FUJITSU

shaping tomorrow with you

Connection-oriented (COE) Ethernet for Government

The Global Information Grid (GIG) and its component networks, such as the Defense Information Systems Network (DISN), form the state-of-the-art network foundation for DoD communications. This architecture requires a secure and manageable network infrastructure for real time, assured packet services. The DISN network includes the Defense Switch Network (DSN) for nonsecure dial-up voice telephone service; the Defense Red Switch Network (DRSN) that provides high-quality secure voice and conferencing for senior decision makers; the NIPRNet (for non-secure exchanges); SIPRNet (for secure exchanges); the Defense Messaging System (DMS); the DISA ATM Network (DATM); and the DISN Video Services (DVS) network.

Vital access infrastructure

As these networks become part of the GIG, a secure, manageable access and on-ramp infrastructure is vital. Current access networks consist of a highly heterogeneous mix, chiefly dominated by TDM and ATM technologies and combining copper and fiber-based last miles.

To enable the new generation of high-bandwidth applications, it is necessary to migrate the access infrastructure from these legacy technologies to Ethernet-centric approaches. These approaches provide lower cost while delivering the highest degrees of security and deterministic performance.

As networks complete the process of migrating to Ethernet, a single manageable, scalable, secure access foundation is vital to the successful implementation of mission-critical networking applications.

In addition to lower cost, security and determinism, the Ethernet-centric "on-ramp" network must achieve several objectives:

- Simplify management
- Accommodate diverse last miles
- Provide the highest degree of resiliency and availability

The ideal on-Ramp technology

Ethernet is an essential component of next-generation networks. The backbone networks of the global infrastructure are dominated by IP/MPLS riding over a photonic physical layer. Interconnecting end-user agencies to the global infrastructure will depend heavily on efficient Ethernet aggregation, protection and transport.

Connection-Oriented Ethernet (COE) networks can enjoy the benefits traditionally associated with Ethernet:

- Bandwidth granularity
- Aggregation and statistical multiplexing efficiency
- Cost-effectiveness

At the same time, COE networks deliver the benefits traditionally associated only with SONET:

- Resiliency
- Security
- Deterministic performance

The Fujitsu portfolio

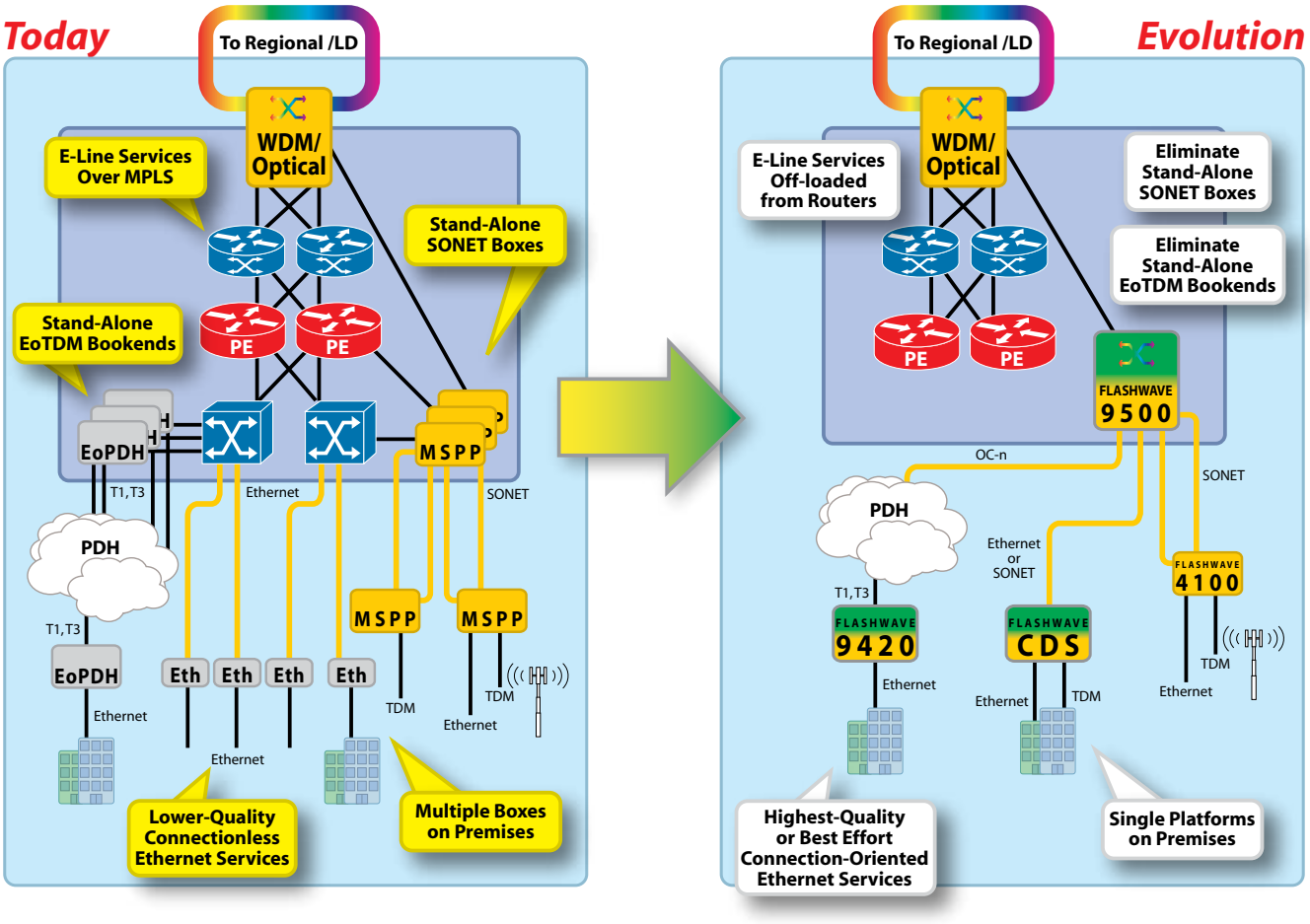
- FLASHWAVE® 9500 Packet Optical Networking Platform
- FLASHWAVE 9420 Packet Optical Networking Platform
- FLASHWAVE CDS Packet Optical Networking Platform
- FLASHWAVE 4100 ES
- NETSMART® 1500 Network Management System
- Fujitsu Installation, turn-up & test, and migration services

Features

- Deterministic yet flexible
- Highly cost-effective
- Delivers guaranteed bandwidth
- Excellent latency and jitter performance
- 50 ms automatic protection switching
- Statistical multiplexing and oversubscription

Eliminate cost and complexity

COE is the ideal on-ramp technology for all services that ride over the GIG. COE creates explicitly defined native Ethernet connections with reserved network resources and dedicated protection circuits.



Ethernet-based on-ramp architecture

Ethernet-only COE

Fujitsu embraces an Ethernet-only approach to COE, which forwards frames based on the Ethernet tag headers and not by the connectionless bridging of Ethernet MAC addresses. This simple approach has compelling advantages. It delivers all the benefits of COE without the large cost and operational complexity of routed IP/MPLS control plane in access/aggregation environments. COE also avoids the cost and management complexity of additional pseudowire and MPLS data plane layers.

Fujitsu integrates COE networking with Layer 1 networking in its FLASHWAVE family of packet optical networking platforms. This innovative integration of COE and Layer 1 technologies uniquely enables on-ramp networks to utilize a variety of Ethernet access technologies to reach end users, while realizing the benefits of COE and eliminating large amounts of cost and complexity from hub-site locations.

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