



Australian Government

ICTTEN526 Dimension and design a radio frequency identification system

Release: 1

ICTTEN526 Dimension and design a radio frequency identification system

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 7.0.

Application

This unit describes the skills and knowledge required to carry out installation, maintenance and upgrade of information and communication technology (ICT) networks.

It applies to individuals employed by ICT networking provisioning companies specialising in radio frequency identification (RFID) technology. These individuals might work on upgrades to existing systems or be involved in implementation of new logistical or security networks using RFID technology according to design specifications.

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

Unit Sector

Telecommunications Networks Engineering

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Prepare to dimension and design an RFID system	1.1 Obtain project brief and scope from relevant personnel and arrange for site access in compliance with required security arrangements, legislation, codes, regulations and standards 1.2 Research the functionality, configuration and implementation methods of RFID technology 1.3 Select required software and hardware to confirm the proposed system is designed to meet business requirements 1.4 Conduct a survey of relevant interrogators, readers, tags and wireless units
2. Dimension and design	2.1 Select relevant interrogators and readers for the given

ELEMENT	PERFORMANCE CRITERIA
RFID system	specification and confirm their compatibility with network infrastructure 2.2 Minimise interrogator-to-interrogator interference according to client requirements 2.3 Verify that antenna geometry and footprint are consistent with the chosen design 2.4 Incorporate use of anti-collision protocols into the RFID design 2.5 Customise required tag to client requirements 2.6 Predict performance for read distance, write distance and tag response time according to client requirements 2.7 Select location for RFID tag to be placed on an item and prepare a design proposal for the RFID system including specifications 2.8 Prepare a report containing design solutions, justified recommendations of preferred products and submit for client approval
3. Document specified RFID system	3.1 Complete documentation according to client requirements 3.2 Inform client of standards applying to the design 3.3 Secure sign-off of RFID design from relevant personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	Uses mathematical formulae and geometric calculations to interpret and record technical specifications and evaluate possible design solutions
Oral communication	Uses active listening, observational and questioning techniques to identify different perspectives and confirm, clarify or revise understanding
Reading	Organises, evaluates and critiques technical documentation from a range of complex texts
Writing	Prepares workplace documentation including reports and design solutions incorporating technical language to communicate complex information clearly and effectively
Planning and organising	Uses a combination of formal, logical planning processes to identify required information, test strategies and resources
Problem solving	Uses formal analytical and lateral thinking techniques for

SKILL	DESCRIPTION
	identifying issues, generating and evaluating possible solutions
Self-management	• Selects required communication protocols and conventions in a broad range of work contexts
Technology	• Selects and uses digital technologies and systems to achieve work goals and enhance work processes

Unit Mapping Information

Supersedes and is equivalent to ICTTEN515 Dimension and design a radio frequency identification system.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTTEN526 Dimension and design a radio frequency identification system

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- dimension and design at least two radio frequency identification (RFID) systems.

In the course of the above, the candidate must:

- adapt RFID technologies to specified plans and designs
- evaluate RFID client specifications against accepted industry practices
- include RFID architecture across secure environments
- integrate RFID information into business applications
- produce design information in configuring the network with internet protocol (IP)
- offer design recommendations and solutions.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- required legislation, codes, company work practices, regulations and standards, workplace health and safety (WHS) requirements for scoped work
- functions and features of:
 - RFID technology, products and architecture
 - interrogators
 - readers
 - tags
 - wireless units
 - network topologies
 - radio frequency (RF) interference
- methods for conducting surveys of required RFID technologies

- sources of RFID interference
- business process design
- relevant features of business operations, business function and organisation of the client
- compatibility issues with existing system and resolution procedures
- configuration of IP networks
- desktop applications and operating systems
- linkage between operational processes
- network protocols and operating systems
- radio spectrum and RFID frequencies
- RFID hardware and software
- RFID technologies incorporating substantial depth in network operating systems, protocols, interrogators and sensors, wireless technologies and cabling standards
- security protocols, standards and data encryption requirements
- documentation and report requirements according to organisational procedures.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- a suitable network site
- client's functional requirements
- RFID equipment specifications
- database software
- simulation software
- organisational guidelines
- network or computer layout documentation and premises plans.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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