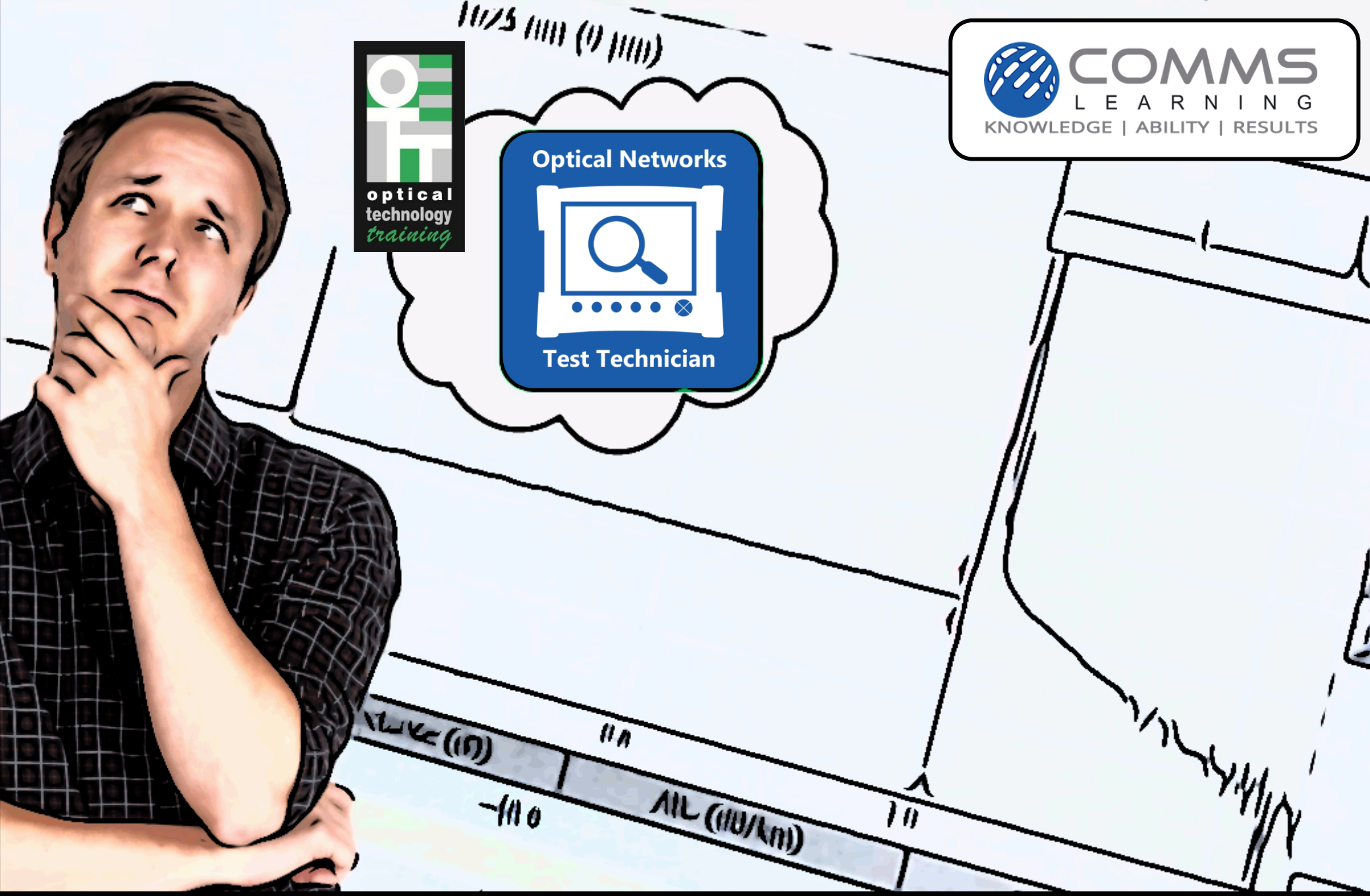

A unique training course from Optical Technology Training, delivered by CommsLearning

www.commslearning.co.nz

Optical networks Test Technician (OTT)

3 days

Test course

Purpose

This course is designed for those responsible for acceptance testing and fault diagnosis of fibre optic cabling networks. The practical sessions can be focussed on different application areas such as Telecom network links (up to 40km), Enterprise/LANs or data centres.

The course covers the basics of fibre optic technology first, so that you can really understand what you are dealing with and recognise the factors that can affect performance. We then cover the reasons for carrying out essential routine testing tasks and the knowledge and skills involved in doing so. This is great for teams, as it ensures a shared, solid foundation of knowledge before moving on to OTDR testing.

We then help you build an in-depth knowledge of OTDR testing so that you can become a proficient and confident OTDR test technician able to interpret and follow a test specification, and carry out an OTDR testing assignment efficiently, safely and effectively. You'll learn to set up an OTDR correctly to obtain valid, useful data, and you'll get tips for efficient testing & using methodical filenaming. You'll learn to complete the testing process successfully, checking the validity of the data you have acquired, recognise any issues highlighted by the results you obtain and carry out initial interpretation of results on site.

Features

- ❑ small, informal groups to provide the best learning experience
- ❑ hands-on experience with the equipment
- ❑ practical exercises
- ❑ comprehensive course manual for reference
- ❑ access to supporting online resources

Key outcomes

Be able to:

- ✓ explain how optical fibres work and recognise the issues that can affect performance
- ✓ explain why you are carrying out testing on fibre optic cabling
- ✓ interpret and evaluate test specifications
- ✓ work safely when testing optical fibres
- ✓ carry out inspection of fibre optic connectors and adaptors with a video probe
- ✓ carry out continuity and insertion loss testing
- ✓ optimise OTDR test parameters and measurement conditions to enhance the acquisition of the required information
- ✓ speed up data acquisition using automatic routines & other features of your OTDR
- ✓ interpret and analyse OTDR traces, event tables and icon based link maps
- ✓ recognise and deal with problems or issues you might encounter when using an OTDR
- ✓ explain the parameters that you are testing and recognise the range of results that you might expect
- ✓ assess the quality of the fibre infrastructure
- ✓ carry out fault-finding in a methodical manner

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BECOMING an OTT
- ❑ Why test optical networks?
- ❑ Standards

LIGHT AND FIBRES

COMMS & FIBRE OPTICS
- ❑ Basic comms systems
- ❑ Terminology & units

LIGHT & WAVELENGTHS
- ❑ Electromagnetic spectrum
- ❑ Wavelengths/frequencies
- ❑ Speed of light

LIGHT IN OPTICAL FIBRES
- ❑ How fibres work
- ❑ Multimode fibre
- ❑ Singlemode fibre
- ❑ Operational performance factors

FIBRE TYPES FOR NETWORKS
- ❑ Fibre types for datacomms
- ❑ Fibre types for telecoms

ROUTINE TESTING

SAFETY REVIEW
- ❑ Safety guidelines
- ❑ Laser Safety issues

INSPECT+CLEAN CONNECTORS
- ❑ Why do we inspect & clean?
- ❑ Inspection standards
- ❑ Inspection equipment
- ❑ Cleaning equipment
- ❑ Connector care
- ✓ Hands-on practical: cleaning and inspecting connectors

CONTINUITY & POLARITY TESTING
- ❑ Continuity & polarity checking
- ✓ Hands-on practical: continuity and polarity

TESTING FIBRE OPTIC LINKS
- ❑ Optical power & loss budgets
- ❑ Equipment
- ❑ Insertion loss measurements
- ❑ Reporting
- ✓ Hands-on practical: ILM

OTDR TESTING

PREPARING FOR OTDR TESTING
- ❑ Specification of parameters
- ❑ Resources checklist
- ❑ Management of test results
- ✓ Hands-on practical session

OTDR INTRODUCTION
- ❑ What is OTDR testing?
- ❑ What can it do for us?
- ❑ How does it work?

OTDR CAPABILITIES
- ❑ Distance measurements
- ❑ Fibre loss measurements
- ❑ Bending losses
- ❑ Splice loss measurement
- ❑ Connector losses
- ❑ Link return loss (ORL)

OTDR LIMITATIONS
- ❑ Dynamic range
- ❑ Dead zone
- ❑ Resolution

TEST CONFIGURATIONS
- ❑ Cable on a drum
- ❑ Installed cable before termination
- ❑ Connectorised systems

USING THE OTDR
- ❑ Step by step guide
- ❑ Manipulating the trace
- ❑ Measurement parameters
- ✓ Hands-on practical: setting up the OTDR and testing simple links

OTDR ISSUES
- ❑ Poor launch conditions
- ❑ Interfacing with bare fibres
- ❑ Ghosts
- ❑ Fibre mismatches
- ✓ Hands-on practical: testing more complex links and channels

OTDR TRACE ANALYSIS
- ❑ What info do we want?
- ❑ Analysis of a single trace
- ❑ Multiple wavelength traces
- ❑ Analysis of multiple fibres
- ❑ Bi-directional analysis
- ✓ Hands-on practical: bi-directional OTDR testing
- ❑ OTDR trace comparison
- ✓ Hands-on practical: trace analysis exercises

USING OTDR SOFTWARE
- ❑ OTDR viewer software
- ❑ Automatic event detection
- ❑ Comparing OTDR traces

TROUBLESHOOTING

TROUBLESHOOTING FIBRE OPTIC NETWORKS
- ❑ The challenges
- ❑ Diagnostics & other information
- ❑ The cabling or the equipment?
- ❑ Potential cabling faults

COMMS LEARNING
KNOWLEDGE | ABILITY | RESULTS

Optical Networks Test Technician

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CommsLearning, founded by Andy Edwards in 2002, specialises in providing training in ICT and Telecommunications, to a broad range of clients around the World spanning the banking, retail, utilities, telco, military, airline, technology and media industries. Now based in the Asia Pacific region, Andy is the CEO and Head of Technical Delivery and is focussed on instructor-led technical training, delivering training in New Zealand, the Pacific Islands and Australia; a role that his 40+ years of telecommunications experience qualifies him well for. Andy also works with local partners across the Asia Pacific region who are able to help with specific requirements.

Andy is licensed by Optical Technology Training to teach the OTT CONA, CFCE, CONE and short testing courses.

optical technology training

OTT partner

Certified Optical Network Associate

Certified Optical Network Engineer