



Australian Government

ICTICT516 Test telecommunications network using virtual instruments

Release: 1

ICTICT516 Test telecommunications network using virtual instruments

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 apply simulation testing techniques to telecommunication systems.

It applies to technical staff who work with optical communication systems.

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

Unit Sector

Telecommunications – IT Use

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 simulation of hardware instruments	1.1 Arrange access to site according to required procedure 1.2 Determine specific applications for virtual instruments in telecommunication systems 1.3 Determine features of virtual instruments applicable to telecommunication systems, including limitations of virtual instruments 1.4 Select a range of simple and complex virtual instruments applicable to telecommunication systems
2. Perform simulation	2.1 Perform measurements on telecommunication systems using simple virtual instruments

techniques	2.2 Simulate and display properties of a modulated signal with software generated instruments following enterprise work health and safety (WHS) processes and procedures 2.3 Simulate and display a data signal transmitted through a band-limited channel 2.4 Control virtual instruments using data bus operation
3. Analyse simulation measurements	3.1 Determine conversion processes used in virtual instruments 3.2 Document potential effect of a simulation algorithm on readings taken 3.3 Analyse measurements in context of conversion process and simulation algorithm
4. Report measurement results	4.1 Prepare report on measurement results 4.2 Submit report to supervisor

Foundation Skills

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

Skill	Performance Criteria	Description
Reading	1.1, 1.2, 1.3, 3.3	- Draws on a range of strategies to research and understand complex texts - Analyses and consolidates test results and data from a range of sources, against defined criteria and requirements
Writing	1.1, 3.2, 4.1, 4.2	Demonstrates sophisticated writing skills by selecting appropriate conventions and stylistic devices to express precise meaning
Oral Communication	1.1, 4.2	Establishes effective spoken communication in a range of contexts
Numeracy	1.3, 2.1-2.4, 3.1-3.3, 4.1	- Selects and applies a wide range of mathematical and problem solving techniques in a broad range of contexts - Uses a wide range of formal mathematical language and representation to communicate mathematically
Navigate the world of work	1.1, 2.2	Takes full responsibility for following policies, procedures and legislative requirements and identifies organisational implications of new legislation or regulation

Get the work done	1.1-1.4, 2.1-2.4, 3.1, 3.3	• Accepts responsibility for planning and sequencing complex tasks and workload, negotiating key aspects with others, taking into account capabilities, efficiencies and effectiveness • Applies systematic and analytical decision-making processes for complex and non-routine situations • Responds intuitively to problems requiring immediate resolution, drawing on past experiences to focus on the cause • Uses and investigates new digital technologies and applications for testing, managing and manipulating data and communications effectively, in a secure and stable digital environment
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTITU516 Test telecommunications network using virtual instruments	ICTITU5144A Test telecommunications network using virtual instruments	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 ICTICT516 Test telecommunications network using virtual instruments

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Performance Evidence

Evidence of ability to:

- interpret and use equipment and system manuals and specifications
- use latest virtual instrument test equipment
- simulate signals and systems using complex virtual instruments
- analyse and report on results of simulation.

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:

- describe the applications of virtual instruments
- explain current and emerging developments in relation to virtual instruments
- describe instrumentation principles and practices
- identify internet support services
- outline modulation methods, AM, FM and digital formats
- name sampling and data conversion processes
- explain virtual instrument features and benefits.

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 – Information Technology use field of work and include access to:

- internet sites

- electronic workbench or similar software
- virtual instrument applications and media
- a workplace conducting operations involving virtual instruments, with support from a competent supervisor or mentor
- telecommunications equipment suitable for integrating projects
- industry software packages (where applicable).

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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