Australian Government

Department of Education, Employment and Workplace Relations

ICAT4221B Locate equipment, system and software faults

Release: 1

ICAT4221B Locate equipment, system and software faults

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit defines the competency required to apply systematic principles to fault finding in any field of IT. The following units are linked and form an appropriate cluster: • ICAS4109B Evaluate system status • ICAT4242B Perform unit test for a class No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	

Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

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.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Choose the most appropriate fault finding method	1.1. Analyse and document the ***system*** that requires troubleshooting 1.2. Identify and apply specifically designed troubleshooting tools for the ***system*** 1.3. Investigate and record generic cyclic ***fault finding tools*** 1.4. Obtain required specialist tools appropriate to the work
2. Analyse the problem to be solved	2.1. Collect all data relevant to the ***system*** as well as signs and symptoms of the ***problem*** 2.2. Organise the collected data to enable an understanding of the status of the ***system*** 2.3. Analyse the data to determine that there is a ***problem***, and the nature of the ***problem***
3. Define the causes of the problem and create a plan of action	3.1. Create a list of probable causes of the ***problem*** 3.2. Organise causes in order of likelihood 3.3. Formulate a ***solution*** or rectification 3.4. Rectify probable causes, testing for the success of the ***solution*** and record results
4. Review problem and system status	4.1. Test the ***system*** to ensure the ***problem*** has been solved and record results 4.2. Document the ***problem***, its signs and symptoms, and the ultimate ***solution*** and load to database of problems/solutions for future reference

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE
This section describes the skills and knowledge required for this unit.
Required skills
• Problem solving skills for a defined range of unpredictable problems involving participation in the development of strategic initiatives • Communication skills in relation to analysis, evaluation and presentation of information • Teamwork skills involving the contribution to solutions and goals of a non-routine

REQUIRED SKILLS AND KNOWLEDGE
or contingency nature • Group facilitation and presentation skills in relation to transferring and collecting information and gaining consensus • Negotiation skills in relation to other team members and applied to a defined range of predictable problems • Report writing skills for business requiring depth in some areas, analysis and evaluation of information in a defined range of areas • Change management skills in relation to maintaining the continuity of IT operations and business functions • Customer service skills in relation to reviewing change procedures • Skills in handling difficult clients in relation to reviewing change procedures • Conflict resolution skills in relation to reviewing change procedures • Risk analysis skills in relation to reviewing change procedures • Low level training needs analysis skills • Low level programming skills
Required knowledge
• Broad knowledge of help desk and maintenance practices • Current industry-accepted hardware and software products, with broad knowledge of general features and capabilities and detailed knowledge in some areas • Broad knowledge of the role of stakeholders and the degree of stakeholder involvement • Broad general knowledge of the client business domain • Detailed knowledge of the system's current functionality • Broad knowledge of quality assurance practices • One or more change management tools • Broad knowledge of system testing • Broad knowledge of some change control procedures • Detailed knowledge of the system under modification

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 following is essential: • Assessment must confirm the ability to choose the best fault finding method for a situation/scenario, and apply it in a structured, methodical manner. To demonstrate competency in this unit the person will require access to: • System to be diagnosed • Diagnostic and fault finding tools • Technical and system documentation
Context of and specific resources for assessment	Troubleshooting and fault finding are universal competencies used by most IT practitioners and operate at all stages of the systems life cycle. These activities apply procedures for localizing and diagnosing equipment or system malfunctions or anomalies, typically by systematic examination progressing from higher to lower levels of assembly. The breadth, depth and complexity of knowledge and skills in this competency would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance would be involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature. Assessment must ensure: • Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop new criteria and procedures for performing current practices and provision of some leadership and guidance to others

EVIDENCE GUIDE	
	in the application and planning of the skills would be characteristic. • Applications may involve responsibility for, and limited organisation of, others. Assessment will usually include observation of real or simulated work processes and procedures and/or performance in a project context as well as questioning on underpinning knowledge and skills. The questioning of team members, supervisors, subordinates, peers and clients where appropriate may provide valuable input to the assessment process. The interdependence of units for assessment purposes may vary with the particular project or scenario.
Method of assessment	The purpose of this unit is to define the standard of performance to be achieved in the workplace. In undertaking training and assessment activities related to this unit, consideration should be given to the implementation of appropriate diversity and accessibility practices in order to accommodate people who may have special needs. Additional guidance on these and related matters is provided in ICA05 Section 1. • Competency in this unit should be assessed using summative assessment to ensure consistency of performance in a range of contexts. This unit can be assessed either in the workplace or in a simulated environment. However, simulated activities must closely reflect the workplace to enable full demonstration of competency. • Competency in this unit can be assessed in a live environment provided the assessor has a prior knowledge of the outcome, or in a simulated or fire walled environment.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example: • ICAS4109B Evaluate system status

EVIDENCE GUIDE	
	• ICAT4242B Perform unit test for a class An individual demonstrating this competency would be able to: • Demonstrate understanding of a broad knowledge base incorporating some theoretical concepts • Apply solutions to a defined range of unpredictable problems • Identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas • Identify, analyse and evaluate information from a variety of sources • Take responsibility for own outputs in relation to specified quality standards • Take limited responsibility for the quantity and quality of the output of others • Maintain knowledge of industry products and services

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.	
System may include but is not limited to:	• hardware and software components that run a computer or network
Fault finding tool	• For networking: Ping, trace route, Telnet, protocol analysers, operating system tools, mapping tools, the OSI layered model • For programming: Trace, debug, break points, compilers • For systems analysts: There are no specific tools for systems analysts, they are the conduit between the implementers (programmers or net

RANGE STATEMENT	
	workers) and the users. They may have to review design criteria after user feedback to improve system performance or rectify faults in design or implementation
Problem may be in reference to:	• problems with the business • system • application • network • people in the organisation
Solution may include but is not limited to:	• new hardware • hardware upgrades • new software • software upgrades • user training • business processes • implementing a new system

Unit Sector(s)

Unit sector	Test

Co-requisite units

Co-requisite units		

Competency field

Competency field	