



Australian Government

ICTTEN425 Design, install and configure a customer smart technology network

Release: 1

ICTTEN425 Design, install and configure a customer smart technology network

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to test and troubleshoot smart technology network installations.

It applies to individuals who design and install smart grid networks for domestic or industrial enterprises using internet protocol (IP) networking technology.

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

Unit Sector

Telecommunications – 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 for design and installation of a smart technology network	1.1 Prepare for given work according to work health and safety (WHS) and environmental requirements with appropriate personnel from the enterprise 1.2 Identify safety hazards and implement risk control measures in consultation with appropriate personnel 1.3 Determine nature and scope of the smart technology network from customer specifications and appropriate personnel 1.4 Obtain operating instructions, manuals, hardware and software testing methodologies 1.5 Consult appropriate personnel to ensure task is coordinated

ELEMENT	PERFORMANCE CRITERIA
	effectively with others involved at the worksite
2. Design a customer smart technology network	2.1 Produce a smart technology network topology that is interoperable and scalable after considering customer requirements, technical specifications, physical and financial constraints and expansion projections 2.2 Determine network devices and network resources according to enterprise procedures 2.3 Produce smart technology network design including network security and network element configurations to meet design specifications and enterprise procedures
3. Install and configure a designed smart technology network	3.1 Install smart technology network hardware to topology design plan according to enterprise procedures 3.2 Determine network addressing scheme for network connectivity, and verify using calculations 3.3 Configure network elements to perform logical connection of smart technology network topology with required network security features 3.4 Conduct connectivity and performance tests to verify the network installation meets design specification 3.5 Troubleshoot smart technology network and internet connectivity according to manufacturer's specifications and enterprise procedures
4. Complete and document network design and installation	4.1 Restore worksite to safe condition according to established safety procedures 4.2 Record and store essential design and installation information according to enterprise procedures 4.3 Notify appropriate personnel of task completion according to enterprise procedures

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description

Reading	1.3, 2.1, 2.3, 3.5, 4.2, 4.3	Recognises and interprets enterprise procedures, manuals and specifications to determine important information
Writing	2.3, 4.2, 4.3	Uses clear, specific and industry-related terminology to develop network documentation and update workplace records and in written communications with customers
Oral Communication	1.1-1.3, 1.5, 4.3	- Liaises with appropriate personnel about technical requirements using specific and relevant language - Uses listening and questioning techniques to confirm understanding
Numeracy	2.1, 3.2	Evaluates and reviews technical data and makes calculations to verify connectivity and configuration
Navigate the world of work	1.1, 1.2, 2.2, 2.3, 3.1, 3.5, 4.1-4.3	- Takes personal responsibility for adherence to legal and regulatory responsibilities relevant to own work, and draws attention to any issues that may affect self or others - Recognises and follows organisational protocols and meets expectations associated with own role
Interact with others	1.1-1.3, 1.5	- Collaborates with others to achieve joint outcomes, playing an active role in facilitating effective group interaction - Selects and uses appropriate conventions and protocols when communicating with customers and co-workers in a range of work contexts
Get the work done	1.3, 1.4, 2.1, 2.2, 3.1-3.5, 4.2	- Determines job priorities and works logically and systematically to undertake clearly defined and familiar tasks - Implements actions according to a predetermined plan, making slight adjustments if necessary, and addressing some unexpected issues - Takes responsibility for routine decision-making by selecting from a range of predetermined options in routine situations, identifying and taking some situational factors into account - Diagnoses and implements standard solutions to unexpected situations based on safety requirements and specified work outcomes - Understands purposes and specific functions of common digital systems and uses them effectively to complete routine tasks

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTTEN425 Design, install and configure a customer smart technology network	ICTTEN4229B Design, install and configure a customer smart technology network	Updated to meet Standards for Training Packages.	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for ICTTEN425 Design, install and configure a customer smart technology network

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Performance Evidence

Evidence of ability to:

- determine job requirements by referring to documentation and through discussion with appropriate people
- design a smart technology network that uses advanced networking techniques
- install a smart technology network according to design specification
- configure network devices to meet design functionality
- document smart technology network design, installation and configuration.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- outline enterprise work health and safety (WHS) procedures
- summarise network design concepts including:
 - business requirements
 - network topologies
 - physical and financial constraints
 - security
 - wired or wireless options
- explain network requirements:
 - applications
 - lifecycle
 - manageability
 - quality of service
- summarise open systems interconnect (OSI) layered communication model

- summarise the following areas of troubleshooting including:
 - impact of network failure
 - maintenance troubleshooting
 - different problem-solving methodologies.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the telecommunications networks engineering field of work and include access to:

- a site where design and installation of a smart technology network may be conducted
- tools, equipment and materials currently used in industry
- relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

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

Links

Companion Volume implementation guides are found in VETNet -

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