

DESIGN AND DEPLOYMENT OF OPTICAL FIBER NETWORK AT ATOMIC ENERGY

CENTRE, DHAKA

Osman Goni

*Research Scholar, Computer System and Network Division (CSND), Bangladesh Atomic Energy Commission, Agargaon,
Dhaka, Bangladesh*

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ABSTRACT

Fiber-optic communication is a method of transmitting information from one place to another by sending pulses of infrared light through an optical fiber. The light is a form of carrier wave that is modulated to carry information. Fiber was preferred over electrical cabling when high bandwidth, long distance, or immunity to electromagnetic interference is required. This type of communication can transmit voice, video, and telemetry through local area networks or across long distances. Optical fiber is used by many telecommunications companies to transmit telephone signals, Internet communication, and cable television signals. Researchers at Bell Labs have reached a record bandwidth distance product of over 100 petabit × kilometers per second using fiber optic communication. To fulfill the current requirements of Atomic Energy Center, Dhaka considering its smooth operation of high speed internet service, optical fiber based network is the state-of-the-art network solution. An optical fiber network design refers to the specialized processes leading to a successful installation and operation of a fiber optic network which includes determining the type of communication system(s) which will be carried over the network, the geographic layout, the transmission equipment required and the fiber network over which it will operate. Atomic Energy Centre, Dhaka (AECD), considered as the pioneer institution of the Bangladesh Atomic Energy Commission (BAEC) is now one of its research establishments located at the core of Dhaka city was established in 1961 to carry out research and development activities in the field of Nuclear science and technology for peaceful purposes. For that, here internet is essential. So optical fiber network design and deployment at Atomic Energy center is very important.

KEYWORDS: *Optical Fiber, Route Planning, Deployment, Network Design, BTCL, AECD, Frequency band, Wavelength.*