Australian Government

ICTPMG8149B Evaluate and use telecommunications management networks

Release 1

INDUSTRY
SKILLS
COUNCILS
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ICTPMG8149B Evaluate and use telecommunications management networks

Modification History

Release	Comments
Release 2	This version first released with *ICT10 Integrated Telecommunications Training Package Version 3.0*. Minor changes to unit descriptor, application and two performance criteria. Outcomes deemed equivalent.
Release 1	This version first released with *ICT10 Integrated Telecommunications Training Package Version 1.0*.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to analyse, evaluate and monitor business performance using appropriate network diagnostic models and tools in the management of open systems in IT/ICT communications networks.

Application of the Unit

Network, IT and engineering staff who analyse and monitor performance of telecommunications network apply the skills and knowledge in this unit.

Relevant job roles include managing and monitoring operational communications networks, such as asynchronous transfer mode (ATM), cellular networks, telephone exchanges and computer clusters.

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
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

1. Prepare to evaluate and use telecommunications management network	1.1 Research and evaluate network management architectures in common carrier and extended models
	1.2 Evaluate features and functionality of the Standards Committee International Telecommunications Union (ITU-T) TMN architecture and network models
	1.3 Research and evaluate techniques for collecting management information from network nodes using interrupts and polling
	1.4 Analyse configuration management problems and produce an assessment report on solutions by integrated network management systems
2. Analyse fault management and accountability procedures	2.1 Evaluate effectiveness of fault management processes from beginning to resolution, including automation of fault management
	2.2 Analyse reasons for alarm correlation with process analysis and apply *fault identification* to network problems
3. Plan for reliability and survivability	3.1 Research and produce a report on quality of service (QoS) in a telecommunications context, including relevant international standards and range and type of possible monitoring parameters for a QoS
	3.2 Analyse reasons for service levels in a telecommunications context
	3.3 Perform linear and exponential trend analysis on real or simulated data for a single *monitoring parameter*
	3.4 Research and assess reliability and survivability in a telecommunications context with reference to disaster and security management policies and procedures
	3.5 Develop a disaster recovery plan for a telecommunications network
4. Research and report network management techniques	4.1 Research how accounting records are generated and used for both voice and data networks
	4.2 Analyse the process of generating bills from accounting records, configuration and customer information as appropriate
	4.3 Research and report on network management *techniques and standards* used for the IT/ICT systems and networks
	4.4 Research and report on standards used in the simple network management protocol (SNMP) network management model and the global system for mobiles (GSM) network

	4.5 Analyse network management functions over a CNET network simulation or similar data network and produce a report on the findings

Required Skills and Knowledge

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

Required skills

- analytical skills to evaluate a range of complex technical data
- communication skills to work effectively within a group and present information
- information technology skills for word processing, using statistical data and desktop research
- literacy skills to prepare reports and read and interpret technical standards
- planning and organising skills to manage own work in short timeframes
- research skills to gather data and information
- technical skills to use telecommunications management networks.
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Required knowledge

- administrative network management systems
- business model
- business processes
- enterprise solutions
- operations network management systems
- organisational policy and procedures
- workplace and industry environment.

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:
	
	 • research and evaluate the architectural features and functions of network management systems
	 • research and report:
	    • major features, configuration and functions of management systems
	    • on fault management and accountability procedures
	    • major features and functions of QoS agreements
	    • on network management techniques
	 • analyse the major features of planning for reliability and survivability.

Context of and specific resources for assessment	Assessment must ensure: • a telecommunications operations site with a network management system • networked computers with relevant software.
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: • oral or written questioning to assess knowledge of network management • direct observation of the candidate performing network management functions within a telecommunication system • review of research reports prepared by the candidate.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplaces and job role is recommended, for example: • ICTRFN8180B Analyse a cellular mobile network system • ICTTEN8194A Investigate the application of cloud networks in telecommunications switching.

	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.

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.

Fault identification may include:	- congestion - major alarm - minor alarm - out of service - outage - trouble ticket.
Monitoring parameter may include:	- grade of service - bit errors - block errors.
Techniques and standards may include:	- ATM1 - integrated services digital network (ISDN) - synchronous digital hierarchy(SDH)/synchronous optical network (SONET).

Unit Sector(s)

Telecommunications - Project management