



Australian Government

Department of Education, Employment and Workplace Relations

ICTTEN7222A Manage solution architecture and impacts in line with organisational processes

Release: 1

ICTTEN7222A Manage solution architecture and impacts in line with organisational processes

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to analyse business options to plan, develop and manage solution architecture systems integration across multiple architectures for a telecommunications service provider. 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	Network engineering staff or senior technical officers with appropriate project management roles and authority to direct the activities of installation staff, manufacturers and vendors apply the skills and knowledge in this unit. This unit applies to service provider network infrastructure implementing solution architecture in line with organisational processes as a business solution.
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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 plan to support architectural design process	1.1. Prepare a plan with techniques to support the architectural design process and communicate the solution to different stakeholder groups 1.2. Analyse business options to support architectural design trade offs for optimal design solution 1.3. Evaluate strengths and weaknesses of relevant technologies in the context of the requirement 1.4. Assess a range of alternative interdisciplinary concepts and the effect of their attributes on the design requirements 1.5. Prepare a solutions architecture plan with possible solutions and alternative solutions
2. Develop interface requirements for effective solutions across multiple architectures	2.1. Evaluate system element interfaces and the sources of complexity for the interface management of the system across multiple architectures 2.2. Develop a process and appropriate techniques to be adopted for the interface management of system elements for solution architecture 2.3. Produce a control process of the system element interfaces of the management system 2.4. Liaise and arbitrate between stakeholders where there are conflicts in the definition of interfaces
3. Manage solution architecture systems integration	3.1. Evaluate suitability of system integration, verification and validation plans for solution architecture from requirements 3.2. Develop systems integration, verification and validation plans for complex systems to ensure viable integration process 3.3. Manage system integration plan and diagnose complex faults 3.4. Document fault conditions, report to appropriate person and follow up corrective actions 3.5. Prepare evidence for customer acceptance and certification of the system integration management plan 3.6. Plan and manage a transition to operational activity for the solution architecture
4. Manage solution implementation and notify stakeholder groups	4.1. Produce final project management requirements against solution architecture plan and notify the stakeholder groups of the impending implementation 4.2. Evaluate the impact of the proposed project solutions on customers and enterprise 4.3. Manage solution architecture activities as part of an

ELEMENT	PERFORMANCE CRITERIA
	overall project plan and monitor solution architecture risks 4.4. Manage the amendments to solution architecture processes to meet the needs of the project and apply necessary corrective actions

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- analytical skills to evaluate business options to support architectural design
- communication skills to:
 - interact with stakeholders while maintaining a customer focus and consideration of customer needs
 - liaise with internal and external personnel where there are conflicts in the definition of interfaces
 - present solutions at business meetings
 - work effectively within group
- literacy skills to:
 - prepare reports given a specific format
 - read and interpret requirements
- numeracy skills to analyse requirements
- PC skills to use a word processor to translate enterprise and technology issues into validation plans
- planning and organisational skills to:
 - break large projects into a series of small projects
 - manage and prioritise own work
 - manage solution elements
- problem solving skills to solve domain, technology and logistics problems
- safety awareness skills to follow all related occupational health and safety (OHS) requirements and work practices
- task management skills to work systematically with required attention to detail and adherence to project requirements
- technical skills to:
 - develop alternative solutions
 - diagnose interface requirements

REQUIRED SKILLS AND KNOWLEDGE
• manage solution architecture systems integration
Required knowledge
• features and operating requirements of complex systems, key performance indicators (KPIs) and service level agreements • information required to define solution architecture and impacts in line with organisational processes • interdisciplinary concepts across multiple architectures • issues and challenges that occur with system changes • legislation, codes of practice and other formal agreements that directly impact on system integration • manufacturer's requirements for operation of systems equipment • organisational policy and procedures • performance and integration requirements • solutions architecture alternatives • specific OHS requirements that impact on activity in terms of safety of self and public safety • system element interfaces for solution architecture • system integration plans • validation plans

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: • prepare an architecture plan with solutions and alternative solutions • develop interface requirements for effective solutions across multiple architectures • manage solution architecture systems integration • analyse impact of proposed project solutions on customers and enterprise • prepare evidence for customer acceptance and certification of the system integration management plan • produce final project management requirements.
Context of and specific resources for assessment	Assessment must ensure: • site where the development and management of solution architecture systems integration across multiple architectures may be conducted • software tools currently used in industry • vendor products, specifications, equipment and enterprise policy required for the activity.
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 implementing system integration • direct observation of the candidate performing a systematic approach to test and analysis of problems arising • review of evaluations, plans and evidence for customer acceptance, prepared by the candidate • oral or written questioning of the candidate to assess required knowledge.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplaces and job role is

EVIDENCE GUIDE

	recommended, for example: • ICTTEN7221A Manage end to end architectural solutions across multiple domains. 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.

<i>Stakeholder groups</i> may include:	• construction • design • finance • planning • procurement.
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<i>Interdisciplinary concepts</i> may	• behaviour • functionality
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RANGE STATEMENT	
include:	• structure.

RANGE STATEMENT	
Attributes may include:	• availability • cost • feasibility • human factors • maintainability • reliability • risk • schedule • technology requirements • testability.
Possible solutions may include:	• better or more services • better technology option • credible solutions • easier to implement and manage • feasible solutions • more scalable.
Alternative solutions may include:	• availability of technology • cost • feasibility • human factors • risk • schedule • technology requirements.
System element interfaces may include:	• requirements posed on the system element • services to be provided by the system element specified connected devices/interfaces • system elements that can support several interfaces.
Sources of complexity may include:	• different domains • multinational programs • multiple suppliers • novel technology.
System elements may include:	• contractual relationship • customer relationship • development relationship • hierarchical relationship.
System integration may include:	• combining the component subsystems into one system and ensuring that the subsystems function together as a system • process of linking together different

RANGE STATEMENT	
	computing systems and software applications physically or functionally.
Validation plans may include:	• identification of method • interaction between the stakeholders • timing for each activity.
Project management requirements may include:	• project specifications • risk assessment and management options • timelines, costs and deliverables.

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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