



Australian Government

Department of Education, Employment and Workplace Relations

ICTTEN5058A Acceptance test new systems and equipment

Release: 1

ICTTEN5058A Acceptance test new systems and equipment

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to acceptance test telecommunications equipment. It involves the method of ensuring new system readiness through the application of appropriate inspections and tests to confirm compliance and performance. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.
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Application of the Unit

Application of the unit	Field officers, technicians or technical supervisors from carriers, contractors or other service providers apply the skills and knowledge in this unit. This unit applies to switching, transmission, radio and internet protocol (IP) based networks and the various transmission paths. It also applies to carrier grade, enterprise grade or customer equipment.
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to conduct acceptance testing	1.1. Obtain installation and commissioning documents and planning specifications from appropriate personnel to ensure the installed system is as planned and specified 1.2. Visually inspect new installation and verify compliance of the system against relevant legislation, codes, regulations and standards 1.3. Select and obtain required test equipment for suitability of acceptance testing 1.4. Prepare acceptance schedule and test criteria in consultation with appropriate personnel
2. Conduct acceptance testing	2.1. Undertake and analyse performance tests to ensure measurements meet with predetermined specifications and approved operating margins 2.2. Verify performance levels to be within tolerance specifications 2.3. Test protection mechanisms to ensure performance criteria meets the specified standard 2.4. Test alarms for satisfactory operation 2.5. Refer identified problems to appropriate personnel for remedial action 2.6. Record all acceptance test procedures and results
3. Complete administrative tasks	3.1. Complete acceptance documentation including recommendations 3.2. Notify appropriate personnel and obtain sign off

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to interpret test equipment settings and readings
- communication skills to:
 - liaise with customers and technical staff to ensure requirements are known and can be met within timeframes

REQUIRED SKILLS AND KNOWLEDGE

- prepare reports and technical documentation
- literacy skills to interpret technical specifications, standards documents and related documentation
- numeracy skills to make calculations and necessary calibration changes
- planning and organisation skills to develop activity plans to undertake inspections and tests in efficient manner
- safety awareness skills to:
 - apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
 - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- technical skills to correctly handle, connect and calibrate test equipment

Required knowledge

- cabling, terminations and supporting structures that may be encountered in the system under inspection
- common performance levels and standards
- electrical and or optical properties to be measured
- occupational health and safety (OHS) issues appropriate to the environment under inspection
- overview of typical network topologies, switching, routing and transmission techniques
- transmission type and signals that may be encountered
- various test equipment types suitable for tests to be made

Evidence Guide

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Evidence of the ability to:

- inspect new installation and verify compliance against installation plans
- prepare acceptance schedule and test criteria
- undertake relevant acceptance tests and analysis against specified performance criteria complying with all related OHS requirements and work practices.

Context of and specific resources for assessment

Assessment must ensure:

- sites where acceptance tests may be conducted
- use of testing equipment currently used in industry
- relevant regulatory and equipment documentation.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- direct observation of the candidate undertaking acceptance tests
- review of reports and plans completed by the candidate for different scenarios and situations
- oral or written questioning to assess knowledge of tests and inspections types of systems and applications
- review of a completed acceptance documentation for systems and equipment prepared by the candidate including recommendations.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- ICTTEN5059A Commission telecommunications network equipment
- ICTTEN5092A Undertake planned outage management.

EVIDENCE GUIDE

	Aboriginal people and other people from a non-English speaking background may have second language issues. Access must be provided to appropriate learning and assessment support when required. Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed. In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. Where applicable, physical resources should include equipment modified for people with special needs.
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Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Installation and commissioning documents may include:

- agreed modifications to original design plan
- commissioning test results
- preliminary test results
- recommendations from commissioning procedures.

Appropriate personnel may include:

- network manager
- planning manager
- project manager.

RANGE STATEMENT	
<i>Installed system</i> may include:	• Access Network • broadband access network • IP networks • radio network • switching • transmission • wireless access network.
<i>Relevant legislation, codes, regulations and standards</i> include:	• Australian Communications Industry Forum (ACIF) standards and codes • Australian Communications and Media Authority (ACMA) technical standards • International Standards ISO 9000 and 9001 • International Telecommunications Union (ITU) standards • OHS • Privacy Act • private property law.
<i>Test equipment</i> may include:	• digital analysers • global system for mobiles (GSM) spectrum frequency synthesiser • optical fibre power meters • optical time domain reflectometer (OTDR) • protocol analysers • spectrum analysers.
<i>Test criteria</i> may include:	• live traffic tests • normal and extreme load tests • test environment • test margins and errors.
<i>Performance tests</i> may include:	• compliance tests: • electromagnetic compatibility (EMC) • electromagnetic interference (EMI) • stability tests • transmission tests.
<i>Protection mechanisms</i> may include:	• uninterrupted power supply (UPS) • earth leakage breakers • earth protection • redundant standby equipment • software back up and restore.
<i>Alarms</i> may include:	• audible alarms

RANGE STATEMENT

	• on-screen display and monitoring systems • visual indicators.
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Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Telecommunications networks engineering
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