



Australian Government

Assessment Requirements for UEEEC0068 Troubleshoot 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 and performance criteria on at least two separate occasions and include:

- analysing and interpreting measurement results
- applying fundamental knowledge in finding faults efficiently
- applying relevant work health and safety (WHS)/occupational health and safety (WHS/OHS) requirements, workplace procedures and practices, including using risk control measures
- applying sustainable energy principles and practices
- checking tools and test equipment for correct operation and safety
- consulting with relevant stakeholders regarding the nature of the problem and impacts of work to diagnose and repair
- dealing with unplanned situations in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- demonstrating signal testing and signal analysis
- demonstrating the making of relevant adjustments
- dismantling and reassembling equipment as required
- finding and repairing faults in communications system
- identifying faulty components and replacing components without damage
- making relevant measurements and calculations
- providing written justification for the repairs
- selecting and using relevant radio frequency (RF) test equipment
- selecting appropriate components and/or materials for the repairs
- using methodical fault-finding techniques.

Knowledge Evidence

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

- measurement techniques to verify system performance and signal quality of analogue and digital signals, including parameters such as bit error rate and inter-symbol interference.
- methods to reduce effects of spurious emissions, harmonics, over-modulation and

intermodulation distortion (IMD) on the radio frequency (RF) spectrum

- modulation and demodulation techniques, including complex modulation schemes, e.g. multiple-input/multiple-output (MiMo) and spread-spectrum
- RF and intermediate frequency (IF) amplifier principles
- RF filtering principles, including quality (Q), bandwidth and typical filter types
- RF safety precautions
- RF signal generation and conversion principles
- receiver operating principles and characteristics, including practical troubleshooting and test techniques
- regulatory and technical requirements for efficient RF spectrum access
- relevant industry standards, codes of practice and regulations
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- transmitter operating principles and characteristics, including practical troubleshooting and test techniques.

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 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 suitable 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 finding and repairing faults in 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>