



Australian Government

DEFSIM017 Fault find and repair simulator image generator and visual display systems

Release: 1

DEFSIM017 Fault find and repair simulator image generator and visual display systems

Modification History

Release 1. This is the first release of this unit of competency in the DEF Defence Training Package Release 4.0.

Application

This unit describes the knowledge and skills required to conduct fault finding and repairs to the simulator image generator and visual display systems. This includes analysing fault reports, identifying and rectifying faults, conducting functional tests and the documentation and certification processes. In the context of this unit, simulators are used to replicate land, air, sea and undersea systems to facilitate training and development.

Both software and hardware components may be involved. Image generator hardware components may include commercial off-the-shelf systems, proprietary designed systems and high-end rack mount personal computers with engineering graphic cards installed.

Image generator software components include proprietary software to process visual databases stored on the information gateway, under direction of simulators' host computing system, to produce drive signals for the visual display, and/or commercial software.

Maintenance tasks include fault finding hardware to line replacement at unit level, image and backup of software installation, configuration and updating.

Visual display systems may include liquid crystal display, digital light processing, liquid crystal on silicon, light emitting diode, organic light emitting diode, cathode ray tube and/or laser.

Mechanisms may include projection (direct and/or rear, including optics and display surfaces), and/or direct display (television, monitor).

Maintenance tasks may include setup, fault finding, alignment of projectors, optics alignment and colour matching and balance.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to.

Those undertaking this unit would work independently, or as part of a team, with minimal supervision, while performing complex tasks, including complex problem solving, in a limited range of contexts. They would use discretion and judgement and take responsibility for the quality of their outputs.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

Simulator Operations

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Receive and analyse fault report

- 1.1** Receive and analyse simulator image generator and visual display system fault report
- 1.2** Identify and select appropriate fault finding method(s) that will apply across the range of simulator image generator and visual display system
- 1.3** Prepare the simulator image generator and visual display system for fault finding

2 Identify and find fault

- 2.1** Apply fault finding method(s)
- 2.2** Identify and analyse fault indicators
- 2.3** Identify the simulator image generator and visual display system fault
- 2.4** Confirm that the fault is the one initially reported

3 Repair fault

- 3.1** Identify and confirm cause of fault
- 3.2** Identify and confirm repair method(s)
- 3.3** Complete simulator image generator and visual display system repair
- 3.4** Conduct post repair safety check

		3.5	Restart simulator image generator and/or visual display system
4	Conduct functional test	4.1	Test simulator image generator and visual display system to ensure operational integrity
		4.2	Confirm operational parameters
5	Finalise repair process	5.1	Finalise simulator image generator and visual display system repair reports including a detailed synopsis of the fault and the repair process and any certification requirements
		5.2	Report the operational status of the simulator image generator and visual display system

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to DEFSIM003 Fault find and repair simulator image generator and visual display systems.

Links

Companion Volume Implementation Guides are found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6bdbab1e-11ed-4bc9-9cba-9e1a55d4e4a9>

Assessment Requirements for DEFSIM017 Fault find and repair simulator image generator and visual display systems

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least one occasion and includes:

- undertaking research and analysis related to simulator image generator
- undertaking research and analysis related to visual display systems
- following logical, complex fault finding techniques
- using measuring instruments including light meters, chroma meters and theodolites
- applying simulator image generator systems repair methodologies
- applying simulator image visual display systems repair methodologies
- following configuration management processes using appropriate information technology and software including proprietary projector software and proprietary image generation software
- identifying, reviewing and analysing information that may impact on the simulator image generator and visual display systems fault finding
- conducting simulator image generator functional testing
- conducting simulator image generator and visual display systems functional testing
- negotiating and communicating effectively with key stakeholders.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- operational capabilities and limitations of the relevant simulator
- operational capabilities and limitations of the relevant simulator image generator and visual display system
- simulator operating modules comprising the simulator system being worked on
- fault indicators related to the simulator image generator and visual display systems being worked on
- repair methodologies related to the simulator image generator and visual display systems being worked on
- legislative and regulatory requirements related to the simulator being worked on
- organisational policy and procedures related to the relevant simulator image generator and visual display systems
- configuration management related to the simulator image generator and visual display

systems being worked on

- product knowledge related to systems and/or equipment in service.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Retail or commercial systems whose primary purpose is entertainment do not meet the requirements.

Individual domestic use systems whose primary purpose is entertainment do not meet the requirements. Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- acceptable means of simulation assessment
- applicable documentation, including workplace procedures, regulations, codes of practice and operation manuals
- relevant materials, tools, equipment and PPE currently used in industry.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6bdbab1e-11ed-4bc9-9cba-9e1a55d4e4a9>