

**COMMITTEE T1 – TELECOMMUNICATIONS**

**T1X1.5**

**Boulder, CO., March 26 - 28, 2001**

**T1X1.5/2001-113**

**CONTRIBUTION TO T1 STANDARDS PROJECT**

**TITLE** Slide Presentation for T1X1.5/2001-099  
**SOURCE** Sudheer Dharanikota, Raj Jain, Nayna Networks Inc.  
Krishna Ramadas, Jay Shah  
Yong Xue, Curtis Brownmiller WorldCom  
2400 N. Glenville Dr.  
Richardson, TX. 75082  
**CONTACT** Raj Jain

Raj Jain is now at  
Washington University in Saint Louis  
Jain@cse.wustl.edu  
<http://www.cse.wustl.edu/~jain/>

**PROJECT** Optical Hierarchical Interfaces

---

**ABSTRACT**

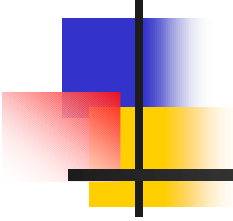
This document contains the slide presentation for T1X1.5/2001-099.

---

**Notice**

This Document has been prepared to assist Standards Committee T1X1. It is offered to the committee as a basis for discussion and is not a binding proposal on Nayna Networks Inc. or WorldCom. Information presented in this document may be subject to change after more study. Nayna Networks Inc. or WorldCom specifically reserves the right to add to, amend, or to withdraw the statements contained herein.

Detecting and Correlating  
External Path-Related Faults By  
Cohesive OXC and DWDM  
Protocols  
(ANSI T1X1.5/2001-099)



**Sudheer Dharanikota, Raj Jain, Jay Shah**  
**Nayna Networks Inc.**

**Curtis Brownmiller, Yong Xue**  
**WorldCom**



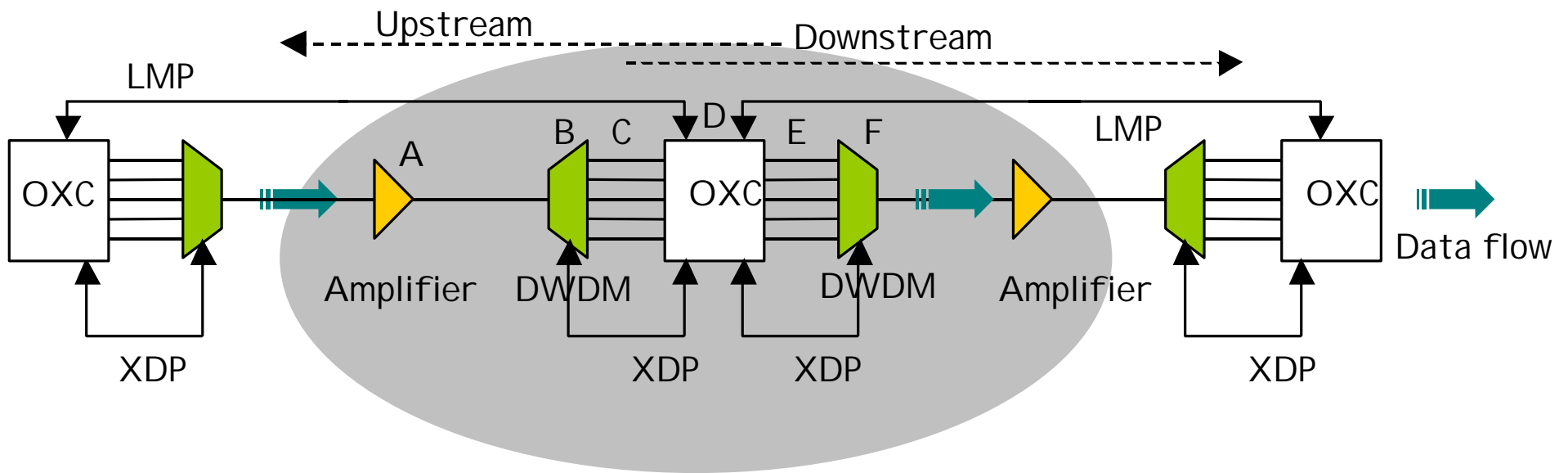
A decorative graphic consisting of overlapping yellow, red, and blue squares with a black crosshair.

## Outline

---

- Why do we need OXC-DWDM Protocol (XDP)?
- Requirements
- Conclusions

# Why Do We Need OXC-DWDM Protocol?



- To communicate electrical faults to optical crossconnects

A decorative graphic consisting of overlapping yellow, red, and blue squares with a black crosshair.

# Requirements

---

- Control channel management
  - Negotiate: Configuration, monitoring, support features
- Monitoring requirements
  - Types: Event-driven, polled
  - Per  $\lambda$  monitoring, per group monitoring ( $\lambda$ , DWDM)
    - How about generalizing OSC and terminating on OXC?
- Fault analysis
  - Group error/ degradation correlation and reporting
  - Individual error reporting

A decorative graphic consisting of overlapping yellow, red, and blue squares with a black crosshair.

## Conclusions

---

- OXC- DWDM protocol is important
  - For fault analysis
  - Faster error recovery times
- Should negotiate
  - Configuration correlation
  - Monitoring support – such as Fiber, DWDM, Bundles Others
  - Feature support - such as LOL, LOF behavior
- Monitoring should be
  - Event-driven
  - Polled
  - Periodic report