



Australian Government

Department of Education, Employment and Workplace Relations

ICTCBL4099A Remotely locate and identify cable network faults

Release: 1

ICTCBL4099A Remotely locate and identify cable network faults

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to remotely locate and identify cable network faults. This unit applies to voice, video and data telecommunications applications using metallic and optical fibre cables. All customer cabling work in the telecommunications, fire, security and data industries must be performed by a registered cabler. All cablers are required to register with an Australian Communications and Media Authority (ACMA)-accredited registrar.
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Application of the Unit

Application of the unit	Technicians who work remotely locating and identifying telecommunications cable faults in access networks apply the skills and knowledge in this unit. It may be done at a centralised testing office and make use of computer test routines and databases.
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Licensing/Regulatory Information

Not Applicable

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. Verify fault report	1.1. Locate source of fault using available information and contacts to verify nature of fault as reported 1.2. Perform preliminary operational testing according to type of fault presentation, fault environment and enterprise guidelines to verify nature of fault 1.3. Analyse historical data to identify possible causes and solutions
2. Conduct remote testing to diagnose network fault	2.1. Evaluate cable fault details and plan strategy to conduct remote testing 2.2. Conduct appropriate remote diagnostic test to isolate and diagnose the network fault 2.3. Determine the urgency and impact of fault and identify the required response time frame 2.4. Evaluate the diagnostic tests to determine the type, location and nature of network fault
3. Dispatch fault-finding field personnel	3.1. Prepare a fault report and forward to appropriate staff according to enterprise guidelines 3.2. Notify fault centre and arrange for the dispatch of technician to rectify fault 3.3. Notify customer of fault progress and arrange for fault clearance time

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communication skills to liaise with internal and external personnel on technical and operational matters
- literacy skills to interpret technical documentation, such as equipment manuals and specifications
- numeracy skills to take and analyse measurements
- planning and organisational skills to organise and maintain equipment
- problem solving skills to solve equipment and logistics problems
- task management skills to work systematically with required attention to detail and adherence to all safety requirements

REQUIRED SKILLS AND KNOWLEDGE

- technical skills to:
 - perform fault clearance
 - use diagnostic equipment
 - use hand and power tools

Required knowledge

- features and operating requirements of test equipment
- information required to operate equipment according to a test specification
- legislation, codes of practice and other formal agreements that impact on the work activity
- manufacturer's requirements for safe operation of equipment
- specific occupational health and safety (OHS) requirements relating to the activity and site conditions
- test methods and performance requirements
- typical issues and challenges that occur on site

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:

- methodically approach fault identification
- conduct tests appropriate to the type of fault identified
- interpret test results
- provide instructions to staff engaged in on site repair.

Context of, and specific resources for assessment

Assessment must ensure:

- sites where remote investigation of cable network faults may be conducted
- use of fault-finding equipment currently used in industry
- relevant documentation that impact on cable network and fault-finding activities.

Methods of assessment

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

- review of a hands-on project completed by the candidate
- review of an oral and written report, including test results and fault-finding methodologies
- direct observation of the candidate remotely locating and identifying cable system faults.

Guidance information for assessment

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

- ICTCBL4057A Test cable bearers
- ICTTEN4087A Undertake remote diagnosis and repair of network faults.

Aboriginal people and other people from a non-English speaking background may have second language issues.

EVIDENCE GUIDE

	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.

<i>Available information</i> may be provided by:	• customer reporting • maintenance team • network fault centre • network management printout • site installation and maintenance records.
<i>Nature of fault</i> may include:	• cable or equipment • customer or service provider • static or intermittent • urgent or non-urgent.
<i>Operational testing</i> may include:	• data transfer performance • electrical performance

RANGE STATEMENT	
	• frequency response performance • signal processing.
<i>Type of fault</i> may include:	• cable: • metallic • optical fibre • equipment: • access network • customer • Ethernet • transmission • network: • access • core • data network • wavelength division multiplexing (WDM) • Ethernet • system: • customer • service provider • vendor.
<i>Fault environment</i> may include:	• access • core • customer • service provider • vendor.
<i>Historical data</i> may refer to:	• customer interaction • equipment type • fault records • fault statistics • name of previously involved staff • service records.
<i>Impact of fault</i> may refer to:	• urgent: • congestion on emergency services route • loss of connectivity • loss of service • non-urgent: • loss of billing or toll • poor performance

RANGE STATEMENT

	• poor quality of service (QoS) • poor service.
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Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Cabling
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