



Australian Government

Department of Education, Employment and Workplace Relations

ICTTEN4085A Monitor, analyse and action telecommunications network alarms

Release: 1

ICTTEN4085A Monitor, analyse and action telecommunications network alarms

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit describes the performance outcomes, skills and knowledge required to take appropriate action in response to network alarms. It includes network impact, problem diagnosis, network restoration and normalisation of alarms. The alarms may be monitored locally on site, or remotely by technical field staff or by personnel at the Network Operations Centre (NOC). 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	Field officers, technicians, maintenance staff and supervisors from carriers, contractors or other service providers apply the skills and knowledge in this unit. It applies to maintenance staff who are responsible for monitoring equipment rooms, having both physical access to local alarms and remote access to alarms where the equipment is externally located.
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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. Plan response to network alarm	1.1. Determine alarm severity and specific network elements affected from presentation of alarm 1.2. Assess the likely impact to the client and network of the alarm 1.3. Notify the NOC and other relevant parties of alarm condition 1.4. Prioritise the actioning of alarms according to existing service level agreement obligations and enterprise policy 1.5. Assess the impact of any outage issues and major customers affected 1.6. Provide information to and seek advice from other relevant parties in identifying the problem and cause of the alarm condition 1.7. Diagnose the likely cause of the alarm condition using established methodical strategies 1.8. Escalate diagnosis to higher level fault clearance unit according to enterprise policy where necessary
2. Arrange rectification of network problem	2.1. Implement enterprise policy relating to outages as required 2.2. Rectify network problems when appropriate capability and time constraints can be met 2.3. Enact escalation procedures according to enterprise policy 2.4. Make available all alarm data and diagnosis to other areas with responsibility and jurisdiction for network restoration 2.5. Provide clear and concise instructions to field staff to facilitate all repair efforts 2.6. Monitor the progress of the network repair effort 2.7. Apply enterprise policy in relation to alarms requiring no further action
3. Complete alarm clearance tasks	3.1. Reset alarms following network restoration 3.2. Notify all relevant parties of problem rectification 3.3. Undertake appropriate cause and effect studies to prevent re-occurrence of problem 3.4. Complete administrative tasks and recommend any changes required by the enterprise quality assurance system

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- analytical skills to review alarm information and make judgments to inform operational decisions
- communication skills to provide advice and guidance to others and to liaise with technical personnel working across different levels and in different contexts
- initiative and enterprise skills to identify improvements to alarm resolution and troubleshooting
- learning skills to keep up to date with new technology
- literacy skills to read complex technical data and procedures
- numeracy skills to interpret levels, readings and numerical data
- problem solving skills to address complex problems from a remote location
- research skills to source technical information from enterprise website or manufacturer's technical documentation
- technical skills to undertake diagnosis and repairs on a range of networks

Required knowledge

- escalation procedures
- installed telecommunications systems and equipment
- path protection
- telecommunications networks
- test equipment and test procedures
- typical problems and challenges that arise in NOCs and in the field
- typical systems and procedures

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:

- monitor and analyse a range of network alarms including use of fault history and ranking of likely causes
- undertake and monitor network repairs
- plan and coordinate the actioning of network alarms.

Context of and specific resources for assessment

Assessment must ensure:

- sites on which local and remote monitoring and analysis of network alarms may be conducted
- manufacturer's technical documentation.

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 performing remote diagnosis of network alarms, ranging from common to complex
- direct observation of the candidate preparing an action plan in response to a range of network alarms
- oral or written questioning of required knowledge.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- ICTTEN4081A Locate, diagnose and rectify faults
- ICTTEN4086A Undertake routine maintenance of the telecommunications network
- ICTTEN4087A Undertake remote diagnosis and repair of network faults.

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.

EVIDENCE GUIDE

	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>Alarm</i> may include:	• computer screen alarm information sourced from network management system • physical indicator lamps on: • equipment circuit cards • equipment rooms • racks • subracks • suites.
<i>Network elements</i> may include:	• equipment utilised in the following networks: • cellular • data • fixed radio • hybrid fibre coaxial (HFC) • mobile radio • satellite

RANGE STATEMENT

- voice.

RANGE STATEMENT	
Impact may include:	- customer impact: - degradation of service - disruption of service to residential customers - intermittent performance - loss of revenue to an enterprise customer - loss of service to an enterprise customer - network impact: - congestion - drop out - excessive latency - limited coverage - no transmission - poor grade of service - poor signal quality - routing problems.
NOC may include:	- engineering unit within a carrier responsible for: - coordinating repairs or changes to the network - monitoring the network - performing diagnostic tests.
Relevant parties may include:	- customer - design engineer - NOC - on site technical staff - other installations sharing same network traffic - project manager - specialist technical support staff.
Outage may include:	- loss of service to customers due to a network fault or upgrade - planned, in the case of network upgrades or unplanned in relation to faults.
Methodical strategies may relate to:	- analysing test results and previous fault history - conducting tests - coordinating the actions of upstream and downstream maintenance personnel - isolating fault progressively to eliminate probable causes

RANGE STATEMENT	
	• reloading software • remotely interrogating hardware • scheduling diagnosis for low traffic times • substituting hardware.
Escalation procedures may include:	• greater involvement from the NOC • progressive shifting of network restoration responsibility to more capable areas.
Administrative tasks may include:	• checking correct labelling of all equipment and amending where required • completing job orders and submitting to appropriate enterprise organisational unit • completing test sheets according to specification and logging test instrument usage • following quality control procedures • handing over installation briefs, documents and equipment manuals to operational staff • recording test results and updating appropriate databases • updating design specifications and returning to design area as required by enterprise requirements.
Quality assurance may include:	• acting on logs, reports and other data to guide ongoing quality improvements • updating logs and reporting on installation or maintenance activities.

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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