



Australian Government

ICTNPL502 Develop planning strategies for access network design

Release: 1

ICTNPL502 Develop planning strategies for access network design

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to develop specifications for access networks to be used by network designers, and involves gathering information on anticipated demand and business requirements for the access network to determine design criteria to meet current and future needs.

It applies to individuals with a high level of specialist technical skills and knowledge in telecommunications and IT networks using internet protocol (IP) systems.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Telecommunications – Network Planning

Elements and Performance Criteria

Element	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Evaluate access network requirements and infrastructure capability	1.1 Estimate likely growth in access network use by analysing forecasting market intelligence data on customer demand 1.2 Compare available capacity and capability of current access infrastructure deployment against researched demand data to identify infrastructure and product shortfalls 1.3 Quantify network requirements for upgrades or network augmentation to increase capacity and capability of existing network 1.4 Determine relevant standards, business and regulatory requirements

	to be considered in access network planning 1.5 Formulate justification to proceed by analysing business requirements and benefits to the business
2. Prepare strategic plan and scoping document	2.1 Determine appropriate technologies, network elements and equipment for access network deployment, including new or alternative solutions to meet business requirements 2.2 Select commercially viable technology compatible with the existing network to deploy with existing and future network 2.3 Prepare planning document and supporting documentation with recommendations that complies with deployment standards and regulatory requirements 2.4 Provide estimated costs and schedule for a planning solution
3. Produce project brief	3.1 Evaluate and summarise project scope into the required briefing format with relevant supporting documentation for a project brief that complies with access network deployment rules 3.2 Plan project delivery to suit business requirements and practical limitations 3.3 Produce access networks specifications with approvals and present to the design section to produce detailed design specifications

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Learning	2.1	Employs a range of approaches and investigative techniques to consider present and future needs of the network and to overcome obstacles
Reading	1.1, 1.2, 1.4, 2.1, 2.2, 2.3, 3.1, 3.2	- Analyses and evaluates complex written and visual text in specialised workplace documentation to determine key information and specific requirements - Evaluates complex text to determine legislative, regulatory and project requirements
Writing	1.2, 1.5, 2.3, 3.1-3.3	Develops complex material for a specific audience using clear and detailed language and visuals while employing

		expected forms and conventions • Prepares reports which incorporate evaluation of information and specialised and cohesive language
Oral Communication	1.4, 2.2, 3.1, 3.3	• Clearly articulates requirements using language appropriate to audience and environment, and participates in a verbal exchange of ideas and solutions
Numeracy	1.1-1.3, 1.5, 2.4	• Interprets numerical information and applies mathematical calculations relating to time durations and budgetary information • Analyses numerical information to measure usage and calculates metric measurements, quantities/ratios and financial data using appropriate tools
Navigate the world of work	1.4, 2.3	• Ensures knowledge of legislative requirements and products is kept up-to-date to provide accurate information • Takes full responsibility for following policies, procedures and legislative requirements and identifies organisational implications of new legislation or regulation
Get the work done	1.1, 1.2, 1.4, 1.5, 2.1-2.4, 3.1, 3.2	• Accepts responsibility for planning and sequencing complex tasks and workload, negotiating key aspects with others, taking into account capabilities, efficiencies and effectiveness • Monitors progress of plans and schedules, and reviews and changes them to meet new demands and priorities • Responds intuitively to problems requiring immediate resolution, drawing on past experiences to focus on the cause of a problem rather than the symptom • Applies systematic and analytical decision making processes for complex and non-routine situations

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTNPL502 Develop planning strategies for access network design	ICTNPL5096A Develop planning strategies for access network design	Updated to meet standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICTNPL502 Develop planning strategies for access network design

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Performance Evidence

Evidence of ability to:

- interpret growth patterns using available data
- develop options for access network design which satisfy customer and enterprise financial goals
- develop a clearly documented network plan, within specifications and including merging technological development and product implementation.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain capability and limitations of the various access network technologies
- identify current equipment to meet future service obligations
- outline the role of the following specific features of network planning:
 - broadband networks
 - data networks
 - elements and architecture of the various access networks and their technologies
 - facilities and environmental issues
 - limits of a fixed access transmission network
 - media and content
 - regional and metropolitan network
 - typical access network technologies
 - voice networks
 - wireless network

- explain distribution structure of networks, including backbone, access and edge
- identify key technologies that make up the access network
- outline the following general features of network planning:
 - levels of reliability performance standards, applicable to specific equipment deployment needs
 - network design including routing and redundancy
 - standards and regulations
- describe typical problems and challenges with the capability and limitations of the various access networks.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances must be typical of those experienced in the Telecommunications – Network Planning field of work and include access to:

- computer aided design (CAD)
- computer networks
- data for network planning
- network equipment deployment plans
- planning models
- relevant standards and regulations.

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

Links

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