



Australian Government

Assessment Requirements for MEA717 Evaluate avionic digital systems

Release: 1

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Modification History

Release 1 - New unit of competency

Performance Evidence

Evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria under the specified conditions of assessment, and must include:

- identifying WHS, regulatory and electrical safety requirements, risk management procedures, features and functions of aircraft digital avionic systems and components, system design principles and techniques, including performance and operating environment, system control, indicating and circuit protection requirements and interface requirements between avionic systems and other systems, including the electrical power distribution
- reviewing effects of electricity on humans, dangerous high currents and voltages and automated systems, regulatory requirements related to extra low, low and high voltage applications and relating these to aircraft digital avionic system applications
- reviewing effects of electro-magnetic radiation on humans and relate them to aircraft radio frequency and pulse systems
- determining and confirming:
 - parameters and context of tasks
 - chain of responsibility
 - personal functions and responsibilities
 - team and support functional group interdependencies and communications
 - appropriate qualifications and delegations
 - appropriate support including technical and professional assistance
- investigating associated CM and ILS requirements and drafting required data
- identifying and drafting documentation required for compliance with airworthiness regulations
- assessing and applying:
 - basic aircraft digital avionic system performance analysis and design procedures
 - design standards
 - regulatory requirements
 - graphics skills and techniques
- evaluating system components and specifications against system design and operating criteria
- evaluating system software against system design and operating criteria

- reporting and documenting results of scoping, principles and techniques identification and evaluation of applications.

Knowledge Evidence

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

- features and layout of aircraft avionic digital systems, including control, indication and antennas
- features and layout of instrument display systems, including:
 - engine indication and crew alert
 - primary flight
 - multi-function
 - head-up display
- flight management computer system
- digital electronics, including A-D and D-A converters
- pulse systems
- inertial navigation and inertial reference systems
- gyroscopic principles
- synchro and servo systems, including feedback loops
- master caution and warning systems
- basic design principles for:
 - display systems and instrument panel layout including head-up display
 - digital communications and navigation systems
 - pulse systems
 - digital autopilot systems
 - automatic flight control
 - digital engine control
 - automatic landing systems
 - inertial navigation and inertial reference systems
 - flight management computer systems
 - area navigation systems
 - on-board maintenance computer systems
 - cabin services
- avionic software design procedures and requirements
- data buses, including multiplexing and demultiplexing
- interface with the aircraft electrical system
- wiring and antenna cabling types, standards and specifications
- performance and operating environment effects
- airworthiness regulator design standards

- compliance requirements of the WHS Act and regulations, codes of practice, standards, risk assessment
- scope of trade, technical and professional support services required in digital avionic system applications
- management data interface with CM and ILS.

Assessment Conditions

- This unit may be assessed on the job, off the job or a combination of both on and off the job. Where assessment occurs off the job, that is, the candidate is not in productive work, then a simulated working environment must be used that reflects realistic workplace situations and conditions.
- The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team.
- Where applicable, reasonable adjustment must be made to work environments and training situations to accommodate ethnicity, age, gender, demographics and disability.
- Assessment methods must be by direct observation of tasks and include questioning on underpinning knowledge to ensure its correct interpretation and application.
- Assessment may be applied under project-related conditions (real or simulated) and require evidence of process.
- Assessment must confirm a reasonable inference that competency is able not only to be satisfied under the particular circumstance, but is able to be transferred to other circumstances.
- Assessors must be satisfied that the candidate can competently and consistently:
 - identify and apply WHS, regulatory and risk management procedures
 - review dangers and effects of electricity and electro-magnetic radiation on humans
 - determine parameters and context of tasks, personal, team, technical and professional assistance and support, personnel functions and responsibilities, and chain of responsibility
 - investigate sustainability implications of aircraft digital avionic system applications as specified in CM and/or ILS requirements
 - assess and apply basic aircraft digital avionic system design and maintenance/repair requirements, software basic analysis and graphics skills and techniques
 - evaluate aircraft digital avionic systems and components for compliance with WHS and airworthiness regulatory requirements
 - report and document results including provision of CM and ILS input data.
- Assessment may be in conjunction with assessment of other units of competency where required.
- Assessors must satisfy the requirements of the National Vocational Education and Training Regulator (Australian Skills Quality Authority, or its successors).

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ce216c9c-04d5-4b3b-9bcf-4e81d0950371>

