



Australian Government

Department of Education, Employment and Workplace Relations

ICTTEN4202A Install and test a radio frequency identification system

Release: 1

ICTTEN4202A Install and test a radio frequency identification system

Modification History

Not Applicable

Unit Descriptor

<p>Unit descriptor</p>	<p>This unit describes the performance outcomes, skills and knowledge required to undertake a radio frequency identification (RFID) installation, configuration and testing. This could be part of the upgrade in an existing or the implementation of a new logistical or security network using RFID technology.</p> <p>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.</p>
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Application of the Unit

<p>Application of the unit</p>	<p>Officers in field work who carry out installation, maintenance and upgrade of ICT networks apply the skills and knowledge in this unit. They would be employed by telecommunications and IT networking provisioning companies specialising in RFID technology.</p> <p>They will be able to use acquired knowledge of integrating new and converging functionalities to a network.</p>
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to install specified RFID system	1.1. Prepare for given work according to relevant legislation, occupational health and safety (OHS), codes, regulations and standards 1.2. Arrange access to the site according to required procedure 1.3. Choose the most suitable RFID system based on specifications and in consultation with appropriate person 1.4. Evaluate options for equipment installation siting and antenna positioning to include the effects of electromagnetic interference and shielding 1.5. Investigate causes of interference with RFID systems 1.6. Specify the network element requirements for the installation and any training requirements for clients 1.7. Create a deployment plan including down times and advise the user group 1.8. Obtain all components and devices required for the RFID system
2. Install specified RFID system and resolve any faults	2.1. Install interrogators or readers according to given plan 2.2. Install tags and document the correct procedures for locating and orienting tags 2.3. Install and undertake network configuration activities using relevant operating system and application upgrades to integrate RFID system into the overall network 2.4. Troubleshoot problems between interrogators or readers, tags and networks including tuning for optimum performance and rectify any faults
3. Test the RFID installation according to specification and standards	3.1. Test system installation according to design specifications and standards including optimum placement of tags and data transmission completeness and record outcomes 3.2. Carry out any changes 3.3. Validate changes or additions against specifications 3.4. Document the test results
4. Complete documentation in	4.1. Complete all documentation for users according to the design and customer requirements

ELEMENT	PERFORMANCE CRITERIA
compliance with customer requirements and clean up worksite	4.2. Complete report and notify client of status of the network and standards applying to the installation 4.3. Clean up and restore worksite to client's satisfaction 4.4. Secure sign off from appropriate person

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- communication skills to liaise with internal and external personnel on technical, operational and business related matters
- literacy skills to interpret technical documentation and write reports, user and training documentation in required formats
- numeracy skills to take test measurements, interpret results and evaluate performance and interoperability of RFID system
- planning and organisational skills to plan, prioritise and monitor own work
- problem solving and contingency management skills to adapt configuration procedures to requirements of RFID network and reconfigure depending on differing operational contingencies, risk situations and environments
- research skills to interrogate vendor databases and website to implement different configuration requirements to meet client design specifications
- technical skills to select and use RFID diagnostic test, application software and hardware to suit different RFID network applications

Required knowledge

- client business domain, business function and organisation
- common network cable types and connectors
- compatibility issues and resolution procedures
- configuration of internet protocol (IP) networks
- current industry-accepted hardware and software products
- desktop applications and operating systems as required
- enterprise communication and training systems in relation to training and advising staff involved in the deployment
- network topologies
- RFID technologies incorporating substantial depth in network operating systems, protocols, interrogators and sensors, wireless technologies and cabling standards

Evidence Guide

EVIDENCE GUIDE	
<p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p>	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • plan installation • use basic research skills for adapting RFID technologies to specified plan and design • implement and verify RFID operations • implement RFID architecture across a secure environment • encode RFID tags and attach to items • integrate RFID information into business applications • configure the network with IP addressing • cable and test the RFID network • create technical and user documentation.
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> • site where RFID installation may be conducted • use of field measurement equipment currently used in industry • relevant network element specifications • technical requirements for an RFID network • cabling • networked (LAN) computers • workstations • RFID diagnostic software • WAN service point of presence.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • direct observation of the candidate installing and testing an RFID system • oral or written questioning of underpinning skills and knowledge • evaluation of report prepared by the candidate outlining testing procedures, test results and recommendation of network changes.

EVIDENCE GUIDE**Guidance information for assessment**

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- ICTTEN4198A Install, configure and test an internet protocol network.

Aboriginal people and other people from a non-English speaking background may have second language issues.

Access must be provided to appropriate learning and assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed.

In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.

Where applicable, physical resources should include equipment modified for people with special needs.

Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. **Bold italicised** wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

RANGE STATEMENT	
<i>RFID system</i> may include:	<ul style="list-style-type: none"> • antenna • cabling • databases • interrogators or readers • power supplies • tags • wireless units.
<i>Specifications</i> may include:	<ul style="list-style-type: none"> • cable drops • device mounting locations • electrical specifications for: <ul style="list-style-type: none"> • adapters • interrogators • power units • readers • sensors • tags • wireless units • interrogation zone locations • RFID network topology • site diagrams.
<i>Appropriate person</i> may include:	<ul style="list-style-type: none"> • authorised business representative • client • IT support manager • network administrator • RFID network manager • small or medium enterprise (SME) customer • small office home office (SOHO) customer • supervisor.
<i>Network element requirements</i> may include:	<ul style="list-style-type: none"> • drives • routers • servers • switches.
<i>Training requirements</i> relate to:	<ul style="list-style-type: none"> • education requirements for support staff • client requirements • relevant enterprise policies.
<i>Clients</i> may include:	<ul style="list-style-type: none"> • external organisations • individual people • internal departments • internal employees

RANGE STATEMENT	
	<ul style="list-style-type: none"> • logistic company • warehouse.
<i>User group</i> may include:	<ul style="list-style-type: none"> • administration • dispatch • inventory • stores • transport • warehouse.
<i>Configuration</i> may include:	<ul style="list-style-type: none"> • access control needs • hostnames • IP addresses • network connectivity issues • port numbers • server domains.
<i>Optimum performance</i> may include:	<ul style="list-style-type: none"> • antenna type • cable length or loss • equipment mounting and protection • interference considerations • latency • tag type <ul style="list-style-type: none"> • active • operating frequency • passive.
<i>Documentation</i> may include:	<ul style="list-style-type: none"> • audit trails • ISO, IEC, AS standards • naming standards • operational instructions • project management templates • report writing • training documentations • version control.

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Telecommunications networks engineering
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