



Australian Government

Department of Education, Employment and Workplace Relations

ICTPMG6034A Prepare a detailed design brief

Release: 1

ICTPMG6034A Prepare a detailed design brief

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to prepare a detailed design brief to realise a building and equipment provisioning project. The project may be a new installation, upgrade of capacity or technology for an existing network or subsystem for convergence to Next Generation Networks (NGN). Preparing the brief involves costing, vendor and technology choices, scheduling and resourcing. 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	The unit is relevant to technical managers, supervising technicians, project managers, consultants or contractors in organisations conducting network design or construction to deploy or convert to internet protocol (IP) based technologies.
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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. Evaluate design requirements	1.1. Consult relevant legislation, codes, regulations and standards that impact on the project 1.2. Determine need for enhancement to new or existing telecommunications network from telecommunications project plan and associated project brief 1.3. Determine specific purpose and type of network growth and enhancement using collated data from other relevant sources 1.4. Consult customer regarding enterprise criteria and determine timeframe for design plan 1.5. Establish and organise design resource requirements
2. Evaluate information to prepare design drawings	2.1. Obtain site access through consultation with affected property owners where project impacts on private property 2.2. Collect field data and propose ways to manage physical impediments that may affect building construction work 2.3. Verify existing equipment, equipment layouts and building services to plan for network growth 2.4. Ascertain the impact of relevant heritage, environmental and other governmental legislation and initiate action or organise consultative processes to gain approvals according to enterprise policy 2.5. Prepare design drawing according to enterprise requirements
3. Select design option	3.1. Analyse proposed network needs to determine a set of realistic design options 3.2. Evaluate and select preferred design option according to approved enterprise criteria and discuss selected option with customer 3.3. Assess system compatibility and make modifications to design
4. Prepare design plan	4.1. Prepare detailed design plan including relevant geographical and topological information, equipment and material and cost estimates 4.2. Discuss final designs with planners and project management and obtain approval to proceed 4.3. Produce final detailed design brief with drawings,

ELEMENT	PERFORMANCE CRITERIA
	material requirements and testing and maintenance plans for operational staff to follow

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- analytical skills to compare and evaluate effective technical solutions of new and emerging technologies of NGN
- communication skills to:
 - negotiate approvals and contract arrangements with suppliers and contractors
 - liaise with customers to ensure requirements are known and can be met within timeframes
- literacy skills to:
 - interpret technical specifications and related documentation
 - document technical requirements and procedures
- numeracy skills to:
 - determine workforce requirements
 - analyse and confirm capacity requirements
 - calculate budget requirements and limitations
- organisational skills to arrange relevant documentation and approvals
- planning and organisational skills to:
 - set out project requirements and priorities
 - make site access and equipment delivery arrangements
- problem solving skills to account for unexpected variations to requirements
- research skills to gain and maintain relevant and current technical product knowledge
- technical skills to plan NGNs

Required knowledge

- common customer telecommunications applications and related equipment
- connections to carrier infrastructure or equipment
- cost-effective solutions in planning
- current legislation relating to installation of telecommunications equipment and connection to carrier services

REQUIRED SKILLS AND KNOWLEDGE

- customer premises equipment
- environmental impacts and options for green ICT installations
- network and transmission equipment
- network topologies, interface and interconnection solutions
- occupational health and safety (OHS) requirements for:
 - electrical safety
 - materials handling
 - physical hazards:
 - confined spaces
 - heights
 - lifting
- power requirements and electrical safety
- technology of NGN
- test equipment types

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:

- prepare a design brief for building and equipment design provisioning
- analyse network and enterprise needs to determine design options
- prepare detailed design documentation to enable realisation of design.

Context of and specific resources for assessment

Assessment must ensure:

- sites on which projects may be designed
- 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 design tasks
- review of drawings, plans and specifications prepared by the candidate
- oral or written questioning to assess knowledge of the design process
- a completed design brief for a project.

Guidance information for assessment

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

- ICTPMG6033A Develop a project management plan.

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.

EVIDENCE GUIDE

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.

Relevant legislation, codes, regulations and standards may include:

- Australian Communications and Media Authority (ACMA) technical standards
- Australian building codes and regulations
- environmental protection
- fire regulations
- heritage legislation
- industrial relations awards and agreements
- International Standards ISO 9000 and 9001
- International Telecommunications Union (ITU) recommendations
- local government
- OHS

RANGE STATEMENT	
	• Privacy Act • Spectrum Management Authority • Telecommunications Act and Telecommunications National Codes.
Telecommunications network may include:	• NGN delivery: • broadband access • data transfer • internet protocol TV (IPTV) • mobile data • mobile telephony • multimedia • video • voice over IP (VoIP) • radio: • fixed • mobile • satellite • switching • transmission • video.
Network growth and enhancement may refer to:	• access • broadband • IP • radio: • fixed • mobile • satellite • switch • transmission path.
Data may include:	• abutting enterprise development plans • enterprise databases • existing enterprise cable designs and plans • interviews with field-based colleagues and organisations.
Enterprise criteria may include:	• enterprise business strategy outcomes • enterprise service policy • information systems • planned project outcomes.
Resource requirements may	• design personnel

RANGE STATEMENT	
include:	• finance • material • tools • vehicles.
Field data may include:	• building inspections • inspection • maps • plans • site surveys.
Building services may include:	• air conditioning • cable access • earthing • lighting • power • racking.
Heritage, environmental and other governmental legislation may require contact with:	• federal agencies • local councils • local residents • other service providers • property owners • state agencies.
Enterprise policy may include:	• cost • customer demand • equipment and system upgrades • future maintenance • modification • resource requirements • time.
Design drawing may include:	• existing and proposed layout • facilities route • physical placement of equipment.
Network needs may include:	• conditions and planned needs • existing network • heeding legislative and other barriers.
Design options may relate to:	• customer service • economics • equipment • labour • material

RANGE STATEMENT	
	• network integrity • preferred technologies • time • timing.
<i>Geographical and topological information</i> may include:	• access • dams • fences • hazards • location of: • other services • plant • potential hazards • potential soil erosion areas • survey marks.
<i>Equipment and material</i>	• antenna • cable support materials • cabling and terminating equipment and tools • ducting • frame and superstructure equipment • hand and power tools • mechanical aids • power: • cables • connectors • racking • radio equipment • structure • switching and transmission gear • test equipment • tower • wave guide.

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Project management
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