



Australian Government

ICTTEN814 Manage development and application of testing artefacts

Release: 1

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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 plan and manage a test regime by developing testing artefacts to evaluate application software for a telecommunications network.

It applies to individuals working as network engineers or senior technical staff within project management roles, and includes technologies in mobile phones, wireless modems, set top boxes, media centres, web applications and content servers using application software to provide a telecommunications service.

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. Plan the test effort and develop test strategy for software testing	1.1 Critically analyse functionalities of an application software from the system design document and create a test strategy for a new telecommunications product line 1.2 Produce steps in developing test strategy and attributes of each step, according to enterprise policy 1.3 Produce a test strategy to evaluate suitability of application software for integration into the telecommunications network

ELEMENT	PERFORMANCE CRITERIA
	1.4 Assess a range of tests required to evaluate performance and functionality of application software and determine tests required to suit the test regime 1.5 Evaluate features of testing tool and debuggers, and select an appropriate tool to test the software application and detect faults 1.6 Produce a test plan based on requirements of the project specifications, and identify testing artefacts required for model-based software testing
2. Plan the development of testing artefacts	2.1 Develop software testing strategies for uncovering evidence of defects in software systems as part of the quality assurance process 2.2 Produce a test dependency model of the relationship between the test regime and test levels in software testing for referencing and validation 2.3 Critically analyse software testing requirements to determine domain testing and application testing artefacts requirements to validate the software product
3. Develop and manage testing artefacts	3.1 Create reusable domain artefacts to detect early defects in domain testing 3.2 Modify domain test artefacts by binding variability to create application test artefacts to detect defects in product line applications 3.3 Produce test reporting associated with test cycle phases within the test plan 3.4 Critically analyse test reports and evaluate the impact of the test plan with testing artefacts on the testing environment 3.5 Manage progress of the test plan to minimise risks associated with testing and ensure the test complies with test requirements 3.6 Report detected defects to product evaluation personnel and prepare a strategy to manage defects 3.7 Critically analyse testing metrics produced by the test tool to manage tracking of defects, and use metrics to plan process improvements 3.8 Produce an evaluation report from the traceability matrix to manage defects or failures from the test plan

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	1.1, 1.2, 1.6, 2.3, 3.3, 3.4	Organises, evaluates and critiques ideas and information from a wide range of complex texts
Writing	1.3, 1.6, 3.3, 3.6, 3.8	Prepares clear and concise workplace documentation, including reports and recommendations incorporating technical language, to communicate complex information
Numeracy	3.4, 3.7	Uses numerical information to interpret and evaluate different types of technical data and take measurements
Interact with others	3.6	Selects and uses appropriate conventions and protocols when communicating with technical personnel in a range of work contexts
Get the work done	1.1-1.5, 2.1-2.3, 3.1, 3.5	- Uses a combination of formal, logical planning processes and an increasingly intuitive understanding of context for complex, high-impact activities with strategic implications - Demonstrates a sophisticated understanding of principles, concepts, language and practices associated with the digital world and uses this to devise strategies - Implements actions according to a predetermined plan, making adjustments if necessary - Takes responsibility for high-impact decisions in complex situations involving many variables and constraints - Uses formal, analytical and lateral thinking techniques for resolving software, hardware and logistics problems

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTTEN814 Manage development and application of testing artefacts	ICTTEN7226A Manage development and application of testing artefacts	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 ICTTEN814 Manage development and application of testing artefacts

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Performance Evidence

Evidence of ability to:

- produce steps in developing test strategy
- produce a test strategy to evaluate suitability of application software
- develop software testing strategies for uncovering evidence of defects in software systems
- create reusable domain artefacts to detect early defects in domain testing
- produce test reporting associated with phases of a test cycle within the test plan
- produce an evaluation report from the traceability matrix.

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:

- outline applications' software features and functionalities
- specify the configuration of software testing tools
- define *software artefact* and explain the process for testing artefacts
- summarise creation of the traceability matrix
- summarise steps in developing the test strategy and specify various tests that may be applied
- outline domain and application testing
- explain essential elements of test plans
- evaluate features of testing tools and debuggers
- explain the identification of types of risks
- outline the management of:
 - software defects
 - test traceability
- explain phases of test cycles

- summarise production of test reviews
- outline steps in developing a test strategy
- explain testing procedures.

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 should be typical of those experienced in the telecommunications networks engineering field of work and include access to:

- a site where testing artefacts can be developed and applied
- software tools currently used in industry
- vendor products, specifications, equipment and enterprise policy required for the activity.

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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