



Australian Government

**Assessment Requirements for UEEEC0037
Fault find and repair telecommunication
apparatus and systems**

Release: 1

Assessment Requirements for UEEEC0037 Fault find and repair telecommunication apparatus and systems

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:

- applying logical diagnostic methods
- using fault scenarios to test the source of system faults
- identifying faults and competency needed to rectify them
- rectifying faults in system electronics
- verifying that the system operates correctly
- documenting fault rectification
- dealing with unplanned events
- applying relevant risk identification, assessment, reporting and control requirements
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including the use of risk control measures
- applying sustainable energy principles and practices
- coordinating work with relevant person/s
- determining live testing/measurement requirements
- determining scope of work
- identifying and accessing materials, tools, apparatus and testing devices
- isolating circuits/machines/systems.

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:

- telecommunication apparatus and system fault finding and repair, safe working practices and relevant standards, codes and regulations, including:
 - telephone system fundamentals:
 - the transmission of sound in a telephone system encompassing:
 - function of telephone transmitters and receivers
 - components and functions of the telephone

- purpose of earthing and protection in a telephone system
- customer switching systems encompassing:
 - basic function
 - difference between a key system and a private automatic branch exchange (PABX)
 - advanced features
- basic operations of system distribution frames (SDF)/test point frames (TPF), power fail and line interface requirements (e.g. indial, rotary groups, ISDN, extension and tie-line circuits)
- types, purpose, use, and requirements of metering devices
- metering and installation arrangements of public/pay phones
- installation methods and requirements encompassing:
 - customer switching systems (CSS)
 - interfacing equipment
 - termination of CSS equipment
- requirements for programming of CSS
- hazard associated the electronic components of CSS encompassing:
 - static discharge
 - chemical damage
 - mechanical damage
 - electromagnetic Interference
- telephone network facilities:
 - network subsystems (i.e. functional blocks) components and operating parameters
 - switches within the network
 - customer accesses infrastructure
 - system security
- telecommunication earthing and protection:
 - telecommunication overvoltage protection system:
 - operating principles
 - overvoltage and surge/spike suppression protection techniques
 - overvoltage protection devices
 - installation of overvoltage protection systems
 - earthing protection system encompassing:
 - components and arrangement of the multiple earth network (MEN) system
 - TELEX functional earth system
 - telecommunication system earthing single and multi-storey
 - communication earth system
 - protective earth barriers for segregation, cable tray, duct and metal equipment enclosures
 - electrical interference encompassing:
 - types – radio frequency interference (RFI) and electro-magnetic interference

(EMI)

- sources of interference
- techniques in reducing interference
- earthing cable shields
- earth testing instruments and procedures
- safety issues to be considered with earthing and bonding
- PABX fundamentals:
 - programming methods
 - configuration options
 - programming options
- switches, hubs and routers:
 - purpose and function
 - circuit configurations
 - connection arrangements
 - system protocols
- decoders:
 - purpose and function
 - circuit configurations
 - connection arrangements
 - system protocols
- fault finding and repair:
 - typical faults, their symptoms and cause
 - fault diagnosis procedures and testing
 - component replacement
 - system adjustments
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/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 diagnosing and rectifying faults in telecommunication apparatus and 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>