

Fibre optic test & measurement workshop

3 days



Purpose

This fibre optic test and measurement workshop focuses on providing the basic information and practical experience required to carry out routine testing of point to point fibre optic cabling systems and FTTH systems using splitters in typical PON configurations. Tests covered include:

- ▶ inspection & cleaning of fibre optic connector end faces
- ▶ insertion loss measurements with light source and power meter
- ▶ OTDR testing

These tests may be carried out for the following purposes:

- ▶ to prove quality of new installations
- ▶ to prove quality of a fibre link from a dark fibre supplier
- ▶ troubleshooting and/or problems
- ▶ assessing ability of infrastructure to support specific and/or general applications

Features

This workshop will provide extensive hands-on practical sessions, putting all of the required tests into practice on a variety of test systems including:

- ▶ short point to point links
- ▶ longer point to point links
- ▶ branching passive optical networks (PONs)

This workshop assumes that delegates are already familiar with the fundamentals of optical fibres, fibre optic infrastructure and the operational and test wavelengths of telecoms and FTTH systems, as well as all safety related issues of working on fibre optic systems.



Key outcomes

- ✓ appreciate the importance of cleanliness when handling fibre optic connectors
- ✓ carry out inspection of fibre optic connectors
- ✓ test fibre optic links according to relevant standards
- ✓ test patch cords correctly
- ✓ carry out continuity and insertion loss testing
- ✓ use an OTDR correctly for optimum testing of fibre optic links
- ✓ describe the purpose of OTDR testing
- ✓ analyse OTDR traces and event tables



delivered by
TransAfrican
Fibre Services

Fibre optic test & measurement workshop

The syllabus

TESTING OVERVIEW

WHY, HOW & WHEN TO TEST

- Continuity checking
- Insertion loss measurement
- OTDR testing

INSPECTING & CLEANING CONNECTORS

- Why do we inspect & clean connectors?
- Inspection standards
- Inspection equipment
- Cleaning equipment
- Connector care

ROUTINE TESTING

CONTINUITY TESTING

- Continuity checking

TESTING TELECOMS LINKS

- Optical power & loss budgets
- Equipment
- Insertion loss measurements
- Reporting

OTDR TESTING

WHY USE AN OTDR?

- What is OTDR testing & what can it do for us?

OTDR CAPABILITIES

- Distance measurements
- Fibre loss measurements
- Splice loss measurement
- Connector losses
- Link return loss

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

OTDR ISSUES

- Poor launch conditions
- Interfacing with bare fibres
- Ghosts
- Fibre mismatches

