



Australian Government

ICTTEN828 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 7.0.

Application

This unit describes the skills and knowledge required to plan and manage test regimes by developing testing artefacts to evaluate network application software.

It applies to individuals working as network engineers and 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 network services.

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 the test effort and develop test strategy for software testing	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 1.2 Analyse functionalities of application software from the system design document and create a test strategy for a new network product line 1.3 Produce steps in developing test strategy and attributes of each step according to enterprise policy 1.4 Produce a test strategy and evaluate suitability of application software for integration into the network

ELEMENT	PERFORMANCE CRITERIA
	1.5 Assess a range of tests required to evaluate performance and functionality of application software and determine tests required to suit the test regime 1.6 Evaluate features of testing tool and debuggers, and select a required tool to test the software application and detect faults 1.7 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 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 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, and confirm the test complies with test requirements 3.6 Report detected defects to relevant personnel and prepare the strategy to manage defects 3.7 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 according to organisational requirements

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	• Uses numerical information to interpret and evaluate different types of technical data and take measurements
Reading	• Organises, evaluates and critiques ideas and information from a wide range of complex texts
Writing	• Prepares workplace documentation, including reports and recommendations incorporating technical language, to communicate complex information
Teamwork	• Selects and uses required conventions and protocols when communicating with technical personnel in a range of work contexts
Planning and organising	• Uses a combination of formal, logical planning processes and an 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

Unit Mapping Information

Supersedes and is equivalent to ICTTEN814 Manage development and application of testing artefacts.

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 ICTTEN828 Manage development and application of testing artefacts

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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:

- manage the development and application of at least three different testing artefacts for a network.

In the course of the above, the candidate must:

- produce steps in developing test strategy
- minimise testing risks
- manage defects and failures from the test plan
- 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.

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, regulations and standards, workplace health and safety (WHS) requirements for scoped work
- applications' software features and functionalities
- the configuration of software testing tools
- software artefact and explain the process for testing artefacts
- creation of the traceability matrix
- steps in developing the test strategy and specify various tests that may be applied
- domain and application testing
- essential elements of test plans

- features of testing tools and debuggers
- the identification of types of risks
- the management of:
 - software defects
 - test traceability
- phases of test cycles
- production of test reviews
- steps in developing a test strategy
- testing procedures
- workplace evaluation report.

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:

- 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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