



Australian Government

RIIARO201 Work in autonomous operations

Release: 1

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Modification History

Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 9.0. Newly created unit.
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Application

This unit describes skills and knowledge required to perform a task, process, or job in an autonomous operation. It includes following policies and procedures for preparing and carrying out work as well as reporting on work progress.

The unit applies to those who perform work in an autonomous workplace to ensure production and safety of automated equipment operations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Coal mining

Metalliferous mining

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element
1. Prepare for work in an autonomous operation	1.1 Locate and examine work instructions, policies and procedures for tasks performed alongside automated plant and equipment and systems 1.2 Implement organisational procedures and processes for work preparation in the autonomous operation 1.3 Identify the major components of automated equipment or system in own work instructions
2. Carry out work instructions for the automated equipment or system	2.1 Apply organisational policies and procedures in complying with governing legislation relating to occupational health, safety, environment and community 2.2 Monitor the operation of the automated equipment or

ELEMENT	PERFORMANCE CRITERIA
	system 2.3 Identify malfunctioning equipment or system that is not functioning as expected within mode of operation and parameters 2.4 Respond according to organisational procedures to malfunctioning equipment or system 2.5 Finalise work task according to organisational requirements
3. Report on and handover finalised work tasks	3.1 Communicate completion of work in the autonomous operation according to organisational procedures 3.2 Follow organisational protocol and operational procedures to handover tasks, processes or jobs

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Oral communication	Communicates with colleagues in the event of equipment and/or system malfunctions
Reading	Interprets technical information relating to the automated equipment and/or system operation relevant to own role

Unit Mapping Information

No equivalent unit. Newly created unit.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIIARO201 Work in autonomous operations

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- complete at least 2 work tasks involving automated equipment or systems in an autonomous operation.

During the above, the candidate must:

- identify the hazards, and subsequent risks, associated with the work task
- complete organisational documentation recording the measures used to control hazards and mitigate their risks
- complete the work task according to organisational requirements.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- impacts of automated equipment and system on the workplace value chain, including:
 - worker safety
 - productivity
 - consistent product quality
 - system or process repeatability
 - customer requirements
- impacts of automation on the community, including:
 - employment opportunities in new and developing job roles
 - productivity and economic benefit
 - impact on the environment
 - impact on heritage sites

- procedures for accessing, and techniques for interpreting, workplace procedures that reflect the requirements of legislation and codes of practice applying to autonomous operations relevant to own role, including requirements of:
 - industry standards, including or equivalent to:
 - IEC 61511 Safety instrumented systems for the process industry sector
 - IEC 61508 / AS 61508 Functional safety of electrical/electronic/programmable electronic safety-related systems
 - mining, environmental, cultural and heritage, and community legislation and/or codes of practice governing aspects of autonomous operations relevant to own work, including:
- types of equipment found in an autonomous workplace relevant to own role:
 - mobile – trains, trucks, drill rigs, excavators, wheel loaders
 - fixed plant – conveyers, hoppers, reclaimers
 - virtual reality/robotics/artificial intelligence
 - electrical and mechanical controls of automated equipment
- visual monitoring techniques and monitoring tools to identify:
 - indications of faulty or abnormal operation of automated plant and equipment
 - common faults associated with automated plant and equipment operations
- organisational communication protocols specific to autonomous operations relating to:
 - types of communication, including:
 - oral
 - written
 - radio
 - interacting with systems
 - types of communication systems, including digital tools, tablets, phones, and apps
 - escalation procedures
- safety protocols relating to own work instructions, including:
 - application of personal protective equipment (PPE) to meet safety requirements relating to own work environment
- responsibilities in own role for safely operating within the automated system
- functions of automated plant and equipment in workplace relevant to own role, including inputs, outputs, linkages, connectivity, and controls
- key components of organisational documentation relating to hazards and risks associated with own work tasks, including at least 1 of the following:
 - safe work method statement (SWMS)
 - Take 5 safety checklist
 - safety observation template
 - required permit.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - PPE
 - equipment required to work safely in autonomous operations
- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with legislative and regulatory requirements and using policies, procedures and processes directly related to industry sector for which the unit is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements.

This includes:

- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector/Unit sector	AQF indicator level	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Infrastructure***	1	1 year
	2	2 years
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil	3-6	3 years

Industry sector/Unit sector	AQF indicator level	Required assessor or industry subject matter expert experience
Infrastructure***		
Units coded 'RIIARO' (Autonomous and Remote Operations)	Given that this is an emerging industry area, assessors are required to demonstrate vocational competencies at least to the level being assessed, and current industry skills directly relevant to the assessment being provided.	
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the Companion Volume Implementation Guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

***Excluding units coded 'RIIARO' (Autonomous and Remote Operations).

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