



Australian Government

ICTRFN403 Test and repair cellular network equipment

Release: 1

ICTRFN403 Test and repair cellular network equipment

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to analyse cell performance and perform diagnostic tests and repairs on sub-elements and subsystems within cellular networks.

It applies to individuals working as field officers and technicians who may be responsible under supervision for small projects or parts of larger projects and for the coordination of projects in sites remote from the organisational headquarters.

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

Unit Sector

Telecommunications – radio frequency networks

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to test cellular network equipment	1.1 Produce alarm list from cellular network subsystem that shows faults or disturbances 1.2 Reset sub-element according to manufacturer's specifications 1.3 Clear or block alarms and adjust alarm thresholds according to manufacturer's specifications
2. Test cellular network sub-element equipment	2.1 Test parameters influencing cell performance and record performance for a range of field settings 2.2 Test, record and report sub-element performance according to manufacturer's specifications

	2.3 Run diagnostic test on sub-element 2.4 Swap working or executing sub-element with spare or idle unit to allow software upgrades 2.5 Swap working or executing sub-element with spare or idle sub-element to allow replacement of hardware
3. Rectify faults in cellular network equipment subsystems	3.1 Locate faulty sub-element within subsystem and identify fault 3.2 Identify faulty parts or equipment and replace or repair according to service agreement 3.3 Record fault details and rectification summary 3.4 Hand over and sign off with client

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2, 1.3, 2.2	Recognises and interprets information from relevant sources to determine technical specifications
Writing	1.1, 2.1, 2.2, 3.3, 3.4	Uses clear, specific and industry related terminology to complete and update workplace documentation and in written communications with clients
Oral Communication	3.4	- Liaises with internal and external personnel about technical requirements using specific and relevant language - Uses listening and questioning techniques to confirm understanding
Numeracy	2.1-2.3	Evaluates and reviews numerical information when interpreting measurements
Get the work done	1.2, 1.3, 2.1-2.5, 3.1, 3.2	- Determines job priorities and works logically and systematically to undertake clearly defined and familiar tasks - Implements actions according to a predetermined plan, making slight adjustments if necessary and addressing some unexpected issues - Takes responsibility for routine decision making by selecting from a range of predetermined

		options in routine situations, identifying and taking situational factors into account • Diagnoses and implements standard solutions to network problems • Understands the purposes and specific functions of common digital systems and uses them effectively to complete routine tasks
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTRFN403 Test and repair cellular network equipment	ICTRFN4159A Test and repair cellular network equipment	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTRFN403 Test and repair cellular network equipment

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Performance Evidence

Evidence of the ability to:

- prepare the cellular network alarm system
- produce an alarm list and use this to locate faults
- test cellular network parameters and performance
- measure output power received around a cell
- run diagnostic tests on sub-elements and subsystems
- locate and repair faulty sub-elements and subsystems.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain anti-static protection and its importance and potential effect on cellular network equipment
- summarise cellular antenna installation procedures
- outline electrical concepts and measurements required for cellular network repairs
- explain electromagnetic radiation (EMR) and mitigation
- list the common network components and describe their basic functions
- provide an overview of:
 - the progression of generations of cellular networks
 - features and operating requirements of test equipment
- outline procedures for repairs and swap activities
- summarise test operation of cellular network equipment
- list and describe the tests required for network components
- describe the importance of voltage levels and polarity

- describe the precautions and actions required to minimise, control or eliminate hazards related to cellular network equipment installations.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the telecommunications – radio frequency networks field of work and include access to:

- a site for mobile phone network tests and measurements
- performance testing software
- relevant legislation and documentation to test and repair network equipment.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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