



**Australian Government**

# **AVIM0009 Facilitate training in a synthetic environment**

**Release: 1**

# **AVIM0009 Facilitate training in a synthetic environment**

## **Modification History**

Release 1. This is the first release of this unit of competency in the AVI Aviation Training Package.

## **Application**

This unit involves the skills and knowledge required to facilitate training in a synthetic environment in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards.

Use of the unit for simulation training activities outside of an aviation context is in accordance with relevant regulatory, organisational or enterprise procedures.

It includes planning a synthetic learning activity; preparing a trainee for these activities; and guiding, facilitating and monitoring learning. It also includes conducting post-training activities and reviewing facilitation processes.

This unit addresses vocational training technical skill requirements (physical, mental and task-management abilities) related to synthetic training and assessment duties of vocational instructors and assessors and contributes to safe and effective performance in simple and/or complex operational and training environments.

Operations are conducted as part of commercial and military vocational training activities across a variety of operational contexts within Australian industry.

Work is performed independently or under limited supervision as a single operator or within a team environment.

Licensing, legislative, regulatory or certification requirements are applicable to this unit.

## **Pre-requisite Unit**

Not applicable.

## **Competency Field**

M – Training and Assessment

## **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.

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|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1 Plan a synthetic learning activity</b>                | <b>1.1</b> Learning strategy and/or learning program is accessed, read and interpreted to determine learning outcomes or objectives to be met and relevant delivery requirements<br><br><b>1.2</b> Potential risks, including those associated with human factor aspects of synthetic training devices, are identified<br><br><b>1.3</b> Limitations of synthetic training device are identified<br><br><b>1.4</b> Delivery plan is developed to plan, manage and sequence synthetic training activities and events to ensure logical progression of learning content, trainee safety and continuity of trainee progress<br><br><b>1.5</b> Technical and human factor requirements for synthetic environment, including safety and emergency procedures, are confirmed                                                                                                                                                  |
| <b>2 Prepare trainee for synthetic training activities</b> | <b>2.1</b> Availability of suitable resources is confirmed<br><br><b>2.2</b> Mental and physical preparedness of trainee to undertake training in synthetic environment is confirmed<br><br><b>2.3</b> Introduction to synthetic environment is provided, including training objectives and relevant workplace procedures<br><br><b>2.4</b> Instructional relationships are established between trainer/facilitator and trainees using appropriate communication tools and skills<br><br><b>2.5</b> Trainee is briefed on how synthetic training activity will be conducted to meet training objectives<br><br><b>2.6</b> Risk management issues applicable to synthetic training activity are discussed with trainee and trainee responsibility for managing relevant risks is confirmed<br><br><b>2.7</b> Trainee ability to comprehend and/or recall training objectives, knowledge, handling techniques and planned |

- synthetic training activity/scenario is confirmed
- 3 Guide and facilitate learning in a synthetic environment**
- 3.1** Liaison with relevant personnel is conducted to determine simulation activity requirements
- 3.2** Learning is facilitated in accordance with delivery plan using relevant synthetic devices and facilitation skills
- 3.3** Good practice in facilitating learning in a synthetic environment is applied to ensure an effective and safe transfer of learning to the real world
- 3.4** Technical issues are addressed as required using relevant technical support mechanisms and/or personnel
- 3.5** Opportunities for authentic learning, practice and formative assessment are built into the learning experience
- 3.6** Pre-loaded automatic demonstrations are employed as required
- 3.7** Abnormal/unusual conditions are monitored and addressed
- 3.8** Variations to activity conditions are implemented as required
- 3.9** Handover/takeover procedures for control of synthetic device are implemented in accordance with workplace procedures
- 4 Monitor learning in a synthetic environment**
- 4.1** Trainee progress is monitored and documented in accordance with workplace procedures
- 4.2** Trainee cognitive load is assessed, monitored and managed
- 4.3** Support and guidance are provided within synthetic environment as appropriate
- 4.4** Trainee is encouraged to develop self-assessment skills
- 4.5** Trainee interaction with others and participation in synthetic training activities is continuously monitored, and interventions are made as required
- 4.6** Opportunities are provided for trainees to reflect on their learning progress

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|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>5 Conduct post-training activities</b>                    | <b>5.1</b> Significant details of trainee performance are clearly and accurately debriefed                                                                                                                                |
|                                                              | <b>5.2</b> Playback devices are employed during debriefing to illustrate key learning points as required                                                                                                                  |
|                                                              | <b>5.3</b> Trainee is briefed on details of next training event as required                                                                                                                                               |
|                                                              | <b>5.4</b> Trainee records are maintained in accordance with workplace procedures                                                                                                                                         |
|                                                              | <b>5.5</b> Relevant stakeholders are kept informed about trainee progress                                                                                                                                                 |
|                                                              | <b>5.6</b> Synthetic device faults are recorded and/or rectified in accordance with workplace procedures                                                                                                                  |
|                                                              | <b>5.7</b> Support and guidance are provided post-synthetic environment activities as required                                                                                                                            |
| <b>6 Review synthetic environment facilitation processes</b> | <b>6.1</b> Synthetic training session outcomes are evaluated against desired session outcomes                                                                                                                             |
|                                                              | <b>6.2</b> Review is undertaken post-completion of learning program, course or qualification                                                                                                                              |
|                                                              | <b>6.3</b> Time is taken to reflect on own performance as a trainer or facilitator, and ways to improve performance are explored                                                                                          |
|                                                              | <b>6.4</b> Recommendations for improvements in facilitating training and appropriateness of synthetic systems, tools and resources are identified and documented, and discussed with relevant personnel for future action |

## 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.

## Unit Mapping Information

This unit replaces and is equivalent to AVIM5004 Facilitate training in a synthetic environment.

## Links

AVI Training Package Companion Volume Implementation Guide available on VET Net: -  
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=4725260a-0af3-4daf-912b-ef1c2f3e5816>

# Assessment Requirements for AVIM0009 Facilitate training in a synthetic environment

## Modification History

Release 1. This is the first release of this unit of competency in the AVI Aviation Training Package.

## Performance Evidence

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

- adapting to differences in equipment and operating environment in accordance with standard operating procedures (SOPs)
- applying flexibility in facilitation when using synthetic devices, including:
  - applying intervention techniques
  - assessing learning and performance
  - effectively using a variety of activities or providing directions for different trainee needs
- conducting briefings and debriefings
- confirming technical and human factor requirements for a synthetic environment
- following safety and emergency procedures, including established procedures and industry safe practice
- coordinating activities involving a range of complex tasks
- coordinating information communications technology related activities
- debriefing significant details of trainee performance
- developing a delivery plan that ensures logical progression of learning content, trainee safety and continuity of trainee progress, including:
  - determination of learning management tools, such as feedback systems and support mechanisms
  - individual/group learning objectives or outcomes for learning program or segment of learning program to be addressed
  - learning/activities/events to be addressed in e-learning sessions
  - number of trainees and their specific support requirements
  - resources and/or tools to be used
  - timing, sequence and number of pre-planned sessions
  - types of pre-planned sessions – synchronous (in real time using conferencing, chats and forums) or asynchronous (not in real time using email, offline forums and bulletin boards)
  - topics to be addressed in learning sessions
- evaluating instructional effectiveness
- identifying potential risks, including those associated with human factor aspects of synthetic

training devices

- identifying potential risks, including:
  - effects on what is learned and relationship with the real world
  - negative learning
- implementing handover/takeover procedures for control of synthetic device in accordance with workplace procedures
- implementing work health and safety (WHS) procedures and relevant regulations
- interpreting trainee needs and directing them to new learning opportunities
- maintaining trainee records in accordance with workplace procedures
- managing an environment that fosters learning and performance
- monitoring and addressing abnormal/unusual conditions
- monitoring and documenting trainee progress in accordance with workplace procedures
- reading, comprehending and interpreting written technical English
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- reporting and/or rectifying problems, faults or malfunctions promptly in accordance with workplace procedures
- selecting and employing appropriate simulation equipment
- selecting and using required personal protective (PPE) equipment conforming to industry and WHS standards
- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

## Knowledge Evidence

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

- abnormal conditions, including hardware, software and equipment malfunction/failure and poor/unusual trainee performance, including:
  - emergency communication
  - equipment malfunction/failure
  - hardware malfunction/failure
  - loading stops
  - motion stops
  - participant simulation sickness
  - personnel equipment malfunction/failure
  - poor/unusual participant performance
  - smoke or overheat warnings
  - software malfunction/failure
- advantages of synthetic training environments in facilitating learning
- limitations of synthetic training devices, including:

- fidelity
- instrumentation
- movement
- resolution
- good practice in facilitating learning in a synthetic environment, including:
  - assisting trainees in locating, using and evaluating online information
  - facilitating group work
  - guiding learning activities through setting up questions, issues, scenarios to be addressed
  - knowing when to intervene/when to let trainees direct themselves
  - maintaining momentum and motivation of trainees through ongoing individual contact and feedback
  - moderating disruptive, abusive or dominant trainees
  - observing trainee interaction and intervening as required to maintain focus/momentum/engagement
- application of simulation and synthetic activities including live, virtual and constructive (LVC) simulations
- common trainee errors and suggested suitable remedial instruction
- risk management issues, including:
  - emergency communication
  - equipment malfunction/failure
  - fidelity and resolution constraints/limitations smoke or overheat warnings
  - loading stops
  - motion stops
  - negative learning
  - simulator access/egress
  - simulation/motion sickness
  - threat and error management (TEM)
- debriefing and feedback techniques, including:
  - individual versus group debrief
  - basic techniques:
    - review simulation event
    - recall what happened
    - clarify facts
    - correct misconceptions
    - reinforce specific learning outcomes
  - intermediate techniques:
    - guided reflection of event
    - coaching methodology
    - transfer learning responsibility to participants
    - decision-making analysis

- cost versus benefit/trade-offs
- skill and knowledge technique enhancement
- advanced techniques:
  - less guidance
  - using media/checklists/video
  - oral and written evaluation
  - part of group talks/part listens
  - varied perspective (observers)
  - developing and evaluating new concepts
  - developing self-evaluative learning in participants
- debrief of stakeholders, including:
  - feedback to manufacturer, contracted suppliers and contracted maintainers
  - feedback to relevant organisational authorities
  - feedback to relevant personnel on conclusion of simulator activity
- documentation production and safe storage
- effective use of a course of training, curricula/syllabus and lesson plans
- effects of simulation sickness:
  - nausea subscale:
    - increased salivation
    - sweating
    - nausea
    - stomach awareness
    - burping
  - oculomotor subscale:
    - fatigue
    - headache
    - eyestrain
    - difficulty focusing
  - disorientation subscale:
    - vertigo
    - dizzy (eyes open)
    - dizzy (eyes closed)
    - blurred vision
    - established procedures applicable to simulation operations
- variations to training activity:
  - changes made in response to a strategic requirement
  - changes made in response to a training need
- functions of single-user, multi-user and distributed user operating systems
- fundamentals of instructing, questioning, engaging and motivating trainees
- handover/takeover procedures for controlling synthetic device/s

- how to distinguish between a technical problem and a content problem, and how to respond accordingly
- human factors implication and risks in a synthetic training environment
- information communications technology in a simulation and synthetic environment
- intervention strategies, principles and implications for a synthetic environment
- relevant learning management systems
- relevant WHS and environmental procedures and regulations applicable to simulation operations and personnel safety
- relevant sections of national and state/territory regulatory requirements and codes of practice
- sequencing and developing synthetic training activities and their relationship with real world training activities
- structure and content of relevant training resources
- techniques for introducing tasks in manageable segments to avoid overloading a trainee
- training and assessment competency standards
- cognitive load assessment, including:
  - anxiety
  - apathy
  - fatigue
  - impatience
  - inadequate demonstration
  - inadequate fault analysis
  - inadequate opportunity to practice
  - information overload
  - lack of preparation
  - outside pressures
  - physical discomfort
  - task complexity
  - unreasonable expectations
- when to intervene and when to let trainees direct themselves
- when interventions must be made to:
  - address safety
  - engage trainee
  - highlight a key learning point
  - initiate remedial actions
  - maintain momentum
- review of training, including:
  - effectiveness of learning protocols, their application and proposed changes
  - feedback from trainees, colleagues, learning designers via survey or discussion
  - identification of issues in managing/monitoring e-learners and the need for changes to contact/monitoring processes
  - identification of issues in using a delivery plan and the need for changes/modifications to

- the plan
- technology effectiveness
- self-reflection, including:
  - asking critical questions about performance, problems, methods used and success of trainees
  - seeking, listening to and acting on feedback from trainees and others.

## 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.

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 personal protective equipment (PPE) currently used in industry.

Synthetic training devices must include one of the following:

- associated simulator computer hardware and software
- desktop simulator
- flight training device
- full motion simulator
- operating system
- part-task trainer
- simulator
- single, multiple or team operator simulator
- synthetic training device
- virtual reality training system.

## Links

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