**FDDI (Fiber Distributed Data Interface)**

FDDI is a set of ANSI protocol for sending digital data over fiber optics cable. FDDI networks are token-passing and dual ring networks, and support data rates up to 100 Mbps; FDDI is frequently used as a backbone technology as well as a means to connect high speed computers in a local area. This technology was produced by the ANSI X3T9.5 standards committee in the mid-1980s because high-speed engineering workstations were beginning to tax the capabilities of existing LANS and network reliability was becoming an increasingly important issue as system managers began to migrate mission-critical applications from large computer to networks. Therefore, a new LAN was needed that could easily supports these workstations and fulfill these reliability needs.

FDDI uses dial-ring architecture with traffic on each ring flowing in opposite directions in (counter-rotating). The dual ring consists of a primary and a secondary ring. It allows up to 2km between stations using multimode fiber and even longer distances using a single mode. The primary fault-tolerance feature is the dual ring; during normal operation the primary ring is used for data transmission and the secondary ring remains idle, but if a station on the dual ring fails or is powered down or if the cable is damaged, the dual ring is automatically “wrapped” (double back onto itself) into a single ring. FDDI specifies the physical and media-access portions of the OSI reference model, FDDI is not actually a single specification, but it is a collection of four separate specifications, each with a specific function. The four specifications are the Media Access Control (MAC), Physical Layer Protocol (PHY), Physical-Medium Dependent (PMD), and Station Management (SMT). The MAC defines how the mediums is accessed, the PHY defines data encoding/decoding , clocking requirements, framing and other functions, the PMD defines the characteristics of the medium, and the SMT defines the FDDI station configuration and ring control features.

An extension to FDDI, called FDDI-2, supports the transmission of voice and video information as well as data. Another variation of FDDI, called FDDI full Duplex Technology (FDDT) uses the same network infrastructure but can potentially support data rates up to 200 Mbps; also there is a copper specification similar to FDDI protocols, called Copper Distributed Data Interface (CDDI), defined to provide 100-Mbps service over twisted-pair copper.

Today, although FDDI implementations are not as common as Ethernet or Token Ring, FDDI has gained a substantial following that continues to increase as the cost of FDDI interfaces diminishes.

"Fiber Distributed Data Interface FDDI." *Fiber Optic Cables*. Web. 03 Nov. 2011. <http://www.timbercon.com/Fiber-Distributed-Data-Interface-FDDI.html>.

"FDDI: Fiber Distributed Data Interface." *Javvin | Network Protocols Guide, Network Monitoring & Analysis Tools*. Web. 03 Nov. 2011. <http://www.javvin.com/protocolFDDI.html>.