

Light up the backbone for advanced services SURPASS Transparent Optical Networks



IP Transport



Ease of use – from regional to ultra-long-haul networks

Today's transparent optical networks market demands solutions that provide easy access to a broad and reliable portfolio of services with a fast return on investment.

The Nokia Siemens Networks SURPASS hiT 7300 and SURPASS hiT 7500 products provide optical networking solutions that are individually optimized to the carrier's needs.

The network market speeds up

Compared to classical data traffic, today's carrier and service provider landscape is becoming more and more versatile and open-minded. On one hand, bandwidth requirements are steadily increasing due to new services and applications such as quadruple play (fixed telephony, video, data and mobile telephony), and in addition, next generation router technology is increasing the data rate by a further factor of at least four. On the other hand, rapid time to market is key to success. Service provisioning times need to be reduced from days to minutes to offer more flexible and cost-effective services to carriers' customers. Moreover, almost all carriers scrutinize network operational budgets closely, with the aim of running a lean network with easy planning, minimized installation efforts and simple operation.

Nokia Siemens Networks technology sets the pace

A modern DWDM core network can solve all of these challenges. Siemens' products for the transparent optical network market deliver the highest degree of flexibility for an individual installation today and network growth over its lifetime. These DWDM platforms provide latest and best-in-class technology today and are future-proof, with an in-service upgrade for upcoming enhanced features such as PXC and 100 GE in hardware, and GMPLS at the control level.

The SURPASS hiT 7300 and SURPASS hiT 7500 support the creation of scalable and robust transparent optical networks with both minimized regeneration from regional to ultra-long-haul (ULH) reach, and with fast service provisioning capabilities.

Both DWDM platforms already allow flexible deployment of leading edge (R)OADM technologies and support traffic up to 40 Gbit/s.

Ease of configuration

With SURPASS hiT 7300 and SURPASS hiT 7500, the use of dynamically reconfigurable OADMs and true PXCs allows an initial point-to-point link to grow easily and in-service into a full optical mesh with a unique flexibility to respond to changing traffic patterns.

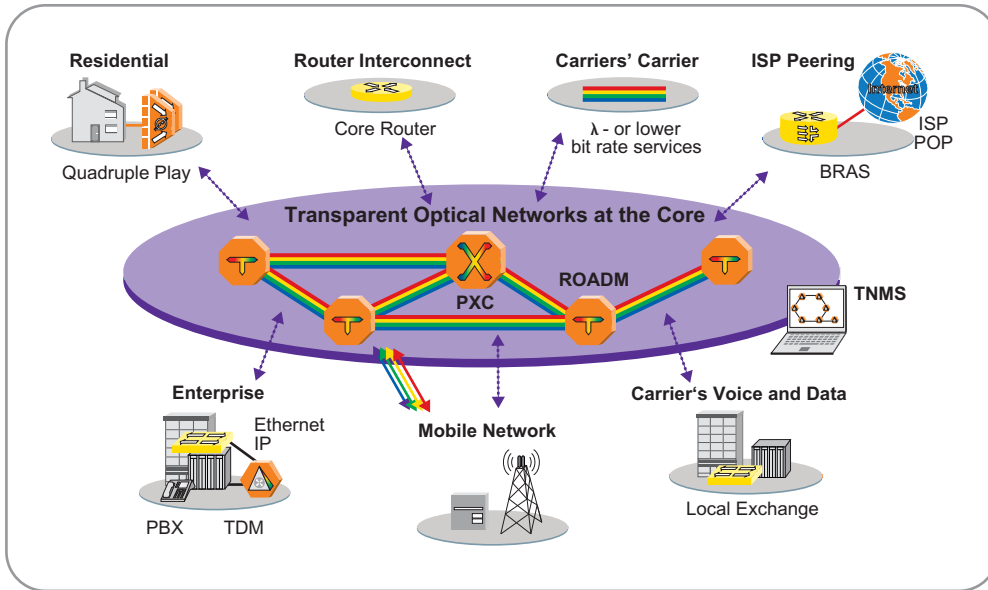
The modularity of the multi-haul platforms is maintained from the overall system performance deep in the core of the multiplexer and transponder design.

Various transponder and amplifier options can be used to optimize for regional, long-haul and ULH reach – with an arbitrary mixture of line rates from 50 Mbit/s up to 40 Gbit/s. This enables new OC-768/STM-256 services towards Internet router interfaces, and provides a future-proof platform that is able to cope with any present or future capacity requirements, thus postponing if needed the installation of a new DWDM system by extending existing 10 Gbit/s networks. The 40 Gbit/s solution fits perfectly to the platform, runs over the same infrastructure and works on a 50 GHz and 100 GHz grid, including (R)OADM, PXC and dispersion compensation.

Ease of service

The increasing dynamics of network traffic patterns require enlarged tolerance and a robust link design for parasitic and transient effects.





- 1.6/3.2 Tbit/s platforms
- 2.5 Gbit/s to 40 Gbit/s per wavelength in arbitrary mix
- Regional to ultra-long-haul (200 to 3,000 km)
- Supports linear, ring and meshed network topologies
- Comprehensive automation features
- Variety of service interfaces: SDH/SONET, G.709, GE, 10 GE LAN/WAN, SAN, OTH, TDM
- Truly transparent transport of any data services, incl. 10 GE LAN
- Variety of (R)OADM technologies
- Easy-to-use planning tool
- Best-in-class TNMS

The most common effect to be coped with in a transparent optical network from both the commercial and technical viewpoint is chromatic dispersion. Using the latest MLSE technology in the SURPASS hiT 7300 and SURPASS hiT 7500 significantly saves CAPEX for dispersion compensation while transponders with enhanced dispersion tolerance permit significant OPEX savings during installation.

Ease of planning

To fully take advantage of the various options, the TransNet tool provided with the Siemens DWDM products simplifies planning and procurement, giving information on fast commissioning, self-guided installa-

tion and turn-up, and automated maintenance. TransNet is also used for quick channel upgrades, and, together with the link control, provides a deep level of overall automation in the SURPASS hiT 7300 and SURPASS hiT 7500.

That's ease of use!

The SURPASS hiT 7500 is the top-of-the-line DWDM platform for LH to ULH reach, offering ultra-high capacity paired with ease of operation, while the SURPASS hiT 7300 offers a cost-efficient and easy-to-use solution for regional/LH networks. SURPASS hiT 7300/7500 from Siemens are scalable platforms with customizable reach, maximum flexibility and tunability that combine proven technology competence and worldwide experience with service provider infrastructures.

Abbreviations

CAPEX	Capital Expenditure
DWDM	Dense Wavelength Division Multiplexing
GMPLS	Generalized Multi-Protocol Label Switching
LH	Long Haul
MLSE	Maximum Likelihood Sequence Estimator
(R)OADM	(Reconfigurable) Optical Add Drop Multiplexer
OPEX	Operating Expenditure
OTH	Optical Transport Hierarchy
PXC	Photonic Cross-Connect
SNMP	Simple Network Management Protocol
TMNS	Telecommunications Management Network System

Team up with Nokia Siemens Networks

Nokia Siemens Networks offers the optimum solution:

- Lowest possible initial cost due to huge variety of customization options
- Easy-to-use concept permits significant OPEX reduction
- Platforms with proven product performance and a broad customer base
- Highly flexible service offering with strong local resources
- Reliable European partner with broad solutions portfolio

