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Metropolitan Area Network Support at Fermilab

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Advances in wide area network service offerings, coupled with comparable developments in local area network technology have enabled many HEP sites to keep their offsite network bandwidth ahead of demand. For most sites, the more difficult and costly aspect of increasing wide area network capacity is the local loop, which connects the facility LAN to the wide area service provider(s). Fermilab has chosen to provide its own local loop access through leasing of dark fiber to a nearby network exchange point (StarLight), and procuring dense wave division multiplexing (DWDM) equipment to provide data channels across the fiber. Installing and managing such optical network infrastructure has broadened the Laboratory's network support responsibilities to include operating network equipment that is located off-site, and is technically much different than classic LAN network equipment. Effectively, the Laboratory has assumed the role of a local service provider.

This presentation will cover Fermilab's experiences with deploying and supporting a Metropolitan Area Network (MAN) infrastructure, based on metro-range DWDM equipment, in order to meet its offsite networking needs. The benefits and drawbacks of providing and supporting such a service will be discussed. Issues of scalability, complexity, monitoring, and troubleshooting will also be discussed.

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