



Australian Government

AVIM0017 Facilitate training in a synthetic environment

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Modification History

Release	Comments
1	This unit of competency was first released in AVI Aviation Training Package Release 12.0.

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.

It includes planning synthetic learning activities, preparing trainees for these activities, and guiding, facilitating and monitoring learning. It also includes conducting post-training activities and reviewing synthetic environment facilitation processes.

This unit incorporates aviation non-technical skill requirements (mental, social and personal-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.

Flight instruction operations are conducted as part of recreational, commercial and military vocational training activities across a variety of operational contexts within Australian industry.

Work may be performed independently or under limited supervision as a single instructor or within a multi-crew environment.

Licensing/Regulatory Information

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

Pre-requisite unit(s)

Not applicable.

Competency field(s)

M - Training and Assessment

Unit sector(s)

Not applicable

Elements and Performance Criteria

Elements		Performance criteria	
Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.	
1	Plan a synthetic learning activity	1.1	Access, read and interpret learning strategy or learning program to determine learning outcomes or objectives to be met and relevant delivery requirements
		1.2	Identify potential risks, including those associated with human factor aspects of synthetic training devices
		1.3	Identify limitations of synthetic training device
		1.4	Develop delivery or training plan to organise, manage and sequence synthetic training activities and events to ensure logical progression of learning content, trainee safety and continuity of trainee progress
		1.5	Confirm technical and human factor requirements for synthetic environment, including safety and emergency procedures, are confirmed
2	Prepare trainee for synthetic training activities	2.1	Confirm availability of suitable resources
		2.2	Confirm mental and physical preparedness of trainee to undertake training in synthetic environment
		2.3	Provide introduction to synthetic environment, including training objectives and relevant workplace procedures
		2.4	Establish instructional relationships between trainer and trainees using appropriate communication tools and strategies
		2.5	Brief trainee on how synthetic training activity will be conducted to meet training objectives
		2.6	Discuss risk management issues applicable to synthetic training activity with trainee and confirm their responsibility for managing relevant risks
		2.7	Confirm trainee ability to comprehend and/or recall training objectives, knowledge, handling techniques and planned synthetic training activity or scenario

3	Guide and facilitate learning in a synthetic environment	3.1	Liaise with relevant personnel to determine simulation activity requirements
		3.2	Facilitate learning according to delivery or training plan using relevant synthetic devices and facilitation skills
		3.3	Apply good practice in facilitating learning in a synthetic environment to ensure an effective and safe transfer of real world learning
		3.4	Address technical issues as required using relevant technical support mechanisms or staff
		3.5	Incorporate opportunities for authentic learning, practice and formative assessment into the learning experience
		3.6	Employ pre-loaded automatic demonstrations as required
		3.7	Monitor and address abnormal or unusual conditions
		3.8	Implement variations to activity conditions as required
		3.9	Implement handover or takeover procedures for control of synthetic device according to workplace procedures
4	Monitor learning in a synthetic environment	4.1	Monitor and document trainee progress according to workplace procedures
		4.2	Assess, monitor and manage trainee cognitive load
		4.3	Support and provide guidance to trainee within synthetic environment as appropriate
		4.4	Encourage trainee to develop self-assessment skills
		4.5	Monitor trainee's interaction with others and participation in synthetic training activities continuously, and intervene as required
		4.6	Provide opportunities for trainees to reflect on their learning progress
5	Conduct post-training activities	5.1	Debrief significant details of trainee performance clearly and accurately

		5.2	Employ playback devices during debriefing to illustrate key learning points as required
		5.3	Brief trainee with details of next training event as required
		5.4	Maintain trainee records according to workplace procedures
		5.5	Inform relevant stakeholders about trainee progress
		5.6	Record or rectify synthetic device faults according to workplace procedures
		5.7	Provide support and guidance for post-synthetic environment activities as required
6	Review synthetic environment facilitation processes	6.1	Evaluate synthetic training session outcomes against desired session outcomes
		6.2	Undertake a review post-completion of learning program, course or qualification
		6.3	Reflect on own performance as a trainer or facilitator, and explore on ways to improve performance
		6.4	Identify and document recommendations for improvements in facilitating training and appropriateness of synthetic systems, tools and resources, and discuss future action with relevant individuals

Foundation skills

Foundation and digital skills essential to successful completion of this unit are mapped to the Australian Core Skills Framework (ACSF) and the European Digital Competence Framework (DigComp 3.0).

Further information is available in the AVI Companion Volume V1.1.

Range of conditions

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

Refer to the AVI Aviation Companion Volume Implementation Guide for non-essential items for this unit of competency.

Assessment Requirements for AVIM0017 Facilitate training in a synthetic environment

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 according to standard operating procedures
- 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
- coordinating activities involving a range of complex tasks
- coordinating information communications technology related activities
- debriefing significant details of trainee performance
- developing a delivery or training 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
 - evaluating instructional effectiveness
 - individual/group learning objectives or outcomes for learning program or segment of learning program to be addressed
 - learning/activities/events to be addressed in learning sessions
 - number of trainees and their specific support requirements
 - resources and/or tools to be used
 - sessions are revised to incorporate current industry developments
 - timing, sequence and number of pre-planned sessions
 - topics to be addressed in learning 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)

- following safety and emergency procedures, including established procedures and industry safe practice
- identifying potential risks, including:
 - effects associated with human factor aspects of synthetic training devices
 - effects on what is learned and relationship with the real world
 - negative learning
- implementing handover/takeover procedures for control of synthetic device according to 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 according to workplace procedures
- managing an environment that fosters learning and performance
- monitoring and addressing abnormal/unusual conditions
- monitoring and documenting trainee progress according to 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 according to workplace procedures
- selecting and employing appropriate simulation equipment
- 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
- application of simulation and synthetic activities including live, virtual and constructive (LVC) simulations
- 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
- common trainee errors and suggested suitable remedial instruction
- debriefing and feedback techniques, including:
 - individual versus group debrief
 - basic techniques:
 - clarify facts
 - correct misconceptions
 - recall what happened
 - reinforce specific learning outcomes
 - review simulation event
 - intermediate techniques:
 - coaching methodology
 - cost versus benefit/trade-offs
 - decision-making analysis

- guided reflection of event
- skill and knowledge technique enhancement
- transfer learning responsibility to participants
- advanced techniques:
 - developing and evaluating new concepts
 - developing self-evaluative learning in participants
 - less guidance
 - oral and written evaluation
 - part of group talks/part listens
 - using media/checklists/video
 - varied perspective (observers)
- 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:
 - burping
 - increased salivation
 - nausea
 - stomach awareness
 - sweating
 - oculomotor subscale:
 - difficulty focusing
 - eyestrain
 - fatigue
 - headache
 - disorientation subscale:
 - blurred vision
 - dizzy (eyes closed)
 - dizzy (eyes open)

- vertigo
- established procedures applicable to simulation operations
- 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
- handover/takeover procedures for controlling synthetic device/s
- 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
- limitations of synthetic training devices, including:
 - fidelity
 - instrumentation
 - movement
 - resolution
- relevant learning management systems
- relevant sections of national and state/territory regulatory requirements and codes of practice
- relevant WHS and environmental procedures and regulations applicable to simulation operations and personnel safety
- 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 learners and the need for changes to contact/monitoring processes
 - identification of issues in using a delivery or training plan and the need for changes/modifications to the plan
 - technology effectiveness

- 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)
- 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
- structure and content of relevant training resources
- synthetic training activities including sequencing and developing and their relationship with real world training activities
- techniques for introducing tasks in manageable segments to avoid overloading a trainee
- training and assessment competency standards
- variations to training activity:
 - changes made in response to a strategic requirement
 - changes made in response to a training need
- 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.

Assessment Conditions

Assessment must occur in workplace operational situations where it is appropriate to do so: where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate 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
- 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.

Mandatory Workplace Requirements

Assessment of performance evidence may be in a workplace setting or an environment that accurately represents a real workplace.

Unit Mapping Information

Previous Code and Title	Equivalence	Comments
AVIM0009 Facilitate training in a synthetic environment	Equivalent	

Links

Companion volumes, including implementation guides, are found on the national training register - <https://training.gov.au/training/details/AVI>.