



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **ICTTEN4072A Effect changes to existing customer premises equipment systems and equipment**

Release: 1

## **ICTTEN4072A Effect changes to existing customer premises equipment systems and equipment**

### **Modification History**

Not Applicable

## Unit Descriptor

<b>Unit descriptor</b>	<p>This unit describes the performance outcomes, skills and knowledge required to effect changes to existing customer premises equipment (CPE), systems and products. It involves producing plans, carrying out alterations and testing new work.</p> <p>The changes may be part of a project on emerging technologies on existing network or subsystem for convergence to Next Generation Networks (NGN).</p> <p>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.</p>
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## Application of the Unit

<b>Application of the unit</b>	<p>Linesmen, line installers and technicians from telecommunications carriers, contractors, other service providers or private providers apply the skills and knowledge in this unit to upgrade or modify customer equipment and systems.</p> <p>This unit applies to all communications applications and emerging technologies of convergence and multimedia. This unit may be applied to domestic, commercial or industrial installations for indoor and outdoor installations within a customer premises.</p> <p>CPE systems include digital home integration, security, voice over IP (VoIP), internet protocol television (IPTV), radio frequency identification (RFID), wireless networking and home automation.</p>
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## Licensing/Regulatory Information

Refer to Unit Descriptor

## Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	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 requirements for alteration	1.1. Arrange access to the site according to required procedure and comply with <i>site security arrangements</i> and <i>relevant legislation, codes, regulations and standards</i> 1.2. Assess <i>facilities</i> and capacity to ensure requirements can be met 1.3. Evaluate existing system availability and access to accommodate proposed changes 1.4. Notify appropriate personnel of identified <i>safety hazards</i> at worksite 1.5. Evaluate the compatibility of existing and proposed <i>systems</i> and equipment before proceeding with planned changes 1.6. Negotiate planned system outages and outage time with the customer
2. Document specifications and plans for alteration	2.1. Produce an amendment plan of systems <i>alterations</i> to assess suitability with existing system 2.2. Produce <i>specifications</i> for alteration requirements according to customer requirements 2.3. Select materials and <i>tools and equipment</i> compatible with the upgrade activity
3. Install additional equipment and program system feature changes	3.1. Produce an activity plan for minimal disruption of alterations to ongoing client activity 3.2. Carry out all alterations in a <i>safe manner</i> according to relevant standards and regulations and manufacturer's specifications 3.3. Test new work in isolation and when integrated with existing systems to confirm compatibility of alterations with existing network
4. Update plans and records	4.1. Update all plans and documents to show installed systems accurately and clearly 4.2. Complete <i>documentation</i> for customer support
5. Restore site to required condition	5.1. Remove waste and debris from worksite and dispose of according to environmental requirements to maintain safe work site conditions 5.2. Recover obsolete equipment and return to customer or for disposal as agreed with customer 5.3. Notify customer 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 equipment settings and readings
- communication skills to liaise with customers and technical staff to ensure requirements are known and can be met within timeframes
- literacy skills to:
  - interpret technical specifications and related documentation
  - produce plans and update documentation
- planning and organisation skills to arrange site access and equipment delivery
- problem solving skills to account for unexpected faults or equipment configuration anomalies
- 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 occupational health and safety (OHS) standards
  - work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- technical skills to:
  - perform fault clearance
  - use diagnostic equipment
  - use hand and power tools

#### Required knowledge

- legislation, codes of practice and other formal agreements that impact on the work activity
- manufacturer's requirements for safe operation of equipment
- network addressing
- specific OHS requirements relating to the activity and site conditions
- types of CPE
- typical issues and challenges that occur on site
- vendor products

## Evidence Guide

<b>EVIDENCE GUIDE</b>	
<p>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.</p>	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> <li>• identify customer's needs</li> <li>• develop plans and drawings to give effect to planned changes to systems and equipment</li> <li>• alter system and equipment including physical and programming change according to OHS and relevant standards and regulations</li> <li>• identify, conduct and interpret tests appropriate to the change.</li> </ul>
<b>Context of, and specific resources for assessment</b>	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> <li>• systems and equipment to effect changes</li> <li>• equipment and systems manuals, specifications and enterprise policy.</li> </ul>
<b>Methods of assessment</b>	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> <li>• direct observation of the candidate installing additional equipment and programming system changes</li> <li>• review of amendment plan prepared by the candidate outlining systems alterations and specifications</li> <li>• review of test results and documentation completed by the candidate</li> <li>• oral or written questioning to assess required knowledge.</li> </ul>
<b>Guidance information for assessment</b>	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> <li>• ICTTEN4073A Cut over customer premises equipment major upgrades.</li> </ul> <p>Aboriginal people and other people from a non-English speaking background may have second language issues.</p>

## EVIDENCE GUIDE

	<p>Access must be provided to appropriate learning and assessment support when required.</p> <p>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.</p> <p>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.</p> <p>Where applicable, physical resources should include equipment modified for people with special needs.</p>
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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.

***Site security arrangements*** may include:

- access times and methods
- approval to enter site
- approved entry requirements
- electronic surveillance
- security clearance.

***Relevant legislation, codes, regulations and standards*** may include:

- Australian Communications Industry Forum (ACIF) standards and codes
- Australian Communications and Media Authority (ACMA) technical standards
- AS Communications Cabling Manual (CCM) Volume 1



<b>RANGE STATEMENT</b>	
	<ul style="list-style-type: none"><li>• AS/NZS 3000:2007</li><li>• AS/NZS 3080:2003</li><li>• AS/NZS 3084:2003</li><li>• AS/NZS 3085.1:2004</li><li>• AS/NZS IEC 61935.1:2006</li><li>• AS/NZS IEC 61935.2:2006</li><li>• AS/NZS ISO/IEC 14763.3:2007</li><li>• AS/NZS ISO/IEC 15018:2005</li><li>• AS/NZS ISO/IEC 24702:2007</li><li>• Australian Building Codes and Regulations</li><li>• cabling security codes and regulations</li><li>• confined spaces regulations</li><li>• Environmental Protection Acts</li><li>• OHS</li><li>• regulated or industry codes of practice</li><li>• technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.</li></ul>

<b>RANGE STATEMENT</b>	
<b>Facilities</b> may include:	<ul style="list-style-type: none"> <li>• available hardware</li> <li>• available rack space</li> <li>• building limitations</li> <li>• cooling requirements</li> <li>• enclosure capacity</li> <li>• floor space</li> <li>• power requirements.</li> </ul>
<b>Safety hazards</b> may refer to:	<ul style="list-style-type: none"> <li>• access points that may contain:                             <ul style="list-style-type: none"> <li>• hazardous light (non-visible laser)</li> <li>• RF emission</li> </ul> </li> <li>• contact with remote power feed</li> <li>• electrical supply and areas of earth potential rise (EPR) that require mandatory separation from communications cable</li> <li>• hazardous conduit as according to AS 1345:1995 conduit colours associated with a hazardous service.</li> </ul>
<b>Systems</b> may include:	<ul style="list-style-type: none"> <li>• digital home integration</li> <li>• home automation</li> <li>• home computing</li> <li>• IPTV</li> <li>• RFID</li> <li>• security installation</li> <li>• VoIP</li> <li>• wireless network.</li> </ul>
<b>Alterations</b> may relate to:	<ul style="list-style-type: none"> <li>• additions</li> <li>• alterations that can be effected either on site or remotely</li> <li>• configurations</li> <li>• moving outlets and services</li> <li>• new extensions to services</li> <li>• removals</li> <li>• systems and application upgrades</li> <li>• upgrades to software.</li> </ul>
<b>Specifications</b> may be found in:	<ul style="list-style-type: none"> <li>• cable plans and designs</li> <li>• contract documents</li> <li>• equipment details</li> <li>• software requirements</li> <li>• specification schedules</li> <li>• upgrade specifications.</li> </ul>

<b>RANGE STATEMENT</b>	
<p><i>Tools and equipment</i> may include:</p>	<ul style="list-style-type: none"> <li>• tools:                             <ul style="list-style-type: none"> <li>• electrical:                                     <ul style="list-style-type: none"> <li>• cordless or power drill</li> <li>• soldering iron</li> </ul> </li> <li>• hand:                                     <ul style="list-style-type: none"> <li>• cutters</li> <li>• pliers</li> <li>• strippers</li> <li>• terminating tools</li> </ul> </li> </ul> </li> <li>• equipment:                             <ul style="list-style-type: none"> <li>• analyser</li> <li>• cable identification kit</li> <li>• diagnostic tools</li> <li>• local area network (LAN) Cat tester</li> <li>• passive optical meter (PON).</li> </ul> </li> </ul>
<p><i>Safe manner</i> may include:</p>	<ul style="list-style-type: none"> <li>• safe use and handling of:                             <ul style="list-style-type: none"> <li>• chemicals</li> <li>• materials</li> <li>• tools and equipment</li> <li>• work platforms:                                     <ul style="list-style-type: none"> <li>• ladders</li> <li>• scaffold</li> <li>• scissor lifts or cherry pickers</li> </ul> </li> </ul> </li> <li>• use of protective clothing:                             <ul style="list-style-type: none"> <li>• earmuffs</li> <li>• gloves</li> <li>• head protection</li> <li>• kneepads</li> <li>• masks</li> <li>• protective suits</li> <li>• safety boots</li> <li>• safety glasses.</li> </ul> </li> </ul>
<p><i>Documentation</i> may include:</p>	<ul style="list-style-type: none"> <li>• boot up and back up procedures</li> <li>• equipment configurations</li> <li>• inventory of material used on project</li> <li>• software upgrades</li> <li>• updated cable records</li> <li>• updated plan.</li> </ul>

## Unit Sector(s)

<b>Unit sector</b>	Telecommunications
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## Co-requisite units

<b>Co-requisite units</b>	

## Competency field

<b>Competency field</b>	Telecommunications networks engineering
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