



Australian Government

ICTOPN606 Manage dense wavelength division multiplexing transmission systems

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 7.0.

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 DWDM transmission systems	1.1 Obtain and review required legislation, codes, company work practices, regulations and standards, work health and safety (WHS) and environmental requirements, personal protective equipment, and hazard identification tools for scoped work 1.2 Determine networking issues and necessities according to organisational procedures and requirements 1.3 Install network management software according to vendor access instructions, security procedures and administrative guidelines 1.4 Create customised representations of the enterprise's network topology

	1.5 Set and configure thresholds for performance monitoring according to organisational guidelines 1.6 Prepare a plan to integrate DWDM management systems into broader network management systems, where required
2. Manage DWDM transmission systems	2.1 Manage network using required communications links 2.2 Monitor network for faults and performance 2.3 Produce a fault and performance report as per organisational guidelines
3. Use network management to report on the overall state of DWDM transmission systems	3.1 Analyse performance monitoring data and alarm data 3.2 Prepare a report and make recommendations based on analysis 3.3 Report on network degradation over the mandated 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	DESCRIPTION
Numeracy	Uses mathematical equations to evaluate technical data and determine acceptable monitoring levels
Oral communication	- Uses listening and questioning skills to confirm technical and operational requirements - Participates in verbal exchanges of ideas and solutions and uses required, detailed and clear language to address key personnel and clients
Reading	Interprets textual information from required sources to identify and plan for all job requirements and adhere to procedures and standards
Writing	Completes standard reports and documentation using clear and technically specific language, numerical data and diagrammatic information
Planning and organising	- Sequences and schedules complex activities, monitors implementation and manages required communication - Takes responsibility for high-impact decisions in complex situations involving many variables and constraints - Uses knowledge of context to recognise anomalies and subtle deviations to normal expectations, focusing attention on critical issues
Technology	Uses a broad range of features within applications to improve personal productivity including optimising software functions for

SKILL	DESCRIPTION
	specific purposes

Unit Mapping Information

Supersedes and is equivalent to ICTOPN602 Manage dense wavelength division multiplexing transmission 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 ICTOPN606 Manage dense wavelength division multiplexing transmission systems

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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:

- manage at least two dense wavelength division multiplexing (DWDM) transmission systems.

In the course of the above, the candidate must:

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

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:

- workplace and industry environment required for DWDM transmission systems
- optical communications principles
- functions, features, operational requirements and testing principles of DWDM technology
- functions and features of simple network management protocol (SNMP)
- organisational policies and procedures required by the DWDM transmission system
- required report formats and communication tools to make recommendations on performance and network degradation
- specific work health and safety (WHS) requirements that impact management of DWDM transmission systems
- required legislation, codes, company work practices, regulations and standards and environmental requirements for scoped work.

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:

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

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

Links

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