



Australian Government

Assessment Requirements for UEEEC0009 Commission satellite and microwave communication systems

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology 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:

- identifying measurement parameters
- setting up and adjusting in accordance with communication systems requirements and equipment manufacturer's instructions
- documenting adjustment settings with established procedures
- dealing with unplanned events
- applying sustainable energy principles and practices
- commissioning microwave and satellite communications system
- implementing relevant work health and safety (WHS)/occupational health and safety (OHS) workplace procedures and practices, including the use of risk control measures.

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:

- electronic communications, satellite and microwave, safe working practices and relevant standards, codes and regulations, including:
 - propagation of electromagnetic waves through the atmosphere, transmission lines and waveguides, including characteristic impedance, impedance matching, standing waves and microwave frequency bands
 - microwave device parameters involving wavelength, phase, voltage standing wave ratio (VSWR), impedance matching, circuit parameters, amplifiers, transmission, reception, oscillation, noise figure and noise temperature
 - microwave devices and components
 - microwave operational constraints and operating parameters such as power, bandwidth, gain, efficiency, operational life, electrical parameters, stability, cooling, size, testing and device selection
 - microwave measurements, test equipment and testing techniques

- EMI/EMC, generation, suppression and reduction
- satellite communications systems encompassing:
 - types of satellite systems and sub-systems
 - earth station locality and antenna parameters
 - link specifications and link calculations
 - base band signalling processes
 - modulation and system access
- commissioning electronic communication systems encompassing:
 - purpose of commissioning
 - commissioning planning and documentation
 - initial tests and adjustments
 - commissioning procedures
- relevant manufacturer specifications
- relevant job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures.

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 suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable 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
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- resources that reflect current industry practices in relation to commissioning microwave and satellite communication systems
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>