Australian Government

Department of Education, Employment and Workplace Relations

ICTPMG4152A Manage the delivery of network infrastructure

Release: 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

ICTPMG4152A Manage the delivery of network infrastructure

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to manage the delivery of network infrastructure. It includes scoping the project, developing a project brief and managing the project.
	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.

Application of the Unit

Application of the unit	Network engineering staff or senior technical officers with appropriate project management roles and authority to direct the activities of installation staff, building workers, contractors, manufacturers and vendors apply the skills and knowledge in this unit.
	This unit applies to projects associated with access and core Networks, including switching and transmission via optical fibre, radio, microwave and satellite.

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Scope network infrastructure requirements	1.1. Determine the requirements of the project from client and approved network plan 1.2. Assess current access network conditions to determine existing network capacity and capability 1.3. Analyse *site survey data* and geographical information where necessary to assess suitability of site to design requirements 1.4. Assess risk of *barriers to plan realisation* to enure delivery of network infrastructure project is achievable 1.5. Analyse the impact on planning of *relevant legislation and associated operational codes* 1.6. Produce a *scoping document* with consideration to new technology or technology features required in the project
2. Develop project brief	2.1. Develop planning options considering current and new technology, facilities, features, present and future needs 2.2. Conduct cost-benefit studies to guide decision making processes according to sound business practice 2.3. Discuss project brief with the customer, as required, and obtain approval of planning options 2.4. Produce planning specifications relating to location, route, area, product and/or platform 2.5. Estimate timing, costing and an operating budget according to enterprise policy 2.6. Prepare the final *project brief* and present to operational staff for implementation
3. Manage the project	3.1. Define the roles and responsibilities of stakeholders within the terms of the project 3.2. Establish a reporting and communications line to ensure project is effectively managed 3.3. Review and continually monitor progress of the project against deliverables and timelines and invoke contingencies if required 3.4. Complete *project documents* in line with enterprise standards and guidelines

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.

Required skills

- analysis skills to:
  - analyse site survey data
  - assess current Access Network capacity and capability
- communications skills to liaise and negotiate with customers to ensure requirements are known and can be met within timeframes
- literacy skills to produce:
  - contingency plan
  - planning specifications
  - project brief
  - scoping document
- numeracy skills to conduct cost-benefit analysis
- planning and organisational skills to:
  - plan efficient work schedules
  - plan location route area, product and platform
  - prioritise and organise own work
- problem solving skills to account for unexpected variations to requirements
- research skills to gain and maintain relevant and current technical product knowledge

Required knowledge

- Australian Communications and Media Authority (ACMA) licensing requirements
- common customer telecommunications applications and related equipment
- computer operation
- familiarity with the workplace and industry environment
- industry cabling practices
- leasing versus purchase options
- legislative and environmental impacts, including options for green ICT installations
- network and transmission equipment
- network topologies, interface and interconnect solutions
- occupational health and safety (OHS) procedures
- performance parameters and typical faults in equipment and related connection and transmission media, and various test equipment types
- project management
- telecommunications components and assemblies

REQUIRED SKILLS AND KNOWLEDGE

- warranty information and contractor work guarantees

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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: • scope network infrastructure requirements • analyse and document considerations in project specifications • analyse impact of legislative and environmental conditions to project plan • prepare project brief outlining specifications, timeframes, costing and operating budget • manage the delivery of network infrastructure to completion.
Context of and specific resources for assessment	Assessment must ensure: • sites on which projects may be conducted • relevant databases, legislative requirements and other site and project related documentation.
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 undertaking delivery of network infrastructure including scoping the project, developing a project brief an managing delivery • review of project brief prepared by the candidate outlining specifications, timeframes, costing and operating budget • review of report prepared by the candidate outlining monitoring processes and contingency plan • oral or written questioning to assess knowledge of network infrastructures and project planning.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTTEN4050A Install and configure a wireless mesh network

EVIDENCE GUIDE	
	• ICTTEN4126A Install and configure internet protocol TV in a home network • ICTTEN4211A Design, install and configure an internetwork.
	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

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.	
Site survey data may include:	• building availability or capacity

RANGE STATEMENT	
	• earthing requirements • environmental impact • geological and land surveys • line of sight data • power availability • regulatory and statutory requirements • site availability • site ownership and acquisition data • weather conditions.
Barriers to plan realisation may include:	• building availability • community opposition • environmental considerations • financial constraints • government policy • heritage legislation restrictions • land acquisition problems • planning approvals • technology availability.
Relevant legislation and associated operational codes 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 • Australian building codes and regulations • cabling security codes and regulations • compliance with appropriate ACMA technical standard requirements for underground, aerial, Category 5 or Category 6, 6A, 7 or 7A and unshielded twisted pairs (UTP) • Environmental Protection Acts • fire regulations • Institute of Electrical and Electronics Engineers (IEEE) standards

RANGE STATEMENT

	• mining legislation • noise abatement and heritage legislation • OHS • relevant international standards • technical standards AS/ACIF S008:2006, and AS/ACIF S009:2006 • Trade Practices Act.
Scoping document may include:	• barriers to plan realisation • existing network capacity and capability • recommendations with changes to original specifications • survey findings.
Project brief may include:	• contingency plan • management and reporting systems • project description • project parameters • relevant maps • resources required to complete project • risk analysis • scheduling data • sketch plan • suggested parallel activities.
Project documents may include:	• details of contingency plan • monitoring details • project briefs • project update information • reporting documents.

Unit Sector(s)

Unit sector	Telecommunications

Co-requisite units

Co-requisite units	

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Co-requisite units		

Competency field

Competency field	Project management