



Australian Government

ICTOPN602 Manage dense wavelength division multiplexing transmission system

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 manage a dense wavelength division multiplexing (DWDM) transmission system using graphical user interface (GUI) management software.

It applies to individuals who use high-level technical skills and network management software to manage network operations. It is often carried out at a central Network Operations Centre (NOC).

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

Unit Sector

Telecommunications – Optical Networks

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 manage transmission system	1.1 Determine networking issues and requirements from appropriate person 1.2 Install network management software according to vendor instructions, including access, security and administration 1.3 Create a customised representation of the enterprise's network topology 1.4 Set and configure thresholds for performance monitoring

	1.5 Prepare a plan to integrate the DWDM management system into a broader network management system where applicable
2. Manage transmission system	2.1 Manage network using appropriate communications links 2.2 Monitor network for faults and performance and produce a fault and performance report
3. Use network management to report on the overall state of transmission system	3.1 Analyse performance monitoring data and alarm data 3.2 Prepare report and make recommendations based on analysis 3.3 Report on network degradation over a period of time

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, 3.1	Interprets textual information from relevant sources to identify and plan for all job requirements and adhere to procedures and standards
Writing	2.2, 3.2, 3.3	Accurately completes standard reports and documentation using clear and technically specific language, numerical data and diagrammatic information
Oral Communication	1.1, 1.2, 3.3	Uses listening and questioning skills to confirm technical and operational requirements and participates in a verbal exchange of ideas and solutions and uses appropriate, detailed and clear language to address key personnel and clients
Numeracy	1.4, 3.1	Uses mathematical equations to evaluate technical data and determine acceptable monitoring levels
Get the work done	1.1-1.5, 2.1, 2.2	- Sequences and schedules complex activities, monitors implementation and manages relevant communication - Takes responsibility for high-impact decisions in complex situations involving many variables and constraints - Uses nuanced understanding of context to recognise anomalies and subtle deviations to normal expectations, focusing attention on critical issues and variables - Uses a broad range of features within applications to improve personal productivity including optimising

		software functions for specific purposes
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTOPN602 Manage dense wavelength division multiplexing transmission system	ICTOPN6125A Manage dense wavelength division multiplexing transmission system	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 ICTOPN602 Manage dense wavelength division multiplexing transmission system

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Performance Evidence

Evidence of ability to:

- determine network parameters and set up performance monitoring
- manage network using appropriate software and tools
- monitor network for faults and performance
- produce fault and performance report
- analyse performance monitoring and alarm data
- prepare report with recommendations based on analysis.

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:

- discuss workplace and industry environment relevant to dense wavelength division multiplexing (DWDM)
- outline optical communications principles
- explain DWDM technology, its operation and testing principles
- summarise simple network management protocol (SNMP)
- explain organisational policies and procedures relevant to the DWDM
- determine appropriate report formats and communications tools required to make recommendations on performance and network degradation.

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 must be typical of those experienced in the Telecommunications – Optical Networks field of work and include access to:

- DWDM system and test equipment currently used in industry
- relevant equipment manuals, software manuals and other procedural documentation.

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

Links

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