

MARCONI OMS 1600

Optical MultiService Metro MSPP



Marconi OMS 1664



Marconi OMS 1654

General

The Marconi OMS 1600 is a compact, multi-service transport and switching platform, capable of delivering a wide range of data and TDM services. Its high port density and comprehensive switching options, coupled with its modular configurability, enables operators to cost effectively and incrementally respond to the rapidly changing demands of their customers.

Some of the main OMS 1600 attributes include:

- Dual SDH and Data bus for future-proof flexibility
- 60Gbit/s non-blocking VC-12 switch
- 20Gbit/s non-blocking packet switch
- Embedded DWDM and OTN carrier grade optical transport
- Pre-amplification and booster options for extended reach applications
- STM-16 and STM-64 aggregate interfaces. STM-16 in-service upgradeable to STM-64.
- Carrier class TDM and packet functionality
- Ethernet Port Extension for native Ethernet delivery to a remotely managed NTE

Applications

Multi-service Provisioning

Significant service revenue is still generated from TDM services, which now have to be supported alongside today's rapidly growing packet based services. To cope with this change, equipment deployed in Access and Metro networks must be both flexible enough and cost effective enough to satisfy all of these demands today and for the future. This means that we need products that can change and scale without expensive upgrades and stranded costs. To that end, all of the OMS 1600 family feature universal traffic slots, supporting a wide and growing range of multi-rate, high-density TDM & Data cards. Together with hot-pluggable optics, these give operators the necessary flexibility at a low incremental cost.

Ethernet Service delivery

The Ethernet cards support a wide range of Ethernet and Layer 2 VPN services, including

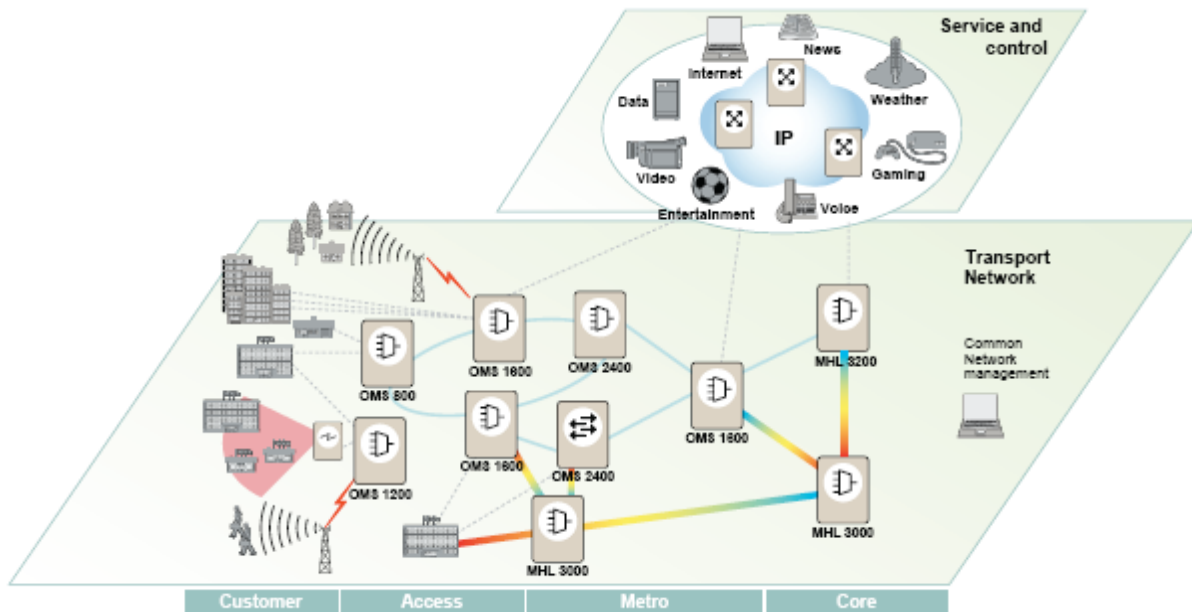
- E-Line, EPL (point to point)
- EVPL (point to multipoint)
- E-LAN, EVPLAN, (multipoint to multipoint)

Sharing a close synergy with Ericsson's OMS 2400 family of "carrier-class" Ethernet Transport products, both families can work together in the same network delivering MPLS services, including VPWS and VPLS. The integrated 20Gbit/s (40Gbit/s unidirectional) packet switch, together with provider Ethernet functionality makes the OMS 1600 an ideal delivery platform for both residential triple play and full telecom quality business services.

Mobile network application

Mobile networks present unique challenges to the transport equipment. At the edge of the optical RAN, the need is for an optical platform that can cost effectively hub 2Mbit/s from base stations, whereas at the controller site a larger platform is typically required to enable multiple RNC and BSCs to be collocated. The functionality required here is the ability to close multiple subtended rings, and groom/consolidate the traffic in a non-blocking VC-12 switch. The introduction of IP base stations will mean that operators who can migrate existing 2Mbit/s backhaul circuits to Ethernet technology can quickly take advantage of this more efficient packet transport.

The OMS 1600 family fulfills all of these requirements; it has comprehensive 2Mbit/s capability and, at the same time, is able to optimize Ethernet transport through packet aggregation and statistical gain.



Functionality

Comprehensive Ethernet support

Standardized GFP, VCAT and LCAS functionality is used to map Ethernet traffic efficiently into VC-12, VC-3 or VC-4 VCGs

Two types of Ethernet cards are provided; mapping cards, optimized for point-to-point applications, and L2 cards offering full packet switching.

Tri-rate ports are provided with configurable throughput up to wire speed and which can be presented as optical or electrical interfaces. A 10GigE port is supported on the central data switch.

A separate data 'bus' removes the dependency on a central SDH switch, enabling the OMS 1600 to host traffic cards fully optimized for data applications. In this way, the OMS 1600 can readily migrate from an SDH ADM, say, to an Ethernet switch with no platform change

Where remote delivery of Ethernet is required, the OMS 1600 supports Ericsson's Ethernet Port Extension product, enabling native optical Ethernet to be delivered to a remotely managed NTE at a distance of up to 70km.

Choice of Shelf Types

The OMS 1600 is available in two shelf types: a standard subrack supporting 16 traffic interface cards, and a compact version. Various options of switch sizes (currently 10Gbit/s, 20Gbit/s or 60Gbit/s) can be fitted, as shown in the table below.

When combined with the wide range of optical aggregate traffic cards and optional Ethernet Layer 2 cards, it is not surprising that the OMS 1600 has rapidly become established as the MSPP of choice for many of the world's leading network operators.

Shelf Variant	Switch Size		
	10G	20G	60G
Full size OMS 1664	2Mbit/s Drop 504 x 2Mbit/s	STM-16 High port count	STM-64 & DXC
Compact OMS 1654	Light loaded Configuration	STM-16 Compact	STM-64 Compact

In-service traffic upgrade

If configured initially with STM-16 aggregates, the OMS 1600 can be later upgraded, in service, to STM-64, as traffic volumes increase

Flexible node application

The full VC-12 connectivity of the 384 x 384 STM-1 (60 Gbit/s) switch allows the OMS 1600 to be used as a compact Lower Order full connectivity, non-blocking cross-connect. As an OCS, the OMS 1600 can cross-connect any combination of STM-64, STM-16, STM-4 or STM-1 for hub, mesh and ring closure topologies. Whether used as an MSPP, terminal, ADM or cross-connect the OMS 1600 becomes a key enabler for simplifying and lowering the cost of network build.

Embedded WDM

CWDM or DWDM interfaces are provided through user selectable SFP modules. A fully tunable STM-64/OTM1r.2 (G.709) card is also available. WDM multiplexing is supported using integrated passive filters, or in conjunction with the Ericsson MHL 3000 Multihaul WDM system.

Extended fiber spans

Booster and amplifier options are available to provide longer reach STM-16 and STM-64 spans of up to 120km, 160km, and 200km.

Carrier-grade performance

The OMS 1600 family builds on Ericsson's pedigree of Marconi SDH and carrier networking products. Sub 50ms SDH protection mechanisms are provided, including SNCP, MSP and 4 fibers MS-SPRing. Card protection is provided for switch cards and/or traffic interface cards (1:1, 1:N), as appropriate, together with a range of L2 protection methods, including RSTP and LAG. In addition, the inherent SDH functionality can be exploited to provide alternative Ethernet protection options, including Link Loss Forwarding and LCAS protection.

Extensive performance management features are included for both the SDH and data domains, with counters, alarms and historic data being available to confirm levels of QoS and SLAs. The support of the evolving Ethernet OAM standards will enable end-to-end QoS across mixed networks. This all goes to make the OMS 1600 MSPP the ideal platform for delivering mixed TDM and data services with consistent and predictable behavior.

Network Management

Integrated end-to-end Network Management is key to lowering OPEX. The Ericsson portfolio provides this through the widely deployed ServiceOn solutions, supporting rapid service provisioning, end-to-end performance monitoring and fast fault identification.

To facilitate the rapid deployment of data services, ServiceOn provides end-to-end provisioning of Ethernet circuits with data flow Management, Bandwidth Management, Client Alarm reporting and Management of CoS.

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).

