Australian Government

Department of Education, Employment and Workplace Relations

ICASAS503A Perform systems tests

Release: 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

ICASAS503A Perform systems tests

Modification History

Release	Comments
Release 1	This Unit first released with *ICA11 Information and Communications Technology Training Package version 1.0*

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to ensure that the properties of the entire system are tested and proved adequate before handover to the client or user for final acceptance testing.

Application of the Unit

This unit applies to senior information and communications technology (ICT) staff employed in a range of work environments who are required to ensure that a system is defect-free before it is acceptance tested by the user.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	Performance Criteria
Elements describe the essential outcomes of a unit of competency.	*Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.*

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Elements and Performance Criteria

1. Prepare for test	1.1 Prepare *test environment*
	1.2 Determine software life cycle
	1.3 Define test plan and appropriate *test tools*
	1.4 Recognise and separate the system into runnable modules mirroring live scenarios
	1.5 Gather and prepare logs and result sheets
	1.6 Notify operations of scheduled test to ensure preparedness and understanding of implications for operations
	1.7 Test scripts for online test or test run for batch test
	1.8 Conduct walkthrough to review expected results against acceptance criteria and system requirements documentation
2. Conduct test	2.1 Run test scripts and document results according to test and acceptance processes
	2.2 Perform required quality benchmarks or comparisons for acceptance testing
	2.3 Adopt *organisation and industry standards*
	2.4 Compare actual results to expected results on completion of each system unit, and complete result sheets
3. Analyse and classify results	3.1 Summarise and classify results, highlighting critical or urgent areas of concern and prepare report
	3.2 Compare results against requirements
	3.3 Notify operations of test completion
	3.4 Log attendees' details or comments and gain required signatures
	3.5 Schedule feedback meeting to discuss report and possible next actions with stakeholders if necessary
	3.6 Ensure test reporting complies with documentation and reporting standards

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to:
  - present information
  - provide advice to colleagues and staff
- literacy skills to:
  - interpret technical documentation
  - write reports
- problem-solving skills to solve testing problems
- technical skills to analyse and use programming skills related to testing the operation and consistency of the total system.

Required knowledge

- automated test tools, with detailed knowledge of some features and processes
- input and output requirements
- organisational practice and rules for preparing test
- particular system requirements and features
- underlying test data.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	Evidence of the ability to: • test the operation and consistency of the total system according to the system requirements, including testing performance, security, configuration sensitivity, and start-up and recovery from failure modes; with testing taking place prior to delivery • analyse test results • prepare reports in compliance with documentation and reporting standards.
Context of and specific resources for assessment	Assessment must ensure access to: • appropriate learning and assessment support when required • modified equipment for people with special needs • requirements and design documents • human resources • test hardware and environments in place and free for system test use (all testing to be carried out on the same platform as the completed system; scheduled testing to be on the production platform; production environment is required as part of test preparation) • system or application suitable for testing.

Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:
	
	• direct observation of candidate conducting a test using appropriate test tools
	• verbal or written questioning of underpinning skills and knowledge of components and run-able modules that make up a total system
	• evaluation of test results prepared by candidate, including confirming that functionality is as specified by the business, and documenting any software issues
	• review of test documentation, specifically confirming that:
	  • functionality of the tested system is as specified by the business in the business design specification document and the requirements documentation
	  • software will replace existing software or support the intended business functions and achieves the standards

	required by the organisation for the development of new systems • software, network or web page is of high quality and interfaces with existing systems.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate. Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed. Indigenous people and other people from a non-English speaking background may need additional support. In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Test environment may include:	• data • network, communications and other equipment • operating system • other support software • program libraries.

Test tools may include:	• applications testing:
	  • Cyrano Suite
	  • DataShark
	  • Datatect
	  • preVue-C/S
	• code, unit, class testing:
	  • AssertMate
	  • BoundsChecker
	  • C-Cover
	  • CodeReview
	  • CodeWizard
	  • DeepCover
	  • FailSafe
	  • Hindsight
	  • Insure++
	  • JavaPureCheck
	  • JCAST
	  • Logiscope
	• stress load testing:
	  • Astra SiteManager
	  • Astra SiteTest
	  • automated test facilities
	  • AutoTester Web
	  • e-Load
	  • e-MONITO
	  • e-TEST Suite
	  • JavaLoad

	• LoadRunner.
Organisation and industry standards may include:	• AS3925.1-1994 Software quality assurance - plans • AS4042-1992 Software configuration management plans • AS4043-1992 Software configuration management • AS/NZS 14102:1998 Information technology - guideline for evaluation and selection of computer-aided software engineering (CASE) tools • AS/NZS 4258:1994 Software user documentation process • AS/NZS ISO/IEC 12207:1997 Information technology - Software life cycle processes.

Unit Sector(s)

Systems administration and support