ICTCBL3049A Install systems and equipment on customer premises

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to install customer premises equipment. This may include communications applications, such as telephony, broadband data, video, including digital broadcasting, computer networks, including local area networks (LAN), wide area networks (WAN) and multimedia.
	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.

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 for voice, data and security installation and maintenance.
	This unit applies to indoor and outdoor installation within a customer premises and applies to both customer premises cabling and equipment.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for customer premises systems and equipment installation	1.1. Prepare for given work according to **relevant legislation**, **codes**, **regulations and standards**
	1.2. Arrange access to the site according to required procedure
	1.3. Inform appropriate personnel of existing and potential **hazards** on worksite
	1.4. Verify location of proposed customer **communications equipment** installation according to **plans** obtained from **authorised personnel**
	1.5. Develop installation plans to ensure minimal disruption to the workplace and according to standards
	1.6. Select suitable **tools and equipment**
2. Install system hardware	2.1. Install network equipment following occupational health and safety (**OHS**) **and environmental requirements** according to manufacturer's instructions
	2.2. Confirm service interruption is within limits agreed with the customer
	2.3. Complete cable jumpering to **distribution infrastructure** and **terminal equipment** to specification
	2.4. Document all installation drawings for the customer
3. Configure and test the system	3.1. Install software and configure the system according to specifications
	3.2. **Test** to verify system performance according to customer requirements
	3.3. Record all test results
4. Clean up worksite and compete documentation	4.1. Remove and dispose of installation waste and debris from worksite according to environmental requirements
	4.2. Restore worksite to customer's satisfaction
	4.3. Complete all installation documents and present to the customer
	4.4. Notify the customer and obtain signoff

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
- numeracy skills to make:
    - calculations
    - necessary calibration changes
- planning and organisation skills to arrange site access and equipment delivery
- 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
- technology skills to:
    - accomplish termination of telecommunications media
    - correctly handle, connect and calibrate test equipment for physical installation of equipment and related media

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)
- electrical and or optical properties to be measured
- OHS considerations including:
    - electrical safety, lifting hazards
    - manufacturer's requirements for safe operation of equipment
- overview knowledge of customer premise equipment
- test methods and performance requirements
- typical issues and challenges that occur on site

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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:
	
	• read and interpret:
	  • related floor plans
	  • building plans
	  • reflected ceiling plans
	  • schematic drawings
	• install customer premises equipment
	• configure and test systems and equipment
	• apply relevant regulations and standards
	• comply with all related OHS requirements and work practices.

Context of and specific resources for assessment	Assessment must ensure: • sites where installation of systems and equipment may be conducted • use of installation equipment currently used in industry • relevant regulatory and equipment documentation that impact on installation activities.
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 installing customer premises systems and equipment • review of reports completed by the candidate outlining installation drawings and test results • oral or written questioning to assess knowledge of planning, types of systems and applications.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTCBL3013A Perform cable and system test on customer premises.

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.

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:	• appropriate licences: • crane • forklift • winch • Australian Construction Industry Forum (ACIF) standards and codes • AS Communications Cabling Manual (CCM)

RANGE STATEMENT	
	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 • OHS Acts • road and traffic control legislation and codes • technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.
Hazards may include:	• optical cable • building debris • earth potential rise (EPR) • glass fibre • live power lines • manual handling • mud and water • natural and other gas build up • needle stick injury • radio frequency (RF) equipment emitting radiation • remote power feeding services • vermin.
Communications equipment may include:	• multiplexing • network equipment • radio • security equipment • switching • transmission • voice and data.
Plans may include:	• building • construction • design • site layout drawings • street.

RANGE STATEMENT	
Authorised personnel may include:	- construction manager - project manager - site manager - site supervisor.
Tools and equipment may include:	- tools such as: - angle grinders - cable strippers - cable tie tensioners - crimpers - cut off saws - cutters - drills - hacksaws - hammers - insulation displacement tools - jigsaws - knives - mechanical lifts/hoists - pliers - power tools - screwdrivers - soldering irons - spanners - tape measures - tension wrenches - termination tools - wire strippers - test equipment such as: - anti-static testers - cable testers - digital analysers - humidity and temperature testers - LAN Cat testers - laser source - load testers - multimeters - optical fibre power meters - optical time domain reflectometer (OTDR)

RANGE STATEMENT

	- PC - protocol analyser - voltmeters.
OHS and environmental requirements may relate to:	- identifying other services, including power and gas - need for decommissioning and isolating worksite and lines prior to commencement - 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 - 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

RANGE STATEMENT	
	• stormwater protection • waste management.
Distribution infrastructure may include:	• connector panels • MDF • patch panels • racks.

Terminal equipment may include:	• equipment supplied by service provider:
	  • customer access
	  • interface unit
	• isolation unit
	• modems
	• transmission equipment.

Test may include:	• bit error rate (BER) • continuity • end to end • frequency response • functionality test • gain and attenuation • loop back • signal to noise ratio (SNR) • speed.

Unit Sector(s)

Unit sector	Telecommunications

Co-requisite units

Co-requisite units		

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Competency field

Competency field	Cabling

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