



Australian Government

Department of Education, Employment and Workplace Relations

ICTNPL4114A Produce planning specifications for end to end service delivery

Release: 1

ICTNPL4114A Produce planning specifications for end to end service delivery

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to gather information on the types of end-to-end services and product delivery and evaluate their capability to meet present and future demands. It involves the evaluation and comparison of competing technologies to produce planning specifications and advice to planning, sales and marketing sections. 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	Technical officers from private and public telecommunications network planning organisations apply the skills and knowledge in this unit to develop planning specifications for the implementation of end-to-end services delivery of access networks and products and make recommendations. They combine technical network skills with organisational skills to evaluate end-to-end services used by telecommunications service providers and asset owners primarily in the access network. Technical officers may be responsible for small projects or parts of larger projects, and for the operational and engineering of the telecommunications network in general.
--------------------------------	---

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 the project	1.1. Prepare for given work according to site specific safety requirements and enterprise occupational health and safety (OHS) processes and procedures 1.2. Determine the types of currently deployed end-to-end service delivery networks by accessing and using network information sources 1.3. Produce a brief on how end-to-end service delivery network elements relate to the larger network and their impact on the work
2. Assess the capacity and capability of a specific end-to-end service delivery project and a building facility project	2.1. Determine the nature, quantity, architecture and condition of existing end-to-end service delivery network elements and attributes that contribute to determining planning specifications 2.2. Assess the capacity and capability limitations of an existing end-to-end service delivery network project by accessing network information sources and conducting site visits 2.3. Assess the capacity and capability limitations of a building facility project that contribute to determining planning specifications
3. Assess the capacity and capability of product and service delivery	3.1. Determine the types of currently deployed products and services by accessing sales and marketing information database 3.2. Produce a brief evaluating the capability and technology of current product and services to meet demands and their relationship to the larger network 3.3. Evaluate the emerging technologies that contribute to determining planning specifications for demands of future products and services
4. Produce planning briefs	4.1. Produce a brief on the planning specifications of an end-to-end service delivery network and a building facility project for planning section to determine current and future network demands 4.2. Produce a brief on products and services planning requirements for sales and marketing to determine provisioning of future demands

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communication skills to liaise with internal and external personnel on technical and operational matters
- literacy skills to interpret technical documentation and write briefs in required formats
- numeracy skills to compare technical data on various network technologies
- planning and organisational skills to plan, prioritise and monitor own work
- research skills to interrogate databases and investigate different equipment requirements
- technical skills to select and describe appropriate end-to-end services models

Required knowledge

- emerging technologies, trends and products that are available overseas and will be in demand in the Australian market
- information required to prepare and review the limits of:
 - broadband networks
 - data networks
 - facilities and environmental issues
 - fixed access transmission network
 - media and content
 - regional and metropolitan network
 - voice networks
 - wireless network
- overview knowledge of:
 - basic network design including routing and redundancy
 - levels of reliability performance standards applicable to specific equipment deployment needs
 - standards and regulations
- specific knowledge on the distribution structure of networks including:
 - access
 - backbone
 - edge
- up to date knowledge of current equipment and product types to meet future service obligations

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: • access network information databases to determine the types of end-to-end services and products • conduct site evaluation assessment • evaluate the capacity and capability of end-to-end services to meet current and future demands • assess the limitations of current end-to-end services and produce specifications to meet future demands • assess the limitations of current building facility and services and produce specifications to meet future demands • summarise and produce planning briefs to network, sales and marketing planning sections.
Context of and specific resources for assessment	Assessment must ensure: • an access network planning area, with access to systems and deployment rules and standards • end-to-end services and products databases • relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.
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 evaluating competing technologies and producing planning specifications • review of reports completed by the candidate for differing project briefs • oral or written questioning to assess knowledge of the various access methods of providing an end-to-end service in terms of delivery.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended,

EVIDENCE GUIDE

	for example with: • ICTNPL4108A Plan the deployment of access network architectures. 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.

End-to-end service delivery networks may include:

- fixed access network:
 - copper :
 - asymmetrical digital subscriber line (ADSL) and digital subscriber line (DSL)
 - coaxial
 - hybrid fibre coaxial (HFC)

RANGE STATEMENT

- twisted pair
- optical:
 - fibre to the node (FTTN)
 - fibre to the premises (FTTP)
 - HFC
- internet protocol (IP) broadband data network:
 - email
 - local area network (LAN)
 - multiprotocol label switching (MPLS)
 - web
 - wide area network (WAN)
- Next Generation Networks:
 - IP based systems using IPv6 addressing
 - IP private branch exchange (IP PBX)
 - IPTV
 - mobile video
 - multimedia
 - voice over internet protocol (VoIP)
- regional and metropolitan transport network:
 - asynchronous transfer mode (ATM)
 - dense wavelength division multiplexing (DWDM)
 - MPLS
 - synchronous digital hierarchy (SDH)
- wireless access:
 - Bluetooth
 - cellular mobile:
 - 3G/4G
 - code division multiple access (CDMA)
 - global system for mobiles (GSM)
 - microwave
 - pager
 - radio
 - satellite
 - WiFi (802.11)
 - WiMAX (802.16)
 - wireless local loop
 - wide area networks (WLAN).

RANGE STATEMENT	
<i>Network information sources</i> may include:	• network management databases for: • capacity assessment data • network performance data • traffic dimensioning data • network management tools.
<i>Network elements</i> may include:	• IP based: • gateways • layer 2 and layer 3 switches • routers • optical devices: • amplifiers • multiplexers • routers • splitters • switches • virtual equipment: • networks • PBX • servers • simulations.
<i>Attributes</i> of network elements may include:	• accessibility • capability • capacity • compatibility • convergence • deployability • interoperability • longevity • reliability • return on investment • scalability • security.
<i>Limitations of a building facility</i> may include:	• air conditioning loads • alarms and security • building monitoring and management system • equipment racking • fire protection • floor capacity

RANGE STATEMENT	
	• floor loading capability • port capacity • power requirements: • battery supply • emergency power supply • energy loads • mains supply.
Products and services may include:	• broadband products: • ADSL • cellular mobile data • FTTP • HFC cable • VDSL • WiFi • WiMAX • wireless data • media and content product: • IPTV • mobile video • pay TV • webhosting • voice products: • public switched telephone network (PSTN) • VoIP • voice over broadband (VoBB).
Emerging technologies may include:	• IPTV • IPv6 architectures • mesh networks • mobile video • NGN • WiFi enabled phones • WiMAX enabled phones.

Unit Sector(s)

Unit sector	Telecommunications
--------------------	--------------------

Co-requisite units

Co-requisite units		

Competency field

Competency field	Network planning
-------------------------	------------------