



**Australian Government**

# **ICTTEN523 Locate, diagnose and rectify complex system equipment faults**

**Release: 1**

# ICTTEN523 Locate, diagnose and rectify complex system equipment faults

## 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 identify faults in upstream or downstream services that may require involvement of third-party providers.

It applies to individuals working as network engineering officers, installers, maintenance staff, and manufacturer and equipment specialists. They work closely with others and rectify technical faults.

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 locate and rectify complex faults  | <ul style="list-style-type: none"><li>1.1 Notify client to arrange site access according to organisational procedures</li><li>1.2 Obtain and interpret results of action taken by previous fault repairers</li><li>1.3 Obtain fault history from relevant personnel and establish fault patterns according to data and organisational procedures and requirements</li><li>1.4 Discuss and develop strategies for fault identification and repair with relevant personnel</li><li>1.5 Obtain tools and test identified faulty equipment according to organisational procedures and manufacturer specifications</li></ul> |

| ELEMENT                                         | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                 | 1.6 Set up equipment according to manufacturer specifications and safe work practices, and reconfigure as required                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 2. Locate and diagnose faults                   | 2.1 Isolate and test fault and remove likely variables from assessment, following organisational policies and procedures<br>2.2 Escalate equipment fault identification and seek diagnosis advice from relevant personnel<br>2.3 Diagnose fault according to organisational procedures<br>2.4 Provide progress reports to relevant personnel<br>2.5 Seek guidance from national support in fault diagnosis as required, and with third-party vendors for unknown faults<br>2.6 Negotiate required system downtime with relevant personnel |
| 3. Rectify faults                               | 3.1 Identify fault rectification options and present to client<br>3.2 Rectify fault according to findings<br>3.3 Replace, reprogram and repair faulty equipment according to service agreement and guidance<br>3.4 Dismantle and remove temporary service according to organisational requirements<br>3.5 Perform routine checks and identify faults<br>3.6 Notify client of additional faults and replace, reprogram and repair faults within the scope of agreement                                                                     |
| 4. Clean up worksite and complete documentation | 4.1 Record and document fault location and equipment faults<br>4.2 Remove and dispose of waste and debris from worksite according to environmental requirements<br>4.3 Restore worksite to client's satisfaction and receive client signoff<br>4.4 Complete and submit required documentation and explain rectification actions to 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           | <ul style="list-style-type: none"><li>• Uses mathematical formulae to interpret technical data, such as specifications of equipment operations</li></ul>                                                                                                                                                         |
| Oral communication | <ul style="list-style-type: none"><li>• Liaises and negotiates with clients, repairers and technical staff using required strategies to extract main ideas and information from oral texts regarding technical and operation matters</li><li>• Employs listening and questioning techniques to confirm</li></ul> |

| SKILL                   | DESCRIPTION                                                                                                                                                                                                                                   |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | understanding                                                                                                                                                                                                                                 |
| Reading                 | <ul style="list-style-type: none"><li>Identifies, analyses and evaluates technical documentation including codes, standards and regulatory information</li></ul>                                                                              |
| Writing                 | <ul style="list-style-type: none"><li>Prepares written reports and workplace documentation, incorporating technical language to communicate complex information</li></ul>                                                                     |
| Teamwork                | <ul style="list-style-type: none"><li>Selects protocols and conventions for communicating with technical personnel and customers in a broad range of work contexts</li><li>Collaborates with others to negotiate agreeable outcomes</li></ul> |
| Planning and organising | <ul style="list-style-type: none"><li>Uses a combination of formal, logical planning processes to identify and rectify technical faults</li></ul>                                                                                             |
| Problem solving         | <ul style="list-style-type: none"><li>Uses analytical processes to decide on a course of action, establishing criteria for deciding between options, and seeking input and advice from others before taking action when necessary</li></ul>   |
| Self-management         | <ul style="list-style-type: none"><li>Takes personal responsibility for adherence to legal and regulatory responsibilities and organisational policies and protocols required to own work</li></ul>                                           |
| Technology              | <ul style="list-style-type: none"><li>Identifies key principles and concepts underpinning design and operation of digital systems and tools, and applies these as required</li></ul>                                                          |

## Unit Mapping Information

Supersedes and is equivalent to ICTTEN508 Locate, diagnose and rectify complex faults.

## 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 ICTTEN523 Locate, diagnose and rectify complex system equipment faults

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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:

- locate, diagnose and rectify equipment faults in at least four different situations.

In the course of the above, the candidate must:

- conduct advanced tests
- isolate and locate faults
- follow applicable organisational procedures and workplace health and safety (WHS) requirements and work practices.

## 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, WHS requirements for scoped work
- organisational procedures regarding:
  - contacting clients and other external parties
  - fault history and patterns
  - fault identification and completion approaches
  - fault escalation procedures and requirements
  - safety requirements and standards
  - timeframe requirements
  - environmental requirements
- fault-location techniques and test equipment required
- fault types and rectification methods
- function of service agreements

- types of networks and equipment including:
  - access
  - broadband deployment
  - cabling
  - internet protocol (IP) networks for enterprise and customer systems and installations
  - local area networks (LANs)
  - telephony
  - wide area networks (WANs)
- types of workplace environment and practices.

## **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:

- sites on which faults are required to be diagnosed
- testing equipment and systems currently used in industry
- required regulatory and equipment documentation impacting complex fault repairs.

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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