Networking Fundamentals

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**Main Post**

Cat 5 unshielded twisted pair (UTP) cable type is a twisted pair cable for computer networks. It is used for Ethernet, FastEthernet and Token Ring. Cat 5 gives up to 100Mbps data rate and its maximum length can be 100m. It is one of the most popular cables all over the world. Cat 5 provides more reliable table and data communication networks as compared to other wires. Mostly designed Cat 5 cables used two twisted pairs for the early networks. However, in future there were some changes were brought in Cat 5 to increase the speed and length of wires in a network.

Fiber optics has made it easy to transmit data in seconds as compared to other copper cables. There are two modes in fiber optic cables which include single mode and multimode. Single mode fiber optics are used for long distance transmissions because it has a light carrying 8 to 10 microns whereas Multimode fiber optics are used for shorter distance transmissions because it has large light carrying core. Fiber optics mode must be decided after finding the transmission distance. If a distance is within a couple of miles then multimode will be preferred otherwise single mode will be preferred (Fibre optics in broadcasting, 2010).

**Follow up (1)**

 Cat 5e is the extended version of Cat 5 twisted pair cable. It is used for Ethernet, Fast Ethernet, and Gigabit Ethernet. However, it provides a better data rate as compared to Cat 5. It gives up to 1 Gbps data rate but its length is the same as Cat 5.

**Follow up (2)**

 Fiber optics mode is dependent on the application. Multimode is relatively inexpensive fiber optic as compared to a single mode which is very costly and is usually used for the coverage of long distance transmissions. However, the cost for replacing the single mode with the multimode can be economical.

**References**

Fibre optics in broadcasting. (2010). Broadcast & CableSat, Retrieved from <https://search.proquest.com/docview/503265529?accountid=41759>