

Specification

Signalling and Operational Systems Competence Management

MD-15-105

QUEENSLAND RAIL OFFICIAL

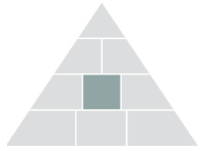
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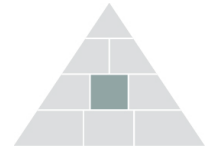


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1 Purpose

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 workers performing rail safety work have the competence to carry out their work, and
- Ensure that records of competence are maintained for all rail safety workers.

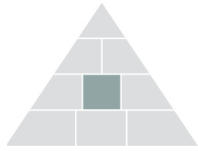
Additional obligations relating to technical competence requirements are contained within the following Queensland legislation:

- 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 MD-10-169; Signalling - Management of Externally Delivered Projects MD-13-654; Signalling - Project Delivery Standard MD-14-40; Signalling Engineering Maintenance MD-11-332 specify the competency of workers undertaking signalling and operational systems work for Queensland Rail. The purpose of this Specification is to detail Queensland Rail's Signalling and Operational Systems Competence Management and Assurance process, ensuring a rigorous process that meets regulatory obligations and accreditation requirements and address the requirements of the standards.

This Specification defines the Signalling and Operational Systems Discipline Competence Management and Assurance requirements that shall be achieved by Employees, Contractors and Consultants who perform rail safety or safety critical work for Queensland Rail.

Queensland Rail employee competence is managed in accordance with the ET & CI Career and Development Framework and through the corporate Learning and Management System, however there are roles not defined in the roles ET & CI framework or position descriptions that are specialised. Queensland Rail employees are required to be assessed as competent for these specialised signalling roles.



1.1 Scope

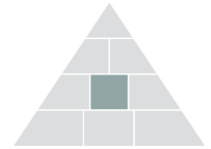
This Specification covers all Queensland Rail Signalling and Operational Systems Employees, Contractors and Consultants who carry out rail safety work in support of Queensland Rail's Signalling and Operational Systems infrastructure. Specifically, all personnel involved in the concept, design, development,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

Contractors and Consultants providing services to Queensland Rail shall be designated as Rail Industry Workers (RIW) and shall adhere to the competency management and verification requirements and processes established under the Australasian Railways Association (ARA) Rail Industry Worker Program.

Queensland Rail 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.

1.1.1 What is out of scope

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



2 Requirements of this Specification

2.1 Managerial Responsibilities

Queensland Rail Managers, Contract Managers, Contracting Organisations and Alliance Partners shall ensure all their employees, alliance members, contractors, and sub-contractors undertaking rail safety work for Queensland Rail are compliant with this Specification and maintain current evidence of continued practice of competencies. The Managers, Contract Managers, Contracting Organisations and Alliance Partners shall identify the Signalling and Operational Systems activities and then the role related to that activity.

Queensland Rail, Contracting Organisations and Alliance Partners shall ensure that only staff who have been assessed as competent in accordance with Queensland Rail processes and have had their competencies approved by Queensland Rail in accordance with this Specification work on Queensland Rail infrastructure.

2.2 Responsibilities of RIWs

Queensland Rail signalling staff and external contractors and consultants working on Queensland Rail signalling systems and equipment are performing rail safety work, as defined by Rail Safety National Law (Queensland) (RSNL). Under RSNL, rail safety workers must be assessed for competency following the Australian Qualifications Framework (AQF). The Australasian Railway Association (ARA) has developed the Rail Industry Worker (RIW) framework to provide a single competency framework across the Australian rail industry which complies with regulatory requirements and RSNL. The Rail Industry Worker System¹ is one mechanism for assessing and managing RIW competencies. Queensland Rail uses the Rail Industry Worker System for external contractors and consultants and its own system for internal staff.

Within the Rail Industry Worker System, Queensland Rail applies and assesses the competencies described in Table 6. Competencies granted by another jurisdiction are not necessarily transferrable into Queensland Rail. The Rail Industry Worker System acts as a public repository of Queensland Rail assessed competencies.

Employee (QR internal staff) and Contractor (external staff) RIWs 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 Rail Safety National Law (Queensland), Section 117 subsection (6), it is an offence to provide false or misleading information in material particulars; or to omit such information.

¹ <https://www.riw.net.au/>



- 2) Ensuring the competencies, they require to work on Signalling and Operational Systems are valid, current and relevant to the work that they undertake. When a role classification requires an RIW to work within the rail corridor, then RIW shall also comply with the medical and track safety competency requirements under the Queensland Network Rules and Procedures (QNRP).
- 3) Only undertaking work or tasks for which they have been assessed as competent by Queensland Rail, and;
- 4) Maintaining and making available to Queensland Rail records of their training and work experience for use in assessing and auditing their claimed competency in accordance with this Specification.

2.3 Signalling Competency

Queensland Rail will designate a Competency Approver, who has the authority to approve, or change approval of, the applicants to roles contained within this specification. The Competency Approver for all roles shall be the Signal and Operational Systems Discipline Head, or nominated delegate. Competencies for internal staff shall be assessed by a competent technical supervisor and approved by the Signal and Operational Systems Discipline Head or nominated delegate.

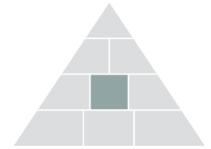
Where there is evidence of poor performance from an Employee or Contractor RIW, the Competency Approver may remove, suspend or reduce a competency. Queensland Rail may act at any time, separate from the periodic reassessment.

Queensland Rail staff are assessed for the roles listed in Table 4 of section 2.4. Table 4 shows roles, role descriptions, proficiencies and qualifications for both engineering, technical and trade levels. The assessment for Queensland Rail Employees will be recorded within the corporate Learning and Management System (LMS). 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 and Employee's manager.

The Rail Industry Worker System competencies for external contractors and consultants are listed in Table 6 of section 2.5. Table 6 shows categories, roles, role descriptions, proficiencies and qualifications for both engineering, operational systems, technical and trade levels. The assessment of competencies for Contractors and Consultants will be recorded in the Rail Industry Worker System.

The descriptions of the proficiency levels are listed in Table 7 of section 2.6.2.

The evidence required for external assessment described in Section 2.6.



Note that individual company position descriptions may or may not align in title or function with the roles listed in the matrices. In many cases the position description might involve multiple roles. In which case, the difference is simply the amount of evidence required to support all roles, for example, an RIW might hold a Bachelor of Engineering and hold the position of Signals Maintenance Engineer within their company, but the rail safety work they undertake falls under the role of Test Engineer and Maintenance Engineer. In this case both roles are selected and all evidence requirements for both roles shall be provided to Queensland Rail for assessment.

Evidence of Competency is demonstrated through verified experience and/or the possession of units of competence (or competencies) issued by organisations such as Registered Training Organisation's (RTO's).

Employee and Contractor RIWs shall be assessed on the proficiency, competence and evidence requirements of this Specification, and if approved, shall be deemed competent to undertake rail safety work under the approved role classification(s).

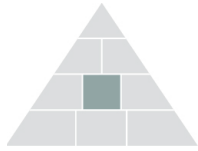
The Queensland Rail Employee or Employee's manager or Contractor RIW shall apply for each role that they would like to be assessed; Queensland Rail will assess the roles. Only when approval is given shall the Employee or Contractor RIW be permitted to undertake rail safety work within the proficiency level of that role.

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 RIW has relevant and current Signalling and Operational Systems experience. This is notwithstanding the legislative requirements such as RPEQ and the electrical licences.

2.3.1 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 level (e.g. L2) will be competent to perform a full spectrum of activities at that level. The Queensland Rail competency management framework does not provide an assessment of specialist skills and equipment types. Therefore the resource competencies and skills (specialities and equipment) needed to undertake project works shall be assessed and documented in the project planning and reporting documents (e.g. Design Management Plan / Report as per MD-15-75, Test & Commissioning Strategy and Test & Commissioning Plan as per MD-15-72 respectively).

Individuals undertaking the project works shall be accountable 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 design, or a particular Audio Frequency Track Circuit, or the Queensland Rail approach to LV power distribution and electrical safety should seek guidance from a qualified person with recognised skills in the subject. This applies at L2 and L3 as well as at L1.

2.3.2 Queensland Rail Employee requirements

Queensland Rail has specific requirements for signal testers. These requirements also apply to externally qualified signalling electricians recruited as permanent employees and Queensland Rail signalling electricians who are in the process of obtaining but have not yet attained the Certificate IV– Rail Signalling (or equivalent).

2.3.3 Testers

This specification includes testing roles for Queensland Rail staff who are known as Test Engineers, Verification Testers, Function Testers and Testers In Charge respectively. These roles are critical for the testing and commissioning of signalling and these roles have limited internal resources that are competent.

2.3.4 Competencies for ETCS

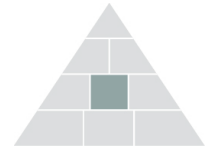
The ETCS L2 signalling system uses digital radio communication between the train and the trackside equipment to provide a movement authority to the train, in place of lineside signals. This is an addition to Queensland Rail’s existing signalling principles.

Signalling staff 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.

Competencies in the digital radio communications used by ETCS L2 are outside the scope of this Specification.

2.3.5 External Signalling Electricians Verification

Queensland Rail may employ signalling electricians who underwent formal signalling training; Certificate IV– Rail Signalling (or equivalent), externally or have not continuously worked at Queensland Rail since attaining the qualification. This employee may have previously worked for Queensland Rail, worked for a railway in Queensland and elsewhere in Australia and shall have a portfolio of evidence supporting their current competency. The signalling electrician will be competent and have obtained a Queensland electrical mechanic licence and a Certificate IV– Rail Signalling (or equivalent).



In general, signalling equipment across Australia is similar but there are differences in circuit layout/concepts, enterprise governance/ compliance and operational procedures/systems.

The following process shall provide assurance that the engagement of externally trained or experienced signalling electricians will have no ill effect on safety and reliability of the signalling system.

A newly recruited signalling electrician with skills and experiences acquired whilst working in other heavy rail networks will undertake the following:

- Work under supervision of a signal electrician for two months whilst completing a logbook supplied by Assets Training Delivery’s Technical Training
- Undertake an assessment in the third month prior to the end of probation period.

The recruit will undergo a Recognition of Current Competency (RCC) assessment conducted by Assets Training Delivery’s Technical Training team using the logbook as evidence of appropriate familiarisation with the Queensland Rail signalling system and enterprise work requirements. The Competency Approver grants issuance to conduct work as a signalling electrician upon successful completion of the RCC process which is recorded in the LMS.

If this signalling electrician requires further development, they will work under supervision until successful completion of the RCC. The RCC process may identify elective units of competency required by Queensland Rail but not already achieved by the candidate. The candidate will require enrolment and training in these units of competency before working unsupervised on the equipment to which it pertains. The Signalling Electrician (external) role and description is described in Table 1.

Role	Role Description	Competence 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 Electrical mechanic licence as required	Certified copy of Qualification and transcript Electrical mechanic licence Resume/Portfolio of Evidence

Table 1 Signalling Electrician (external)

2.3.6 Signalling Electricians without Certificate IV

Queensland Rail has signalling electricians who are undergoing training but have not yet attained the Certificate IV– Rail Signalling. They will have completed a Certificate III in Electrical or Electrotechnology and are licenced electricians. They may have achieved several units of competency toward the Certificate IV– Rail Signalling qualification but must work under the supervision of Certificate IV– Rail Signalling (or equivalent) qualified personnel.



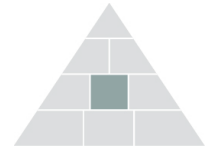
A signalling electrician undergoing training is permitted to undertake specific work tasks on signalling sub systems or equipment without supervision once attainment of applicable unit(s) of competency have been verified. The forementioned tasks corresponding to the listings in Table 2. The LMS shall be kept up to date with units attained. Equivalency shall be appropriately recognised for superseded units/awards. Information on equivalency of superseded qualifications and awards can be found at <https://training.gov.au/> or by contacting the issuing Registered Training Organisation (RTO).

Equipment	Unit Code	Unit of competency title
Track Circuits	UEERS0024	Install and maintain rail track circuit leads and bonds
	UEERS0033	Maintain train detection equipment
Level Crossings	UEERS0025	Maintain active level crossing equipment
Point Machines	UEERS0030	Maintain power-operated point actuating devices
Signals (AWS & ATP)	UEERS0032	Maintain trackside signal and train protection equipment
Vital Interlockings and non-vital telemetry systems	UEERS0034	Maintain vital relay interlocking systems
	UEERS0027	Maintain computer-based interlocking rail systems
	UEERS0029	Maintain non-vital telemetry systems
Signalling Cable Testing / Repairs	UEERS0037	Test copper rail signalling cables
	UEERS0036	Repair rail signalling power and control cables

Table 2 Signalling Electricians without Certificate IV

The Assets Training Delivery's Technical Training team will provide regular updates to the business groups of the signalling electricians who have successfully attained the units of competency. The roles and descriptions are as per Table 3.

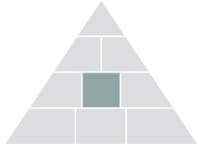
Role	Role Description	Competencies Required	Evidence Required
Signalling Electrician Track Circuits	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Certificate III in Electrotechnology Electrician UEERS0024 UEERS0033 Electrical mechanic licence	Certified copy of Qualification Evidence of units attained 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.	Certificate III in Electrotechnology Electrician UEERS0025 Electrical mechanic licence	Certified copy of Qualification Evidence of units attained 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.	Certificate III in Electrotechnology Electrician UEERS0030 Electrical mechanic licence	Certified copy of Qualification Evidence of units attained Electrical mechanic licence



Role	Role Description	Competencies Required	Evidence Required
Signalling Electrician Signals	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Certificate III in Electrotechnology Electrician UEERS0032 Electrical mechanic licence	Certified copy of Qualification Evidence of units attained Electrical mechanic licence
Signalling Electrician Interlockings/ Non-Vital	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Certificate III in Electrotechnology Electrician UEERS0034 UEERS0027 UEERS0029 Electrical mechanic licence	Certified copy of Qualification Evidence of units attained Electrical mechanic licence
Signalling Cable Testing / Repairs	Responsible for undertaking the physical maintenance and construction activities by implementing and following signalling and functional maintenance and construction documentation.	Certificate III in Electrotechnology Electrician UEERS0037 UEERS0036 Electrical mechanic licence	Certified copy of Qualification Evidence of units attained Electrical mechanic licence

Table 3 Roles and descriptions for Queensland Rail Employees

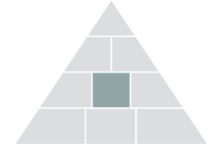
Note, Signalling Electricians undergoing training may not perform ‘set to work’ procedures post signalling system fault recoveries. However, as part of their training they are required to contribute to the safe and timely return of the signalling system to service. Valuable experience may be gained by a trainee in assisting a qualified Certificate IV– Rail Signalling personnel with fault rectification, and coordinating and documenting the work. The experience may be extended by reviewing signalling documents and correlating the installed equipment to the fault conditions observed during the remediation.



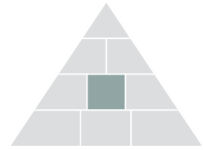
2.4 Queensland Rail internal roles and descriptions

Queensland Rail roles and descriptions for internal design and testing employees are described in Table 4. Refer to Table 7 for proficiency level descriptions.

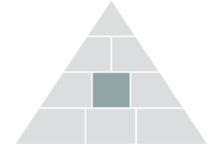
Role	Role Description	Competence Required	Evidence Required
Senior Signal Engineer Level 3	Responsible for final sign off of procedures, specifications and standards for design, construction, maintenance and testing and commissioning. This role will also provide the sign off for strategies, asset plans and concepts. In Queensland Rail this role is primarily performed by the Discipline Head or Principal Signalling Engineer.	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia Registered Professional Engineer of Queensland (RPEQ) accreditation	Certified copy of engineering qualification Certified copy of RPEQ Certificate and evidence of currency Resume/Portfolio of Evidence
Senior Signal Design Engineer Level 3	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements and capable of producing and conducting the final sign-off of signalling principles. They will be experienced with Queensland Rail's principles and standards and perform the Pass role for designs.	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia Registered Professional Engineer of Queensland (RPEQ) accreditation	Certified copy of engineering qualification Certified copy of RPEQ Certificate and evidence of currency Resume/Portfolio of Evidence
Signal Design Engineer Level 2 or Level 1	Responsible for production of signal designs and final checking against signalling principles and standards, and functional design documentation. May include the independent review of designs. All Professional Engineering Services carried out by someone in this role will be directly supervised by a responsible Senior Signal Design Engineer or Signal Design Engineer who shall be a RPEQ. They will be experienced with Queensland Rail's principles and standards and the Signal Design Engineer Level 2 will perform the Check role for designs. Undertake the Assistant Tester role	Degree in electrical engineering or equivalent engineering qualification 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 (Diplomas in relevant field)	Certified copy of engineering qualification (or certified of qualification for the equivalent pathway) Resume/Portfolio of Evidence
Signal Designer Level 2 or Level 1	Responsible for initial drafting and production of signal designs by implementing principles, standards and functional design documentation under direct supervision by an RPEQ Undertake the Assistant Tester role	Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline	Certified copy of Qualification Resume/Portfolio of Evidence



Role	Role Description	Competence Required	Evidence Required
Lead CADD Operator Level 3	<p>Responsible for</p> <ul style="list-style-type: none"> Coordinating all technical drafting aspects and resources for projects allocated to the team and with the design teams. This includes communication with clients and contractors regarding all technical drafting aspects of various projects. Communicating with and providing advice and assistance to design teams on Queensland Rail design documentation standards and the application of relevant graphics software to Computer Aided Design (CAD). Developing and documenting and maintaining all drafting and document control standards for safety critical signalling information and systems required for the business <p>Required for large /complex projects.</p>	<p>Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline or 5+ years' experience in railway signalling is required</p> <p>And Qualification in Bentley Microstation / Promis.e</p>	<p>Certified copy of Qualification</p> <p>Resume/Portfolio of Evidence</p>
CADD Operator Level 2 or Level 1	<p>Responsible for drafting of signal designs associated with Promis.e-based projects</p>	<p>Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline or 3+ years of experience in railway signalling</p> <p>And Qualification in Bentley Microstation / Promis.e</p>	<p>Certified copy of Qualification</p> <p>Resume/Portfolio of Evidence</p>
Senior ETCS Design Engineer Level 3	<p>Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements and capable of producing and conducting the final sign-off of ETCS principles.</p>	<p>Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>Registered Professional Engineer of Queensland (RPEQ) accreditation</p>	<p>Certified copy of engineering qualification</p> <p>Certified copy of RPEQ Certificate and evidence of currency</p> <p>Resume/Portfolio of Evidence</p>
ETCS Design Engineer Level 2 or Level 1	<p>Responsible for production of ETCS designs and final checking against signalling and ETCS principles and standards, and functional design documentation. May include the independent review of designs. All Professional Engineering Services carried out by someone in this role will be directly supervised by a responsible Senior ETCS Design Engineer or ETCS Design Engineer who shall be a RPEQ.</p> <p>Undertake the Assistant Tester role</p> <p>An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma (Diplomas in relevant field)</p>	<p>Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p>	<p>Certified copy of engineering qualification (or certified of qualification for the equivalent pathway)</p> <p>Resume/Portfolio of Evidence</p>



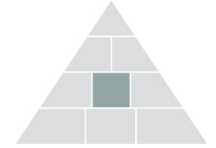
Role	Role Description	Competence Required	Evidence Required
Senior Principles Test Engineer Level 3	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements and capable of principles testing and conducting the final sign-off of signalling works. This level will develop and include independent signalling principles validation.	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia Registered Professional Engineer of Queensland (RPEQ) accreditation	Certified copy of engineering qualification Certified copy of RPEQ Certificate and evidence of currency Resume/Portfolio of Evidence
Principles Test Engineer Level 2	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements and capable of principles testing and conducting the final sign-off of signalling works. May include independent signalling principles validation.	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia	Certified copy of engineering qualification Resume/Portfolio of Evidence
Principles Test Engineer Level 1	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements and capable of principles testing This level may be for people who are novices under the direct supervision of an RPEQ or competent principle tester without an RPEQ but still require a level of supervision to meet the RPEQ legislation requirements. This will all be documented in the principles test plan.	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia	Certified copy of engineering qualification Resume/Portfolio of Evidence
Senior Test Engineer Level 3	Responsible for: <ul style="list-style-type: none"> Defining test strategies and test plans. Construction testing, function testing, integration testing, principles testing and design acceptance testing and the commissioning into service. Verifying that all tests have been completed as per the test plan. Responsible for checking, verification and conducting the final sign-off of signalling test activities. Approval of testing and commissioning plans. This role includes performing the role of the Tester in Charge.	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia Registered Professional Engineer of Queensland (RPEQ) accreditation	Certified copy of engineering qualification Certified copy of RPEQ Certificate and evidence of currency Resume/Portfolio of Evidence



Role	Role Description	Competence Required	Evidence Required
Tester In Charge -TIC Level 3	<p>Responsible for production of Signalling Test & Commission documentation, testing methodology and testing charts for approval by the Senior Test Engineer for Major projects. One Tester in Charge will be appointed overall Tester in Charge will be in overall charge of the testing and commissioning and of implementation of the approved test plan. Other TICs will be able to manage shifts.</p> <p>When the test and commissioning is not undertaken to prescribed procedures or require the undertaking of Professional Engineering Service, the TIC shall be required to be an RPEQ or refer to an RPEQ for authorisation.</p> <p>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.</p>	<p>Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma (Diplomas in relevant field)</p>	<p>Certified copy of engineering qualification (or certified of qualification for the equivalent pathway)</p> <p>Resume/Portfolio of Evidence</p>
Tester In Charge -TIC Level 2	<p>Responsible for production of Signalling Test & Commission documentation, testing methodology and testing charts for approval by the Senior Test Engineer. One Tester in Charge will be appointed overall Tester in Charge will be in overall charge of the testing and commissioning and of implementation of the approved test plan. Other TICs will be able to manage shifts.</p> <p>When the test and commissioning is not undertaken to prescribed procedures or require the undertaking of Professional Engineering Service, the TIC shall be required to be an RPEQ or refer to an RPEQ for authorisation.</p> <p>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.</p>	<p>Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma (Diplomas in relevant field)</p>	<p>Certified copy of engineering qualification (or certified of qualification for the equivalent pathway)</p> <p>Resume/Portfolio of Evidence</p>
Tester In Charge -TIC (Asset Renewal)	<p>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.</p> <p>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.</p>	<p>Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma (Diplomas in relevant field)</p>	<p>Certified copy of engineering qualification (or certified of qualification for the equivalent pathway)</p> <p>Resume/Portfolio of Evidence</p>



Role	Role Description	Competence Required	Evidence Required
Function Tester	<p>Responsible for function testing and undertaking test activities by following signalling documentation and functional test documentation. The tests would include:</p> <ul style="list-style-type: none"> • Contact Proving Test • Circuit Function Test • Circuit Strap & Function Test • Through System Function Test • Power Supply Polarity and Isolation Tests • Points Correspondence Test • Points Out of Correspondence Test • Earth Leakage Test • Correspondence testing to Control Centre • Apparatus Function Test 	<p>Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline</p> <p>Electrical mechanic licence as required</p>	<p>Certified copy of Qualification</p> <p>Electrical mechanic licence</p> <p>Resume/Portfolio of Evidence</p>
Function Tester (Asset Renewal)	<p>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 Design/Engineering Office</p>	<p>Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline</p> <p>Electrical mechanic licence as required</p>	<p>Certified copy of Qualification</p> <p>Electrical mechanic licence</p> <p>Resume/Portfolio of Evidence</p>
Verification Tester	<p>Responsible for performing verification testing activities by following signalling documentation and functional test documentation. The tests would include:</p> <ul style="list-style-type: none"> • Documentation Check • Correlation Check • Apparatus Inspection (Relay/Equipment/Wire/Pin coding) • Wire Count • Null Count • Insulation Test • Bell Continuity Test • Hand Trace • Equipment layout • Standards Compliance Checks 	<p>Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline</p> <p>Electrical mechanic licence as required</p>	<p>Certified copy of Qualification</p> <p>Electrical mechanic licence</p> <p>Resume/Portfolio of Evidence</p>



Role	Role Description	Competence Required	Evidence Required
Signalling Electrician	(External)	Cert-III in Electrical or Electrical Technology	Electrical mechanic licence (QLD)
Signalling Electrician	Signalling Cable Testing / Repairs	Currently enrolled in a nationally accredited Cert IV- Railway Signalling AQF training course.	QR Endorsement for the units of competency completed
Signalling Electrician	Track Circuits	Currently enrolled in a nationally accredited Cert IV- Railway Signalling AQF training course.	QR Endorsement for the units of competency completed
Signalling Electrician	Level Crossings	Currently enrolled in a nationally accredited Cert IV- Railway Signalling AQF training course.	QR Endorsement for the units of competency completed
Signalling Electrician	Signals	Currently enrolled in a nationally accredited Cert IV- Railway Signalling AQF training course.	QR Endorsement for the units of competency completed
Signalling Electrician	Point Machines	Currently enrolled in a nationally accredited Cert IV- Railway Signalling AQF training course.	QR Endorsement for the units of competency completed
Signalling Electrician	Interlockings and Non-vital systems	Currently enrolled in a nationally accredited Cert IV- Railway Signalling AQF training course.	QR Endorsement for the units of competency completed

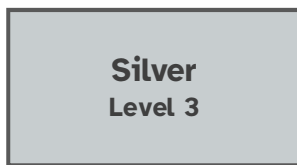
Table 4 Queensland Rail Signalling and Operational Systems Roles and Description



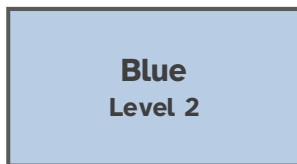
2.5 Consultant and contractor roles and descriptions

The roles and qualifications of signalling engineering, operational systems and technician works performed by external consultants and contractors for Queensland Rail are described in Table 6. A summary of the qualifications required for each role is presented in Appendix 2. The relationships between roles and proficiency levels are presented in graphical form in Appendix 3.

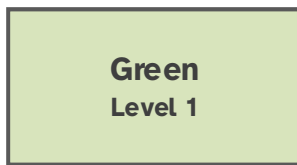
The following colour coding is applied in Table 6 and Appendix 3.



Competency role at Proficiency Level 3 – Expert



Competency role at Proficiency Level 2 – Practitioner



Competency role at Proficiency Level 1 – Novice

The definitions of Table 5 apply in Table 6.

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.

Table 5 Signalling works complexity.



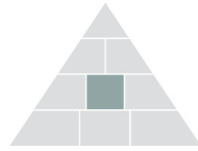
Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
Queensland Rail Chief Engineer	Discipline Head, Signalling and Operational Systems	Proficiency Level 3	Responsible for final sign off of procedures, specifications and standards for design, construction, maintenance and testing and commissioning. This role will also provide the sign off for strategies, asset plans and concepts. In Queensland Rail this role is primarily performed by the Discipline Head	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia Registered Professional Engineer of Queensland (RPEQ) accreditation. 10+ years of experience in railway signal engineering	Certified copy of engineering qualification Certified copy of current RPEQ Certificate Work Experience / Log Book demonstrating currency
Signalling and Operational Systems Discipline Head	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. Perform the " Pass " role for designs. Provide guidance and interpretation of Queensland Rail's signalling principles and standards, based on deep experience and understanding.	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia Registered Professional Engineer of Queensland (RPEQ) accreditation. 10+ years of experience in railway signal design	Certified copy of engineering qualification Certified copy of current RPEQ Certificate Work Experience / Log Book demonstrating currency
	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. Perform the " Check " role for designs. 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.	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia 5+ years of experience in railway signal design Optionally, RPEQ accreditation A Signal Design Engineer L2 must demonstrate: <ul style="list-style-type: none"> a high level of understanding of Queensland Rail signalling principles and standards, signalling plans, signal control tables; a high level of understanding of level crossing signalling and operations; a high level of skill and knowledge of PBI interlocking technologies (MicroLok, Westrace, Westlock, VPI and SSI), and associated data structures and data preparation processes; a high level of skill and knowledge of relay-based interlocking technology. 	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency
	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. All work shall be mentored by a Signal Design Engineer or Signal Designer Level 2. 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 or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency



Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	Signal Designer	Proficiency Level 2	<p>Responsible for drafting and initial production of signal designs, design related calculations by implementing principles, standards and functional design documentation.</p> <p>Perform the "Check" role for designs.</p> <p>Preparation of Signalling Concept documents, Technical and User Requirement Specifications.</p> <p>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.</p>	<p>Railway Signalling Certificate IV,</p> <ul style="list-style-type: none"> or Diploma or Advance Diploma or higher in relevant discipline, or IRSE Signalling Designer licence, or IRSE Signalling Designer Assistant licence. <p>5+ years of experience in railway signalling</p> <p>A Signal Designer L2 must demonstrate:</p> <ul style="list-style-type: none"> a high level of understanding of Queensland Rail signalling principles and standards, signalling plans, signal control tables; a high level of understanding of level crossing signalling and operations; a high level of skill and knowledge of PBI interlocking technologies (MicroLok, Westrace, Westlock, VPI and SSI), and associated data structures and data preparation processes; a high level of skill and knowledge of relay-based interlocking technology. 	<p>Certified copy of qualification</p> <p>Current licence(s), including endorsement certificates</p> <p>Work Experience / Log Book demonstrating currency</p>
	Signal Designer	Proficiency Level 1	<p>Responsible for drafting and initial production of signal designs, design related calculations by implementing principles, standards and functional design documentation.</p> <p>All work shall be mentored by a Signal Design Engineer L2, or Signal Designer L2.</p> <p>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.</p>	<p>Railway Signalling Certificate IV,</p> <ul style="list-style-type: none"> or Diploma or Advance Diploma or higher in relevant discipline, or IRSE Signalling Designer licence, or IRSE Signalling Designer Assistant licence. 	<p>Certified copy of qualification</p> <p>Current licence(s), including endorsement certificates</p> <p>Work Experience / Log Book demonstrating currency</p>
	Lead CADD Operator	Proficiency Level 3	<p>Responsible for:</p> <p>Coordinating all technical drafting aspects and resources for projects allocated to the team and with the design teams. This includes communication with clients and contractors regarding all technical drafting aspects of various projects.</p> <p>Communicating with and providing advice and assistance to design teams on Queensland Rail design documentation standards and the application of relevant graphics software to Computer Aided Design (CAD).</p> <p>Developing and documenting and maintaining all drafting and document control standards for safety critical signalling information and systems required for the business</p>	<p>Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline</p> <p>Qualification in Promise and MicroStation.</p> <p>3+ years of experience in railway signalling.</p> <p>With no qualification, 5+ years' experience in railway signalling is required</p>	<p>Certified copy of Qualification and Training records</p> <p>Work Experience / Log Book demonstrating currency</p>
	CADD Operator	Proficiency Level 2	<p>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.</p> <p>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.</p>	<p>Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline</p> <p>Qualification in Promise and MicroStation</p> <p>Or 3+ years of experience in railway signalling</p>	<p>Certified copy of Qualification and Training records</p> <p>Work Experience / Log Book demonstrating currency</p>
	CADD Operator	Proficiency Level 1	<p>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.</p> <p>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.</p> <p>All work shall be mentored by a CADD Operator L2, or Signal Design Engineer L2, or Signal Designer L2.</p>	<p>Qualification (Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline</p> <p>Qualification in Promise and MicroStation</p>	<p>Certified copy of Qualification and Training records</p> <p>Work Experience / Log Book demonstrating currency</p>



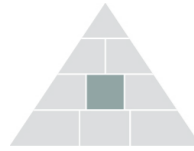
Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
Signalling and Operational Systems Discipline Head	Senior Independent Safety Assessor & Auditor	Proficiency Level 3	Responsible for providing specialist systems safety engineering services related to the introduction 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 engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia. Registered Professional Engineer of Queensland (RPEQ) accreditation. 5+ years of experience in engineering auditing of safety critical systems.	Certified copy of engineering qualification. Certified copy of current RPEQ Certificate Work Experience / Log Book demonstrating currency
	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. 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 engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia. Registered Professional Engineer of Queensland (RPEQ) accreditation. 5+ years of experience in engineering auditing of safety critical systems, including railway experience. Optionally, RPEQ accreditation. An equivalent pathway may be considered for non-engineering degrees candidate.	Certified copy of engineering qualification. Certified copy of current RPEQ Certificate Work Experience / Log Book demonstrating currency
	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. 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 engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia. Registered Professional Engineer of Queensland (RPEQ) accreditation. Relevant experience in engineering auditing of safety critical systems. An equivalent pathway may be considered for non-engineering degrees candidate.	Certified copy of engineering qualification. Certified copy of current RPEQ Certificate Work Experience / Log Book demonstrating currency
Signalling and Operational Systems Discipline Head	Senior ETCS Design Engineer	Proficiency Level 3	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements and capable of producing and conducting the final sign-off of ETCS principles	Degree in electrical engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia Registered Professional Engineer of Queensland (RPEQ) accreditation. 10+ years of experience in railway signal design	Certified copy of engineering qualification Certified copy of current RPEQ Certificate Work Experience / Log Book demonstrating currency
	ETCS Design Engineer	Proficiency Level 2	Responsible for production of ETCS designs and final checking against signalling principles and standards, and functional design documentation. May include the independent review of designs. 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 or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia. Optionally, RPEQ accreditation	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency
	ETCS Design Engineer	Proficiency Level 1	Responsible for production of ETCS designs and final checking against signalling principles and standards, and functional design documentation. May include the review of designs. 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 or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia. Prerequisite qualification: Signal Design Engineer Level 2	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency



Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	ETCS Designer	Proficiency Level 2	Responsible for production of ETCS designs and final checking against signalling principles 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 an ETCS Design Engineer, L2 or higher, with RPEQ accreditation.	Railway Signalling Certificate IV, <ul style="list-style-type: none"> or Diploma or Advance Diploma or higher in relevant discipline, or IRSE Signalling Designer licence. Demonstrated experience in ETCS signalling design.	Certified copy of qualification Current licence(s), including endorsement certificates Work Experience / Log Book demonstrating currency
	ETCS Designer	Proficiency Level 1	Responsible for production of ETCS designs and final checking against signalling principles and standards, and functional design documentation. May include the review of designs. 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, <ul style="list-style-type: none"> 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 licence(s), including endorsement certificates Work Experience / Log Book demonstrating currency
Signalling and Operational Systems Discipline Head	Senior Signal Mechanical Design Engineer	Proficiency Level 3	Responsible for checking / verification and including the final sign-off of mechanical designs.	Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia Registered Professional Engineer of Queensland (RPEQ) accreditation. 10+ years of experience in railway signal mechanical engineering	Certified copy of engineering qualification Certified copy of current RPEQ Certificate Work Experience / Log Book demonstrating currency
	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 engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia. 5+ years of experience in railway mechanical signalling Optionally, RPEQ accreditation.	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency
	Signal Mechanical Design Engineer	Proficiency Level 1	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. All work shall be mentored by a Signal Mechanical Design Engineer L2, or Signal Mechanical Designer L2.	Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia.	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency
	Signal Mechanical Designer	Proficiency Level 2	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 or Signal Mechanical Designer, Level 2.	Qualification (Mechanical Cert IV, Diploma, Adv. Diploma, Degree) in a relevant discipline. 3+ years of experience in railway signalling	Certified copy of qualification Work Experience / Log Book demonstrating currency
	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, Degree) in a relevant discipline.	Certified copy of qualification Work Experience / Log Book demonstrating currency



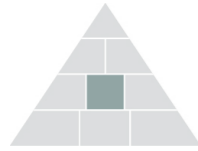
Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
Signalling and Operational Systems Discipline Head	Senior Signalling Constructor <i>Formerly Senior Construction Engineer</i>	Proficiency Level 3	<p>Responsible for the development of methodologies to manage and organise signalling construction activities for moderate to complex multi-disciplinary signalling projects.</p> <p>Responsible for the final sign-off for the construction of the wayside signalling works.</p> <p>Responsible for ensuring that the built signalling system infrastructure is safe and compliant with all applicable and appropriate legislation, standards, procedures, specifications, and assurance governance requirements.</p> <p>Provide final sign-off for construction certification using ITPs.</p> <p>Ensure that all construction related task/activities are performed by staff competent in signalling construction.</p> <p>Provide Signalling Construction Handover certification to TIC / TCC to enable testing to commence and support pre-testing/testing activity.</p> <p>Any work considered to be a Professional Engineering Service must be under direct supervision of a RPEQ in the relevant engineering discipline.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia.</p> <p>An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma (Diplomas in relevant field)</p> <p>10+ years of experience in railway signal engineering</p> <p>5+ years in responsible position of signal construction management</p>	<p>Certified copy of engineering qualification, or</p> <ul style="list-style-type: none"> certified copy of qualification for equivalent pathway <p>Work Experience / Log Book demonstrating currency</p>
	Signalling Constructor <i>Formerly Construction Engineer</i>	Proficiency Level 2	<p>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.</p> <p>The role ensures that the built signalling system infrastructure is safe, that is constructed to applicable standards, procedures and specifications, and that it meets the construction assurance requirements.</p> <p>Provide sign-off for construction certification using ITPs.</p> <p>Ensure that all construction related tasks and activities are performed by staff competent in signalling construction.</p> <p>Liaise with TIC /TCC to support the Signalling Construction Handover certificate process and provide assistance to enable testing to commence during the pre-testing/testing phase of the works.</p> <p>Any work considered to be a Professional Engineering Service must be under direct supervision of a RPEQ in the relevant engineering discipline.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia.</p> <p>An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma (Diplomas in relevant field)</p> <p>5+ years of experience in railway signal engineering</p>	<p>Certified copy of engineering qualification, or</p> <ul style="list-style-type: none"> certified copy of qualification for equivalent pathway <p>Work Experience / Log Book demonstrating currency</p>
	Signalling Constructor <i>Formerly Construction Engineer</i>	Proficiency Level 1	<p>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.</p> <p>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.</p> <p>Ensure that construction related tasks and activities are performed by staff competent in signalling construction.</p> <p>All work shall be mentored by a Signal Constructor L2.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia.</p> <p>An equivalent pathway may be considered for Railway Signalling Certificate IV or Diploma or Advance Diploma (Diplomas in relevant field)</p>	<p>Certified copy of engineering qualification, or</p> <ul style="list-style-type: none"> certified copy of qualification for equivalent pathway <p>Work Experience / Log Book demonstrating currency</p>
	Signal Electrician Construction <i>Formerly: Signal Technician Construction</i>	Proficiency Level 2	<p>Responsible for the signal trade / site construction for undertaking the physical construction activities by interpreting signalling documentation, functional construction documentation and 'set to work'.</p>	<p>Certificate IV in Rail Signalling</p> <p>Experience in railway signalling construction.</p>	<p>Certified copy of Qualifications / Licenses</p> <p>Work Experience / Log Book demonstrating currency</p>
	Signal Electrician Construction <i>Formerly: Signal Technician Construction</i>	Proficiency Level 1	<p>Responsible for the signal trade / site construction for undertaking the physical construction activities by interpreting signalling documentation, functional construction documentation and 'set to work'.</p> <p>All work shall be mentored by a Signal Electrician Construction L2.</p>	<p>Certificate III in Electrotechnology including the unit(s) specific to the tasks being performed.</p>	<p>Certified copy of Qualifications / Licenses</p> <p>Work Experience / Log Book demonstrating currency</p>



Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	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.	Electrical Mechanic Licence. 3+ years of experience in railway signalling	Certified copy of Qualifications / Licenses Work Experience / Log Book demonstrating currency
	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. They may support track renewal activities by disconnecting and reconnecting equipment but may not perform any specific testing, adjustment, and/or certification.	Electrical Mechanic Licence.	Certified copy of Qualifications / Licenses Work Experience / Log Book demonstrating currency
	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 / Licenses Work Experience / Log Book demonstrating currency
	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 / Licenses Work Experience / Log Book demonstrating currency
	Signal Trade Assistant <i>Formerly: Signal Trades/Assistants – Cables, Linesman Joints</i>	Proficiency Level 2	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 civil construction works, and labouring works under direct supervision where a signalling technical skills and requirement applies to the installation.	AQF certificate, with qualification and experience specific to the railway tasks being performed.	Certified copy of Trade Certificates Work Experience / Log Book demonstrating currency
	Signal Trade Assistant <i>Formerly: Signal Trades/Assistants – Cables, Linesman Joints</i>	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 civil construction works, and labouring works, where the rail specific skill applies to the installation. The works shall be carried out 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 Work Experience / Log Book demonstrating currency
Signalling and Operational Systems Discipline Head	Senior Maintenance Engineer	Proficiency Level 3	Responsible for maintenance of the signalling system. Produce and manage maintenance plans, checksheets 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 engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia 10+ years of experience in rail signalling engineering 5+ years of experience in responsible signal maintenance management position	Certified copy of engineering qualification, or • certified copy of qualification for equivalent pathway Work Experience / Log Book demonstrating currency
	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 checksheets. Assist with FMEAs and preparing SA forms for sign-off Undertake 2 nd line assurance activities May require undertaking testing roles as defined under the Signal Testing Roles.	Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia 5+ years of experience in railway signalling	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency



Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	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 checksheets. 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 engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia 1yr experience in railway signalling	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency
	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 checksheets. Assist with FMEAs and preparing SA forms for sign-off Undertake 2 nd 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 5+ years of experience in railway signalling	Certified copy of qualification Work Experience / Log Book demonstrating currency
	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 checksheets. May require undertaking testing roles as defined under the Signal Testing Roles. All work shall be supervised 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 1yr experience in railway signalling	Certified copy of qualification Work Experience / Log Book demonstrating currency
	Signal Maintenance Electrician <i>Formerly: Signal Technician Maintainer</i>	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 being performed. Electrical Mechanic Licence 5+ years of experience in railway signalling	Certified copy of qualification Certified copy of Electrical Mechanic Licence Work Experience / Log Book demonstrating currency
	Signal Maintenance Electrician <i>Formerly: Signal Technician Maintainer</i>	Proficiency Level 1	Responsible for undertaking the physical 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.	Certificate III in Electrical Electrical Mechanic Licence	Certified copy of qualification Certified copy of Electrical Mechanic Licence Work Experience / Log Book demonstrating currency
	Signal Maintainer (Mechanical Works)	Proficiency Level 2	Responsible for undertaking the physical mechanical maintenance activities by implementing signalling technical maintenance plans.	Certificate III in Rail Signalling 3+ years of experience in railway signalling	Certified copy of qualification Work Experience / Log Book demonstrating currency
	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 Rail Signalling	Certified copy of qualification Work Experience / Log Book demonstrating currency
Signalling and Operational Systems Discipline Head	Senior Principles Test Engineer	Proficiency Level 3	Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements. Undertaking Principles Testing. Oversee Principles Testing of Major Works . 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 engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia. Registered Professional Engineer of Queensland (RPEQ) accreditation. 10+ years of experience in railway signal engineering	Certified copy of engineering qualification Certified copy of RPEQ Certificate and evidence of currency Work Experience / Log Book demonstrating currency



Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	Principles Test Engineer	Proficiency Level 2	<p>Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements.</p> <p>Prepare Principles Testing plans.</p> <p>Oversee Principles Testing of Complex or Simple Works.</p> <p>Undertaking Principles Testing, and be able to develop signalling principles.</p> <p>A L2 Principles Test Engineer without experience in Queensland Rail signalling principles shall be supervised by a Senior Principles Test Engineer until such experience is acquired.</p> <p>All work is considered to be 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.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>Optionally, RPEQ accreditation</p>	<p>Certified copy of engineering qualification</p> <p>Work Experience / Log Book demonstrating currency</p>
	Principles Test Engineer	Proficiency Level 1	<p>Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements.</p> <p>Undertaking Principles Testing.</p> <p>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.</p> <p>A candidate shall be mentored in Queensland Rail Principles Testing practises until sufficient experience has been acquired. A Mentoring Plan (MP) shall document activities during the mentoring period.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>A Principles Test Engineer L1 must have the following prerequisite competencies:</p> <ul style="list-style-type: none"> • Functional Tester L2 • Signal Design Engineer L2 	<p>Certified copy of engineering qualification</p> <p>Work Experience / Log Book demonstrating currency</p>
	Principles Tester	Proficiency Level 2	<p>Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements.</p> <p>Prepare Principles Testing plans.</p> <p>Oversee Principles Testing of Complex or Simple Works.</p> <p>Undertaking Principles Testing, and be able to develop signalling principles.</p> <p>A L2 Principles Tester without experience in Queensland Rail signalling principles shall be supervised by a Senior Principles Test Engineer until such experience is acquired.</p> <p>All work is considered to be a Professional Engineering Service. Hence, it must be under the direct supervision of a Principles Test Engineer L2 or L3 with RPEQ accreditation.</p>	<p>Railway Signalling Certificate IV,</p> <ul style="list-style-type: none"> • or Diploma or Advance Diploma in relevant field, • or IRSE Principles Testing licence. <p>5+ years of experience in railway signal design</p>	<p>Certified copy of qualification</p> <p>Current licence(s), including endorsement certificates</p> <p>Work Experience / Log Book demonstrating currency</p>
	Principles Tester	Proficiency Level 1	<p>Responsible for interpreting and complying with Rules and Operating Procedures and Operational Requirements.</p> <p>Undertaking Principles Testing.</p> <p>All work is considered to be a Professional Engineering Service. Hence, it must be under the direct supervision of a Principles Test Engineer L2 or L3 with RPEQ accreditation.</p> <p>A candidate shall be mentored in Queensland Rail Principles Testing practises until sufficient experience has been acquired. A Mentoring Plan (MP) shall document activities during the mentoring period.</p>	<p>Railway Signalling Certificate IV,</p> <ul style="list-style-type: none"> • or Diploma or Advance Diploma in relevant field, • or IRSE Principles Testing licence. <p>3+ years of experience in railway signal design</p> <p>A Principles Tester L1 must have the following prerequisite competency:</p> <ul style="list-style-type: none"> • Functional Tester L2 • Signal Designer L2 	<p>Certified copy of qualification</p> <p>Current licence(s), including endorsement certificates</p> <p>Work Experience / Log Book demonstrating currency</p>



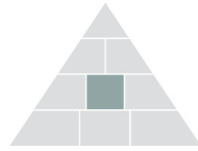
Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	Senior Test Engineer	Proficiency Level 3	<p>Responsible for determining the Testing and Commissioning Strategy and Testing Plans for a project.</p> <p>Responsible for approval of the Testing and Commissioning Strategy and Testing Plans for a project. This includes construction testing, function testing, principles testing, design acceptance testing and commissioning into service.</p> <p>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.</p> <p>Verifies that all tests have been completed as per the Testing Plan.</p> <p>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.</p> <p>Provides RPEQ supervision for Professional Engineering Services for testing and commissioning activities.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>Registered Professional Engineer of Queensland (RPEQ) accreditation.</p> <p>10+ years of experience in railway signal engineering</p>	<p>Certified copy of engineering qualification</p> <p>Certified copy of RPEQ Certificate and evidence of currency</p> <p>Work Experience / Log Book demonstrating currency</p>
	Test Engineer	Proficiency Level 2	<p>Responsible for production of Signalling Testing & Commissioning documentation, testing methodology and testing charts for approval by the Senior Test Engineer or Principles Tester L3.</p> <p>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.</p> <p>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.</p> <p>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.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>10+ years of experience in railway signalling.</p>	<p>Certified copy of engineering qualification</p> <p>Work Experience / Log Book demonstrating currency</p>
	Test Engineer	Proficiency Level 1	<p>Under mentorship of a Test Engineer or TIC, L2 or higher, the Test Engineer L1 shall undertake the following duties:</p> <ul style="list-style-type: none"> 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 commissionings; undertake shift TIC duties. <p>Any work which does not follow prescribed testing procedures or which is considered to be a Professional Engineering Service shall be under direct supervision of a Test Engineer, L2 or higher, with RPEQ accreditation.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>Prerequisite Competency: Functional Tester Level 2</p>	<p>Certified copy of engineering qualification</p> <p>Work Experience / Log Book demonstrating currency</p>



Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	Tester In Charge <i>formerly Test Engineer L3</i>	Proficiency Level 3	<p>Responsible for production of the Testing and Commissioning Strategy and Testing Plans for a project, including Complex or Major Works.</p> <p>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.</p> <p>May undertake the role of Tester in Charge (TIC) and commissioning coordinator.</p> <p>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.</p> <p>Complex or Major Works shall employ a Senior Test Engineer Level 3 to discharge RPEQ and legislative obligations.</p> <p>Performs the role of the Tester in Charge for the certification and handover process.</p> <p>For Complex or Major Works, act as the Testing and Commissioning Coordinator (TCC) to undertake audit and assurance activities.</p> <p>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.</p>	<p>Diploma or Advance Diploma in electrical engineering</p> <ul style="list-style-type: none"> • or Railway Signalling Certificate IV • or IRSE Tester in Charge licence <p>10+ years of experience in railway signalling.</p> <p>Electrical Mechanic License</p>	<p>Certified copy of qualification</p> <p>Current licence(s), including endorsement certificates</p> <p>Work Experience / Log Book demonstrating currency</p>
	Tester In Charge	Proficiency Level 2	<p>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.</p> <p>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.</p> <p>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.</p> <p>The Tester In Charge L2 may perform QR TCC duties for Simple or Complex Works where appointed.</p> <p>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.</p>	<p>Diploma or Advance Diploma in electrical engineering</p> <ul style="list-style-type: none"> • or Railway Signalling Certificate IV • or IRSE Tester in Charge licence <p>10+ years of experience in railway signalling.</p>	<p>Certified copy of qualification</p> <p>Current licence(s), including endorsement certificates</p> <p>Work Experience / Log Book demonstrating currency</p>
	Tester In Charge	Proficiency Level 1	<p>Under mentorship of a Test Engineer or TIC, L2 or higher, the TIC L1 shall undertake the following duties:</p> <ul style="list-style-type: none"> • 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 commissionings; • undertake shift TIC duties. <p>Any work which does not follow prescribed testing procedures or which is considered to be a Professional Engineering Service shall be under direct supervision of a Test Engineer, L2 or higher, with RPEQ accreditation.</p>	<p>Diploma or Advance Diploma in electrical engineering</p> <ul style="list-style-type: none"> • or Railway Signalling Certificate IV • or IRSE Tester in Charge licence <p>Prerequisite Competency: Functional Tester Level 2</p> <p>10+ years of experience in railway signalling</p>	<p>Certified copy of qualification</p> <p>Current licence(s), including endorsement certificates</p> <p>Work Experience / Log Book demonstrating currency</p>



Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	Functional Tester <i>Formerly: Signal Testing Officer</i>	Proficiency Level 3	<p>Responsible for undertaking testing activities by following signalling design and testing documentation and functional test documentation.</p> <p>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.</p> <p>Performing site-based signalling testing as directed by the Tester in Charge (TIC), supporting the development of test plans and work instructions.</p> <p>Liaise and support the TIC in the investigation of faults and failures throughout the project lifecycle providing input as required.</p>	<p>Certificate IV in Rail Signalling</p> <p>Electrical Mechanic Licence</p> <p>10+ years of experience in railway signalling</p> <p>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.</p>	<p>Certified copy of Qualification / Licence</p> <p>Certified copy of Electrical Mechanic Licence</p> <p>Work Experience / Log Book demonstrating currency</p>
	Functional Tester <i>Formerly: Signal Testing Officer</i>	Proficiency Level 2	<p>Responsible for undertaking testing activities by following signalling design and testing documentation and functional test documentation.</p> <p>Responsible for undertaking site-based inspection and testing (Verification, Set to Work and Function Testing) of wayside equipment or modified signalling installations.</p> <p>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.</p> <p>A Functional Tester L2 with an Electrical Mechanic Licence is permitted to perform site-based testing of signalling power systems for AS 3000 compliance.</p> <p>Perform site-based signalling testing as directed by the Tester in Charge (TIC), supporting the development of test plans and work instructions.</p> <p>Liaise and support the TIC in the investigation of faults and failures throughout the project lifecycle providing input as required.</p>	<p>Certificate III Electrical, or</p> <ul style="list-style-type: none"> Diploma or Advance Diploma or higher in relevant discipline, or IRSE Signalling Functional Tester licence. <p>Optional, Electrical Mechanic Licence, or form "Electrical Licence Requirements for Queensland Rail Signal Function Testing"</p> <p>Working knowledge of electrical safety principles</p> <p>5+ years of experience in railway signalling</p> <p>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.</p>	<p>Certified copy of Qualification / Licence</p> <p>Certified copy of Electrical Mechanic Licence</p> <p>Work Experience / Log Book demonstrating currency</p>
	Functional Tester <i>Formerly: Signal Testing Officer</i>	Proficiency Level 1	<p>Responsible for undertaking testing activities by following signalling design and testing documentation and functional test documentation.</p> <p>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.</p> <p>A Functional Tester L1 with an 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).</p> <p>Liaise and support the TIC in the investigation of faults and failures throughout the project lifecycle providing input as required.</p> <p>All work shall be mentored by a Test Engineer L2 or TIC L2 or Functional Tester L2.</p>	<p>Certificate III Electrical, or</p> <ul style="list-style-type: none"> Diploma or Advance Diploma or higher in relevant discipline, or IRSE Signalling Functional Tester licence. <p>Optional, Electrical Mechanic Licence, or form "Electrical Licence Requirements for Queensland Rail Signal Function Testing"</p> <p>Working knowledge of electrical safety principles</p> <p>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.</p>	<p>Certified copy of Qualification / Licence</p> <p>Certified copy of Electrical Mechanic Licence</p> <p>Work Experience / Log Book demonstrating currency</p>
	Verification Tester	Proficiency Level 2	<p>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.</p> <p>Performing verification duties as directed by the Tester in Charge (TIC).</p> <p>A person without an Electrical Mechanic Licence shall be accompanied on site by a licensed electrician.</p> <p>May perform field and circuit correlation activities under direct supervision of Functional Tester L2.</p>	<p>Degree in relevant engineering discipline or equivalent engineering qualification, or</p> <ul style="list-style-type: none"> Certificate III Electrical, or Diploma or Advance Diploma or higher in relevant discipline, or IRSE Licence 1.3.155X Verification Tester (Operational Railway). <p>Optional, Electrical Mechanic Licence, or form "Electrical Licence Requirements for Queensland Rail Signal Function Testing"</p>	<p>Certified copy of Qualification / Licence</p> <p>Certified copy of Electrical Mechanic Licence</p> <p>Work Experience / Log Book demonstrating currency</p>

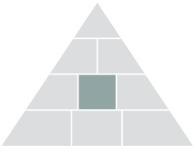


Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	Verification Tester	Proficiency Level 1	<p>Responsible for undertaking tests on signalling components and equipment in accordance with the test specifications and plans in preparation for Functional Testing in a factory environment or non-operational railway (green field). The Verification Tester uses an approved test plan with defined scope for the works.</p> <p>Performing verification duties as directed by the Tester in Charge (TIC).</p> <p>Examples of testing:</p> <ul style="list-style-type: none"> • 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 <p>A person without an Electrical Mechanic Licence shall be accompanied on a railway site by a licensed electrician.</p> <p>All work shall be mentored by a Verification Tester L2.</p>	<p>Degree in relevant engineering discipline or equivalent engineering qualification, or</p> <ul style="list-style-type: none"> • Certificate III Electrical, or • Diploma or Advance Diploma or higher in relevant discipline, or • IRSE Licence 1.3.155Y Verification Tester (Factory) <p>Optional, Electrical Mechanic Licence, or form "Electrical Licence Requirements for Queensland Rail Signal Function Testing"</p>	<p>Certified copy of Qualification / Licence</p> <p>Certified copy of Electrical Mechanic Licence</p> <p>Work Experience / Log Book demonstrating currency</p>
	Signal Test Assistant	Proficiency Level 1	<p>Responsible for assisting with testing of signalling components and equipment in accordance with the test specifications and plans.</p> <p>The Signal Test Assistant shall only perform tasks under direction of a Test Engineer L2 or TIC L2 or Functional Tester L2.</p>	<p>Degree in relevant engineering discipline or equivalent engineering qualification, or</p> <ul style="list-style-type: none"> • Electrical Mechanic Licence, or • IRSE Licence 1.3.150 Signalling Test Assistant <p>Prerequisite qualification: Signal Design Engineer Level 1 or Signal Designer Level 1</p> <p>An individual who is in training for an AQF electrical qualification through a nationally accredited training institution may be engaged as a Signal Test Assistant.</p>	<p>Certified copy of Qualification / Current Licence</p> <p>Certified copy of Electrical Mechanic Licence</p> <p>Work Experience / Log Book demonstrating currency</p>
Signalling and Operational Systems Discipline Head	Senior Operational Systems Engineer	Proficiency Level 3	<p>Responsible to architect, engineer and deliver novel operational systems solutions in a complex rail signalling and communication environment.</p> <p>Responsible for verification and final sign-off of Operational Systems designs and commissioning work.</p> <p>Undertaking testing and commissioning.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>Registered Professional Engineer of Queensland (RPEQ) accreditation.</p> <p>10+ years of experience in railway operational systems and/or control and monitoring.</p>	<p>Certified copy of engineering qualification</p> <p>Certified copy of RPEQ</p> <p>Certificate and evidence of currency</p> <p>Work Experience / Log Book demonstrating currency</p>
	Operational Systems Engineer	Proficiency Level 2	<p>Responsible for production and final checking of Operational Systems designs. This involves interpretation of rail control systems standards, communication principles, standards and protocols and a full understanding of the functional Operational Systems design documentation.</p> <p>May include the independent review of designs.</p> <p>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.</p>	<p>Degree in engineering or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia</p> <p>5+ years of experience in railway operational systems and/or control and monitoring.</p>	<p>Certified copy of engineering qualification</p> <p>Work Experience / Log Book demonstrating currency</p> <p>Certified copy of RPEQ</p> <p>Certificate and evidence of currency</p>



Authoriser	Role	Proficiency Levels	Role Description	Qualification	Evidence Required
	Operational Systems Engineer	Proficiency Level 1	Responsible for production and final checking of Operational Systems designs. This involves interpretation of rail control systems standards, communication principles, standards and protocols and a full understanding of the functional Operational Systems design documentation. May include the independent review of designs. All work shall be mentored by an Operational Systems Engineer or Operational Systems Developer, Level 2. 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 or equivalent engineering qualification which is acceptable for professional membership of Engineers Australia	Certified copy of engineering qualification Work Experience / Log Book demonstrating currency Certified copy of RPEQ Certificate and evidence of currency
	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 systems and/or control and monitoring.	Certified copy of qualification Work Experience / Log Book demonstrating currency
	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 systems and/or control and monitoring.	Certified copy of qualification Work Experience / Log Book demonstrating currency
	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 Work Experience / Log Book demonstrating currency
	Operational Systems Technician	Proficiency Level 2	Responsible for undertaking the physical activities by interpreting functional Operational Systems documentation.	Qualification (Cert IV, Diploma, Adv. Diploma) in a relevant discipline 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 Electrical Mechanic Licence Work Experience / Log Book demonstrating currency
	Operational Systems Technician	Proficiency Level 1	Responsible for undertaking the physical activities by interpreting functional Operational Systems documentation. 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 Electrical mechanic licence as required	Certified copy of qualification Certified copy of Electrical Mechanic Licence Work Experience / Log Book demonstrating currency

Table 6 Contractor's Signalling and Operational Systems Roles and Description



2.6 Submission and assessment

Consultants, contractors and subcontractors undertaking signalling work for Queensland Rail shall be Rail Industry Workers (RIWs).

A consultant or contractor wishing to obtain a Queensland Rail signalling competency defined herein shall submit an application through the Rail Industry Worker System², whence it will be passed to a Queensland Rail assessment panel to determine suitability of experience and qualifications.

Where an engineering degree or equivalent engineering qualification is a stated qualification for a role or proficiency in Table 6 it shall mean a degree or other higher qualification which is acceptable for membership of Engineers Australia. The candidate should seek advice from Engineers Australia regarding the suitability of their qualification and provide such evidence with the application.

2.6.1 Work Experience Record / Log Book

Much of the skills and knowledge obtained in the rail industry is work based and non-accredited. Capturing this information is critical to verifying work experience and certifying the performance of tasks.

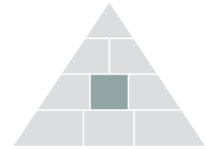
All work-based training shall be documented in a Work Experience Record / Log Book and shall be corroborated by the supervisor. This document is used as supporting evidence to maintain or upgrade the proficiency within a role or qualify for a new role classification.

The Work Experience Record / Log Book is essential evidence in determining proficiency and is used to document the mentoring/supervision of a career progression.

The Work Experience Record / Log Book shall include the following items:

- Dates – Provide the month and year for the start of the work and the finish of the work. Records are organised in order of start dates.
- The role as defined by the signalling and operational systems competency matrix.
- Employer/client & infrastructure owner & project or role – These three details to be included e.g., world consultants for Queensland Rail – design project.
- Description of task – This shall firstly detail the role of the RIW. This shall indicate if a major role or a support role e.g., test team leader or design team member. Details of the project to provide context and technical complexity e.g., new crossover and interlocking changes at Indooroopilly Signalling Equipment Room.

² <https://www.riw.net.au/>



- Reference- This is numbered from one onwards without repeating. A separate number for each project. May provide separate numbers for separate tasks within a project. For example level crossing drafting, TIC, design document up date to as-built could have three reference numbers.
- Equipment or system – This detail the technology used on the works e.g. types of track circuits, types of PBI, types of power supplies.
- Verification signature, name & RIW Card ID, where the verification is undertaken by an Employee or Contractor RIW . The verifier to sign against each entry that is verified. Verifier to print name and RIW ID. Work experience from the past or on other networks does not require the RIW ID but requires position title of the verifier. Where the RIW has a RIW ID this shall be listed.
- Supervisor may make comments regarding the work performance.

2.6.2 Proficiency Levels

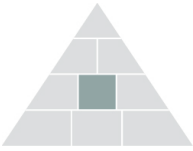
Proficiency required to work on signalling infrastructure is dependent upon the complexity and range of work, and therefore the acquired proficiency shall vary according to training and experience.

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.

Staff may progress from one proficiency level to a higher level. The candidate shall provide evidence of work at the higher level, which is endorsed by a mentor holding the higher proficiency level.

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

Level	Definition
Level 0: Not Competent	No certified competence in the subject
Level 1: Novice	<p>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.</p> <p>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 Log Book 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 candidate's experience to progress their proficiency level.</p>



Level	Definition
Level 2: Practitioner	The person has a level of competence to perform independently and without supervision in routine work procedures. The person is also able to perform more complex activities under the supervision of a person holding proficiency at Level 3. The person, if RPEQ qualified, is able to provide professional engineering services without supervision.
Level 3: Expert	<p>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.</p> <p>The person is considered a Subject Matter Expert (SME) with in-depth knowledge and understanding of Queensland Rail’s signalling engineering standards, practises, processes and operational requirements. The person has varied, 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.</p>

Table 7 Proficiency Levels

A candidate without experience in Queensland Rail standards and systems may be approved up to Level 2 Practitioner. Such staff shall be supervised by a Level 3 Expert until such experience has been acquired.

An individual who is in training for an AQF electrical qualification (apprentice) through a nationally accredited training institution may be engaged as a Signal Test Assistant.

An individual who is in training for an AQF qualification through a nationally accredited training institution may be engaged as a Signal Trade Assistant.

2.6.3 Permission to perform electrical work

All competent persons working with electrical equipment above the level of Extra Low Voltage, as defined in AS 3000, shall possess an Electrical Mechanic License. A person without an Electrical Mechanic License may perform testing work on Extra Low Voltage equipment only, provided:

- the work does not interfere with the integrity of the electrical equipment;
- the work is under the direct supervision of a Queensland licensed electrician;
- the worker has signed Queensland Rail form “Electrical Licence Requirements for Queensland Rail Signal Function Testing”, acknowledging the limitations of their electrical competency.

This requirement covers the Function Tester, Verification Tester, and Signal Test Assistant competencies.



2.6.4 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.

This provides Queensland Rail with full traceability of all RIW's competencies for the rail safety work being undertaken. This then forms the basis of Queensland Rail's audits against RIW's, whether periodically to maintain quality, as a result 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 alliance members, contractors, and sub-contractors RIW's to hold a valid RIW Card on their person whilst undertaking rail safety work for Queensland Rail. When approached by a 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 escorted from the worksite. 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 rail safety work for Queensland Rail.

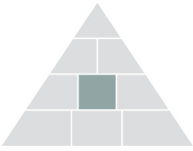
The investigation of an incident and/or breach shall be in accordance with the Queensland Rail Business Rules for Management of Rail Safety Worker Contractors.

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 Rail Industry Worker System until such deficiencies are rectified. This shall prevent the RIW from undertaking all rail safety work for Queensland Rail specific to that classification.

2.6.5 Reassessment

All Employee or Contractor RIW 's with one or multiple roles assessed shall be required to resubmit for reassessment of all roles held every 5 years.

An Employee or Contractor RIW with an expired role shall not undertake rail safety work for those roles with expired competencies until the deficiencies have been rectified.

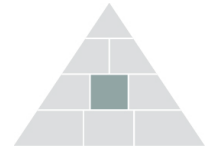


2.7 Queensland Rail List of Roles and LMS Qualification

The following table is the list of roles created in the with the LMS qualification number.

Role	Proficiency	LMS Qualification number
Discipline Head, Signalling & Operational Systems	Level 3	40011000
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
Lead CADD Operator	Level 2	40011006
CADD Operator	Level 2	40011007
CADD Operator	Level 1	40010954
Senior ETCS Design Engineer	Level 3	40010955
ETCS Design Engineer	Level 2	40010957
ETCS Design Engineer	Level 1	40010958
Senior Principles Test Engineer	Level 3	40010959
Principles Test Engineer	Level 2	40010960
Principles Test Engineer	Level 1	40010961
Senior Test Engineer	Level 3	40011026
Tester In Charge – TIC	Level 3	40010962
Tester In Charge – TIC	Level 2	40010963
Tester in Charge (Asset Renewal)	(not applicable)	TBA
Function Tester	(not applicable)	40010966
Function Tester (Asset Renewal)	(not applicable)	40010967
Verification Tester	(not applicable)	40011029
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

Table 8 LMS Qualification

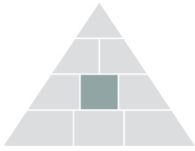


3 Responsibilities

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: <ul style="list-style-type: none"> • approve Principles/Standards to ensure this Specification is reflected in Queensland Rail's day to day operations • establish and maintain processes to provide assurance to the CEO that this Specification is being followed by Queensland Rail • 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 development of the document content, on behalf of Group Asset Manager
Leaders of functions, areas and teams	Must: <ul style="list-style-type: none"> • 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

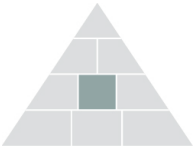
The following key terms and definitions are unique to this Specification. Please refer to the [Business Glossary](#) for other terms not included in this section.

Term	Abbrev	Definition	Source ³
Australian Qualifications Framework	AQF	The national policy for regulated qualifications in Australian education and training.	Australian Government Higher Education Support Act 2003 (Cth)
Australasian Railway Association	ARA		
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.	
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.	
European Train Control System	ETCS	Cab-based digital signalling and control system using digital train radio. Queensland Rail is adopting ETCS Level 2	

³ Where left blank, Source is not applicable.



Term	Abbrev	Definition	Source ³
Mentor		A person whom is being mentored.	
Mentor		<p>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.</p> <p>The Mentor will provide suitable guiding comment and correction during works execution.</p> <p>The Mentor will satisfy themself of the correctness of for work that they have not directly observed by further checking, audit or by prior knowledge and trust of the previous performance of the Mentee.</p> <p>The Mentor will create a record covering the work done and make observations or as appropriate.</p> <p>The Mentor will work with the Mentee to identify those areas where improvement is needed.</p> <p>The Mentor will make recommendations when the Mentee has fulfilled competency requirements at the current level and can work independently.</p>	
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.	Queensland Government Professional Engineers Act 2002 (Qld)
Rail Industry Worker	RIW	Person assessed for competency under the ARA framework to undertake rail safety work, pursuant to RSNL	Rail Safety National Law (Queensland)
Rail Industry Worker Card	RIW Card	The card used to identify each RIW and their competencies.	
Rail Industry Worker 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	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)
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 candidates credit for skills, knowledge and experience gained through working and learning.	



Term	Abbrev	Definition	Source ³
Registered Professional Engineer Queensland	RPEQ	Registered Professional Engineer Queensland	Queensland Government Professional Engineers Act 2002 (Qld)
Registered Training Organisation	RTO	A vocational education and training organisation registered to deliver training in accordance with the AQF.	
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.	
Work Experience Record / Log Book		This is the record of work undertaken by the RIW involving the application of the Signalling and Operational Systems competencies.	



5 Document history

Document Information

Current Version	8.0
First Released	24 March 2015
Last Updated	16 October 2023
Review Frequency	Every 5 years
Review Before	16 October 2028
Document Authoriser	Chief Executive Officer (CEO)
Functional Owner	Discipline Head, Signalling & Operational Systems
Document Owner / Approver	Discipline Head, Signalling & Operational Systems
Content Developer*	Discipline Head, Signalling & Operational Systems
Review Stakeholders	Network Asset Management, SEQ Signalling
Audience	All employees, contractors and consultants

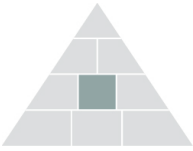
*Contact for further information

Document Amendment History

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
7.0	10/12/2020	2.4	Updated signal designer, Lead CADD and CADD operator Removal of RPEQ from Principles Test Engineer Level 2
		2.5	Updated signal designer, Lead CADD and CADD operator

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

Legal, regulatory and other obligation sources

Jurisdiction	Title
Federal Acts	N/A
State Acts	<ul style="list-style-type: none">• 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.

Queensland Rail documents

Document type	Document title
Principle	MD-13-550 Signalling and Operational Systems Asset Governance and Assurance Principle (SAGA)
Standard	MD-14-4 0 Signalling – Project Delivery Standard MD-11-332 Signalling Engineering Maintenance MD-10-169 Signalling – Change Management of Signalling and Operational Systems Infrastructure MD-13-654 Signalling – Management of Externally Delivered Projects
Strategy / Plan	N/A
Specification / Framework	MD-15-72 GSS Part 13 – Testing and Commissioning MD-15-75 GSS Part 14 – Design and Drawings

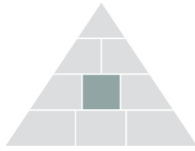
Australian, international and industry standards

Document type	Document title
Australian Standard	AS 3000 Electrical Installations (known as the Australian/New Zealand Wiring Rules)



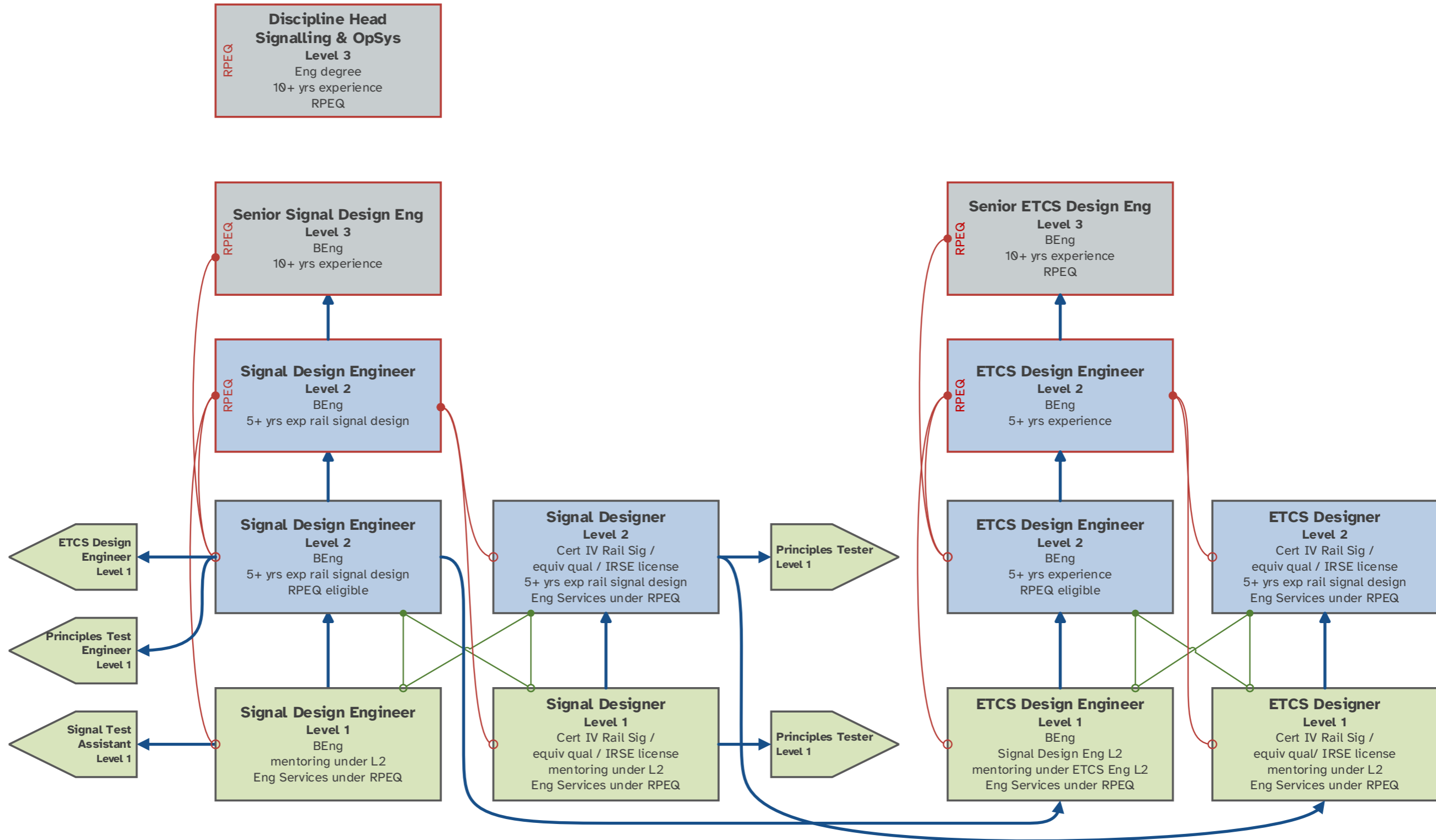
Appendix 2 - Categories and Roles

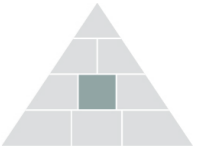
QueenslandRail Appendix 2 of MD-15-105 Signalling and Operational Systems Competence Management		Signalling and Operational Systems		Discipline Head	Signal Design				ISA		ETCS Design			Mechanical Design			Signal Construction				Signal Maintenance				Signal Testing						Operational Systems													
Minimum Essential Education & Training:	RSW Work Descriptor:	Discipline Head, Signalling & Operational Systems	Senior Signal Design Engineer	Signal Design Engineer	Signal Designer	Lead CADD Operator	CADD Operator	Senior Independent Safety Assessor & Auditor	Independent Safety Assessor & Auditor	Senior ETCS Design Engineer	ETCS Design Engineer	ETCS Designer	Senior Signal Mechanical Design Engineer	Signal Mechanical Design Engineer	Signal Mechanical Designer	Senior Signalling Constructor (Formerly Senior Construction Engineer)	Signalling Constructor (Formerly Construction Engineer)	Signal Electrician Construction (Formerly Signal Technician Construction)	Signal Installer Construction	Signal Mechanical Construction	Signal Trade Assistant (Formerly Signal Trades Assistants - Cables, Linemen, Joiner)	Senior Maintenance Engineer	Maintenance Engineer	Signal Maintenance Technician	Signal Maintenance Electrician (Formerly Signal Technician Maintainer)	Signal Maintainer	Senior Principles Test Engineer	Principles Test Engineer	Principles Tester	Senior Test Engineer	Test Engineer	Tester in Charge (Formerly Test Engineer)	Function Tester (Formerly Signal Testing Officer)	Verification Tester	Signal Test Assistant	Senior Operational Systems Engineer	Operational Systems Engineer	Senior Operational Systems Developer	Operational Systems Developer	Operational Systems Technician				
		Degree in engineering or equivalent engineering qualification in relevant field which is acceptable for professional membership of Engineers Australia; to be assessed by a QR Assessor for relevance to the role	M	M	M	M(1)				M	M(1)	M	M	M(1)	M	M	M(1)	M(1)	M(1)					M	M	M(1)											M(1)	M	M	M(1)	M(1)	M(1)		
Registered Professional Engineer of Queensland (RPEQ) accreditation	M	M						M	M			M																							M									
Certificate IV in Railway Signalling - to be assessed by a QR Assessor for relevance to the role				M(1)	M(1)	M(1)						M(1)			M(1)	M(1)	M(1)							M(1)	M(1)															M(1)	M(1)	M(1)		
Relevant IRSE licence - to be assessed by a QR Assessor for relevance to the role				M(1)								M(1)																M(1)																
Applicable CADD Certificate - to be assessed by a QR Assessor for relevance to the role						M	M																																					
Diploma or Adv. Diploma in a relevant discipline - to be assessed by a QR Assessor for relevance to the role				M(1)	M(1)	M(1)			M(1)			M(1)			M(1)	M(1)												M(1)													M(1)	M(1)	M(1)	
Certificate III in Rail Signalling for Mechanical - to be assessed by a QR Assessor for relevance to the role																	M(1)																											
QLD Electrical Mechanic Licence																	M(1)	M																									M	
Signed form "Electrical Licence Requirements for Queensland Rail Signal Function Testing"																																												
AQF Rail specific training certificates or relevant trade qualifications that are specific to the role being performed.																																												
Assessable Competencies - At least one of the following proficiency levels must be selected when applying for the corresponding role from above.																																												
Proficiency Level																																												
Proficiency is determined by the experience and qualifications a person has. Work Experience Log Book is to be uploaded against the applicable Proficiency Level for the Assessor to determine the correct Proficiency Level.																																												
Proficiency Level 3 - based on Current Work Experience Log Book. Refer to: Proficiency Levels and Work Experience Log Book requirements.	R	R			R	R		R	R			R										R						R																
Proficiency Level 2 - based on Current Work Experience Log Book. Refer to: Proficiency Levels and Work Experience Log Book requirements.			R	R		R		R	R			R	R			R	R	R	R	R		R	R	R	R	R			R	R			R	R										
Proficiency Level 1 - based on Current Work Experience Log Book. Refer to: Proficiency Levels and Work Experience Log Book requirements.			R	R		R		R	R			R	R			R	R	R	R	R		R	R	R	R	R			R	R			R	R										
Enterprise Specific Requirements																																												
QR - Operator - Must be held with the National - Around The Track Personnel (Construction/Maintenance) Job Role and is to be selected from the Trackside Safety Competency Matrix if you are required to work in the rail corridor.	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
QR - Working in Electrified Territory (WET) - this role is to be selected from the Trackside Safety Competency Matrix if you are required to work in the 25kV electrified territories	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
QR - Network Lockout - this role is to be selected from the Trackside Safety Competency Matrix if you are working within the danger zone (available as e-learning) from R/W system.	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
<p>M = Mandatory enabling competency M(1) = An equivalent pathway may be considered- see Role Descriptors for pathways M(2) = not required for degree holders in relevant field R = The Queensland Rail assessment panel will review the information provided and determine acceptability against predefined criteria.</p> <p>Important Notes: (1) If the worker is required to perform work within the rail corridor, then they must select the 'Working in the rail corridor' role contained within the 'Trackside Safety Competency Matrix'. This role requires a Category 3 Medical as well as additional competencies and training to be completed. Refer to link below (2) Transport (Rail Safety) Act imposes additional duties to those obligations already imposed under the WH&S Act. It does not replace or modify WH&S obligations. (3) Please refer to MD-13-79 - Business Rules for Management of Rail Industry Worker Contractors for information relating to The exclusion for "Work on stations with limited or no exposure to the danger zones" and requirements for "National Health Assessment" (4) The RW card does not provide authority to gain access to the corridor or construction sites. Link to QR Competency Matrices Link to Procedure MD-13-79: Business rules for Management of Rail Industry Worker</p> <p>General Notes: (1) The listed competencies were current at time of publishing this document. There may be one or more equivalent competencies available or held that are still acceptable. (2) This document is consistent with the current version of MD-15-105 Signalling and Operational Systems Competence Management published in QR SEMs. (3) This document was approved by the Signalling and Operational Systems Discipline Head on 11/10/2023 and it shall be reviewed on or before 11/10/2028. Changes to the required competencies may occur at any time as required by the business or legislative requirements.</p>																																												



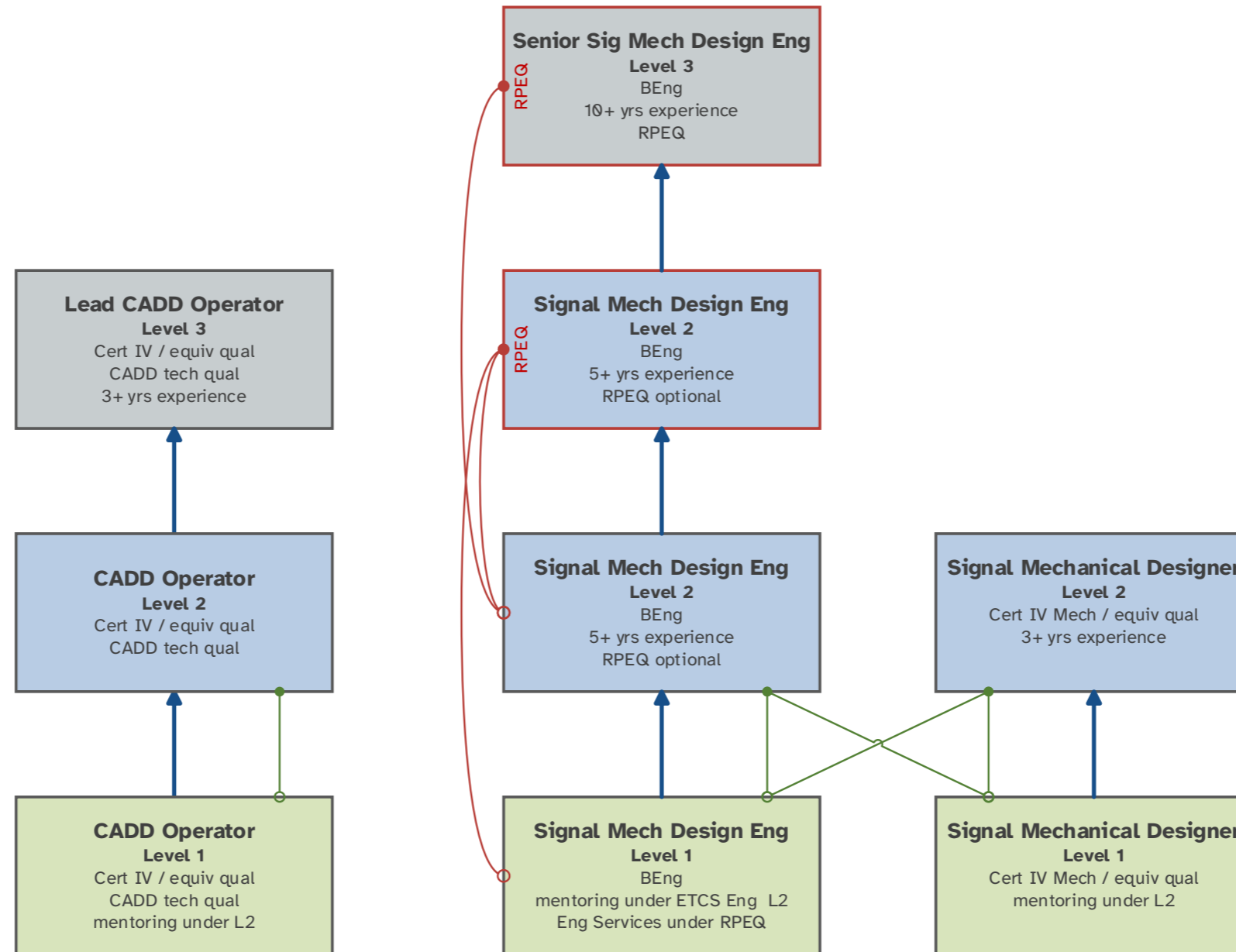
Appendix 3 - Competency Pathways

Appendix 3.1 Signalling Design

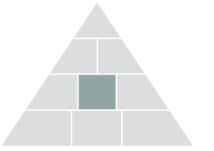




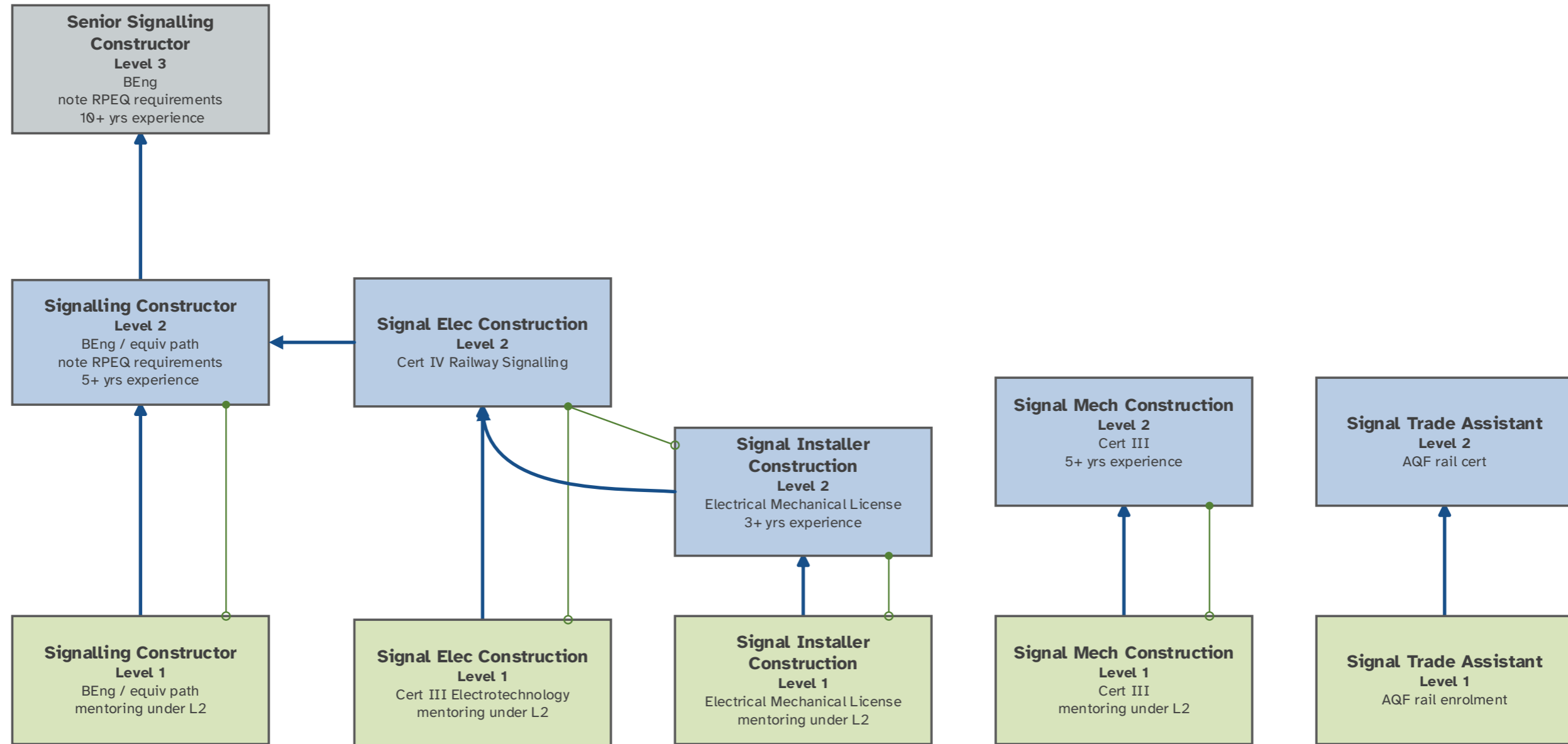
Appendix 3.2 Signalling Mechanical Design

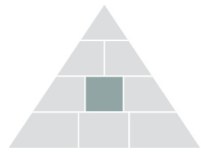




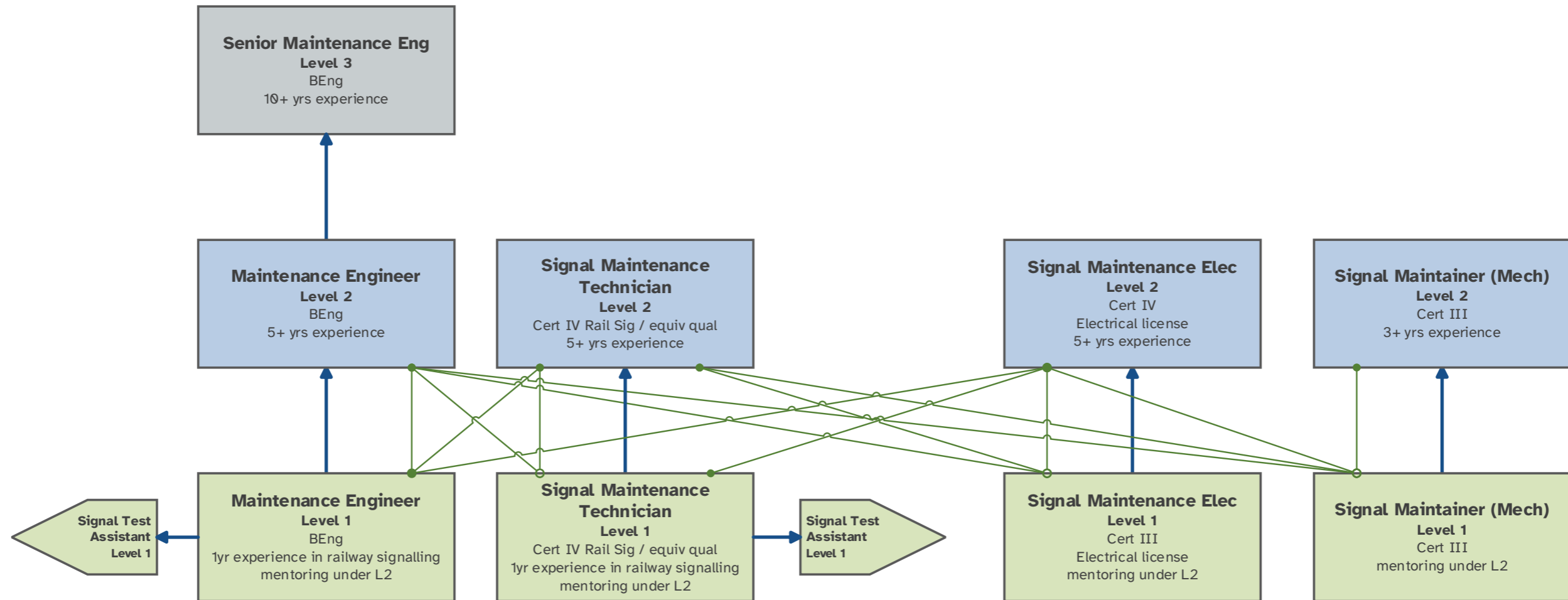


Appendix 3.4 Construction



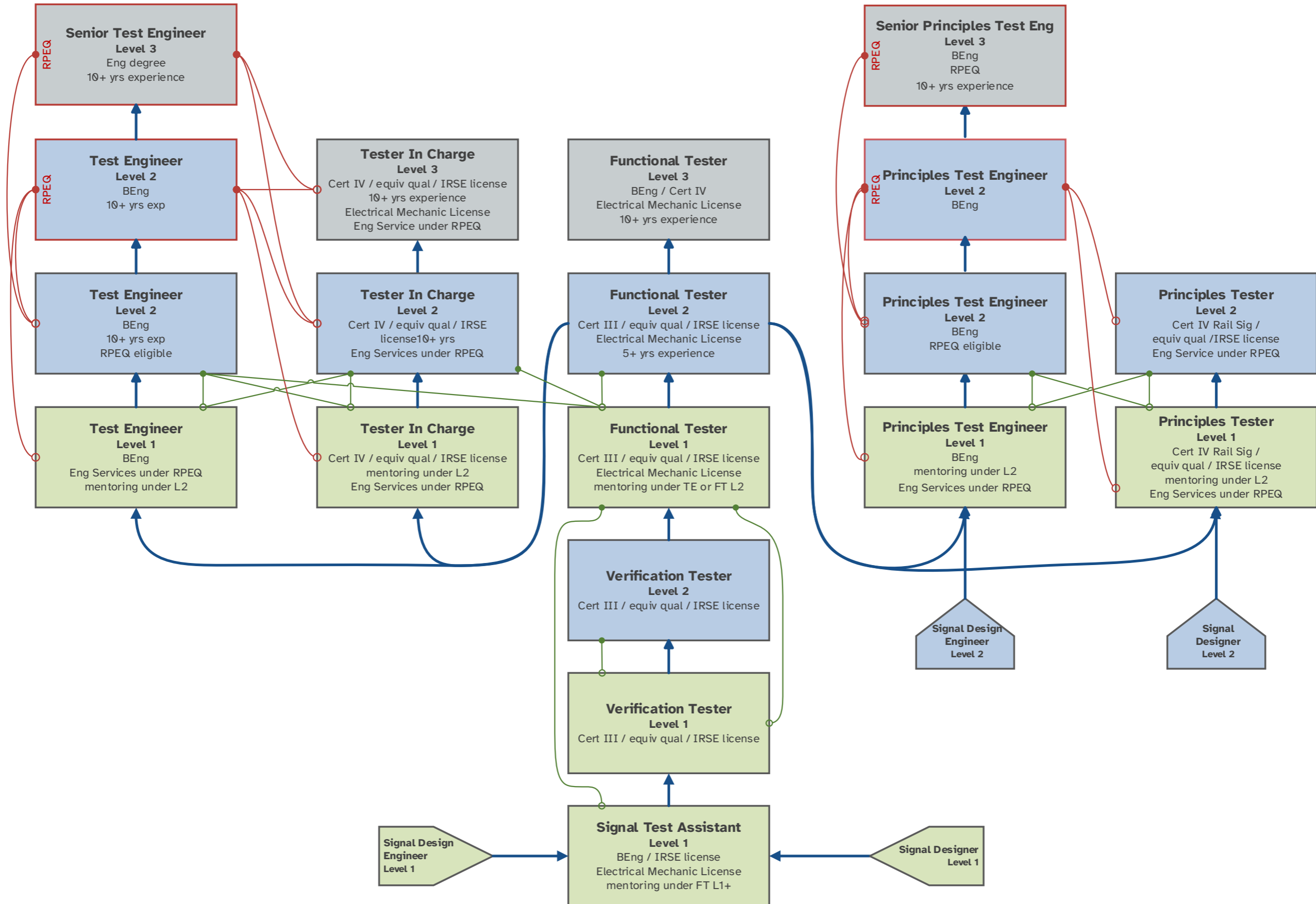


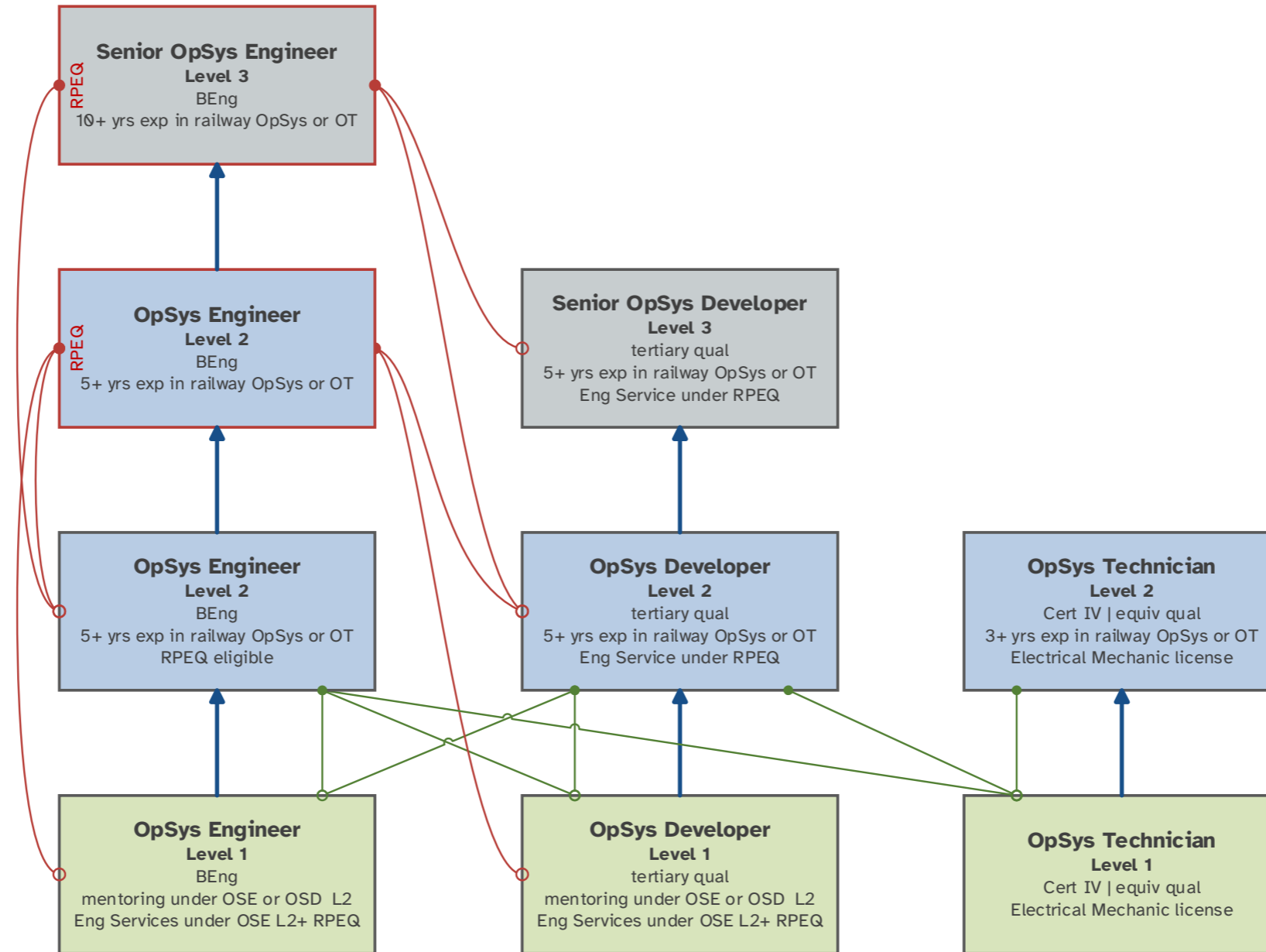
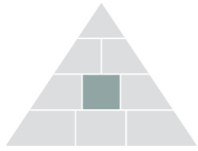
Appendix 3.5 Maintenance

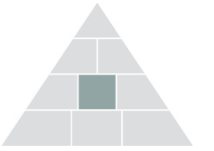




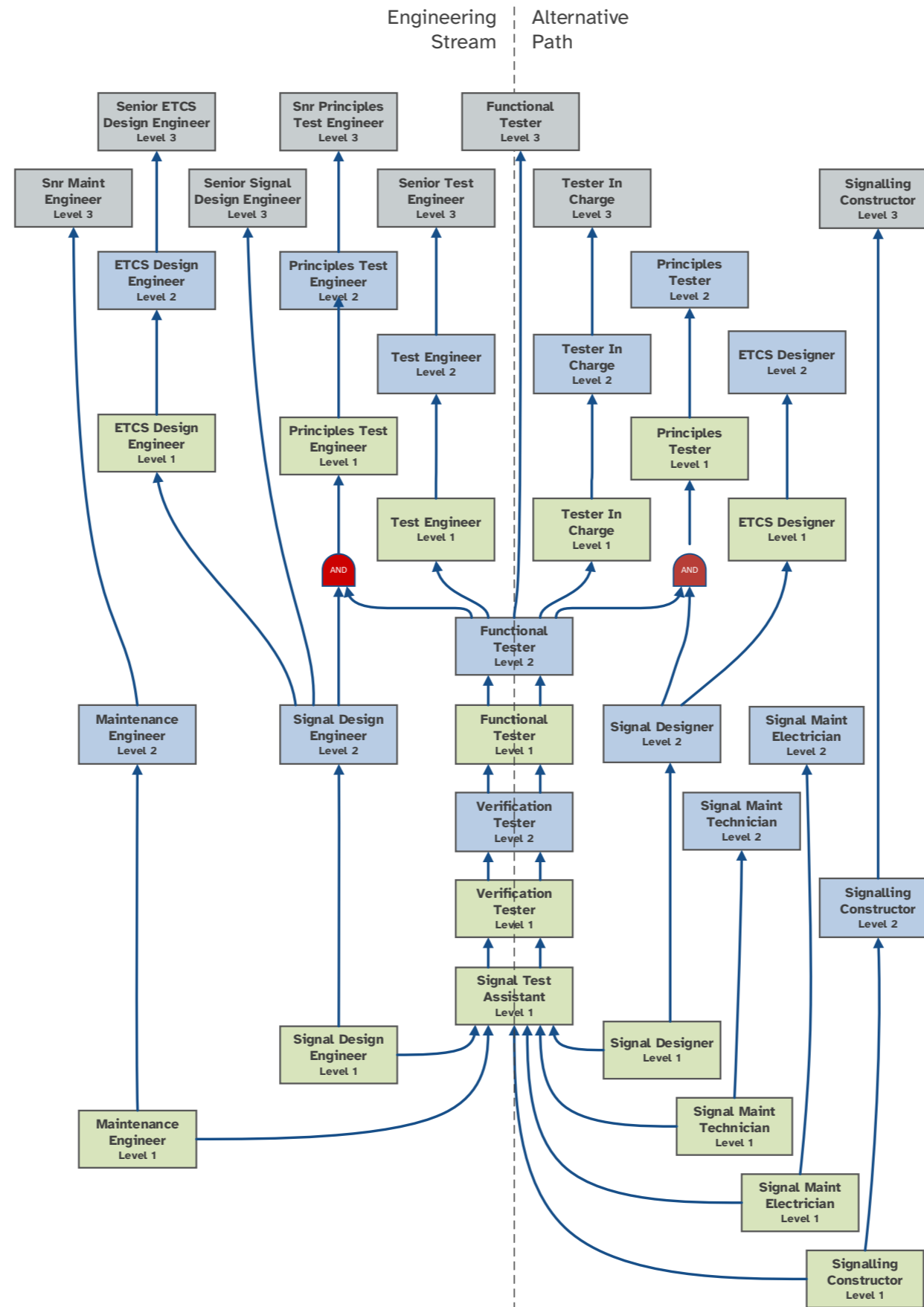
Appendix 3.6 Testing

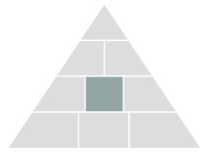




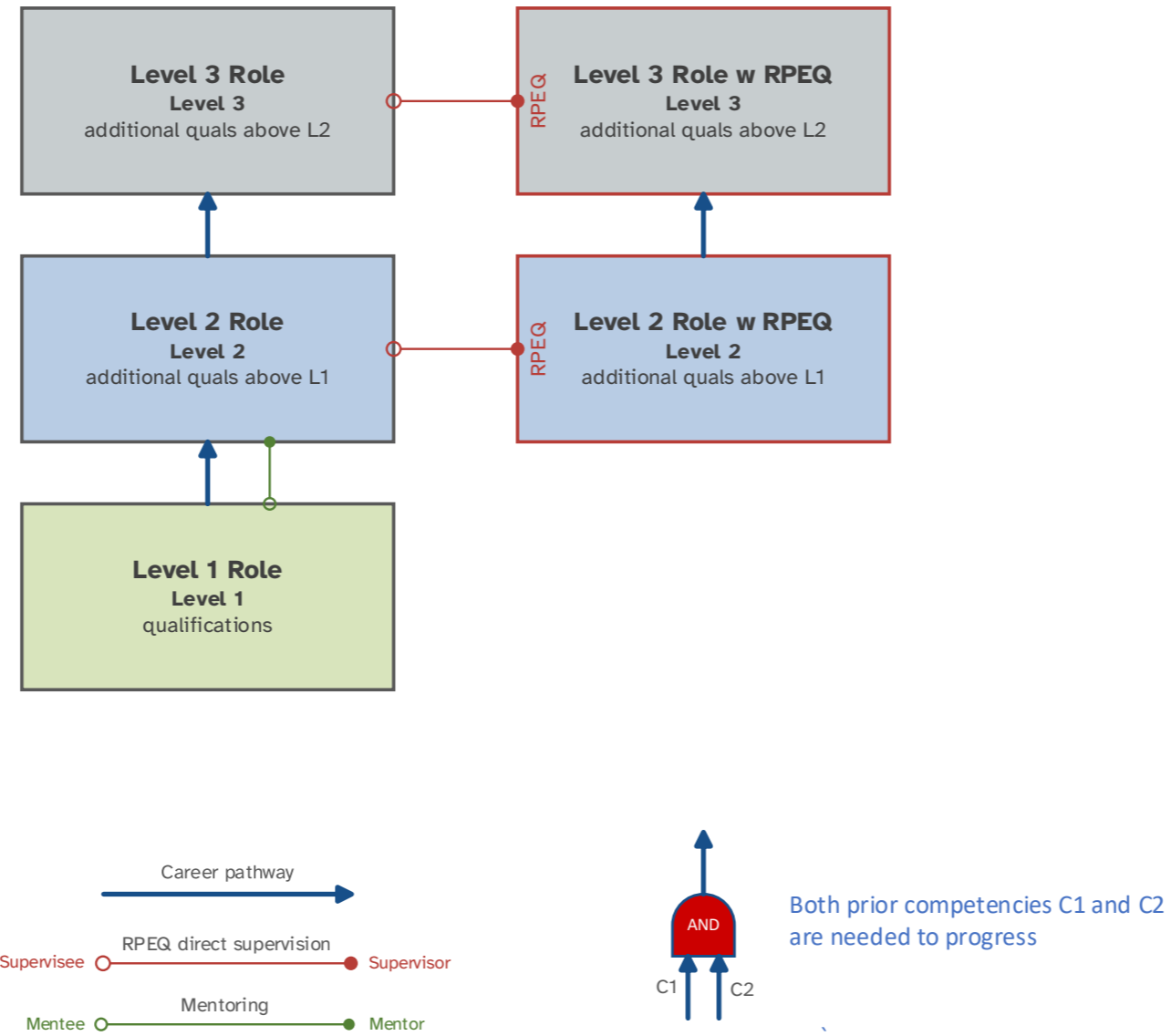


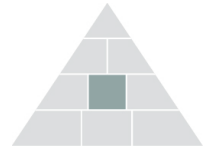
Appendix 3.8 Primary Competency Pathways





Appendix 3.9 Pathway Legend





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