



Australian Government

ICTOPN604 Analyse optical 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 2.0.

Application

This unit describes the skills and knowledge required to verify the characteristics of Next Generation Networks (NGN) to ensure they will support the new modulation requirements of the equipment.

It applies to individuals who are experienced technicians from telecommunications carriers, service providers, or other private and public organisations, who have experience in the optical transmission area.

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 conduct characterisation tests on existing optical network	1.1 Obtain relevant legislation, codes, regulations and standards and follow work health and safety (WHS) and environmental requirements for the given work 1.2 Identify hazards and work safely according to relevant safety legislation and company work practices using personal protective equipment 1.3 Construct test procedures for each test to be conducted 1.4 Notify customer and arrange for site access

2. Conduct link characterisation tests and analyse existing optical network	2.1 Perform optical tests to characterise existing fibre link 2.2 Analyse results of optical tests, and determine extent and nature of future upgrades based on the tests
3. Document analysis of optical network with recommendations	3.1 Produce final drawings and plans of proposed upgrade requirements for optical transmission and submit to project manager according to enterprise policy 3.2 Prepare report on measured performance of the network and recommendations on future upgrades

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, 3.1	Interprets textual information from relevant sources to identify and plan for all job requirements and adhere to procedures and standards
Writing	1.2, 1.4, 3.1, 3.2	Accurately prepares standard documentation using clear and technically specific language, numerical data, drawings and plans
Oral Communication	1.4	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 team members, supervisors and customers
Numeracy	2.2	Uses mathematical equations to evaluate all relevant technical data
Navigate the world of work	1.1, 1.2, 3.1	- Takes personal responsibility for adherence to legal and regulatory responsibilities relevant to own work, with specific reference to workplace safety - Understands main tasks, responsibilities and boundaries of own work
Get the work done	1.3, 2.1, 2.2	Develops plans to manage relatively complex, non-routine tasks with an

		awareness of how they may contribute to longer term operational and strategic goals • Makes a range of critical and non-critical decisions in relatively complex situations, taking a range of constraints into account • Recognises and addresses complex problems involving multiple variables • Actively identifies systems, devices and applications with potential to meet current and/or future needs
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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.

Measurements that must be conducted include:	• optical time-domain reflectometer (OTDR) testing from both ends • optical loss test set (OLTS) • optical return loss (ORL) • chromatic dispersion (CD) • polarisation mode dispersion (PMD) • non-linearity (four wave mixing) • optical signal-to-noise ratio (OSNR)
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTOPN604 Analyse optical transmission systems	ICTOPN6129A Analyse optical transmission systems	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>

