



Australian Government

Department of Education, Employment and Workplace Relations

ICTTEN7220A Translate domain and solution architectures into platform requirements and designs

Release: 1

ICTTEN7220A Translate domain and solution architectures into platform requirements and designs

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to translate domain and solution architectures into platform requirements and designs. Translation involves the entire solution life cycle through development, deployment, management and optimisation. The brief may be for an existing support system or new infrastructure converging to Next Generation Technologies (NGN). 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.
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Application of the Unit

Application of the unit	Technical staff whose work involves translating domain and solution architectures into platform requirements and designs apply the skills and knowledge in this unit. It may make use of design software, and simulation testing for performance to manufacturer's and design specifications.
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

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

ELEMENT	PERFORMANCE CRITERIA
1. Develop system design requirements	1.1. Produce a system requirements specification for a complex project involving enterprise and technology issues using the simplest possible technology and making the system modular 1.2. Resolve and negotiate requirement conflicts in order to establish a complete and consistent requirement set 1.3. Produce and develop acceptance criteria for requirements 1.4. Design a requirements management plan with categorisations, structures and sources of complexity 1.5. Develop a process to manage the requirements enabling users to influence future improvements
2. Produce system design based on requirements	2.1. Evaluate the strengths and weaknesses of relevant technologies in the context of the design requirement and needs for systems integration 2.2. Create a range of alternative interdisciplinary concepts and assess their attributes 2.3. Plan for the incorporation of later life cycle design attributes in developing the design requirements 2.4. Devise a system design strategy and approach and use the tools and techniques to conduct functional analysis 2.5. Produce a set of parameters to track critical aspects of the design 2.6. Use documentation, modelling and simulation tools and techniques to represent a system or system element 2.7. Use complex simulations to evaluate design concepts for a system or system element 2.8. Produce a report to evaluate and advise on the risks, suitability and limitations of models and simulations 2.9. Identify the underlying domain specific issue, strategy and approach to be adopted for ensuring system robustness 2.10. Produce a robust design using domain specific strategy and approach to platform requirements and designs
3. Verify solution design and traceability	3.1. Determine specific aspects of the design to the original intent 3.2. Verify and track specific aspects of the current design back to the original intent throughout the supply chain

ELEMENT	PERFORMANCE CRITERIA
	3.3.Trace verification requirements back to system requirements and vice versa 3.4.Use change control and configuration management to implement remedial actions and change control of inconsistencies

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- communication skills to liaise with internal and external personnel on technical and operational matters
- information technology skills for:
 - desktop research
 - enabling production of a system requirements specification for a complex project
 - word processing
- literacy skills to:
 - interpret technical documentation such as software and hardware manuals and specifications
 - interpret relevant enterprise policy and documentation
 - prepare reports given a specific format
 - read and comply with related occupational health and safety (OHS) requirements and work practices
- numeracy skills to take and analyse measurements
- planning and organisational skills to:
 - break large projects into a series of small projects
 - organise testing and contingency plans
- problem solving skills to manage and trace technical margins both horizontally and vertically through the hierarchy
- task management skills to work systematically with required attention to detail and adherence to project requirements
- technical skills to:
 - conduct functional analysis
 - create design solutions
 - use simulation software

REQUIRED SKILLS AND KNOWLEDGE

Required knowledge

- complex simulation techniques
- current enterprise platforms and designs
- design of management plans
- domain and solution architectures
- enterprise and technology issues
- information required to simulate computer system elements according to a test specification
- interdisciplinary concepts and attributes
- life cycle design attributes
- remedial actions and change control of inconsistencies
- solution design and traceability
- tools to conduct functional analysis

Evidence Guide

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: • develop system design requirements • evaluate design concepts for system or system element using complex simulations • produce a system design using domain specific strategy to platform requirements and design • use functional analysis tools • use complex simulations • verify solution design and traceability.
Context of and specific resources for assessment	Assessment must ensure: • a site where development, deployment, management and optimisation of domain and solution architectures into platform requirements and designs can be undertaken • documentation, modelling and simulation tools currently used in industry • tests and equipment currently used in industry.
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 the candidate translating domain and solution architectures into platform requirements and designs • oral and written questioning of the candidate to assess required knowledge of platform requirements and designs • review of the candidate's documented simulation testing and change and improvement recommendations.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICTTEN7222A Manage solution architecture and

EVIDENCE GUIDE

	impacts in line with organisational processes. Aboriginal people and other people from a non-English speaking background may have second language issues. Access must be provided to appropriate learning and assessment support when required. Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed. In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. Where applicable, physical resources should include equipment modified for people with special needs.
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Range Statement

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.

Enterprise and technology issues may include:

- communication and interoperability issues
- distributed enterprise applications
- technologies you deploy
- vendors you select as partners.

Sources of complexity may include:

- different domains
- multinational programmes
- multiple suppliers
- novel technology.

RANGE STATEMENT	
<i>Systems integration</i> may include:	• combining component subsystems into one system and ensuring that the subsystems function together as a system • process of linking together different computing systems and software applications physically or functionally.
<i>Interdisciplinary concepts</i> may include:	• behaviour • functionality • structure.
<i>Attributes</i> may include:	• availability • cost • feasibility • human factors • maintainability • reliability • risk • schedule • technology requirements • testability.
<i>Life cycle design attributes</i> may include:	• availability • maintainability • reliability • testability.
<i>Functional Analysis</i> component functions may include:	• accounting • manufacturing • marketing • product design • sales.
<i>System element</i> may include:	• elements that can support several interfaces • requirements posed on the system element • services to be provided by the system element • specified connected devices and interfaces.

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Telecommunications networks engineering
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