Fiberintheloop

Presentation to EFM
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Objectives

- To illustrate that point to point 1GE can be combined with side band management at the physical layer.

- To illustrate that point to point 1GE can be combined with side band TDM traffic at the physical layer.

- To illustrate that 1GE with side band management and TDM support could be cost effective in an integrated circuit / chip set implementation.

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The optics and line encoding

- The optics available today can support greater than a pure 1GE.

- The 8B/10B encoding doesn't care if it is running pure 1GE or at a faster rate.

- Running a simple TDM mechanism over an 8B/10B optical link enables circuits and management side bands to be mixed with 1GE running in repeater mode.

- No Ethernet packet switch required in the Service Provider Optical Termination Unit.

Latency and jitter for circuits

- With steady state TDM there is very low latency, no need for large buffers, as with circuit emulation.

- Clock recovery and jitter attenuation can be implemented in logic for individual circuits.

- There is no circuit emulation or VoIP protocol conversion required in the Service Provider Optical Termination Unit.

Does this work?

- Current implementation of 10/100M Ethernet, with T3 and T1/E1, in trials.

- Uses two PLDs, plus off-the-shelf encoders and LIUs, all of which could be integrated into a chip set.

- Stratum 1 quality clock transparency, end to end.

- Side band management is but a few hundreds of bits per second, worst case.

- Full bandwidth / full duplex repeater mode Ethernet, leaves the switching / routing to the CPE and the carrier's infrastructure.

Possible motion

To include within the list of objectives a definition of a PHY mode that supports 1GE point to point in repeater mode, combined with side bands for management and TDM support.