FLASHWAVE 9500
Packet Optical Transport Innovation

Fujitsu Network Communications
Packet Optical Networking Solutions
Fujitsu Network Communications (FNC)  
Who We Are

- Over 30 years' business presence in North America
  - IOCs, LECs, MSOs, wireless carriers
  - Federal, state and local government, financial, utilities, transportation, healthcare, research and education
  - Global scope—local presence

- Broad portfolio, proven real-world performance
  - Packet Optical Networking Platforms
  - Professional services and software
  - FLASHWAVE® DWDM and SONET/SDH
  - 450,000+ network elements deployed in the US

- Industry-leading quality
  - In-house manufacturing – dual factories
  - TL-9000 certified
  - Highest quality performance in the industry

- Large US office and manufacturing facility
  - The ONLY major optical networking vendor to manufacture its own equipment in North America
Fujitsu Network Communications
Tradition of Industry Leadership

- Support Traditional Technologies
  - TDM, WDM, L1 Ethernet Transport

- Growth in Packet Optical Networking
  - Optical transport – ROADM
  - TDM aggregation – SONET
  - L2 Connection-oriented Ethernet
  - EoS to Ethernet interworking
  - OTN aggregation

- Enabling network transition
  - 2G → 3G → 4G Mobility
  - DS1/DS3 → 10/100M
  - SONET → Packet
  - FOADM → ROADM
  - 10G → 40G → 100G

Introducing the FLASHWAVE 9500
Modular Pluggable Architecture

- Realizing CapEx and OpEx reduction
- Universal switching of TDM and Packet services
- Connection Oriented Ethernet for high performance E-LINE
- EoX Gateway – Ethernet over any access
- Scalability with pluggable ROADM
- 10G, 40G, and 100G optical networking
Packet Optical Networking
Architecture Vision

- A converged Packet Optical Network transport layer
  - Converged infrastructure for all service networks
  - Modular technologies
  - Diverse access strategy

- Ubiquitous Ethernet services over any access media
  - EoX Gateway application
  - Interworking between WAN technologies
  - Migrate from traditional TDM to Ethernet

- Value added custom software and services
  - Unified network management and design tools
  - Cross-product, cross-layer control
Packet Optical Networking Convergence
*Multiservice Access, Aggregation, and Transport*

- **Routed Core Network**
  - **High Bandwidth Interconnect**
    - 9500 P-ONP
    - WDM
    - TDM

- **Service Interworking**
- **Guaranteed Access to IP Services**
- **High Performance Private Line Services**
  - Packet, TDM, and wavelength services
  - High bandwidth data center interconnect and router bypass
  - Guaranteed data aggregation and access to IP services
  - High performance private line services and service interworking
  - Mobile Backhaul, Wholesale, Business applications

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NETSMART Network Management

Common Management of all FLASHWAVE Elements and Technologies

- **NETSMART 1500**
  - NETSMART 1500 EMS
    - Configuration, Provisioning & Fault Mgmt.
    - Software Download
    - NE Backup & Restore
    - 150K+ Managed Elements

- **NETSMART 500**
  - Enhanced graphical NE interface
  - Local and remote NE mgmt. and control

- **NETSMART 2000 Planning Tool**
  - Optical Network Planning
  - Node placement, line card, amplifier & DCM selection based on fiber and demand data
  - Creates detailed network design, shelf, cabling and BoM outputs

- **FLASHWAVE 4100ES**
  - TDM and SONET Provisioning and Management

- **FLASHWAVE 7120**
  - Access and Core Wavelength Provisioning and Management

- **FLASHWAVE CDS**
  - Connection Oriented Ethernet Provisioning and Management

- **HDS/SDS**

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FLASHWAVE 9500 Packet ONP

- Enabling the Transition from TDM to Packet
- Industry Leading Technology Integration
  - Packet
  - Optical
  - TDM
- Architectural Innovation
  - Universal Switching
  - ROADM-on-a-Card
  - Service Interworking
- Connection Oriented Ethernet for Service Providers
  - Best of SONET/SDH: Reliability, Availability, and Manageability
  - Best of Ethernet: Economics, Ubiquity, and Scalability
- End-to-End NETSMART Network Management
shaping tomorrow with you