Australian Government

Department of Education, Employment and Workplace Relations

ICT40610 Certificate IV in Telecommunications Networks Technology

Release: 1

ICT40610 Certificate IV in Telecommunications Networks Technology

Modification History

Not Applicable

Description

Descriptor

This qualification reflects the role of a technician with a range of telecommunications skills who can:

- install and maintain enterprise network in emerging and converging technologies
- install and maintain optical and wireless equipment for high speed broadband network infrastructure
- install and maintain internet protocol (IP) based network telecommunications equipment
- install IP based networks in home networks and small and medium enterprises
- install and maintain telecommunications, data cabling and cabling products on customer premises Cabling at the customer premises in accordance to requirements of the Australian Communications and Media Authority (ACMA) and relevant industry registration bodies, and in line with the specifications of the access network owner
- install and maintain telecommunications access network cabling and infrastructure, systems and basic customer premises equipment
- assess installation requirements of converging voice, video and data IP networks
- plan and performing installations
- test installed equipment and fault find.

This role involves a degree of autonomy and may include limited supervision of others.

Job Roles

Job roles and titles vary across different sectors of the industry. Possible job titles relevant to this qualification include:

- customer computer system installer
- customer premises equipment installer
- home network installer
- IP based network installer
- network security equipment installer
- optical network equipment installer
- radio technician
- RFID system installer
- secure IT network installer
- SME network installer
- sustainability network equipment installer
- telecommunications network technician
- wireless LAN installer wireless network equipment installer
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Prerequisite requirements

There are no prerequisite requirements for individual units of competency.

Pathways Information

Qualification Pathways
Pathways into the qualification
Candidates may enter this qualification with limited or no vocational experience and without a relevant lower level qualification.

Pathways from the qualification
After achieving the ICT40610 Certificate IV in Telecommunications Networks Technology, candidates may undertake the ICT50210 Diploma of Telecommunications Network Engineering, a qualification for those seeking to develop more specialised technical skills and knowledge, or a range of other Diploma qualifications.

Licensing/Regulatory Information

Licensing, **legislative**, **regulatory or certification considerations**
All training programs must be conducted with the reference to the regulatory regime of the prevailing statutory authority (currently ACMA).

National Code of Practice for Induction for Construction Work
Some cabling and installation work may fall within the definition of construction work. If so, people entering the construction site are required to complete the general induction training program specified by the National Code of Practice for Induction Training for Construction Work (Australian Safety Compensation Council, May 2007).

Achievement of the unit CPCCOHS1001A Work safely in the construction industry from the CPC08 Construction and Plumbing Services Integrated Framework Training Package fulfils this requirement.

Entry Requirements

Entry requirements
There are no entry requirements for this qualification.

Employability Skills Summary

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
Employability Skill	**Industry/enterprise requirements for this qualification include**:
Communication	• determining options to rectify faults and discussing them with customer so that necessary action is determined • documenting test methods and results

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY

	• making a complete check of installation against installation plans • reading, interpreting and using equipment/system manuals and specifications and relevant enterprise policy and documentation • conveying information to clients, colleagues and other site personnel • providing feedback to customers on operating the equipment
Teamwork	• identifying members and roles of team • identifying and contributing to team tasks and goals • recognising and responding positively to conflict within team • working with team members to work with clients and install equipment • relating personal role to the industry • participating in a team structure by identifying team members, tasks and goals and recognising and responding positively to conflict • applying interpersonal skills with clients, employer, supervisors, work associates, team members and other contractors • giving and receiving feedback to assist in meeting team and organisation goals
Problem solving	• ranking causes of problems, working from system-wide impacts to specific impacts • diagnosing network security problems to secure the network • identifying barriers to installation and developing strategies to overcome them within time and budget restrictions • identifying faults or optimisation options • rectifying faults and adjusting system to optimal operation • determining cable routes taking into account building services, safety, industry codes and practices, and customer requirements • following up promptly on difficulties and known problem areas
Initiative and enterprise	• prioritising urgent requests and acting according to organisational guidelines • identifying barriers to installation and developing strategies to overcome them within time and budget restrictions • adapting plan to suit specific features of site • identifying issues and possible solutions within established guidelines • interacting with enterprise personnel, customers and other contractors keeping a customer focus and considering customer needs
Planning and organising	• identifying realistic short and long-term career objectives • planning and provision to meet key dates and milestones

EMPLOYABILITY SKILLS QUALIFICATION SUMMARY	
	• gathering data for the installation of systems and equipment • planning the installation of fibre cable, taking into account technical, scheduling and financial considerations • interpreting design and relating to site characteristics • prioritising work according to organisation guidelines • running a test of network security arrangements
Self-management	• identifying realistic short and long-term career objectives • identifying work to be completed • complying with all related OHS requirements and work practices • developing installation plans to ensure minimal disruption to the workplace • checking that tools and equipment are in safe working order and adjusted to manufacturer specification • relating own role to the industry and establishing own work schedule • using strategies to present a professional image to customers • interpreting and applying relevant regulations and standards
Learning	• relating current or intended role to career objectives in a positive manner • giving and receiving feedback to assist in meeting team and organisation goals • making clients aware of opportunities that exist for system upgrades, additional services and training • seeking assistance from team members when necessary • providing suitable training and assessment opportunities for work team members • providing training to customers on system, product, product features and facilities
Technology	• checking that tools and equipment are in safe working order and adjusted to manufacturer specifications • converging many integrated and emerging technologies • testing and measuring of broadband network infrastructure • installing and operating telecommunications equipment and products • installing and operating equipment and products • identifying, replacing or repairing faulty parts and equipment • undertaking relevant acceptance tests and analysing results against specified performance criteria

Packaging Rules

Packaging Rules

Total number of units = **17**

8 core units, **plus**

1 elective unit from Group A workplace units, **plus**

8 elective units from Group B general units

Elective units must be relevant to the work outcome, local industry requirements and the qualification level.

A maximum of three units from Group B general elective units may be substituted with three units of competency from any endorsed Training Package or any accredited course at Certificate IV or Diploma level. One of those three units from Group B general elective units may be substituted from Group A workplace elective units where required by a specific job role.

Units selected from other Training Packages or accredited courses must not duplicate units selected from or available within the ICT10 Integrated Telecommunications Training Package.

CORE UNITS

ICTBWN3205A Use optical and radio frequency measuring instruments

ICTOHS2170A Follow OHS and environmental policy and procedures

ICTPMG4152A Manage the delivery of network infrastructure

ICTSUS4185A Install and test power management software

ICTTEN2007A Use electrical skills in telecommunications work

ICTTEN2105A Install and test an internet protocol device in convergence networks

ICTTEN2140A Use hand and power tools

ICTTEN4081A Locate, diagnose and rectify faults

ELECTIVE UNITS

Group A - **Workplace elective units**

BSBSMB401A Establish legal and risk management requirements of small business

BSBSMB405A Monitor and manage small business operations

Packaging Rules

BSBSMB407A Manage a small team

ICAA4041C Determine and confirm client business expectations and needs

ICTTEN4003A Estimate and quote for customer telecommunications equipment installation

Group B - **General elective units**

Cabling

ICTCBL4002A Prepare design drawings and specification for a cable installation

ICTCBL4004A Schedule and supply cabling installation

ICTCBL4023A Supervise cabling project

ICTCBL4057A Test cable bearers

ICTCBL4099A Remotely locate and identify cable network faults

Digital reception technology

ICTDRE4166A Integrate customer digital reception equipment

ICTDRE4167A Integrate data delivery modes

ICT use
(**IP networks**)

ICAB4059B Develop detailed technical design

ICAB4235B Build basic perimeter security into a network

ICAB4236B Build security into a virtual private network

ICAB4240C Build an enterprise wireless network

ICAI4029C Install network hardware to a network

ICAI4030B Install software to networked computers

ICAT3025B Run standard diagnostic tests

Occupational health and safety

ICTOHS2170A Follow occupational health and safety and environmental policy and procedures

ICTOHS2153A Work safely near power infrastructure

CPCCOHS1001A Work safely in the construction industry

Packaging Rules

Optical networks

ICTOPN4115A Install and test a dense wavelength digital multiplexing system

ICTOPN4116A Use advanced optical test equipment

ICTOPN4117A Prepare activity plans and specifications for a fibre to the x installation

Project management

ICTPMG4048A Schedule installation of customer premises equipment

Radio frequency networks

ICTRFN4095A Conduct radio frequency measurements

ICTRFN4158A Select an antenna system for radio communications

ICTRFN4159A Test and repair cellular network equipment

ICTRFN4174A Undertake radio communications signals monitoring

ICTRFN4177A Install radio communications base station equipment

ICTRFN4178A Maintain hybrid fibre coaxial broadband cable network

Sustainability

ICTSUS4183A Install and test renewable energy system for ICT networks

ICTSUS4184A Install and test power saving hardware

ICTSUS4186A Install thin client applications for power over ethernet

Telecommunications engineering networks

ICTTEN2209A Build and maintain a secure network

ICTTEN3056A Install telecommunications network equipment

ICTTEN4001A Identify requirements for customer telecommunications equipment

ICTTEN4040A Assign a transmission path

ICTTEN4051A Install configuration programs on PC based customer equipment

ICTTEN4072A Effect changes to existing customer premises equipment systems and equipment

ICTTEN4073A Cut over customer premises equipment major upgrades

ICTTEN4076A Complete equipment and software upgrades

Packaging Rules
ICTTEN4078A Commission an electronic system
ICTTEN4085A Monitor, analyse and action telecommunications network alarms
ICTTEN4086A Undertake routine maintenance of the telecommunications network
ICTTEN4087A Undertake remote diagnosis and repair of network faults
ICTTEN4102A Repair telecommunication system faults
(**Emerging technologies**)
ICTTEN4050A Install and configure a wireless mesh network
ICTTEN4126A Install and configure internet protocol TV in a home network
ICTTEN4202A Install and test a radio frequency identification system
ICTTEN4215A Install and configure internet protocol TV in a service provider network
ICTTEN4229A Design, install and configure a customer smart grid network
(**IP networks**)
ICTTEN4198A Install, configure and test an internet protocol network
ICTTEN4199A Install, configure and test a router
ICTTEN4210A Implement and troubleshoot enterprise routers and switches
ICTTEN4211A Design, install and configure an internetwork
ICTTEN4212A Apply advanced routing protocols to network design
ICTTEN4213A Configure and troubleshoot advanced network switching
ICTTEN4214A Install and maintain a wide area network
ICTTEN5201A Install, configure and test a server
Selecting electives for different outcomes
The context of this qualification varies and this must guide the selection of elective units.
The following examples are designed to assist in the selection of appropriate electives for particular outcomes at this level but they are in no way prescriptive.
Customer computer system installer
Core units plus one Group A workplace elective unit plus:
• ICTTEN4076A Complete equipment and software upgrades
• ICTTEN4198A Install, configure and test an internet protocol network
• ICAB4059B Develop detailed technical design
• five additional units from Group B general elective units, with a maximum of one

Packaging Rules

of those additional units from Group A workplace elective units as appropriate to the specific job role.

Customer Premises Equipment installer

Core units plus one Group A workplace elective unit plus:

- ICTTEN4051A Install configuration programs on PC based customer equipment
- ICTTEN4072A Effect changes to existing customer premises equipment systems and equipment
- ICTTEN4073A Cut over customer premises equipment major upgrades
- ICTTEN4078A Commission an electronic system
- four additional units from Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.

Home network installer

Core units plus Group A workplace elective unit plus:

- ICTDRE4166A Integrate customer digital reception equipment
- ICTDRE4167A Integrate data delivery modes
- ICTTEN4126A Install and configure internet protocol TV in a home network
- ICTTEN4198A Install, configure and test an internet protocol network
- ICTTEN4229A Design, install and configure a customer smart grid network
- three additional units Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.

Network Security equipment installer

Core units plus Group A workplace elective unit plus:

- ICAB4235B Build basic perimeter security into a network
- ICAB4236B Build security into a virtual private network
- ICTTEN4198A Install, configure and test an internet protocol network
- ICTTEN4199A Install, configure and test a router
- four additional units Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.

Optical network equipment installer

Core units plus Group A workplace elective unit plus:

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- ICTOPN4115A Install and test a dense wavelength digital multiplexing system
- ICTOPN4116A Use advanced optical test equipment
- ICTOPN4117A Prepare activity plans and specifications for   a fibre to the x installation
- ICTRFN4178A Maintain hybrid fibre coaxial broadband cable network
- four additional units Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.

RFID System installer

Core units plus Group A workplace elective unit plus:

- ICTTEN4202A Install and test a radio frequency identification system
- ICTTEN4198A Install, configure and test an IP network
- ICTTEN4078A Commission an electronic system
- ICAI4030B Install software to networked computers
- four additional units Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.

SME network installer

Core units plus one Group A workplace elective unit plus:

- ICTTEN4210A Implement and troubleshoot enterprise routers and switches
- ICTTEN4211A Design, install and configure an internetwork
- ICTTEN4212A Apply advanced routing protocols to network design
- ICTTEN4213A Configure and troubleshoot advanced network switching
- four additional units Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.

Sustainability Network equipment installer

Core units plus Group A workplace elective unit plus:

- ICTSUS4183A Install and test renewable energy system for ICT networks
- ICTSUS4184A Install and test power saving hardware
- ICTSUS4186A Install thin client applications for power over ethernet
- five additional units from Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.

Packaging Rules

Wireless LAN installer

Core units plus Group A workplace elective unit plus:

• ICAB4240C Build an enterprise wireless network
• ICAB4236B Build security into a virtual private network
• ICAI4030B Install software to networked computers
• ICTTEN4198A Install, configure and test an internet protocol network
• four additional units from Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.

Wireless network equipment installer

Core units plus Group A workplace elective unit plus:

• ICTRFN4096A Conduct field tests of radio and wireless networks
• ICTRFN4158A Select an antenna system for radio communications
• ICTRFN4159A Test and repair cellular network equipment
• ICTRFN4177A Install radio communications base station equipment.
• four additional units Group B general elective units, with a maximum of one of those additional units from Group A workplace elective units as appropriate to the specific job role.