Australian Government

Department of Education, Employment and Workplace Relations

ICAICT502A Develop detailed component specifications from project specifications

Release: 1

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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 analyse requirements of the project specifications in order to produce a set of high-level component specifications.

Application of the Unit

This unit applies to systems designers who are required to produce component specifications for programmers.

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.*

Elements and Performance Criteria

1. Develop components	1.1 Document behaviour scenarios according to ***documentation standards*** 1.2 Identify or develop components according to ***project specifications*** 1.3 Prepare diagrams according to ***standards***
2. Prepare schema	2.1 Analyse and document component connectivity 2.2 Identify and incorporate data flow iteration 2.3 Prepare component action diagrams according to standards
3. Prepare component model	3.1 Describe roles and responsibilities 3.2 Review and update functional ***requirements*** 3.3 Specify interface components and component relationships 3.4 Prepare interaction diagrams according to standards
4. Iterate and review model	4.1 Conduct walk-through of current model and review functionality 4.2 Identify relationships to ensure integration of model 4.3 Review class service requirements 4.4 Prepare initial test criteria 4.5 Implement process for incremental testing

Required Skills and Knowledge

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

Required skills

- analytical skills to analyse the domain model
- communication skills to liaise with technical and operational staff
- literacy skills to interpret standards and organisational requirements
- problem-solving skills to resolve issues when components are identified or developed within project specifications
- planning and organisational skills to:
  - scope project
  - estimate time, cost, quality, communications and risk-management issues
- research skills to:
  - identify information sources for a cost-benefit analysis
  - specify, analyse and evaluate broad features of a particular business domain and best practice in program development
- technical skills to produce sequential diagrams.

Required knowledge

- appropriate design tools and their use
- configuration management
- key features of a cost-benefit analysis
- current industry-accepted design methodologies and hardware and software products, including broad knowledge of general features and capabilities
- data-modelling techniques
- program development methodologies
- quality assurance practices for preparing component model
- relevant standards and organisational policies
- current system functionality for analysing components.

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: • identify components relevant to the project requirements • document component connectivity and relationships • document component interface requirements.
Context of and specific resources for assessment	Assessment must ensure access to: • technical specifications • organisational and process goals • standards for model development • computer-aided software engineering (CASE) tools • project deliverables • test plan • project budget • outcomes of the business-analysis process • appropriate software and hardware • appropriate learning and assessment support when required. Where applicable, physical resources should include equipment modified for people with special needs.

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:
	  • preparing component action diagrams
	  • conducting walk-through of models against specifications
	  • using CASE tools
	• verbal or written questioning to assess candidate's knowledge of interoperability between components
	• review of developed model.

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.

Documentation standards may include:	• International Organization for Standardization (ISO), International Electrotechnical Commission (IEC) and Australian Standards (AS)
	• organisational and project policy related to:
	  • sign-off
	  • storage
	  • distribution
	  • revision.

Project specifications may include:	• current system functionality • technical requirements • user problem statement.
Standards may include:	• ISO, IEC and AS standards • organisational standards • project standards.
Requirements may refer to:	• application • business • network • people in the organisation • system.

Unit Sector(s)

General ICT