

# MARCONI OMS 3200

## Optical MultiService Core Switch



### General

The Marconi OMS 3200 Optical MultiService Core Switch enables operators to build a single, consolidated, highly resilient and intelligent low-OPEX core transport network. OMS 3200 is highly capable of efficiently delivering Ethernet, OTN and traditional services.

Designed around a high performance ASTN/ASON control plane the OMS 3200 series delivers new, resilient network protection schemes and enables new client driven service revenue opportunities. The platform's advanced control-plane and wide range of native traffic interfaces make it an ideal solution for building highly resilient optical networks to support SDH, OTN and IP traffic.

- ASTN/ASON Control Plane; Reduces operational overheads and enhances network resilience
- Dual Technology OTN/SDH Switch Fabric; Enables new revenue opportunities and additional future proofing of the network investment
- Embedded Layer 2 Ethernet and MPLS switching options
- Embedded DWDM and OTN support for cost optimized, carrier grade transport
- In-service scalability to meet current and future traffic demands
- Full range of Ethernet, SDH, SAN and OTN Interfaces

## Applications

### Next Generation Optical Core Networks

Today, many core networks consist of multiple core technologies. Typically each set of parallel infrastructure is dedicated to delivering a single service type e.g. TDM, IP or ATM. The OMS 3200 provides an opportunity to significantly reduce core network costs by consolidating all traffic types onto a single, robust and flexible core network.

The combination of multi service support and ASTN/ASON control plane ensure that all services can be delivered rapidly and with the appropriate quality of service.

### Application Benefits

IP/MPLS Core Networks (Router interconnection)

- Higher resilience provided by ASTN restoration
- Reduced router loading due to bypass capability
- Support for PoS or Native Ethernet inter-connections

### Ethernet Leased Line Services

- Lower cost by supporting point to point and Layer 2 services directly on transport infrastructure
- Lower latency as services are not routed at each node
- Higher availability through advanced protection and restoration schemes

### DSLAM Backhaul

- Supports ATMoSDH or IP back-haul
- Support for mesh, ring and star architectures
- High capacity Ethernet aggregation

### Multiple Ring Closure

- One OMS 3200 can replace multiple head end Add/drop multiplexers
- Provides full connectivity within the node
- Multi vendor SNCP/MS-Spring ring closure supported

### DWDM Interconnect

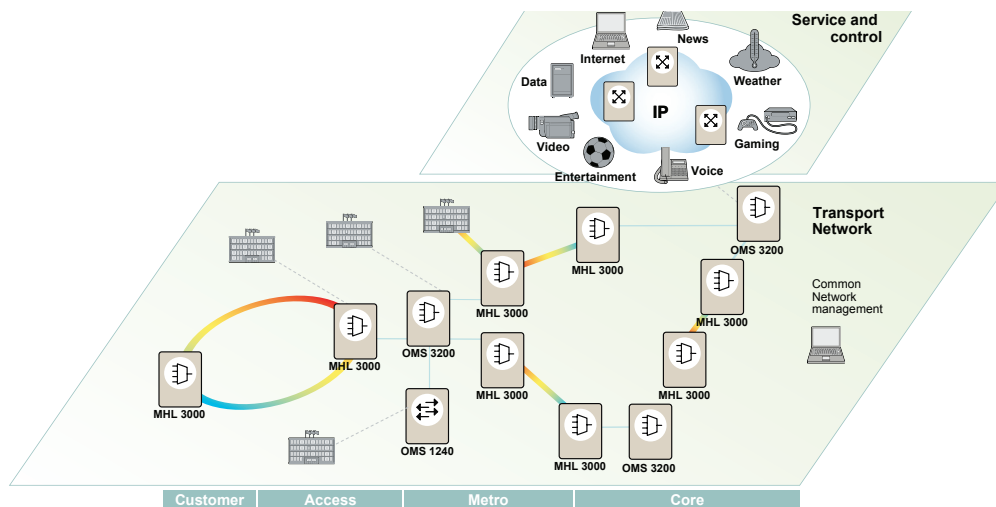
- Colored interfaces removes the need for transponders
- G.709 support facilitates transparent wavelength multiplexing and switching

### TDM to IP network Migration

- Common infrastructure for current and future services
- Enables core bandwidth to be seamlessly migrated from legacy to IP/MPLS equipment

### DXC Replacement

- High capacity VC-12/3 switch blades can be used to replace legacy 4/3/1 Cross connect installations



## Key features

### ASTN/ASON Control Plane

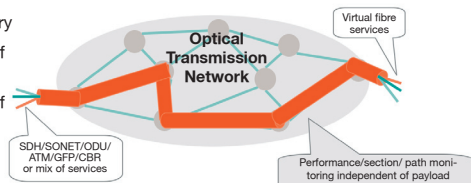
The introduction of ASTN in the transport network opens up a number of potential applications. Distributed functions allow fast execution of bandwidth-saving restoration schemes. Due to the new flexibility in transport service provisioning, new services can be offered. The built-in auto-discovery

functions for equipment and associated links improve many processes in the day-to-day operation of the network. ASTN offers CAPEX-saving advanced protection schemes, OPEX savings automation of operational tasks, new revenue opportunities by enabling differentiated and novel services, and proven interoperability featuring standardized interfaces.

Ericsson enables operators to easily introduce ASTN into either existing or new network builds whilst retaining full control over the amount of resources dedicated to automatic restoration and/or provisioning. For example, both ASTN and traditional SDH-based protection and provisioning can be mixed in the same network, this has been successfully demonstrated in large multi-vendor networks. The Ericsson ASTN Product portfolio includes the ASTN Planner that can be used either as an offline planning/evaluation package or as an integrated element of the ServiceON management suite. The application includes a full suite of planning utilities plus comprehensive scenario modeling functions.

#### Multi-Service Delivering Using OTN

- Service delivery
- Efficient use of bandwidth
- Efficient use of transponders



#### Scalability

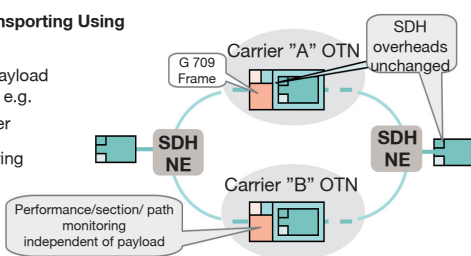
The OMS 3200 series scales from 80Gbps though to 960Gbps to ensure operators can accommodate current and future traffic demands.

#### OTN (G.709) Support

OTN enables the transport of complete SDH signals including the overhead. In addition non-SDH services can be mapped into OTN bearers offering an additional degree of future proofing. OTN makes it possible to build pseudo transparent ASTN switched core networks.

#### Transparent Transporting Using OTN

- Transparent Payload transportation e.g.
- Carriers' carrier
- SDH/SONET ring protection schemes



#### Hot-pluggable optics

Carrier-class, small-form pluggable (SFP/XFP) modules can be incrementally added to cards in response to increasing demand. Optical technology includes CWDM/DWDM colored optics.

#### Multi-Rate SDH Interfaces

Lower rate SDH services (STM-1/4/16) are all supported on flexible Multi Rate units allowing each port to be configured on an individual basis to match the exact service requirements.

#### Multi-Protocol Data Interfaces

Data services are supported on a flexible Multi Protocol Data Unit. Each port can be configured from the management system to support the following services.

- Ethernet 100/1000M and 10G LAN PHY
- Fiber Channel, Fi-Con ESCON

#### IP Services Blade

Flexible data services are supported on the optional IP Service blade which is capable of Ethernet Layer 2 and MPLS based switching and aggregation.

#### Embedded WDM

For metro/regional applications the OMS 3200 offers a choice of embedded CWDM interfaces or a low cost, self-contained 4 x STM-64 WDM system to facilitate high capacity interconnection without the cost or complexity of external xWDM equipment.

#### Protection

The OMS 3200 has a full range of network protection options including ASTN/ASON, MSP (1+1 and 1:N), SNCP, dual-ring interconnection and multiple 2-fibre and 4-fibre MS-SPRING at STM-16 and STM-64. All common equipment including Switch Matrix, Controller and Power supplies can be configured with 1+1 redundancy.

#### Management

The OMS 3200 is managed by the widely deployed ServiceOn solution that provides end-to-end integrated network management for data and SDH, network-wide performance monitoring and rapid fault identification. A Java Craft Terminal is available for additional, focused Element Management. ServiceON Optical provides a full range of northbound interfaces to facilitate integration with higher level management systems.

#### System architecture

All OMS 3200 series products feature a 1+1 protected switch matrix and control plane. Duplicated internal fast Ethernet connections provide communications between the system controllers and each individual chassis slot. Traffic access is via universal traffic slots that can take any of the available optical interface units. Plug-in VC-12/3 switches and Layer 2 Ethernet switches are also accommodated in traffic slots.

*The Ericsson optical portfolio is a world leading family of next generation transport products, designed with the most demanding of customer applications in mind. Flexibility (its ability to adapt to a myriad of applications, not least evolution to*

*packet networking and fixed mobile convergence) and innovation (technologies such as carrier grade data, ASTN, OTN and multireach WDM have built upon our heritage as a pioneer in SDH and WDM).*

## Technical data

### General

This equipment is designed to meet the appropriate sections of ITU-T Recommendations G.691, G.707, G.709, G.782, G.783, G.784, G.823, G.825, G.826, G.957, G.958, G.7712, G.7713, G.7714, G.7715 and G.8080.

### Chassis Options

- OMS 3240 – 80Gbps SDH or SDH/OTN Switch Matrix – 12 Interface Slots
- OMS 3250 – 320Gbps SDH or SDH/OTN Switch Matrix – 32 Interface Slots
- OMS 3255 – 160Gbps SDH Switch Matrix – 16 Interface Slots
- OMS 3255 – 720GbpsSDH/OTN Switch Matrix – 16 High Density (40Gbps) Interface Slots
- OMS 3260 – 960Gbps SDH/OTN expansion switch for OMS 3240/50

### Switch Options

- 80/320/720/960Gbit/s, dual-technology, SDH or SDH/OTN, full-connectivity, fully non-blocking switch fabric VC-4, VC-4-4c, VC-4-16c and VC-4-64C SDH cross-connections and ODU-1 and ODU-2 OTN cross-connections
- 160Gbit/s, SDH full-connectivity, fully non-blocking switch fabric VC-4, VC-4-4c, VC-4-16c and VC-4-64C SDH cross-connections

### Optional Plug-in Switch Modules

- 5/10/20/40/80 Gbit/s VC-12/3 Switch/Groomer options – depending on chassis
- 10Gbps ADM on a card module, 10Gbps VC-12/3/4 Switch unit with 8 integrated Multi-Rate SDH interfaces
- 10/20 Gbit/s IP services Blade - Ethernet Layer 2 -MPLS upgradeable

### Interfaces

- STM-1 electrical: 16-port – 1:N Card protection supported
- Multi-Rate SDH Flexible interface supporting STM-1, STM-4 and STM-16 SFP modules, available in 4, 8 or 16 Port configurations
- 16 Port STM-16 Interface, up to 16 SFP modules per unit – OMS 3255 Only
- STM-64 Interfaces: I-64.1r, I-64.2r, S-64.2b, S-64.1, L-64.2b, V-64.2a
- 4 Port Modular STM-64 Interface, up to 4 XFP Modules – OMS 3255 Only
- STM-64 DWDM: Full-band Tunable G.709 (50 GHz spacing)
- 4 Port OTM-1, up to 4 SFP modules
- OTM-2 optical DWDM – Grey or Tunable options

### Data Interfaces

Multi-Protocol Data 10 Ports, Each port can be configured as 100/1000M Ethernet, Fiber Channel, FI-Con or DVB Alternatively, a single 10 Gbit/s LAN PHY module can be fitted

### Synchronization

Inputs 2048 kHz timing signal to G.703 Section 13, 2 Mbit/s HDB3 to G.703/G.704.  
Outputs 2048 kHz to G.703 Section 13, 2 Mbit/s to G.703/G.704

### Supply voltage

-48V to -60V DC nominal

### Mechanical arrangement

Subrack housed in ETSI 300 119 rack

### Dimensions

OMS 3240 - 12 slot Chassis  
280 mm (D), 535 mm (W) and 764mm (H)  
OMS 3250 - 32 Slot Chassis  
280 mm (D), 535 mm (W) and 1753 mm (H)  
OMS 3255 - 16 slot Chassis  
280 mm (D), 490 mm (W) and 950 mm (H)

### Environment

The equipment will operate to ETS 300 019 Class 3.2. Radiated susceptibility to EN 50082-2 (10 V/m) Conducted, radiated and electrostatic discharge, susceptibility and conducted and radiated emissions to the worst-case limits of EN 300 386-2 for high-priority traffic. Optical safety to EN 60825- 1& 2, ITU-T G.664/ G.958, Electrical safety to EN 60950

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