



**Australian Government**

# **ICTTEN521 Integrate network systems and equipment**

**Release: 1**

# ICTTEN521 Integrate network systems and equipment

## Modification History

| Release   | Comments                                                                                                     |
|-----------|--------------------------------------------------------------------------------------------------------------|
| Release 1 | This version first released with ICT Information and Communications Technology Training Package Version 7.0. |

## Application

This unit describes the skills and knowledge required to integrate network systems and equipment by following predetermined procedures to confirm operability of the system while minimising impact on affected customers.

It applies to individuals working as field officers, technicians and technical supervisors, for network carriers, contractors and other service providers, who install new, additional and replacement equipment in networks. This includes providing support and administrative infrastructures for integration of new and emerging internet protocol (IP) based technologies.

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

## Unit Sector

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. Plan to integrate network systems and equipment | <ul style="list-style-type: none"><li>1.1 Obtain work details and scope from relevant personnel and arrange for site access in compliance with required security arrangements, legislation, codes, regulations and standards</li><li>1.2 Prepare an integration management plan in agreement with relevant personnel</li><li>1.3 Obtain available change management plan and prepare a contingency plan according to organisational requirements</li><li>1.4 Identify systems, traffic and customers to be affected by integrating planned systems and equipment</li><li>1.5 Notify relevant personnel of planned actions and obtain authority</li></ul> |

| ELEMENT                                            | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                    | to proceed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 2. Test and integrate network system and equipment | <ul style="list-style-type: none"><li>2.1 Conduct activities over the set of integration phases documented in the integration management plan</li><li>2.2 Load operational software according to specification and confirm interoperability of new and existing system</li><li>2.3 Stimulate network traffic and confirm that test results are recorded and stored according to enterprise requirements</li><li>2.4 Analyse test results and confirm that established parameters have all been met</li><li>2.5 Evaluate problems during the testing phase and rectify and escalate required procedures</li><li>2.6 Analyse system monitoring alerts and alarms for fault conditions in conjunction with relevant personnel</li><li>2.7 Locate and detect faults within capability and escalate according to enterprise policy</li><li>2.8 Check that operations administrative maintenance systems and system monitoring alerts and alarms are connected according to the required instruction manual</li><li>2.9 Activate new system monitoring alerts and alarms and deactivate old system monitoring alerts and alarms</li></ul> |
| 3. Complete administrative tasks                   | <ul style="list-style-type: none"><li>3.1 Complete integration records according to manufacturer specification and enterprise policy and make recommendations for future network improvement</li><li>3.2 Notify relevant personnel of project completion and obtain sign-off</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Foundation Skills

*This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.*

| SKILL              | DESCRIPTION                                                                                                                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Numeracy           | <ul style="list-style-type: none"><li>• Uses mathematical formulae to calculate measurements, analyse results and make adjustments to equipment and settings</li></ul>                                                                          |
| Oral communication | <ul style="list-style-type: none"><li>• Participates in verbal exchanges with personnel and customers to confirm requirements are properly understood</li><li>• Employs listening and questioning techniques to confirm understanding</li></ul> |
| Reading            | <ul style="list-style-type: none"><li>• Identifies, analyses and evaluates information to determine regulatory and technical requirements to assist with project</li></ul>                                                                      |

| SKILL                   | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | planning                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Writing                 | <ul style="list-style-type: none"><li>Identifies, analyses and evaluates information to determine regulatory and technical requirements to assist with project planning</li></ul>                                                                                                                                                                                                                                              |
| Teamwork                | <ul style="list-style-type: none"><li>Selects and uses communication conventions and protocols to suit purpose and audience</li></ul>                                                                                                                                                                                                                                                                                          |
| Planning and organising | <ul style="list-style-type: none"><li>Uses formal and logical planning processes to identify logistical requirements, test strategies and resources</li></ul>                                                                                                                                                                                                                                                                  |
| Problem solving         | <ul style="list-style-type: none"><li>Makes decisions quickly in familiar situations requiring immediate attention, drawing on past experience to identify key variables and determine the best course of action</li><li>Uses analytical processes to decide on a course of action, establishing criteria for deciding between options, and seeking input and advice from others before taking action when necessary</li></ul> |
| Self-management         | <ul style="list-style-type: none"><li>Keeps up to date with required legislation and considers implications of this when planning work, with specific reference to safety</li><li>Adheres to organisational procedures and protocols in completing work tasks</li></ul>                                                                                                                                                        |
| Technology              | <ul style="list-style-type: none"><li>Understands key principles and concepts underpinning design and operation of digital systems and tools, and applies these as required</li></ul>                                                                                                                                                                                                                                          |

## Unit Mapping Information

Supersedes and is equivalent to ICTTEN506 Integrate new systems and equipment into the telecommunications network.

## Links

Companion Volume Implementation Guide is found on VETNet -

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

# Assessment Requirements for ICTTEN521 Integrate network systems and equipment

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## Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- integrate at least two network systems and at least two types of equipment into the network system.

In the course of the above, the candidate must:

- prepare and implement at least one integration management plan
- develop at least one contingency plan
- test network systems, equipment and associated features being integrated
- apply enterprise escalation and outage procedures
- negotiate procedures and activity on the network and timing of integration
- comply with required organisational and enterprise requirements.

## Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- required legislation, codes, company work practices and procedures, regulations and standards, workplace health and safety (WHS) requirements for scoped work
- functions and features of:
  - integration management plans
  - change management plans
  - contingency plans
  - network traffic
  - system monitoring alerts and alarms
- connections to carrier infrastructure or customer interface units (CIU)
- electrical and optical properties to be measured

- health and safety issues, including electrical, optical and electromagnetic radiation (EMR) when working with networks
- network equipment and emerging technology networks
- suitable tests and test equipment types
- typical performance parameters and faults that are encountered with using scoped network equipment and connection and transmission media.

## Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- sites on which integration procedures can be conducted
- relevant regulatory and equipment documentation that impacts integration
- testing equipment currently used in industry
- capacity to simulate network traffic
- a network and equipment for integration
- equipment and systems manuals, specifications and enterprise policies.

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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