



Australian Government

ICTDRE3156B Install digital reception equipment

Release 1

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Modification History

Release	Comments
Release 2	This version first released with <i>ICT10 Integrated Telecommunications Training Package Version 3.0</i>. Minor change to a performance criterion. Outcomes deemed equivalent.
Release 1	This version first released with <i>ICT10 Integrated Telecommunications Training Package Version 1.0</i>.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to install and configure digital reception equipment (DRE) on customer premises as part of a home network.

Home networks integrate many services, such as broadband, digital TV, free to air (FTA), subscription TV (pay TV) and internet protocol TV (IPTV).

Application of the Unit

Technicians who install and maintain DRE in the home network or small business network apply the skills and knowledge in this unit to integrate many services for the customer.

Integrated services include broadband services, FTA, pay TV and IPTV.

Licensing/Regulatory Information

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.

Pre-Requisites

Nil

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements	Performance Criteria
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>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.</i>

Elements and Performance Criteria

1. Prepare for installation	1.1 Review preparation to ensure work complies with requirements of relevant legislation, codes, regulations and standards 1.2 Notify customer to verify installation order and arrange for site access to comply with security arrangements 1.3 Notify supervisor of identified safety hazards at the work site and complete a job safety analysis (JSA) before commencing work 1.4 Confirm location of digital reception equipment and fittings with customer 1.5 Identify barriers to installation and develop strategies to overcome them within time and budget restrictions 1.6 Select and obtain tools and materials appropriate for the work order
2. Install hardware and equipment	2.1 Measure signal level at wall plate to ensure received signal strength is adequate 2.2 Test customer's existing equipment for operational condition and reception quality 2.3 Notify customer of detected problems and record remedial actions if required 2.4 Identify interconnection cabling requirements and prepare cables for job requirements 2.5 Affix wall plate to agreed position on wall and secure cable according to specification 2.6 Connect set top unit to customer equipment and connect cabling between wall plate and set top unit following occupational health and safety (OHS) and environmental requirements 2.7 Power up set top unit and configure it to customer requirements 2.8 Activate customer services to complete hardware installation where required
3. Commission and test installation	3.1 Conduct functional test to assess transmission signal quality 3.2 Conduct tests to ensure that quality of all services are being delivered against pre-existing conditions 3.3 Check that all interconnected equipment is functional

4. Finalise installation and handover to customer	4.1 Restore site to original condition and customer satisfaction 4.2 Assess damages that may have occurred during installation and arrange with customer for repair or replacement of damaged components 4.3 Remove waste and debris from site and dispose of in a safe and environmentally appropriate manner 4.4 Conduct customer training appropriate to the equipment, services and vendor literature
5. Complete contract documentation	5.1 Provide warranties to customer in required format where work and equipment are subject to warranty 5.2 Prepare invoices and other financial documentation, where required, and present to customer 5.3 Obtain authorised signatures on required documentation to confirm acceptance of completed work

Required Skills and Knowledge

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

Required skills

- communication skills to liaise with customer and colleagues and negotiate with site owner
- literacy skills to interpret technical documentation, specifications and service orders
- numeracy skills to:
 - set up
 - take measurements
 - interpret results
- planning and organising skills to organise and prepare installation resources
- problem-solving skills to respond to typical installation challenges
- task-management skills to:
 - adhere to all safety requirements
 - work systematically with required attention to detail
- technical skills to:
 - perform diagnostic procedures
 - use hand and power tools
 - use test equipment to install equipment.
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Required knowledge

- broad knowledge of whole industry product range
- contemporary equipment and connection methods
- customer service principles, particularly dealing with customers face to face
- enterprise or service specific knowledge of products and services supplied
- OHS general principles and enterprise-specific JSA requirements
- overview knowledge of:
 - objectives and methods of training for product use for customer education
 - radio frequency (RF) theory, principles and safety
 - telephony principles to support return path awareness
- pre-installation enterprise-specific requirements
- quality assurance of enterprise requirements
- return path technology.

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: • identify installation requirements • install equipment applying OHS requirements and work practices • configure set equipment to customer requirements • conduct functionality tests and interpret results • provide customer training appropriate to the equipment • complete the task and handover to customer.
Context of, and specific resources for assessment	Assessment must ensure: • site for digital reception equipment installation • range of digital reception equipment currently used in industry • range of test equipment required for digital reception equipment installation and testing.
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 installing digital reception equipment • direct observation of the candidate conducting signal measurement • oral or written questioning of the candidate to assess knowledge of digital reception equipment and test methods.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTDRE3165A Install a complex digital reception system.

	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

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 • 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 • Environment Protection Acts • Trades Practices Act • Institute of Electrical and Electronics Engineers (IEEE) standards • ISO Draft 11801 • OHS Acts and relevant codes and standards • regulated or industry codes of practice, including appropriate Australian Communications and Media Authority (ACMA) standards • technical standards AS/ACIF S008:2006 and AS/ACIF S009:2006.
Safety hazards may refer to:	• debris • excessive dust or noise • exposed electrical wiring • exposed machinery • industrial • spilled chemicals • unsafe spatial separation of cables • unsafe structures • wet areas.
Digital reception may	• services:

include:	• community television • FTA (open broadcast TV) • IPTV • pay TV • service provision media: • cable • satellite • terrestrial • wireless.
Barriers to installation may include:	• furniture location • internal walls • personal safety • provision and location of power outlets.
Tools may include:	• crimping tool • hand tools • power tools • stripping tool • terminating tools • tool kit.
Signal level may refer to:	• level of signal required to operate equipment effectively • set by carrier specifications.
Customer equipment may include:	• audiovisual (AV) units • digital TV • IPTV unit • master antenna television (MATV) units.
Cabling may refer to :	• coax • data cable • optical patch cable.
OHS and environmental requirements may relate to:	• identifying other services including power and gas • personal protective equipment: • earmuffs • gloves • head protection • masks • protective suits • safety boots • safety glasses • safe work practices, such as the safe use and handling of: • chemicals

	• materials • tools and equipment • safety equipment: • flashing lights • safety barriers • warning signs and tapes • witches hats • special access requirements • environmental considerations: • clean-up protection • stormwater protection • waste management.
Functional test may include:	• carrier specific test • noise measurements • qualitative test • signal power level • spectrum analysis • use of test pattern • voltage alignment tests.
Services may include:	• community television • FTA (open broadcast TV) • IPTV • pay TV.
Warranties may relate to:	• support provided by network service provider • support specified by the equipment manufacturer or supplier.

Unit Sector(s)

Telecommunications - Digital reception technology