AFRICAN ADVANCED LEVEL TELECOMMUNICATIONS INSTITUTE (AFRALTI)

TRAINING WORKSHOP OUTLINE

Title:	**DWDM BROADBAND ACCESS**
Dates:	**9th – 13th November 2015**
Duration:	**5 Days**
Venue:	**Kampala, Uganda**
Tuition Fees:	**US$1,200 per participant from AFRALTI member states and**
	US$1,440 per participant from Non-AFRALTI Member States

Target Audience:
Technical personnel work with mobile and Internet service providers, and colleges and IT professionals working in the field.

Pre-requisite/s:
The applicant must have a minimum of diploma in Telecommunication or its equivalent or at least five years experience in IT industry.

Course Overview:
During the course students will learn the fundamentals of DWDM communications. In particular they will learn about the topologies and architectures used for access networks. They will learn about the protocols necessary for access network. The course also covers design and implementations methods and components used.

Methodology:

The will be classroom presentations by power points and lab practical. Learning will also be carried out through group discussions and case studies.

Workshop Objectives:

After the course participants should be able to:
Understand DWDM principles
- Know how to design a DWDM network for broadband access.
- Select the components and materials for DWDM broadband access

- Apply optical fiber deployment strategies for DWDM.
- Compare DWDM and Other broadband access technologies
- Test DWDM link for broadband access.

Workshop Contents/Topics:

1. How DWDM works
2. WDM-PON Architectures
2.1. Composite PON (CPON)
2.2 Local Access Router Network (LARNET)
2.3 Remote Interrogation of Terminal Network (RITENET)
2.4 Multistage AWG-Based WDM-PON Architecture
2.5. DWDM Super-PON (SPON) Architecture
2.6. SUCCESS-DWA PON Architecture
3. Protocols for WDM-PONS
3.1. MPCP Extension and WDM IPACT
3.2. WDM-PON DBA Protocol for SUCCESS Architecture
4. DWDM Components
4.1. WDM-PON Device Characteristics and Options

- Wavelength Options
- Transmitter Options

4.2. Wavelength-Specified Source

- Distributed Feedback (DFB) Laser Diode (LD):
- Vertical-Cavity Surface-Emitting Laser (VCSEL) Diodes:
- Tunable Lasers:

4.3 Multiple-Wavelength Source

- Multi-frequency Laser (MFL):
- Gain-Coupled DFB LD Array:
- Chirped-Pulse WDM:

4.4 Wavelength-Selection-Free Source

- Spectrum-Sliced Source:
- Injection-Locked Laser:
- Shared Source (or Loop-Back Source) for ONU

5. Receiver Options

- Photodiodes
- Recovery Circuits

6. RN (Remote Node) Options

7. DWDM design and planning

8. Implementation strategies

9. Testing methods

9. Application of DWDM access

10. Services with WDM-PONS

For more information, please contact us on
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