Abstract
In last decade or so, due to the emergence of various high bandwidth applications, there was a strong completion between various access networks. As the bandwidth is increasing day by day and in the present scenario various data intensive applications have led to the introduction of optical fiber as means of communication as a typical access network. As the optical access network provides a huge bandwidth and can be considered for long distance communication. The exceptionally high bandwidth of optical fiber can be explored by employing WDM technique in long reach optical access networks as WDM provides high bandwidth efficiency. In this paper, we have proposed a WDM access network for long reach networks. This proposed scheme evaluates physical layer parameters in terms of eye diagram, quality factor for NRZ and RZ modulation formats across variable optical fiber lengths that can be varied upto 200 kms for optimum solution and results. It is a flexible Solution to be used in next-generation access networks. Further, the bandwidth can also be utilized by using advanced modulation techniques e.g. Orthogonal Frequency Division Multiplexing (OFDM), hybrid WDM/TDM technique and Orthogonal Code Division multiplexing.

References

- Chowdhury, Rejaul, Abdallah Shami, and Khaled Almustafa. "Designing of

**Index Terms**

Computer Science  
Wireless

**Keywords**
Pon: Passive Optical Network  
Wdm: Wavelength Division Multiplexing.