



Australian Government

UEEEEC0044 Modify - redesign electronics and communications systems

Release: 1

UEEEEC0044 Modify - redesign electronics and communications systems

Modification History

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

Application

This unit involves the skills and knowledge required to modify and redesign electronics and communications systems.

It includes modification and redesign of electronics and communications system to augment existing systems for clients. It also includes safe working practices, system parameter reconfiguration, analysis to assure optimum performance, following procedures, and documenting final modifications and settings.

Permits may be required for some work environments, such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Competency Field

Electronics and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to modify/redesign

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures

electronics and communications system	for a given work area are obtained and applied
1.2	WHS/OHS risk control measures and workplace procedures in preparation for work activity are followed
1.3	Safety hazards that have not previously been identified are noted on job safety assessment, assessed and risk control measures implemented
1.4	Appropriate person/s is consulted to ensure the work is coordinated effectively with others involved on the worksite
1.5	System operating parameters are identified by reviewing system specifications and component technical data
1.6	Limitations, use and operation of the electronics and communication system to be modified are determined from original specifications, manufacturer data and industry standards
1.7	Extent of modification is determined from measurements, tests, inspections, system limitations and other relevant requirements
1.8	Specifications and instructions for the modifications are documented in accordance with job requirements and workplace procedures
1.9	Tools, equipment, applications and devices needed for the electronics work are obtained in accordance with workplace procedures and checked for correct operation and safety
1.10	Preparatory work is checked to ensure no unnecessary damage has occurred and complies with job requirements and specifications
2 Generate modification and redesign of electronics and communications system	
2.1	WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
2.2	Alternative modification is considered and discussed with appropriate person/s
2.3	Safety, functionality and economic considerations are incorporated in the proposed modification design

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| | <ul style="list-style-type: none">2.4 Proposed communications system modification complies with job requirements and specifications for system design alteration are documented2.5 Changes in the use and operation of the communications system as a consequence of the proposed modification are included in the design documentation2.6 Unplanned situations are responded to in accordance with workplace procedures, discussions with appropriate person/s and job specifications or requirements in a manner that minimises risk to personnel and equipment2.7 Modification and redesign are carried out efficiently without unnecessary waste of materials or damage to electronics apparatus, the surrounding environment or services using sustainable energy principles |
| 3 Complete design and report modification activities | <ul style="list-style-type: none">3.1 WHS/OHS risk control work completion measures and workplace procedures are followed3.2 Proposed modification is checked in accordance with workplace procedures for compliance with relevant job requirements and industry standards3.3 Worksite is cleaned and made safe in accordance with workplace procedures3.4 Proposed modification is submitted for appropriate organisational approval and, as required, statutory or regulatory approval3.5 Approved copies of the communications system modification and redesign documents are issued and copies retained, documented and stored in records in accordance with workplace procedures |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

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

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Modifying/redesigning electronics and communications systems must include at least the following:

- two different and representative types of electronics and communications systems

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH168A Modify - redesign of electronics and communications systems.

Links

Companion Volume implementation guides are found in VETNet - -

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

Assessment Requirements for UEEEC0044 Modify - redesign electronics and communications systems

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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:

- developing outlines of alternative redesigns
- developing the modified/redesigned system within the safety and functional requirements and budget limitations
- documenting and presenting modifications/redesigns effectively
- successfully negotiating system alteration requests
- obtaining approval for final modified/redesigned system
- dealing with unplanned events
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, workplace procedures and practices, including using of risk control measures
- applying sustainable energy principles and practices.

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 and communications engineering design processes
- functional and non-functional requirements of a customer encompassing:
 - scope of the project
 - non-functional requirements, including:
 - economics (time and cost), including total life cycle costs
 - design
 - implementation (construction)
 - maintenance (operation)
 - decommissioning (recycling)
 - aesthetics (quality)
 - design objectives (specifications)
 - specifications by defining the problem and producing a solution to satisfy the customer

- creation of the design plan through solution synthesis by selecting or creating the solution
- analysis
- optimisation of the proposed solution
- validations of the resulting design against the customer's needs
- implementation of the selected design
- project to be carried out in accordance with current WHS/OHS procedures
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications
- 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 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
- relevant and appropriate materials, tools, equipment and personal protective equipment (PPE) currently used in industry
- resources that reflect current industry practices in relation to modifying and redesigning electronics and communications systems
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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