



Australian Government

ICTTEN408 Complete equipment and software upgrades

Release: 1

ICTTEN408 Complete equipment and software upgrades

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 upgrade telecommunications equipment and software in service provider networks and customer premises, and may apply to switching, transmission, radio, and computer networks using cable, optical fibre, radio, microwave and satellite transmission.

It applies to individuals who supervise installation and maintenance teams involved in new installations or maintenance, upgrades and cut overs of emerging technologies in IP-based telecommunications networks.

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

Unit Sector

Telecommunications – Telecommunications Networks Engineering

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. Prepare for upgrade activity	1.1 Obtain relevant legislation, codes, regulations and standards for compliance when conducting work 1.2 Contact customer for site access, security arrangements and location details of equipment for upgrade 1.3 Identify site hazards and notify appropriate personnel to make site safe 1.4 Prepare an upgrade plan against work order and seek approval from customer

ELEMENT	PERFORMANCE CRITERIA
	1.5 Organise system back-up from support personnel 1.6 Obtain tools and test equipment and check for accuracy and safety 1.7 Allocate specific tasks according to the skill mix of staff involved 1.8 Run test plan on current equipment and identify and rectify problems in consultation with planners 1.9 Complete functional testing of new systems and equipment prior to upgrade to minimise system downtime 1.10 Analyse test results to predict compatibility and interoperability issues of equipment and systems prior to the upgrade work
2. Undertake upgrade	2.1 Implement upgrade according to design specification, following work health and safety (WHS) and environmental requirements 2.2 Follow procedures for upgrade of network in sequential order as defined in instruction manuals 2.3 Monitor progress of upgrade periodically to ensure plans in relation to time and duration are being met 2.4 Notify planner of problems encountered with detail of the impact on the upgrade plan 2.5 Abort upgrade and implement contingency plan if upgrade plan cannot be realised without major disruption to network 2.6 Monitor system response during upgrade and take action according to instructions provided
3. Test upgrade for acceptance	3.1 Undertake tests according to predetermined test plan 3.2 Analyse test results and verify against specified performance levels 3.3 Escalate problems encountered according to enterprise policy 3.4 Invoke reversion procedure to pre-upgrade state, if directed by planners, according to enterprise policy 3.5 Record upgrade test results and provide to network management group 3.6 Run post-upgrade routines according to documented procedures
4. Monitor post-upgrade performance	4.1 Conduct ongoing tests to ensure success of upgrade

ELEMENT	PERFORMANCE CRITERIA
	4.2 Monitor relevant alarms to measure impact of upgrade 4.3 Review customer complaints to assess impact of upgrade on customer satisfaction
5. Finalise administrative work and clean up worksite	5.1 Complete relevant work documentation and administrative tasks according to enterprise policy 5.2 Amend site records to show upgraded equipment layout 5.3 Organise customer training in the new or modified system 5.4 Clean up and restore site to customer satisfaction 5.5 Collect and dispose of waste material and debris according to environmental requirements 5.6 Declare asset ready for use 5.7 Notify customer of upgrade job completion to obtain sign-off of work order and present with a copy of documentation

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
Reading	2.1, 2.2, 2.6, 4.3	Interprets and analyses complex technical information
Writing	1.4, 3.5, 5.1, 5.2, 5.7	Employs appropriate vocabulary and tone to convey specific information to different audiences
Oral Communication	1.2, 2.4, 5.7	Conveys specific messages efficiently and uses an appropriate tone and vocabulary for intended audience
Numeracy	1.10, 3.2, 3.5	Performs calculations to analyse data and records results in required format
Navigate the world of work	1.1-1.3, 1.5, 1.6, 2.1, 2.2, 3.3, 3.4, 3.6, 5.1, 5.4, 5.5	Takes personal responsibility for following explicit and implicit policies, procedures and legislative requirements relevant to own work context
Interact with others	1.4, 1.5, 1.7, 1.8, 2.4, 5.4	Selects appropriate form, channel and mode of communication when liaising with customers and personnel on technical and operational matters
Get the work	1.7-1.10, 2.3, 2.5,	Organises, plans and sequences own workload and

done	2.6, 3.1-3.6, 4.1, 4.2, 5.3, 5.6	- schedules work activities of others - Applies problem-solving processes and reviews impact to ensure solutions or contingency plans are effective - Uses digital technologies and systems to complete work tasks
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTTEN408 Complete equipment and software upgrades	ICTTEN4076A Complete equipment and software upgrades	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 ICTTEN408 Complete equipment and software upgrades

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Performance Evidence

Evidence of ability to:

- analyse implications of hardware and software upgrade on remainder of the network
- identify components of the upgrade process
- prepare an upgrade plan and organise system back-up
- run test plan and analyse test results
- implement upgrade according to work health and safety requirements
- monitor progress of upgrade periodically using both vendor- and enterprise-specific monitoring tools
- implement contingency plan when required, and analyse alarms and alarm conditions
- escalate unresolved problems and review customer complaints to assess impact of upgrade
- make necessary arrangements with the customer for site access and training.

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 alarms used to monitor operation of computer software systems
- explain use of back-up systems
- illustrate common upgrades and post-upgrade routines
- describe escalation and outage procedures
- investigate network management systems
- outline telecommunications networks and equipment
- identify telecommunications monitoring tools
- describe telecommunications test equipment and test set-ups
- describe telecommunications wiring practices.

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 networks engineering field of work and include access to:

- a site where upgrade may be conducted
- equipment, software, test and monitoring equipment currently used in industry
- relevant regulatory, equipment, enterprise and vendor documentation.

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

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