



Australian Government

Department of Education, Employment and Workplace Relations

ICTCBL3103A Maintain cable network

Release: 1

ICTCBL3103A Maintain cable network

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to maintain cable network in customer premises or service provider access networks. This may include communications applications in telephony, broadband, data, video, radio frequency identification (RFID), security and computer networks, including local area networks (LAN), wide area networks (WAN) and multimedia. Cable equipment is used for line and signal conditioning and may use optical or electronic technology in optical fibre hubs or hybrid fibre coaxial (HFC) housings. Licensing, legislative, regulatory and certification requirements apply to working at heights. If an elevated work platform (EWP) is required, verify state or territory law requirements for a licence to operate an EWP. Users should confirm requirements with the relevant federal, state or territory authority. If working at heights, achievement of the unit 'CPCPCM2015A Work safely on roofs' from the CPC08 Construction and Plumbing Services Integrated framework training Package fulfils this requirement.
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Application of the Unit

Application of the unit	Technicians and lineman installers who install and maintain network cable equipment within the broadband infrastructure deployment apply the skills and knowledge in this unit. They may upgrade a coaxial or optical fibre cable as part of a HFC network, a broadband access network or a large customer private network. A cable network can be for indoor and outdoor installations within a customer premises or a service
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	provider access network and may be a domestic, commercial or industrial installation.
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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 for cable maintenance	1.1. Obtain relevant legislation, codes, regulations and standards for compliance when conducting work 1.2. Scope the work by obtaining project plan from appropriate personnel and arrange for site access to comply with security arrangements 1.3. Notify appropriate personnel of identified safety hazards at the worksite 1.4. Determine cable route and type of cable from schedule and identify and avoid other services 1.5. Obtain plant, tools and safety equipment and material to perform tasks safely and efficiently
2. Maintain cables, cable supports and enclosures	2.1. Follow occupational health and safety (OHS) and environmental requirements for the given work and avoid contact with other services 2.2. Clean area of debris, vegetation and foreign matter if required 2.3. Conduct visual inspections on cable infrastructure for assessment of evident damages according to enterprise guidelines and notify appropriate personnel 2.4. Undertake remedial action on damages according to warranties and service level agreements prior to maintenance routine 2.5. Perform maintenance tasks and tests in a safe manner and note activities on maintenance schedule
3. Complete maintenance documentation	3.1. Record test results, maintenance activities and corrective actions for future reference and complete maintenance schedule attendance chart according to enterprise requirements 3.2. Recover obsolete materials and return to appropriate point for disposal 3.3. Restore site according to the requirements of enterprise or approving authority and to customer satisfaction 3.4. Notify appropriate personnel of job completion 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 to ensure requirements are known and can be met within timeframes
- literacy skills to interpret technical specifications and related documentation
- planning and organisation skills to arrange site access and monitor own work
- safety awareness skills to:
 - apply precautions and required action to minimise, control or eliminate hazards that may exist during work activities
 - select and use required personal protective equipment conforming to industry and OHS standards
 - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- technical skills to:
 - correctly handle and connect test equipment
 - repair damage to cable networks

Required knowledge

- cabling types, connectors and cabling structures
- connections to carrier infrastructure or equipment, such as main distribution frame (MDF) or customer interface units (CIU)
- customer premises equipment
- electrical and optical properties to be measured
- OHS considerations including:
 - electrical safety and lifting hazards
 - manufacturer's requirements for safe operation of equipment
- test methods and performance requirements
- typical issues and challenges that occur on site
- warranties and service level agreement

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: • maintain cables, cable supports and enclosures • test and interpret results • undertake remedial action on damages • safely use specialised hand or power tools and equipment • apply regulations and standards related to the maintenance • comply with all related OHS requirements and work practices.
Context of, and specific resources for assessment	Assessment must ensure: • sites where maintenance of network cable may be conducted • use of equipment currently used in industry • relevant regulatory and equipment documentation that impact on maintenance 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. • direct observation of the candidate visually inspecting cable infrastructure • direct observation of the candidate undertaking remedial action • review of reports completed by the candidate outlining test results, maintenance activities and corrective action taken • oral or written questioning to assess required knowledge.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTWOR3127A Supervise work site activities.

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.

Relevant legislation, codes, regulations and standards may include:

- Australian Communications Industry Forum (ACIF) standards and codes
- appropriate licences:
 - crane
 - EWP
 - forklift

RANGE STATEMENT	
	• winch • AS Communications Cabling Manual (CCM) Volume 1 • AS/NZS 3000:2007 • AS/NZS 3080:2003 • AS/NZS 3084:2003 • AS/NZS 3085.1:2004 • AS/NZS IEC 61935.1:2006 • AS/NZS IEC 61935.2:2006 • AS/NZS ISO/IEC 14763.3:2007 • AS/NZS ISO/IEC 15018:2005 • AS/NZS ISO/IEC 24702:2007 • cabling security codes and regulations • Environmental Protection Acts • ISO Draft 11801 (International) • OHS • regulated or industry codes of practice including appropriate ACMA standards • relevant Institute of Electrical and Electronics Engineers (IEEE) standards • road and traffic control legislation and codes • technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.
Appropriate personnel may be:	• cable administrator • consultant • customer • project engineer • project manager • site supervisor.
Safety hazards may refer to:	• access points that may contain: • hazardous light (non-visible laser) • radio frequency (RF) emission • contact with remote power feed • electrical supply and areas of earth potential rise (EPR) that require mandatory separation from communications cable • hazardous conduit as according to AS 1345:1995 conduit colours associated with a hazardous service • unsafe support structures: • condemned poles

RANGE STATEMENT	
	• visible signs of decay or stress • unsafe weather: • heavy rains • high winds • severe heat or cold • thunderstorms.
Cable may be:	• aluminium • coaxial • copper • lead encased • optical fibre • plastic sheathed • structured data cables.
Other services may include:	• availability and suitability of existing cabling trays and fixing systems • drainage and sewerage • fire sprinkler systems • gas and water mains • high voltage (HV) power.
Plant, tools and safety equipment may include:	• plant: • elevated platform vehicle • ladders • scissor lifts • wire raising tool (insulated) • safety equipment: • personal protective clothing: • earmuffs • fall arrest systems • gloves • head protection • kneepads • masks • protective suits • safety boots • safety glasses • flashing lights • gas and other hazard detection equipment • safety barriers

RANGE STATEMENT	
	- trench guards - warning signs and tapes - test equipment: - cable tester - continuity tester - LAN Cat tester - passive optical network (PON) meter - tools: - auger - fixing brackets - spanner.
<i>OHS and environmental requirements</i> may relate to:	- decommissioning and isolating worksite and lines prior to commencement - identifying other services, including power and gas - personal protective clothing: - earmuffs - gloves: - leather - plastic - rubber - head protection - kneepads - masks - protective suits - safety boots - safety glasses - safety harness - safety line - safe working practices, such as the safe use and handling of: - asbestos - chemicals - materials - tools and equipment - work platforms - safety equipment: - flashing lights

RANGE STATEMENT	
	• gas and other hazard detection equipment • safety barriers • trench guards • warning signs and tapes • witches hats • special access requirements • suitable light and ventilation • environmental considerations: • clean-up protection • stormwater protection • waste management.
Visual inspections may include:	• damaged items: • cabinets • cable sheath • cable supports • cables • conduit • enclosures • equipment • lead-in cable • terminations • gas pressure alarms.
Cable infrastructure may include:	• cables • cable supports • enclosures: • cabinets • fibre hubs • housing • pits.
Remedial action may include:	• by-pass to another route • repair damage • replace damaged item.
Maintenance schedule may include:	• customer requirements • location and type of cable and equipment • maintenance schedule report • maintenance tasks • process notification for disruption to service • spare parts availability

RANGE STATEMENT

	• tests required • visual inspections details.
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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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