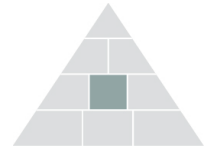
QLD Electrical Licence Compliance Agreement Form MD-25-190 enables persons possessing an AQF qualification that does not grant an Electrical Mechanic Licence (e.g. Certificate III Electrical) to gain a Queensland Rail testing competency. Queensland Rail prefers holders of a testing competency to possess an Electrical Mechanic Licence.

Queensland Registered Professional Electrical Engineers are exempt from needing an QLD electrical mechanic licence to perform testing and fault finding and should not submit QLD Electrical Licence Compliance Agreement Form MD-25-190.

2.13 Documentary evidence and audits

Queensland Rail uses the Rail Industry Worker System to record all evidence requirements for each of the role classifications for external staff. The Competency Approver will assess and approve applications made under the Rail Industry Worker System.

¹⁰ <https://www.queenslandrail.com.au/forbusiness/contractors/Railworkers>



This provides Queensland Rail with full traceability of all RIW's competencies for the railway works being undertaken. This then forms the basis of Queensland Rail's audits against RIW's, whether periodically to maintain quality, or because of an alleged incident/breach or when Queensland Rail has reason to suspect the RIW's competence is called into question.

It is mandatory for all RIW's to hold a valid RIW Card on their person whilst undertaking rail safety work for Queensland Rail. When approached by an ONRSR representative or Queensland Rail auditor / authorised person, the RIW shall present their RIW Card. Where a RIW is found to not hold the necessary competencies / authorisations for the work being undertaken, the RIW shall be directed to cease work and supervisor notified. This shall initiate an investigation by Queensland Rail and may result in a suspension of the RIW for that or all roles the RIW holds and prevent the RIW from undertaking work for Queensland Rail.

The investigation of an incident and/or breach shall be in accordance with the Queensland Rail Business Rules for Management of Rail Safety Worker Contractors Procedure MD-13-79.

Queensland Rail may undertake an audit of any or all evidence in support of a RIW's classification. The audit may request further information from the RIW. Where deficiencies are identified, the RIW shall be required to provide additional information within a reasonable time. In support of this requirement, Queensland Rail reserves the right to suspend or place a 'hold' against the individual's profile in the RIW System until such deficiencies are rectified. This shall prevent the RIW from undertaking all rail safety work for Queensland Rail specific to that classification.

2.14 IRSE membership and licensing

Queensland Rail recognises The Institution of Railway Signal Engineers (IRSE) licensing scheme as a valuable benchmark of structured learning and technical competence. However, holding an IRSE licence does not automatically result in competency recognition for equivalent roles within Queensland Rail's competency framework. IRSE membership reflects professional engagement within the railway signalling industry, and related systems, it does not confer the authority to perform licenced safety-critical or safety-related functions in Queensland Rail.

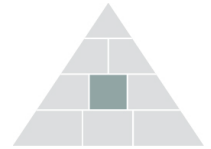
2.15 Queensland Rail MyLearning codes

Table 17 lists the MyLearning code numbers for competencies and proficiency levels for Queensland Rail internal staff. Many of these competencies are new and have not yet been assigned a MyLearning code.



Table 17 - MyLearning Qualification

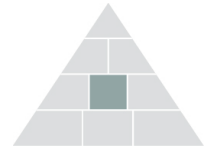
Role	Proficiency	MyLearning code number
Discipline Head, Signalling & Operational Systems	Level 3	40011000
Signal Project Design Manager	Level 3	TBA
Senior Signal Design Engineer	Level 3	40010975
Signal Design Engineer	Level 2	40011002
Signal Design Engineer	Level 1	40011003
Signal Designer	Level 2	40011004
Signal Designer	Level 1	40011005
Signal Design Assistant	Level 1	TBA
Lead CADD Operator	Level 2	40011006
CADD Operator	Level 2	40011007
CADD Operator	Level 1	40010954
Senior ETCS System Engineer	Level 3	TBA
ETCS System Engineer	Level 2	TBA
ETCS System Engineer	Level 1	TBA
Senior ETCS Design Engineer	Level 3	40010955
ETCS Design Engineer	Level 2	40010957
ETCS Design Engineer	Level 1	40010958
ETCS Designer	Level 2	TBA
ETCS Designer	Level 1	TBA
Senior ETCS Safety Engineer	Level 3	TBA
ETCS Safety Engineer	Level 2	TBA
ETCS Safety Engineer	Level 1	TBA
Senior ETCS Validation Engineer	Level 3	TBA
ETCS Validation Engineer	Level 2	TBA
ETCS Validation Engineer	Level 1	TBA
Senior Signal Mechanical Design Engineer	Level 3	TBA
Signal Mechanical Design Engineer	Level 2	TBA
Signal Mechanical Design Engineer	Level 1	TBA
Signal Mechanical Designer	Level 2	TBA
Signal Mechanical Designer	Level 1	TBA
Senior Signalling Constructor	Level 3	TBA
Signalling Constructor	Level 2	TBA



Role	Proficiency	MyLearning code number
Signalling Constructor	Level 1	TBA
Signal Electrician Construction etc		
Senior Maintenance Engineer	Level 3	TBA
Maintenance Engineer	Level 2	TBA
Maintenance Engineer	Level 1	TBA
Signal Maintenance Technician etc		
Senior Principles Test Engineer	Level 3	40010959
Principles Test Engineer	Level 2	40010960
Principles Test Engineer	Level 1	40010961
Principles Tester	Level 2	TBA
Principles Tester	Level 1	TBA
Senior Test Engineer	Level 3	40011026
Test Engineer	Level 2	TBA
Test Engineer	Level 1	TBA
Tester In Charge – TIC	Level 3	40010962
Tester In Charge – TIC	Level 2	40010963
Tester In Charge – TIC	Level 1	TBA
Tester in Charge (Asset Renewal)	(not applicable)	TBA
Functional Tester	(not applicable)	40010966
Functional Tester (Asset Renewal)	(not applicable)	40010967
Verification Tester	(not applicable)	40011029
Signal Test Assistant		
Electronic Systems Tester	Level 2	TBA
Electronic Systems Tester	Level 1	TBA
Signalling Electrician (External)	(not applicable)	40010968
Signalling Electrician Track Circuits	(not applicable)	40010969
Signalling Electrician Level Crossings	(not applicable)	40010970
Signalling Electrician Point Machines	(not applicable)	40010971
Signalling Electrician Signals	(not applicable)	40010972
Signalling Electricians Interlockings and Non-vital systems	(not applicable)	40010973
Signalling Electrician Signalling Cable Testing / Repairs	(not applicable)	40010974
Senior Operational Systems Engineer	Level 3	TBA



Role	Proficiency	MyLearning code number
Operational Systems Engineer	Level 2	TBA
Operational Systems Engineer	Level 1	TBA
Senior Operational Systems Developer	Level 3	TBA
Operational Systems Developer	Level 2	TBA
Operational Systems Developer	Level 1	TBA
Operational Systems Technician	Level 2	TBA
Operational Systems Technician	Level 1	TBA



3 Responsibilities

The following establishes the unique accountabilities and responsibilities of the key internal stakeholders for this Specification.

3.1 Who does what?

Who	What
Discipline Head, Signalling & Operational Systems	As the Functional Owner, has delegated authority from the Queensland Rail Board and CEO to: • approve Principles/Standards to ensure this specification is reflected in Queensland Rail's day to day operations. • create and maintain processes that provide assurance to the CEO that Queensland Rail is complying with this Specification and meeting its obligations under the RSNL and all applicable statutory and regulatory frameworks. • respond to recommendations made when the Specification is reviewed, to ensure the Specification remains up to date and relevant to Queensland Rail.
Senior Manager, Signalling Engineering	Responsible for the deployment of the document content, on behalf of Group Asset Manager
Leaders of functions, areas and teams	Must: • support and communicate the Specification to their employees, and to contractors, consultants and volunteers, to ensure all these people understand the Specification • demonstrate compliance with the Specification.
All employees, contractors and consultants	Everyone who needs to make use of this Specification for work purposes must ensure that they understand and comply with this Specification.

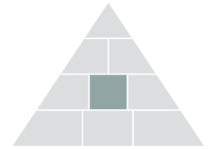


4 Terms and definitions

The following key terms and definitions are unique to this Specification. Please refer to the [Business Glossary](#) for other terms not included in this section.

Term	Abbrev	Definition	Source ¹¹
Australian Qualifications Framework	AQF	The national policy for regulated qualifications in Australian education and training.	Higher Education Support Act 2003 (Cth)
Assets Training Delivery Technical Rail Trainer		Queensland Rail person who delivers training in railway trade skills to employees	
Australasian Railway Association	ARA	Is the peak body for the rail sector in Australia and New Zealand	
Certified Documents		Documents which are confirmed as true copies of the originals, by a person authorised to do so.	
Competency		The possession and application of both knowledge and skills that correspond to relevant workplace requirements and other vocational needs.	
Competency Approver		The Discipline Head Signal and Operational Systems or a delegate formally nominated by the Discipline Head.	Delegated Authorities - Financial and Functional Specification MD-12-904
Consultant		A company or individual responsible for completing a specific task or project within a certain timeframe. The consultant may have an ongoing relationship with Queensland Rail to provide support over a longer period.	
Contractor		A company or individual engaged by Queensland Rail to undertake signalling and operational systems work in accordance with an agreement. A contractor may be a sole trader or an employee of a parent signalling and operational contracting company.	
Direct Supervision		Direct supervision is when the supervisor has direct contact with the supervisee and actual knowledge of the professional engineering service being provided.	
Engineering Trades and Civil Infrastructure	ET&CI	Queensland Rail career development framework	
European Train Control System	ETCS	Cab-based digital signalling and control system using digital train radio. Queensland Rail is adopting ETCS Level 2	
Institution of Railway Signal Engineers	IRSE	Professional institution for those engaged in or associated with railway signalling.	Institution of Railway Signal Engineers

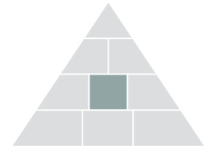
¹¹ Where left blank, Source is not applicable.



Term	Abbrev	Definition	Source ¹¹
Mentee		A person who is being mentored.	
Mentor		A Mentor is an experienced and trusted teacher. The Mentor takes full and complete responsibility for the Mentee's work as if it were their own work. The Mentor will provide suitable guiding comment and correction during works execution. The Mentor will satisfy themselves of the correctness of work that they have not directly observed by further checking, audit or by prior knowledge and trust of the previous performance of the Mentee. The Mentor will create a record covering the work done and make observations or as appropriate. The Mentor will work with the Mentee to identify those areas where improvement is needed. The Mentor will make recommendations when the Mentee has fulfilled competency requirements at the current level and can work independently.	
Professional Engineering Service		An engineering service that requires, or is based on, the application of engineering principles and data to a design, or to a construction, production, operation or maintenance activity, relating to engineering, and does not include an engineering service that is provided only in accordance with a prescriptive standard.	Professional Engineers Act 2002 (Qld)
Queensland Rail	QR	Abbreviation for Queensland Rail, statutory authority established under the Queensland Rail Transit Authority Act 2013 (Qld) to be responsible for rail transport services in Queensland.	
Rail Infrastructure Manager	RIM	Refer to Rail Safety National Law (Queensland)	Rail Safety National Law (Queensland)
Rail Industry Worker	RIW	Person undertaking work in the rail industry with a competency assessed under the ARA framework	
Rail Industry Worker Card	RIW Card	The card used to identify each RIW and their competencies.	
Rail Industry Worker System	RIW System	System for managing competencies of Rail Industry Workers, which is used by Queensland Rail for the assessment of external staff.	https://www.riw.net.au
Rail Safety National Law (Queensland)	RSNL	Refer to Act	Rail Safety National Law (Queensland)
Rail Safety Worker	RSW	Rail safety worker means an individual who carries out rail safety work as defined by RSNL	Rail Safety National Law (Queensland)



Term	Abbrev	Definition	Source ¹¹
Recognition of Current Competency	RCC	Queensland Rail Learning and Delivery award	
Recognition of Prior Learning	RPL	Recognition including recognition of prior learning is a process for giving applicants credit for skills, knowledge and experience gained through working and learning.	
Registered Professional Engineer Queensland	RPEQ	Registered Professional Engineer Queensland	Professional Engineers Act 2002 (Qld)
Registered Training Organisation	RTO	A vocational education and training organisation registered to deliver training in accordance with the AQF.	
Rail Transport Operator	RTO	Refer to Rail Safety National Law (Queensland)	Rail Safety National Law (Queensland)
Relevant experience		Any experience presented for assessment needs to be directly related, connected or pertinent to the role.	
Subject Matter Expert	SME	SME's are RIW's who have met the evidence requirements associated with a Proficiency Level 3 within a given role classification and hold a high level of domain knowledge.	
Supervision of Electrical Work		Supervision means the overseeing of workers, including trainees and apprentices, to ensure risks to people and property are eliminated or at least minimised. While a supervisor may perform audits, auditing should not be seen as interchangeable with supervision. Supervision of electrical work includes: • Health and safety matters, including the identification and assessment of training requirements. • statutory compliance e.g. monitoring the work an apprentice or restricted electrical worker is permitted to perform • technical aspects e.g. compliance with AS/NZS 3000 and GSS part 8. • implementation of a safe work method statement prepared for the work.	Electrical Safety Code of Practice 2020 – Electrical equipment rural industry (ESOPDF025)
Work Experience Record / Logbook		This is the record of work undertaken by the RIW involving the application of the Signalling and Operational Systems competencies.	



5 Document history

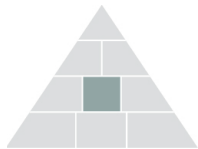
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*Contact for further information

Document Amendment History

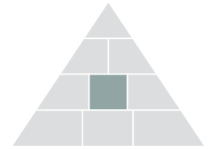
Version	Date	Section(s) Amended	Summary of Amendment
9.0	06/03/2026	Whole document	Restructured and reorganised
		2.3	New section on competency assessment
		2.4	Queensland Rail internal competencies harmonised with RIW competencies. Table for internal competencies removed.
		2.5	New section on special skill areas
		2.6.2	New competencies for ETCS
		2.6.6	New competencies for signalling management
		2.6.11	New competencies for Electronic Systems Testers
		2.8	Clarification on applicability of engineering and tertiary qualifications
		2.9	New section on educational equivalence
		2.10	New section on experience
		2.11	Stronger guidance on logbook writing
		2.12	Clarification on electrical licences



Version	Date	Section(s) Amended	Summary of Amendment
8.0	16/10/2023	2.2	Meaning of Rail Industry Worker clarified
		2.3	Role of Competency Assessor clarified
		2.3.3	New section on specific skills
		2.3.4	New section on skills for ETCS
		2.5	Table rewritten with new and modified competencies Definitions of Simple, Complex and Major Works added
		2.6	Former sections combined Proficiency Levels defined and clarified
		4	New definitions
		App 2/3	Appendices added
7.1	15/09/2021	1	Remove ref to redundant Rail Safety Worker Competence Standard MD-10-182

This document contains confidential material relating to the business and financial interests of Queensland Rail. Queensland Rail is to be contacted in accordance with Part 3, Division 3 Section 37 of the Right to Information Act 2009 (Qld) should any Government Agency receive a Right to Information application for this document. Contents of this document may either be in full or part exempt from disclosure pursuant to the Right to Information Act 2009 (Qld).

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6 Appendices

Appendix 1 – Related documents

Legislation and regulation

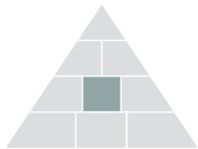
Jurisdiction	Title
Commonwealth Acts	N/A
State Acts	Rail Safety National Law (Queensland) , and associated secondary legislation. Work Health and Safety Act 2011 (Qld) , and associated secondary legislation. Professional Engineers Act 2002 (Qld) , and associated secondary legislation. Electrical Safety Act 2002 (Qld) , and associated secondary legislation.
Other	Various Australian Standards, Codes of Practice, Memoranda of Understanding / Agreement and Government Policies are also applicable.

Australian, international and industry standards

Document type	Document title
Australian Standard	AS 3000 Electrical Installations (known as the Australian/New Zealand Wiring Rules)
RISSB Standard	AS/RISSB 7718:2017 Signal Design Process Management
Industry Standard	Australasian Railway Association, National Signalling Assessment Framework 2023

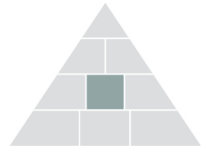
Queensland Rail documents

Document type	Document title
Principle	MD-13-550 Signalling and Operational Systems Asset Governance and Assurance Principle (SAGA)
Standard	MD-10-169 Signalling – Change Management of Signalling and Operational Systems Infrastructure MD-11-332 Signalling Engineering Maintenance MD-13-366 Discipline Head Accountabilities MD-13-654 Signalling - Management of Externally Delivered Projects MD-14-40 Signalling - Project Delivery Standard MD-22-50 Independent Certification
Strategy / Plan	N/A
Specification / Framework	MD-12-904 Delegated Authorities - Financial and Functional MD-15-72 GSS Part 13 - Test and Commissioning Planning MD-15-75 GSS Part 14 - Design and Drawings MD-15-191 Telecommunications - Competence Management
Procedure	MD-13-79 Business rules for management of Rail Industry Worker Contractors
Instruction	N/A
Guideline	N/A



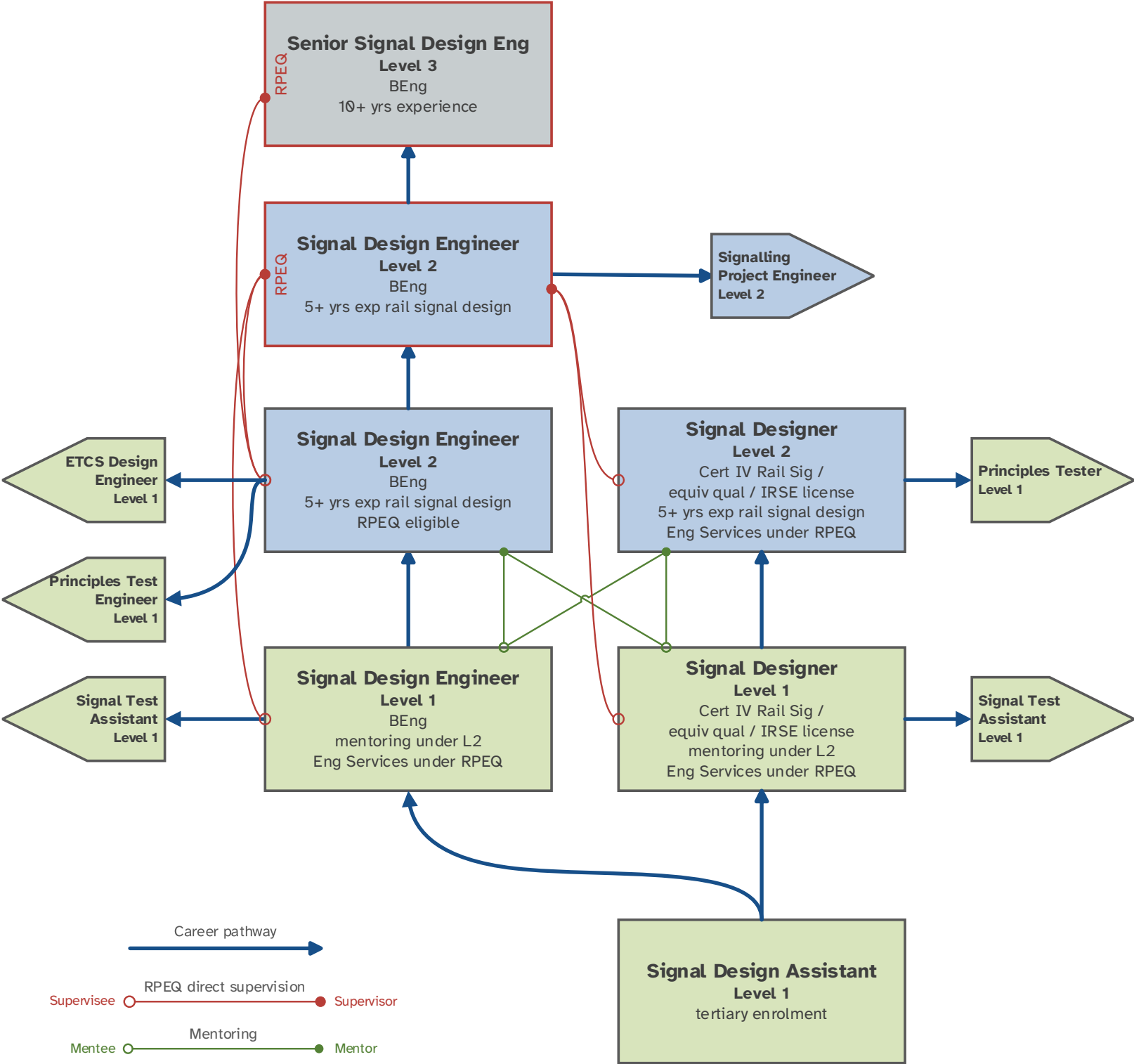
Document type	Document title
Form / Template	MD-25-190 <u>QLD Electrical Licence Compliance Agreement</u>
	MD-26-9 <u>Certificate of Competence</u>

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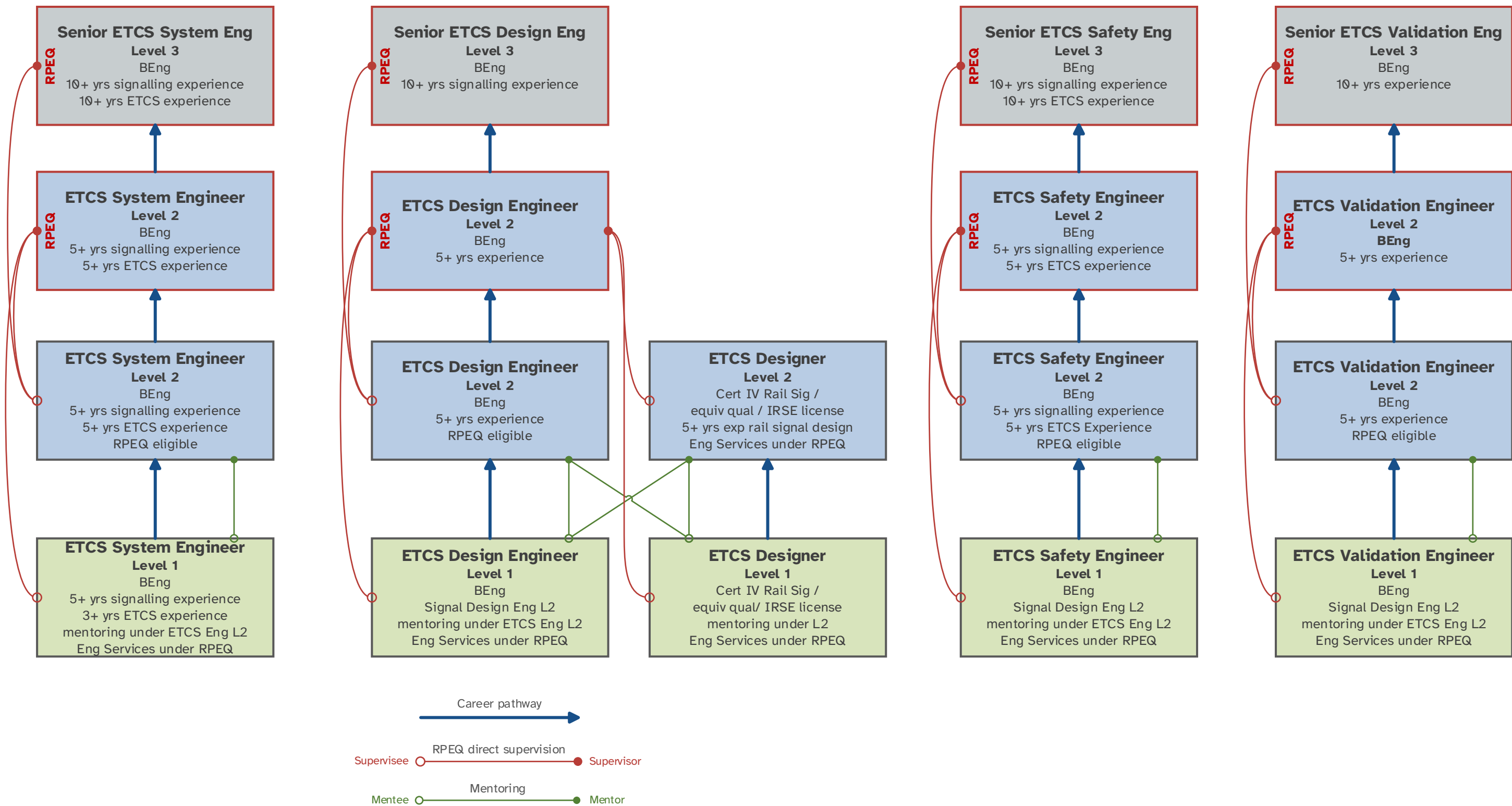
Appendix 3 – Competency Pathways

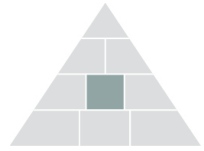
Signal Design



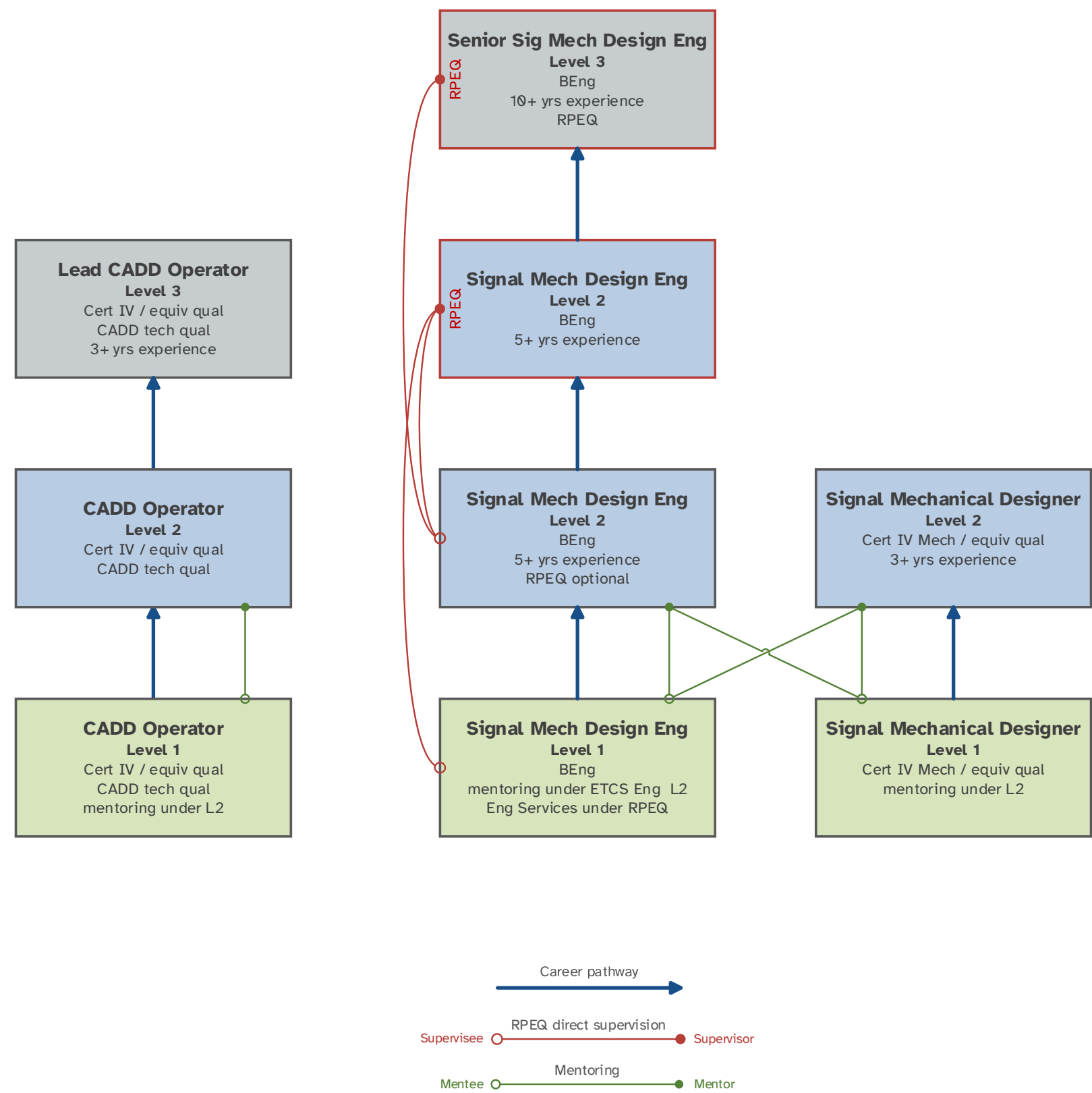


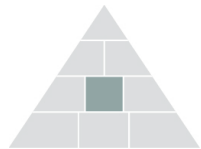
ETCS



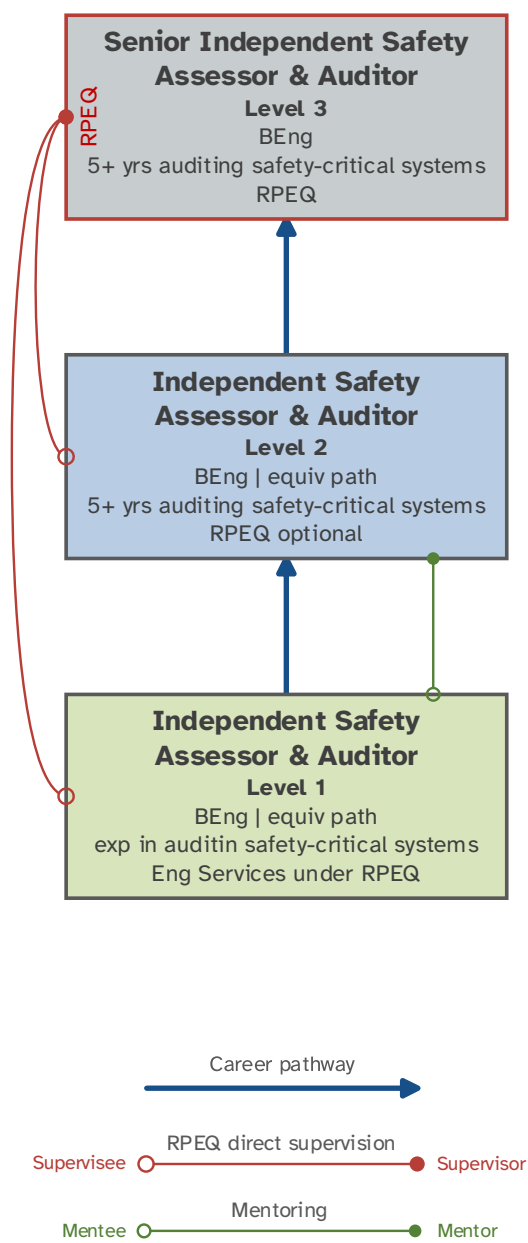


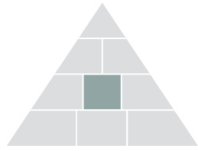
Mechanical Design and CADD



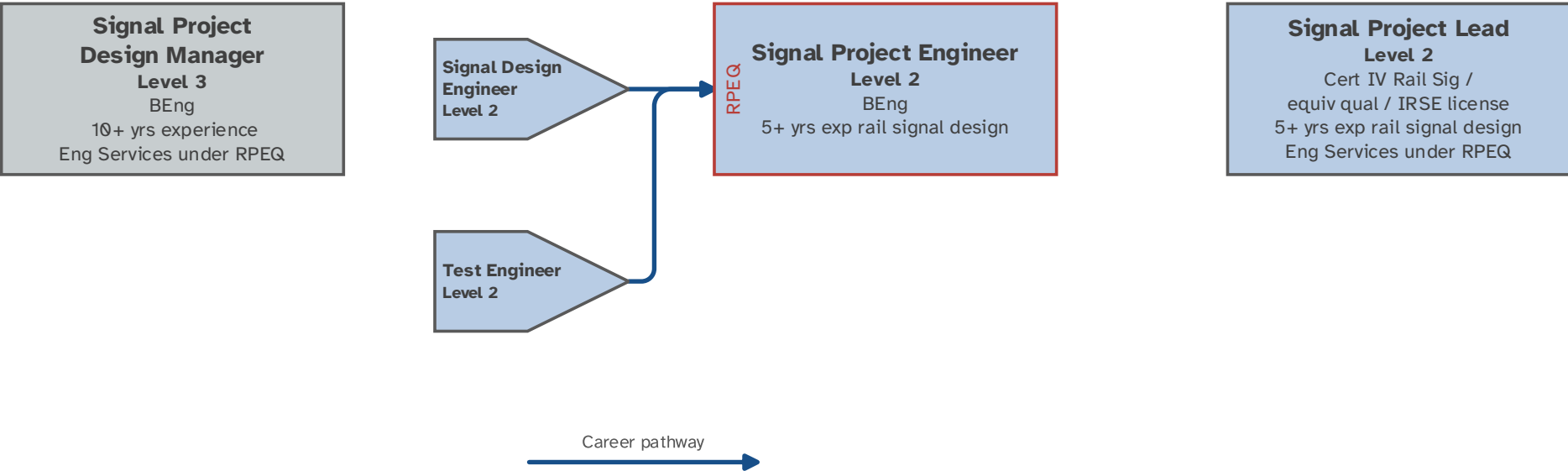


ISAA



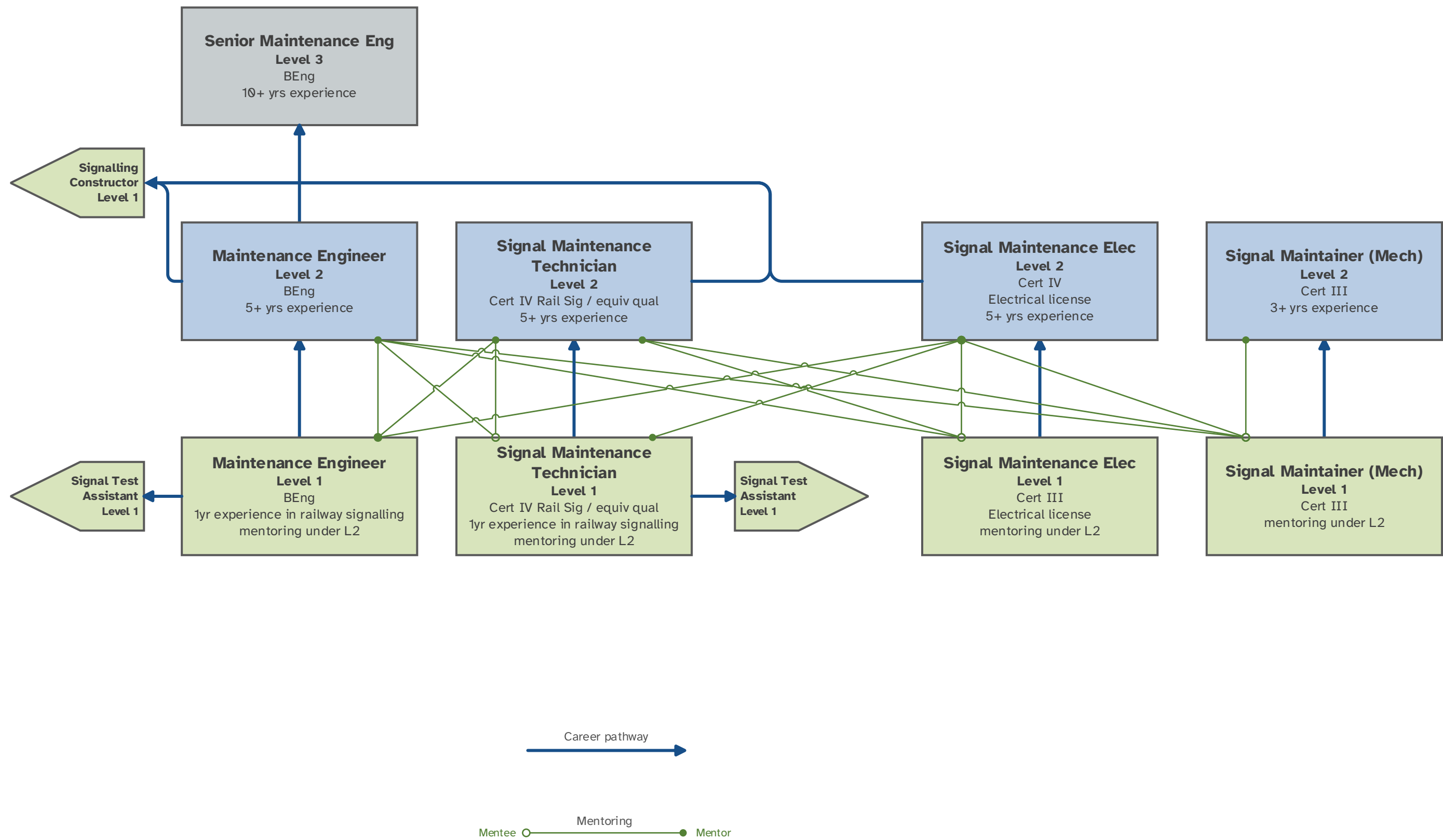


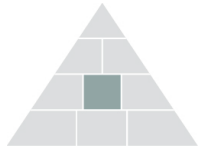
Management



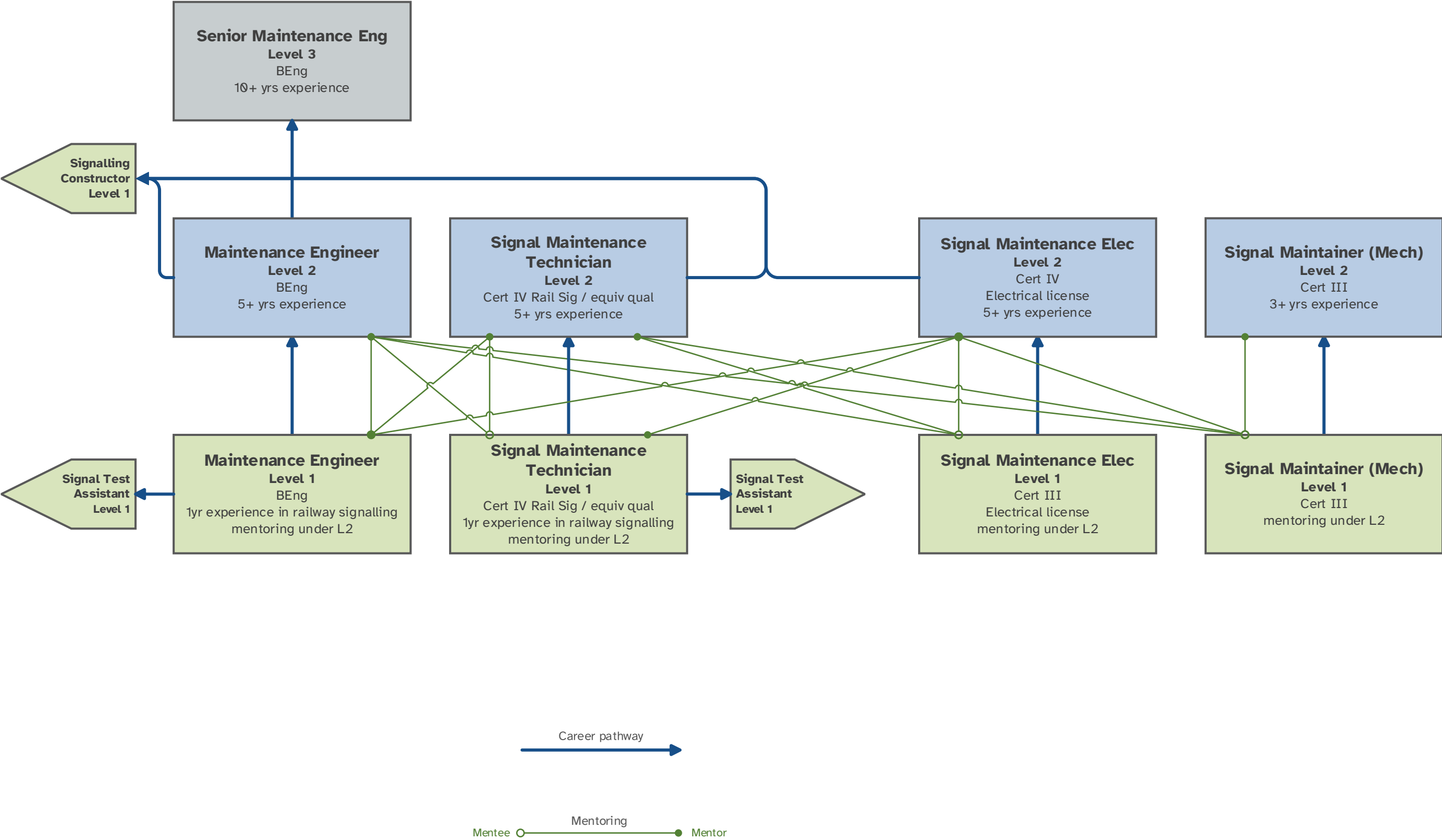


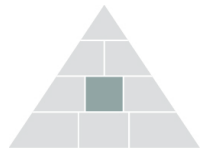
Construction



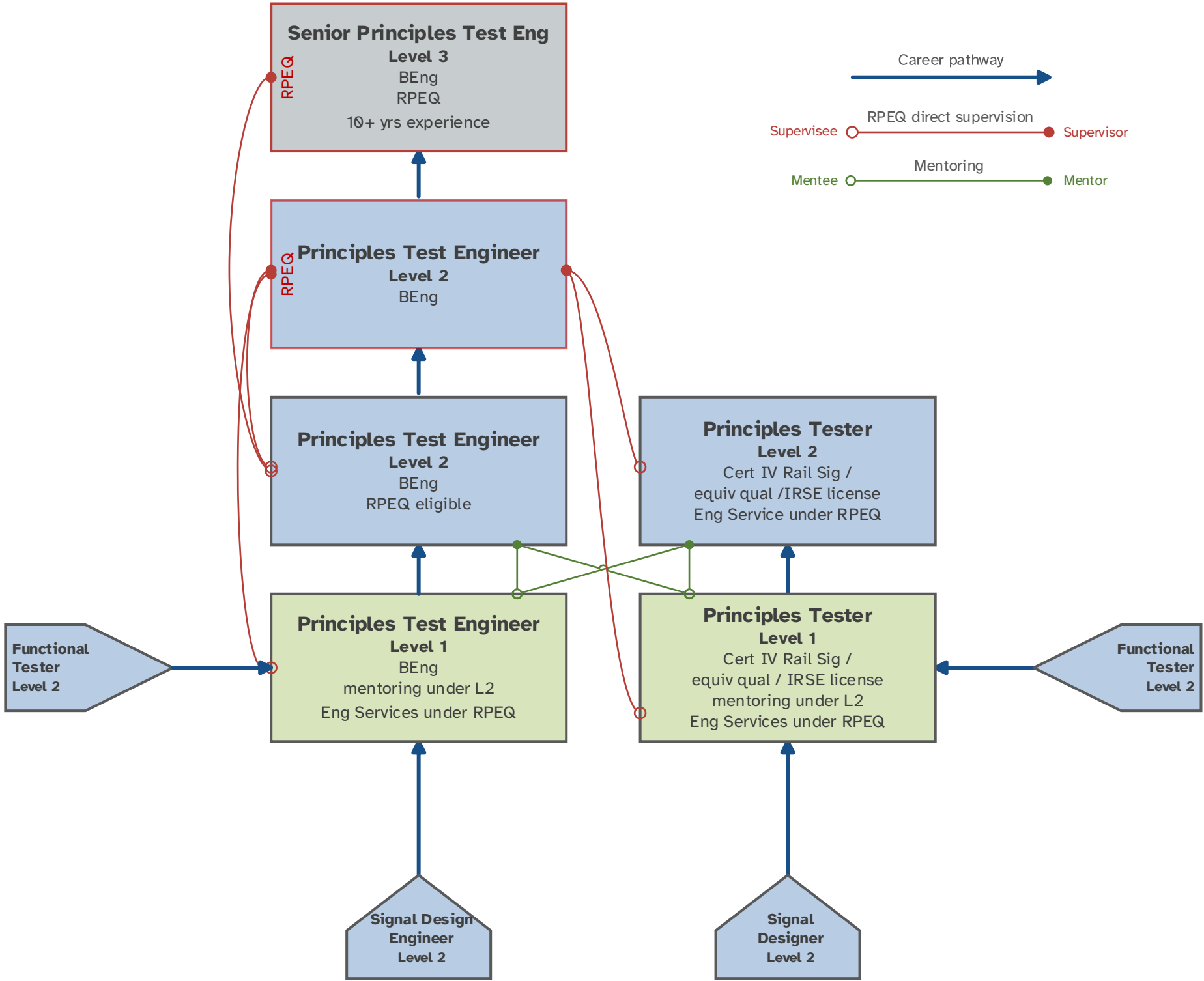


Maintenance



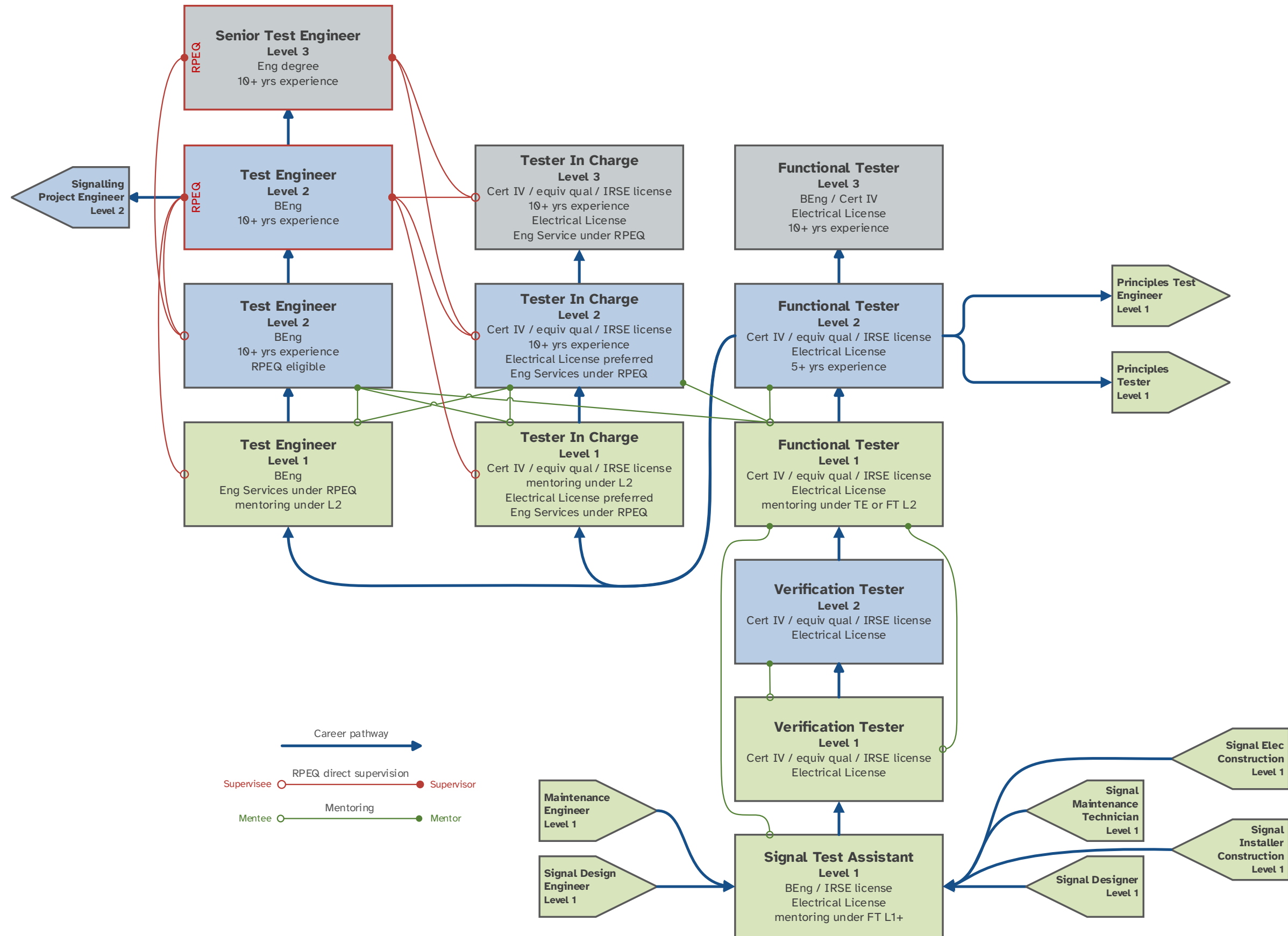


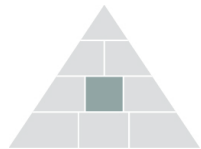
Principles Testing



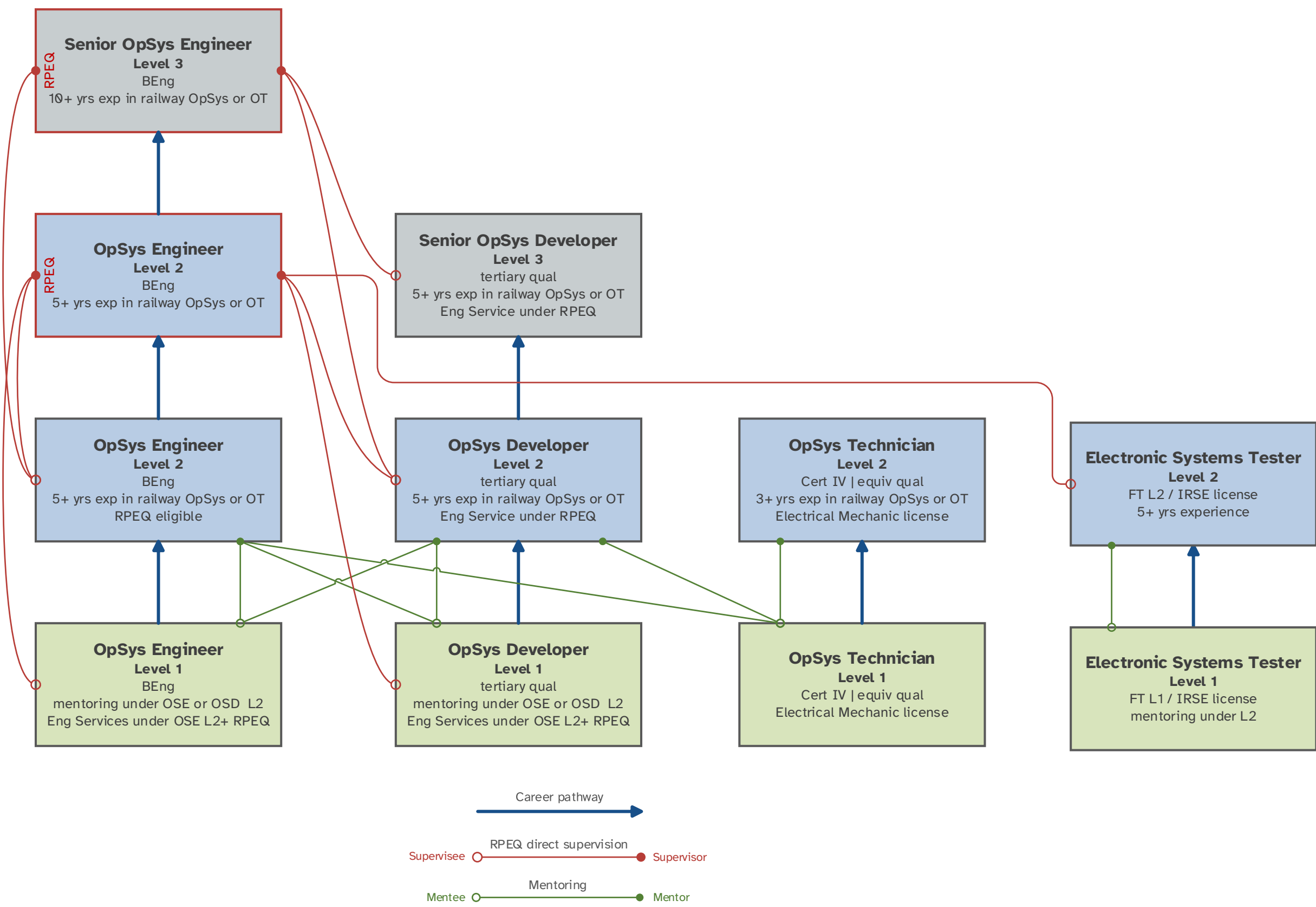


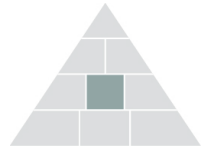
Testing



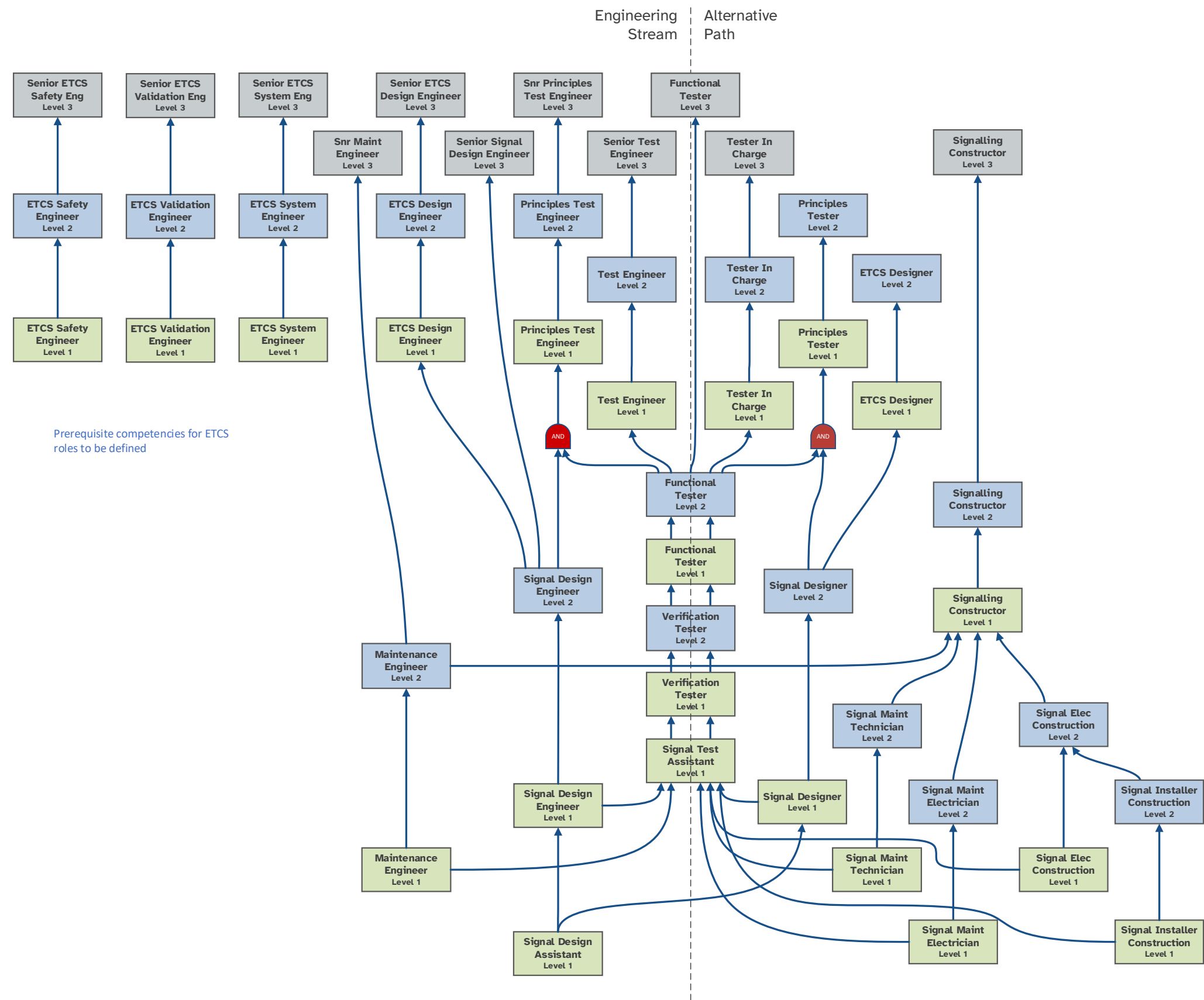


Operational Systems



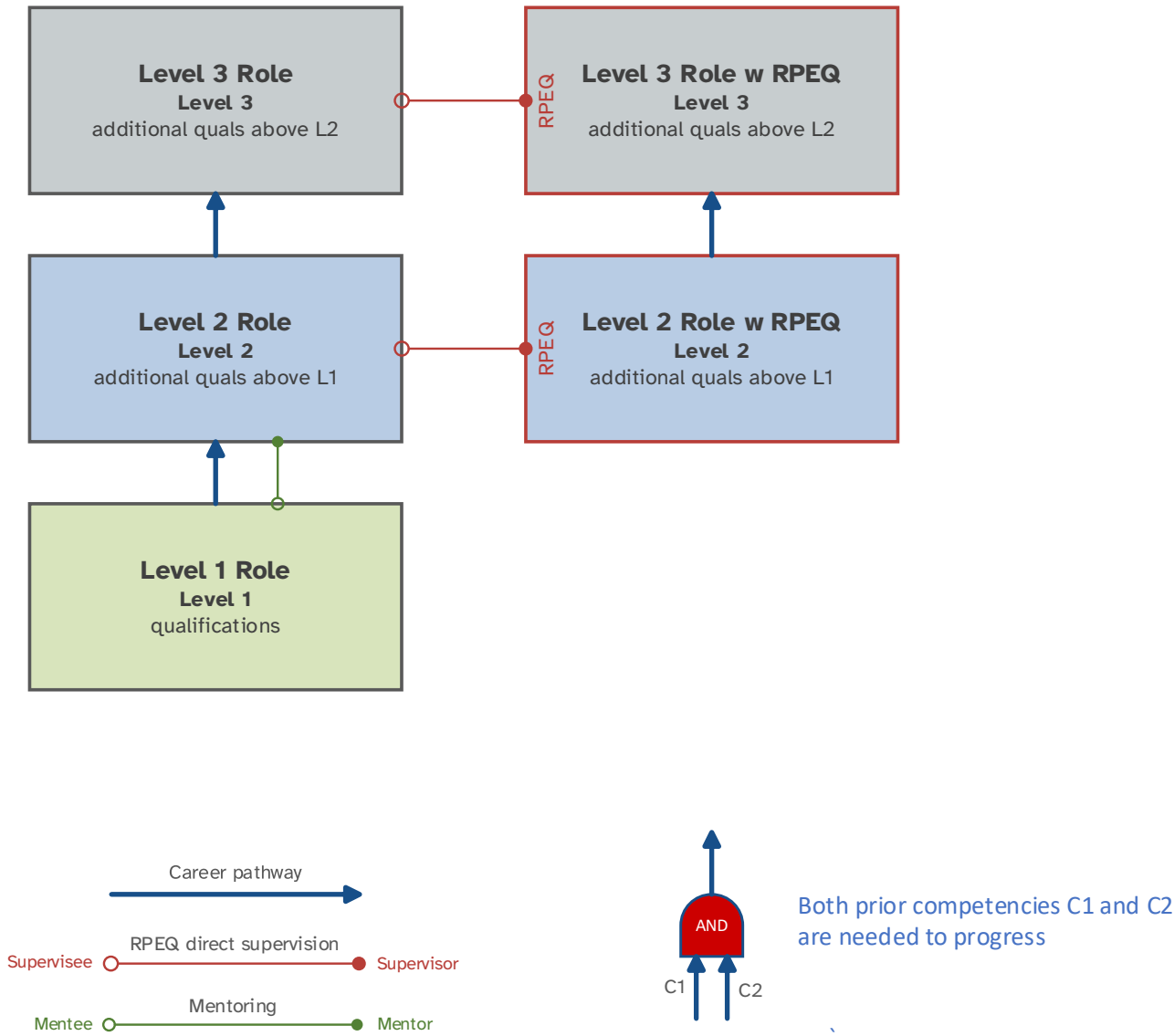


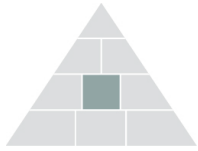
Primary Competency Pathways





Pathway Legend





Appendix 4 – QLD Electrical Licence Compliance Agreement



Queensland Rail Signal testing role - Queensland electrical licence compliance agreement

The *Electrical Safety Act 2002 (Qld)* prohibits the performance or supervision of electrical work without an electrical licence except in very limited circumstances.

When an electrical licence is NOT required

An electrical licence is not required for the testing of electrical equipment if the **testing does not interfere with the integrity of the electrical equipment**. The *Electrical Safety Regulation 2013 (Qld)* outlines specific examples of such exemptions:

- Operating a test button on a safety switch within a domestic electrical installation.
- Utilising an appropriate voltmeter to measure voltage.

Function testing of Queensland Rail's signalling equipment is underpinned by the above clause, subject to **FULL** compliance with two critical conditions herein:

- 1) The testing process does not interfere with the system's integrity.
- 2) Testers operate in strict accordance with an approved safe system of work.

When an electrical licence IS required

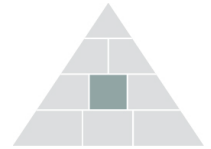
Queensland Rail prefers signalling testers to hold valid Queensland electrical licences or an exemption in accordance with the *Electrical Safety Act 2002 (Qld)*. This requirement stems from the need for electrical professionals to perform certification, testing, and installation of signalling electrical work. Only licensed electricians are authorised to work on electrical equipment operating above extra low voltage thresholds. These thresholds are defined as 50V or less AC RMS, or 120V or less ripple-free DC. The electrical licence requirement ensures compliance with safety regulations and maintains the integrity of signalling systems.

Restriction Agreement

Rail Industry Workers (RIWs) applying for the Queensland Rail Functional Tester competency who do not hold a valid Queensland electrical licence are required to acknowledge and sign this agreement. The agreement imposes restrictions on performing electrical work by limiting the scope of activities such individuals may undertake on Queensland Rail's signalling infrastructure to **testing only**. Queensland Rail will record each worker's electrical qualifications in the RIW system.

If you're uncertain whether the task you have been assigned requires a Qld electrical licence, contact Queensland Rail Discipline Head Signalling and Operational Systems for clarification before starting the work. It's crucial to verify licensing requirements to ensure compliance with safety regulations and avoid potential regulatory legal compliance issues.

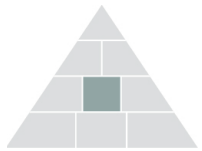
RIW Name (please print)	RIW number	Signature	Date
_____	_____	_____	_____
Witness Name (please print)	RIW number	Signature	Date
_____	_____	_____	_____



Appendix 5 – Obligations of the QR Competency holders

QR Competency holders shall:

- a) **Act with integrity** in all aspects of their work and working relationships, with due regard for the environment.
- b) **Agree and adhere** to all QR competency standards, specifications, and procedures at all times.
- c) **Maintain current** their competence and underpinning knowledge for the competency level they hold or are applying for.
- d) **Understand the purpose and rationale** behind the processes governing the work they undertake.
- e) **Perform only the work for which they hold a valid QR competency**, unless operating under direct supervision of a higher QR competent holder who is acting as a mentor in the same role.
- f) **Immediately notify QR competency approver** of any issue that may affect their ability to safely carry out work for which they are accredited.
- g) **Keep an up-to-date logbook** documenting all training and relevant work experience.
- h) **Submit their logbook at least twice per year** to a direct supervisor who can verify the accuracy of entries. The supervisor must record their name, QR competency, professional registration or licence number (e.g., RIW, IRSE, RPEQ, or equivalent), job title, and their relationship to the competency holder.
- i) **Submit their logbooks for inspection** (originals documents) when required by the RIM/RTO, employer, client, assessing agency, or IRSE Licensing, given reasonable notice.
- j) **Ensure that adequate resources are available** to safely complete any task that may impact the safety and operation of the railway, its workers, or the public before approving, certifying or commencing the work.
- k) **Remain vigilant and aware of any additional risks** and special precautions that may be required when individuals engaged in a task do not hold the necessary competency for the role (e.g., mentorship).
- l) **Immediately notify a TiC or superior** (or for consultants/contractors, the client TCC) if they identify an unsafe situation or receive an unsafe instruction. The Competency holders must take reasonable steps to avoid the unsafe condition. If concerns are ignored or pressure continues, the licence holder must document the facts in writing, provide them to the employer or client, and send a copy to the QR Discipline Head, Signalling and Operational Systems.



- m) **Undergo competency reassessment** prior to expiry and maintain all required licences or professional accreditations relevant to any role they intend to continue performing.
- n) **Comply with all reasonable request** for inspection of their licence
- o) **Work sustainably**, using resources efficiently and responsibly to minimise adverse impacts on people, railway operations and the environment.