Broadband Access Planning for FTTH, GPON, DSL and Wireless Course

31 January – 4 February 2027
Johannesburg

AGILE LEADERS
Training Center

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Ref: 1655_222283 **Date:** 31 January – 4 February 2027 **Location:** Johannesburg **Fees:** 4500 Euro

Overview

Broadband Access Planning for FTTH, GPON, DSL and Wireless Course is a one-week practitioner programme for access engineers, planners and operations teams, who leave with a Broadband Access Selection and Assurance Plan. It compares fibre, passive optical, copper and fixed wireless access through architecture, capacity, reach, service activation, test evidence, faults and migration. Participants use common decision criteria rather than treating each medium in isolation. Agile Leaders Training Center develops practical broadband access planning capability.

Who Should Attend

- Access-network engineers responsible for design and service activation
- Broadband planners responsible for technology and coverage choices
- Operations teams responsible for access performance and faults
- Service-assurance teams responsible for testing and customer experience
- Field teams responsible for optical, copper or wireless access
- Infrastructure managers responsible for access-network migration

The course assumes participants can interpret basic telecom diagrams and link measurements, and it leaves out core-network engineering, spectrum licensing and vendor certification.

Departments and Industries

The course supports organisations that plan, deploy or operate broadband access networks.

- Telecommunications planning, engineering and operations
- Service assurance, field services and network performance
- Internet service providers and managed network services
- Utilities, transport, government and property developments
- Equipment integrators and infrastructure contractors

Learning Objectives

By the end of this course, participants will be able to:

- Compare FTTH, GPON, DSL and fixed wireless architectures
- Build optical distribution and splitter plans
- Evaluate optical budgets, copper constraints and wireless links
- Apply service activation and acceptance-test methods
- Diagnose performance and access-layer faults
- Design a technology-selection and migration plan

Course Agenda

Day 1: Broadband Access Architecture

- Access Network Reference Architecture
- FTTx Deployment Model Comparison
- GPON OLT, ODN, Splitter and ONU Map
- DSL Access Multiplexer and Copper Loop Map
- Fixed Wireless Access Link Model

Day 2: FTTH and GPON Planning

- ITU-T G.984 GPON Architecture Review
- Optical Distribution Network Topology
- Splitter Ratio and Reach Decision Matrix
- Optical Power Budget Worksheet
- FTTH Capacity and Port Allocation Plan

Day 3: DSL and Fixed Wireless Planning

- DSL Family and Loop Constraint Matrix
- Copper Attenuation and Interference Review
- Fixed Wireless Coverage and Link Budget
- Channel, Capacity and Service-Class Assessment
- Access Technology Selection Scorecard

Day 4: Activation, Testing and Assurance

- Broadband Service Activation Checklist
- Optical Loss and OTDR Evidence Review
- DSL Line Statistics and Fault Indicators
- Wireless Signal and Throughput Test Record
- End-to-End Performance and Escalation Map

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Day 5: Access Practice and Capstone

- Exercise: Select an Access Technology
- Exercise: Build a GPON Optical Budget
- Exercise: Diagnose Copper and Wireless Faults
- Exercise: Plan Service Migration and Acceptance
- Capstone: Broadband Access Selection and Assurance Plan

Practical Exercises

Suggested activities use access diagrams, measurements and service evidence.

- Suggested activity: compare FTTH, DSL and wireless options for a coverage area
- Suggested activity: calculate and review a GPON optical budget
- Suggested activity: interpret optical, copper and radio fault evidence
- Suggested activity: build activation, migration and acceptance controls

FAQs

Who should take broadband access planning for FTTH, GPON, DSL and wireless training?

It suits access engineers, planners, operations and assurance teams and assumes basic familiarity with telecommunications diagrams and measurements.

How does broadband access training differ from a general telecom course?

It concentrates on last-mile architecture, medium constraints, access planning, activation, testing and fault isolation rather than broad core, mobile and service topics.

What is the relationship between FTTH and GPON?

FTTH describes fibre reaching the premises, while GPON is one passive optical architecture that can deliver shared fibre access through OLT, ODN, splitters and ONUs.

When is DSL still considered in broadband access planning?

DSL can remain relevant where copper loops exist and fibre deployment is constrained, but distance, attenuation, interference, condition and target service levels must be assessed.

How is fixed wireless access compared with fibre and DSL?

Fixed wireless is compared through coverage, path conditions, spectrum profile, capacity, interference, installation and service assurance alongside fibre and copper constraints.

Conclusion

Participants take back a Broadband Access Selection and Assurance Plan containing architecture choices, budgets, constraints, test evidence and migration controls. It makes technology trade-offs and acceptance criteria visible. It helps access teams plan coverage, activate services, diagnose faults and coordinate upgrades across fibre, copper and wireless networks.