Signals Rail Safety Worker Competency Procedure

ESP-20-01

Applicability

ARTC Network Wide

Publication Requirement

Internal / External

Primary Source

EST-20-02 (website v2.0) and EST-20-02 (extranet v1.2)

Document Status

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Amendment Record

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1.0	17 Jun 24		Updated to consolidate EST-20-02 (extranet v1.2), EST-20-02 (website v2.0), and Technical Note ETD-20-02 (v1.0). Also rebranded.

Table of Contents

1 Introduction

1.1 Purpose

The purpose of this procedure is to ensure that ARTC meets its regulatory obligations and accreditation requirements by having in place a signalling competence assessment process.

1.2 Scope

This procedure outlines required competencies, assessments and recording for ARTC's signalling Roles. The procedure covers all signalling personnel who carry out rail safety work on the ARTC signalling infrastructure. This includes employees, contractors, subcontractors and personnel involved in the design, construction, installation, testing, commissioning, project management and maintenance of the signalling infrastructure.

This document should be read in conjunction with RLS-PR-003 Protocol for Entering the ARTC Rail Corridor.

1.3 Document Owner

The Head of Engineering Standards is the Document Owner. Queries should be directed to standards@artc.com.au in the first instance.

1.4 Definitions

The following terms and acronyms are used within this document:

Term or acronym	Description
ARTC Signalling Assessor	Person approved to review rail industry worker's evidence of competence and issue authorising documents to both the rail industry worker and issuing body.
Assessment	Assessment is the term given to the process of reviewing and approving competency.
Competency	Competency is the ability and evidence provided to demonstrate knowledge and application of a task successfully and consistently.
Competency Matrix	Provides agreed minimum generic skills and knowledge requirements for the rail safety worker.
Rail Industry Worker (RIW) Program	The Rail Industry Worker (RIW) Program is owned by the Australasian Railway Association (ARA) and endorsed by ARTC. The RIW Program meets ARTC's regulatory requirements and compliance with RSNL. It provides visibility of Rail Safety Workers (RSW) moving between projects and employers, maintaining a single electronic record about each RSW's health, training, and competencies.
Rail Safety Worker (RSW)	A Competent Worker who has carried out, is carrying out, or is about to carry out, rail safety work.
Statement of Competency (SoC)	A Statement issued to the Rail Safety Worker detailing the specific signalling competency and proficiency Levels.
Work Experience Record/Work Log Book	This is the record of the work undertaken by the Rail Safety Worker and is verified by an appropriate supervisor or manager. It shows the extent and complexity of the tasks performed, roles and

Term or acronym	Description
	responsibilities in undertaking the tasks and the type/s of technology applied.

1.5   Responsibilities

- RSW is responsible for:
  - o do not undertake work or tasks for which their competency has not been certified;
  - o submitting all the required evidence for assessment;
  - o ensuring competencies required to work in an ARTC rail corridor are valid, current and relevant to the work they undertake;
  - o ensuring to have a valid SoC;
  - o discuss, agree and complete the specific training requirements to address any identified competency gaps aligned to the SoC (if required).
- The ARTC Signalling Assessor is responsible for following the requirements and processes detailed in this document when assessing the competency of an applicant.
- The ARTC Project manager, business unit managers, contractors and their subcontractors are responsible for the implementation of this procedure and for ensuring that RSW maintains a current valid statement of competency while performing the work on ARTC signalling infrastructure.

1.6   Reference documents

- ARTC Signalling Competency Matrix – ESP2001F-27
- Signalling Competency Forms and checklists (ESP2001F-XX – 'XX' represent the range)
- PEO-GL-001 Business Rules for Working in ARTC Rail Corridor
- RLS-PR-003 Protocol for Entering the ARTC Rail Corridor
- EGP-02-01 Engineering Waiver Management
- ESP-20-02 – Assessment Guideline
- External Assessor Agreement
- National Competency Management Framework

ARTC

2 Competency Matrix

The competencies that apply to the signalling roles are set out in the below competence matrix.

- ESP2001F-27 – ARTC Signalling Matrix

Matrix identifies the minimum requirements. Compliance with these requirements does not mean competence across the entire network, or you meet specific requirements to undertake work. ARTC approved signalling assessor will review the applicant's submission and if assessed competent, will issue a Statement of Competency (SoC). Competency assessment examines an applicant's understanding, knowledge and experience in the respective signalling technical area.

2.1 RIW Job Roles

Job Role	Description
Senior Signal Engineer	This covers maintenance, construction and signal engineering, roles responsible for a major function or group of signals people. The person has engineering experience in the railway signalling as defined in the matrix.
Signal Design Engineer	RSW responsible for preparing signalling design that is safe, reliable and in accordance with the signalling principles and practices and that meets the operational and functional requirements.
Signal Designer	RSW competent for signal designing but does not meet the criteria of the Signal Design Engineer.
Assistant Signal Designer	RSW assisting the signal designer/signal design engineer in the development of the signalling design and working for achieving the competency for the Signal Design Engineer/Signal Designer
Signal Engineer Maintenance & Construction	RSW capable to maintain operational signalling equipment and systems; and maintenance test certify new or altered signalling and Responsible for the integrity of operational signalling infrastructure.
Assistant Signal Engineer Maintenance/Construction	RSW assisting the signal maintenance engineer and working for achieving the competency for the Signal Engineer Maintenance/Construction.
Signal Maintainer – Maintenance / Construction	RSW responsible for maintenance and installation of operational signalling equipment.
Signal Installer / Tester	This covers those personnel involved in signalling construction activities or signalling testing activities who have completed an industry based process of formal training and assessment as meeting requirements covering an understanding of signalling construction and testing practices. This includes signalling training with a non-electrical trades background as conducted in the UK or other overseas jurisdictions.
Signalling Installer	RSW capable of working in a live signalling environment to install interface wiring in a location but not the termination of wiring on working equipment.
Signal Mechanical – Maintenance / Construction	RSW responsible for maintenance and installation of signalling mechanical equipment.

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Signals Trades & Assistants	This covers all other RSWs with trade certificates or industry based certification for a skill that is applied in the construction or maintenance of signalling infrastructure. It includes signals cable jointers, signal linesman, signals rack wireman, signals design CAD operator, signals design document administrator and licensed electricians who connect power to signalling infrastructure. They work under direct supervision of an accredited person to carry out activities as directed.
Signal Project Engineer	RIW who is a qualified engineer, working within the project and directly responsible for signal engineering matters of the project.
Signal Project Manager	Managing signalling project on the ARTC network.

3   Principles of Assessment

The competency assessment process ensures that signalling personnel with the appropriate knowledge, skills, experience and proficiency are engaged to conduct the activities defined for a specific job role.

To ensure a fair and equitable process, assessment is required to meet the four principles, including:

- **Validity** - The assessment decision is based on evidence of the RSW's performance that is aligned to the Signal Competency Assessment requirements.

- **Reliability** - The evidence presented for assessment is consistently interpreted, and assessment results are comparable irrespective of the ARTC Signalling Assessor conducting the assessment.

- **Flexibility** – Reflecting the RSW's needs, and drawing from a range of evidence that are appropriate to the context, the Signal Competency Assessment requirements, and the individual RSW.

- **Fairness** - Individual RSW needs are considered, including where appropriate, reasonable adjustments are applied by the ARTC Signalling Assessor when considering the individual RSW's needs.

4   Assessment of competence

This section defines evidence requirements for an RSW to be assessed by an ARTC Signalling Assessor for the role and the associated process for obtaining ARTC competency in the Rail Industry Worker (RIW) Program.

All roles are required to be reassessed every Four (4) years from the award date to confirm the currency of skills, knowledge and experience.

Costs associated with the assessment are agreed between the applicant and the ARTC Signalling Assessor.

4.1   Signal Competency Assessment Request

The applicant needs to select the Job Role required on ESP2001F-21 – Signals Competency Assessment Request Form and complete the remainder of the form and send it as part of the package for assessment.

The Competency Assessment Checklist is completed by the applicant in conjunction with the Work Experience Record (Refer Appendix A for additional information) and Training Record (Refer

Appendix B for additional information). The applicant is required to provide cross-reference to the training and work experience records for each skill detailed in the assessment checklist for the Job Role selected. They will also nominate an expected competency Level (refer Appendix C for additional information) on a self-assessed draft of the corresponding SoC. The assessment checklist should justify the nominated competency Level (Refer ESP-20-02 – Assessment Guideline for additional information).

The applicant shall indicate multiple work experience items for each competency. The number, Level, complexity and type of experience is evaluated to determine the competency Level.

Applicant is required to submit supporting documents with the assessment request. This includes work experience records, training records including product training, education and qualifications and any other evidence in support of the nominated competency Level.

Examples of the format of the work experience record and training record are provided in ESP2001F-25A/B and ESP2001F-26. Alternatively, equivalent templates of other rail organisations or IRSE Logbook and training forms are acceptable.

4.2 Assessment

The ARTC Signalling Assessor will review the evidence provided for the Role, proposed competency Level by the RSW to determine whether they are:

- Competent to carry out roles and Levels applied for or adjusted by ARTC Signalling Assessor.

- Not competent to carry out the role for ARTC.
  - The ARTC Signalling Assessor will advise the applicant and/or manager the RSW does not yet have the minimum required competencies.

- Require a follow-up professional conversation may be requested.
  - An interview can be used. ARTC Signalling Assessor can request additional information and actual evidence of works undertaken to ensure all available information and evidence has been reviewed as part of the assessment process.

Upon successful assessment, a statement of competency will be completed by the ARTC Signalling Assessor. The ARTC Signalling Assessor will approve the applicant in the Rail Safety Worker (RIW) Program.

4.3 ARTC Signalling Assessor facilitated Waiver

Where an applicant does not have a requirement listed on the Signalling Competency Matrix, and it is not reasonably practicable for them to achieve the requirement and if ARTC Signalling Assessor believes that applicant is competent, a waiver with proper justification can be lodged by the ARTC Signalling Assessor for the consideration by ARTC.

5 Job Role Reassessment Approval

The reassessment process needs to occur every four (4) years for the RSWs competency role to remain valid.

If an RSW has not practiced a skill in the previous four (4) years, then the ARTC Signalling Assessor may reduce the competency Level at the time of reassessment.

Costs associated with the Reassessments are between the applicant and the ARTC Signalling ARTC Signalling Assessor

5.1 Role reassessment

This is achieved by uploading current evidence of continued experience in the chosen roles as per ESP2001F-21- Signals Competency Assessment Request. The ARTC Signalling Assessor will perform the Reassessment as required.

6 Competency Upgrade

As applicants gain further training and experience, they may wish to increase Levels of their competency to perform further work and ARTC Signalling Assessor doing an upgrade assessment.

Costs associated with the SoC upgrade are between the applicant and the ARTC Signalling Assessor.

6.1 Assessment of upgrade

With a current job role in RIW Program, an applicant can submit ESPT2001F-24 Signals Competency Upgrade Request where an increase in the competency Level or a new competency assessment is requested. The ARTC Signalling Assessor will perform the upgrade assessment as required. Upgrades to competency Levels on a SoC can be revisited and reassessed during the four (4) year life cycle of the SoC, and the assessed upgraded SoC shall retain the same expiry date as the original SoC.

7 ARTC Signalling Assessors

ARTC Signalling Assessors are approved by the ARTC Standards Group. Relevant skills, knowledge and experience is to be documented as per ESP2001F-23A - Signals Competency Assessor Request and signed External Assessor Agreement submitted. If approved, they will be allowed to assess signalling roles applied for in the Rail Industry Worker (RIW) Program (to add new roles submit an additional request).

ARTC Signalling Assessors not having signal engineering knowledge and experience are to be assisted by a Subject Matter Expert (SME)

Both ARTC Signalling Assessors and subject matter experts shall have a detailed understanding of the ARTC signals competency assessment process (also refer to ESP-20-02 – Assessment Guideline), and the evidence and supporting documentation requirements. Subject matter experts (SME) are required to have the knowledge and understanding of the signals subject matter for which the applicant is being assessed.

7.1 Requirements to become an ARTC Signalling Assessor

Demonstrate current knowledge of the industry, industry practices, and the job or role against

which competency is being assessed.

- Relevant work experience in the areas being assessed.

- Attendance at relevant professional development, training and education activities focusing on good practice in the relevant industry competencies.

- Relevant participation in professional/industry networks.

- Units of Competency completed - Assess Competence (TAEASS402 or TAEASS412).

- At least five (5) years of practical industry experience.

- Comply with relevant ARTC Policies, Procedures and network standards and rules.

ARTC

- Use assessor delegations in an appropriate way for the intended purposes.

- Create and maintain full and accurate records of signal assessments performed in the RIW and SharePoint System.

- Maintain the integrity and security of ARTC's documents or information.

7.2 ARTC Signalling Assessor Reassessment

Reassessment of an ARTC Signalling Assessors competency shall not exceed four years. ARTC Signalling Assessors submit a completes ESP2001-F23A Signals Competency Assessor Request with current evidence of continued experience and a re-signed External Assessor Agreement. The ARTC Standards Group perform reassessment of ARTC Signalling Assessor Role.

8 Appendix

8.1 Appendix A: Work Experience Record

Competency is assessed on the basis of the formal training by training organisations and industry based training and practical experience in applying the knowledge. This practical experience shall be documented in the work experience record. This Work Experience Record is the basis to elevate the Competency ratings from Level 1 (Trained) to Level 2 or Level 3.

The Work Experience Record template ESP2001F-25 or one with equivalent information shall be used to record this experience.

Work Experience shall be recorded to show the work that have performed by the applicant, the role and responsibility, the type of technology and the Level of complexity of the task. A simple description of the project or task does not meet this requirement.

The descriptions that are not specific to applicant's role and responsibility will be considered at the lowest Level of involvement in the activity of a team. For example, "maintenance of signal equipment" – will be considered as the assistant to the team leader for the tasks detailed. For example, "design of crossing loop" will be considered as a team member only responsible for detailing of non-vital information for the design. For example, "construction of signal infrastructure" will only be considered assistant within team performing general tasks with no defined responsibility.

Similarly, with the above items the applicant would not gain recognition for specific tasks such as "maintenance of point machine type xxx or maintenance of track circuit type xxx or design of signal plan, design of track insulation plan, design of control tables or testing of infrastructure. Applicant shall be specific in terms of the tasks performed and refer to the same terms as are detailed on the statements of competency.

Each work experience record entry shall be verified by applicant's Supervisor. The Supervisor in verifying the work experience is certifying the performance of the tasks in accordance with the respective procedures and practices for the infrastructure manager. To confirm that this responsibility has been correctly performed, the Supervisor shall sign the declaration on page 1 of the Work Experience Record and provide details regarding his/her position and organisation.

8.2 Appendix B: Training & Education Record

Formal training includes educational qualifications as per the Australian Qualification Framework (AQF). Industry based training includes training by a supplier for equipment or systems. The

ARTC

training organisation shall issue a certificate of attainment for the course. A certificate of attendance does not demonstrate that applicant have gained a skill.

Applicants need to keep a record using the ARTC template or one with equivalent information to record applicant's training. Please ensure that the record indicates the name of the course and identification number if available, when the course was undertaken and the duration of the course.

8.3 Appendix C: Competency Level and Supervision Level

Level	Description
Level 0	• Undertaking formal training by relevant nationally recognized units of competency • Limited signalling knowledge and skills with on-the-job independent experience being restricted. • Works only under direct supervision for routine tasks or activities only and cannot certify under any circumstances
Level 1	• Completed relevant nationally recognized units of competency. • Completed relevant network rules and standards training. • Acquired foundational knowledge and skills with a basic understanding of signalling systems. • Working towards gaining independent practical on-the-job experience • Indirect/Remote supervision for completion of routine tasks or activities and direct supervision of complex tasks or activities • Cannot certify independently (certification shall be countersigned by a Level 2 or above)
Level 2	• Formally qualified and may be able to complete all tasks or activities (both routine and complex) • Completed relevant Original Equipment Manufacturer (OEM) Product training. • Sufficient knowledge and skills to work independently to obtain on-the-job experience. • Supervision not required for completion of simple tasks or activities, but indirect / remote supervision may be required for complex tasks or activities. • Can certify independently. • Able to mentor trainees and supervise Level 1 for task or activity completion
Level 3	• Detailed knowledge in signalling principles, standards, procedures, and network rules • Advanced knowledge and skills and deep experience in all simple and complex tasks or activities so can perform all tasks or activities without supervision. • Able to manage complex tasks or activities in various contexts and situations including performing advanced fault-finding capabilities. • Can certify independently. • Able to mentor trainees and supervise Levels 1 and 2 for task or activity completion. • Keeps abreast of technologies, architectures, application solutions, standards and regulatory requirements, particularly in evolving fields

Task or activity complexity is described as:

Routine Tasks / Activities	Generally, tasks and activities that are detailed and/or described in standards, procedures, work instructions and/or service schedules and are repetitive in nature, especially in relation to the work of maintenance and construction personnel. This may include investigating and certifying right side failures of the signalling system and/or design tasks that are based on other very similar or pre-existing designs.
Complex Tasks / Activities	Any tasks or activities that are novel or unique in nature, require the application of a worker's knowledge and skills in non-routine ways, or work that has multiple simultaneous elements of risk.

Supervision Levels

Level	Description
Direct Supervision	The 'supervisor' is physically present to directly observe an RSW as they are completing a task or activity. The 'supervisor' must have the time and resources available to support the worker. Tasks are divided into agreed milestones and the 'supervisor' guides through agreed checks and balances which may include asking questions and verifying performance to an agreed standard, in real-time. Continuous monitoring takes place where direct and immediate feedback is provided to intervene if required to mitigate risk and mentor the individual to meet expected performance standards. The 'supervisor' is overall responsible for the manner in which the task or activity is performed.
Indirect / Remote Supervision	The 'supervisor' is not physically available to observe an individual however he/she is satisfied with the RSW's competence and ability to perform the task before authorising the completion of a task. The worker demonstrates an appropriate understanding of the task by correctly articulating the required steps for task completion. 'Supervisor' guidance is provided through access to specific technical resources i.e. people, resources, processes and the 'supervisor' checks task progress on completion. The 'supervisor' is available through multiple communication channels to mitigate risk and mentor the individual to meet expected performance standards. Both the 'supervisor' and worker share the responsibility for the manner in which the task or activity is performed.