



Australian Government

Department of Education, Employment and Workplace Relations

ICTTEN4040A Assign a transmission path

Release: 1

ICTTEN4040A Assign a transmission path

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to allocate channel capacity to a customer or customer group based on details provided in a service request. It involves identifying requirements and translating them into quantitative changes to network transmission and access systems. The activity may be for a new installation or upgrade of capacity or technology for existing network or subsystem for convergence to Next Generation Networks (NGN). 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.
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Application of the Unit

Application of the unit	Technical officers or engineers from private and public organisations apply the planning skills and knowledge in this unit. They combine technical skills with organisational skills to assess customer requirements and allocate a transmission medium to provide access to the customer. They may be responsible for small projects or parts of larger projects and primarily perform planning functions to provide service to a customer.
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	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. Collect data to evaluate capability of transmission path	1.1. Determine service details from service request 1.2. Use transmission medium plans to locate customer position relative to the access network provisioning 1.3. Evaluate existing transmission mediums in close proximity to assess their capability to deliver service to customer 1.4. Specify equipment to be used on the service from service request 1.5. Specify line interface type that is to be used according to enterprise guidelines
2. Allocate transmission medium for service	2.1. Select appropriate transmission medium to deliver service to customer's premises 2.2. Record information about transmission medium between customer's premises and exchange or network terminal point 2.3. Verify service delivery point interface at exchange or network terminal point is compatible with required system 2.4. Conduct appropriate allocation process to assign new services and send completed allocation information to appropriate field staff to verify physical allocation before providing service
3. Maintain transmission medium records	3.1. Advise relevant personnel of impending bearer shortages to facilitate future planning allocation 3.2. Update plans and databases to record all details

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 information affecting dimensioning decisions
- communication skills to liaise with:
 - customers to ensure requirements are known and can be met within timeframes
 - technical staff, subject matter experts and manufacturers

REQUIRED SKILLS AND KNOWLEDGE

- literacy skills to:
 - interpret technical specifications and related documentation
 - notate and record information
- numeracy skills to make calculations to determine capacity requirements
- PC skills for interacting with software systems for allocation and re-routing of channel capacity
- planning and organisational skills to:
 - ensure correct allocation of actual and virtual resources
 - make site access and equipment delivery/allocation arrangements
- technical skills to implement changes to transmission systems:
 - channel allocation
 - reconfiguring
 - virtual private network (VPN)

Required knowledge

- common customer telecommunications applications and related equipment
- Core Networks using emerging and converging technologies
- current legislation relating to installation of telecommunications equipment and connection to carrier services
- customer access options and their technical support systems
- multiplexing principles and transmission hierarchies
- network and transmission equipment
- network topologies, interfaces and interconnect solutions

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:

- assess transmission needs for a transmission path according to service request
- select suitable equipment to provide new services
- interact with internal and external personnel, keeping a customer focus and consideration of customer needs
- deal with problems and provide solutions
- assess future needs.

Context of and specific resources for assessment

Assessment must ensure:

- sites where transmission paths can be allocated
- computer networking facility
- relevant regulatory and equipment documentation
- use of equipment currently used in industry.

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 assessing transmission needs and conducting allocation process
- review of plans and databases completed by the candidate providing details of new transmission path
- oral or written questioning to assess knowledge of assigning transmission paths.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- ICTCBL3069A Install network cable equipment
- ICTCBL3103A Maintain cable network
- ICTCBL4002A Prepare design drawings and specification for a cable installation.

Aboriginal people and other people from a non-English

EVIDENCE GUIDE

	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**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.

Service details may relate to:

- data allocation based on common digital hierarchy increments:
 - asynchronous transfer mode (ATM)
 - custom throughput requirements
 - E1
 - Synchronous transport module level x(STM-X)
- multiple voices channels (ISDN)

RANGE STATEMENT	
	• need ascertained from application: • other data sources • private automatic branch exchange (PABX) • video • single voice channel.
Existing transmission mediums may be determined from:	• databases • local knowledge and include allocation within existing multiplex schemes: • associated physical media • ATM • plesiochronous digital hierarchy (PDH) (E1) transmission system • synchronous digital hierarchy (SDH) • maps.
Equipment may include:	• access equipment: • fibre termination equipment • microwave • modems • satellite • line termination units • multiplex equipment • network infrastructure including ports on multiplex equipment • transmission equipment.
Transmission medium may include:	• frequency allocation on radio transmission • global system for mobile (GSM) communications • hybrid fibre coaxial (HFC) • microwave • satellite • system channel on optical fibre • twisted pair • VPN on a multi protocol label switching (MPLS) link.
Service delivery point interface may include:	• ATM adapter • cross connect port • digital subscriber line access multiplexer (DSLAM) • exchange line interface unit

RANGE STATEMENT	
	• fibre termination point • main distribution frame (MDF).
<i>Allocation process</i> may relate to:	• automated allocation for a group service • manual or computer based procedures for allocating new transmission channel capacity • service.

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Telecommunications networks engineering
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