



Australian Government

DEFSIM003 Fault find and repair simulator image generator and visual display systems

Release: 1

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Modification History

Release	Comments
1	This unit was released in DEF Defence Training Package release 1.0 and meets the Standards for Training Packages.

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 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 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 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.

This unit was developed in a Defence environment but may be relevant to others who work in this field.

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.

Competency Field

Simulator Operations

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section.
1. Receive and analyse fault report	1.1 Receive and analyse simulator image generator and/or 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/or visual display system. 1.3 Prepare the simulator image generator and/or 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/or 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/or 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/or visual display system to ensure operational integrity. 4.2 Confirm operational parameters.
5. Finalise repair process	5.1 Finalise simulator image generator and/or 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/or visual display system.

Foundation Skills

The foundation skills demands of this unit have been mapped for alignment with the Australian Core Skills Framework (ACSF). The following tables outline the performance levels indicated for successful attainment of the unit.

ACSF levels indicative of performance:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Learning					Reading					Writing					Oral communication					Numeracy				

Performance variables

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Support					Context					Text complexity					Task complexity				

Further information on ACSF and the foundation skills underpinning this unit can be found in the Foundation Skills Guide on the GSA website.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

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

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Assessment Requirements for DEFSIM003 Fault find and repair simulator image generator and visual display systems

Modification History

Release	Comments
1	These Assessment Requirements were released in DEF Defence Training Package release 1.0 and meet the Standards for Training Packages.

Performance Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the candidate must demonstrate evidence of performance of the following on at least one occasion.

- undertaking research and analysis related to simulator image generator and visual display systems
- following logical, complex fault finding techniques
- using measuring instruments including light meters, chroma meters and theodolites
- applying simulator image generator and 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 and visual display systems functional testing
- negotiating and communicating effectively with key stakeholders

Knowledge Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the depth of knowledge demonstrated must be appropriate to the job context of the candidate.

- 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

Competency should be assessed in an actual workplace or in a simulated environment, with access to equipment and infrastructure appropriate to the outcome. Competency should be demonstrated over time to ensure the candidate is assessed across a variety of situations.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

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