



Australian Government

Assessment Requirements for ICTTEN315 Determine and apply technologies within a telecommunications system

Release: 1

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Modification History

Release	Comments
Release 1	This version released with ICT Information and Communications Technology Training Package Version 5.0.

Performance Evidence

The candidate must demonstrate the ability to perform the tasks outlined in the elements, performance criteria, and foundation skills, and to:

- develop a block diagram showing a telecommunications system based on copper, fibre and radio mediums
- connect relevant cable to computer components used in a local area network (LAN) environment
- locate components used in a radio/wireless transmission system
- locate components and equipment to facilitate internet operations.

Note: Evidence must be provided at least once when a specific volume or frequency is not stated.

Knowledge Evidence

The candidate must demonstrate the knowledge required to perform the tasks outlined in the elements, performance criteria, and foundation skills, which includes knowledge about:

- basic analog and digital theory
- basic radio-communications theory
- basic fibre optic theory
- basic principles of data encapsulation as a frame and packet of data
- basic multiplexing principles
- timing of data transmission as synchronous, plesiochronous and asynchronous formats
- basic concepts of layers within the OSI and TCP-IP Models
- work health and safety (WHS) regulations for electromagnetic and photonics telecommunications systems
- RF amplification, coax feeder and simple aerial concepts, including Yagi, parabolic dish, aerial gain, directional, omnidirectional, polarity, helical

- components used in common LAN systems including personal computer devices, NUCs, photocopier/printer/scanners, servers, NASs, cable systems, switches, routers, wi-fi modems, and NTDs
- basic concepts and use of programming language
- basic operation of LED, laser and emerging technology sources, fibre cable and photo detector reception
- basic encoding techniques and principles used in ethernet copper cabling
- switching encountered and used in telecommunications, telephone systems, LAN, carrier/retailer
- basic types of modulation, amplitude, frequency and phase modulation used to attain efficiencies in sharing available bandwidth
- basic principles of FDM, TDM and QAM
- basic concepts and use of internet and telecommunications network related programming languages and protocols
- common internet terminology
- measuring techniques, BER, Viterbi, MER, Error rates (10-6)
- basic operation of commonly used telecommunications devices and systems.

Assessment Conditions

Skills must be assessed in a workplace or simulated environment where conditions are typical of those in a telecommunications work environment or workplace.

Access is required to:

- safety signs pertaining to electrical, electromagnetic, radio frequency and photonics systems
- equipment currently used in telecommunications systems (electrical, radio and fibre)
- cabling products and cable used in telecommunications systems.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volume Implementation Guides are available from VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>