Australian Government

ICTBWN304 Work safely with live fibre to test and commission a fibre to the x installation

Release: 1

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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 work safely on a live optical fibre installation to test and commission a wavelength division multiplexing (WDM) system or connect a splitter for fibre to the x (FTTx) deployment.

It applies to individuals who engage in safe work practices as members of a team using emerging technologies to deliver very high speed broadband capacity through the access network for the National Broadband Network (NBN) initiative.

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

Pre-requisite Unit

ICTBWN305 Use optical and radio frequency measuring instruments
and
ICTWHS204 Follow work health and safety and environmental policy and procedures

Unit Sector

Telecommunications – broadband and wireless networks

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Set up and	1.1 Obtain relevant legislation, codes, regulations and standards for

prepare for working with live fibre	compliance when conducting work 1.2 Scope work by obtaining project plan from appropriate personnel and arrange for site access to comply with security arrangements 1.3 Notify appropriate personnel of identified safety hazards at worksite 1.4 Determine type of FTTx equipment, components of optical distribution network (ODN) and WDM components from project plan for testing and commissioning 1.5 Obtain tools and safety equipment and materials to perform tasks safely and efficiently 1.6 Select and use required protective equipment and make site safe and secure for commissioning work 1.7 Create safe working environment by following safe work practices and identifying optical fibre hazards that could cause injuries when handling optical fibres and laser based equipment
2. Connect splitter input fibre to feeder cable	2.1 Follow workplace health and safety (WHS) and environmental requirements for given work, and identify and avoid other services 2.2 Locate feeder fibre port to be connected 2.3 Determine state (live or not) of fibre port to be connected and notify transmitter to ensure that power is turned off at source if fibre port is live 2.4 Connect up connectorised splitter input fibres as instructed by manufacturer 2.5 Arrange for power to be turned back on to newly connected feeder port
3. Perform live WDM commission testing of ODN installation used in FTTx network	3.1 Locate appropriate test points in ODN from manufacturer's instructions for WDM testing 3.2 Test live wavelengths for WDM tests following safety precautions 3.3 Test optical signal strengths for operating wavelengths incoming into optical network termination (ONT) and determine if signal strengths are within range of acceptable power levels 3.4 Test losses between WDM outputs and individual line multiplexers (LM) for each wavelength, and determine if within maximum and minimum power losses 3.5 Conduct all acceptance tests as specified by manufacturer 3.6 Record and tabulate all test results for commissioning requirements
4. Clean up worksite	4.1 Seal and secure any enclosures and cabinets 4.2 Remove waste and debris from worksite and dispose of according to environmental requirements 4.3 Notify appropriate personnel of job completion and obtain sign off

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	1.1, 1.2, 1.4, 2.2, 2.4, 3.1, 3.3-3.5	• Reads and interprets plans, specifications and other documentation from a variety of sources and consolidates information to determine requirements • Analyses and consolidates test results and data from a range of sources, against defined criteria and requirements
Writing	1.2, 1.3, 3.6, 4.3	• Accurately completes relevant reports and documentation and communicates openly with team members using clear and technically specific language and numerical data
Oral Communication	1.2, 1.3, 4.3	• Participates in verbal exchanges with key personnel using appropriate, clear and detailed language to exchange information, ideas or solutions • Uses listening and questioning skills to confirm understanding of requirements
Numeracy	3.2-3.4	• Performs mathematical calculations to check, interpret and confirm results of system tests • Takes measurements and uses them for work layout and construction
Navigate the world of work	1.7, 2.1, 4.2	• Complies with explicit policies and procedures • Explores and implements where identified the implicit expectations of policies and procedures
Interact with others	1.2, 1.3, 4.3	• Uses a limited range of accepted practices for communicating in a work environment • Complies with work instructions and contributes to work group discussions using accepted conventions
Get the work done	1.1, 1.2, 1.4-1.7, 2.2-2.5, 3.1-3.5, 4.1, 4.2	• Plans and implements routine tasks and workload, making limited decisions on sequencing, timing and collaboration, and

		seeks assistance in setting priorities • Makes low-impact decisions within familiar situations, based on a range of predefined or routine solutions, and evaluates the effectiveness of the outcome • Uses the main features and functions of digital tools to complete work tasks and access information

Range of Conditions

This field allows for different work environments and conditions that may affect performance. 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) should be included.

Operating wavelengths are:	• 1310 nm • 1490 nm • 1550 nm.
Ranges of acceptable power levels are:	• -2 to + 2 dBm @ 1310 nm • -26 to -6 dBm @ 1490 nm • -11.5 to +5 dBm @ 1550 nm.
Maximum and minimum power losses are:	• 23.3 dB to 15.0 dB @1310 nm • 21.6 dB to 8.0 dB @1490 nm • 20.9 dB to 9.5 dB @1550 nm.
Acceptance tests are:	• delay • dispersion • optical attenuation and loss measurements • optical power levels • phase.

Unit Mapping Information

Code and title current version	**Code and title previous version**	**Comments**	**Equivalence status**
ICTBWN304 Work safely with live fibre to test and commission a fibre to	ICTBWN3100B Work safely with live fibre to test and commission a fibre to	Updated to meet Standards for Training Packages Additional	No equivalent unit

Code and title current version	Code and title previous version	Comments	Equivalence status
the x installation	the x installation	prerequisite unit	

Links

Companion Volume implementation guides are found in VETNet - https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2