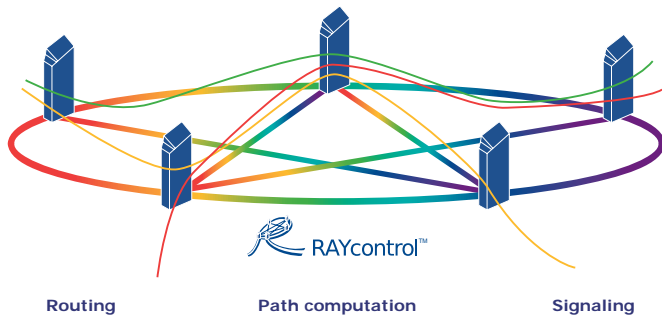


RAYcontrol™

INTELLIGENT OPTICAL NETWORKING



RAYcontrol™ is the premiere GMPLS based optical control plane enabling intelligent optical networking with increased flexibility and improved network efficiency. It includes all functions necessary to access, provision, monitor and control switched optical networks.

The RAYcontrol GMPLS-based control plane greatly simplifies the management of optically switched networks and offers unparalleled flexibility in service delivery, protection and restoration capabilities.

RAYcontrol manages several aspects of system configuration on all equipment. Through end-to-end provisioning, it automates many of the steps needed to configure service delivery. This automation translates to zero configurations on all but one network element, no matter the size or complexity of the network.

The intelligent control plane fully manages allocation of all system and network resources. RAYcontrol automatically enables the most efficient use of those network resources required to support each service.

RAYcontrol both delivers and monitors network performance. Services are provisioned dynamically and in real-time. The complex process of circuit planning and design is fully automated. Service delivery is fast and cost-effective, reducing not only provisioning time, but also the manpower and skill required to provision network services. RAYcontrol also automates the configuration of ROADM devices and enables full end-to-end equalization of optical power levels along the service path.

Protection and restoration options are provided on a per-service basis, thus enabling carriers to customize service quality according to network-wide or even customer-specific service level agreements and cost models. The standards-compliant distributed network intelligence of RAYcontrol breaks the barrier to mesh networking and provides protection mechanisms for any combination of ring and point-to-point topologies.

RAYcontrol supports a wide range of optical platform technologies, including fixed OADM, reconfigurable OADM, in-line regeneration and amplification and wavelength-selective optical switching. RAYcontrol also supports a wide range of service payload configuration options, from SONET/SDH to Ethernet to ITU-T G.709 OTN to transparent optical services.

RAYcontrol implements a rich set of control plane protocol standards, providing a clear pathway for network evolution. This includes integration of OAM&P (Operations, Administration, Maintenance and Provisioning) functions across vendors and transport technologies within a provider domain. In the longer term, it supports the vision of inter-provider, and even customer, flow-through provisioning.

FEATURES + BENEFITS

- Protection and restoration options enable carriers to offer different service level agreements on an individual basis
- Architectural models provide a clear pathway for future network evolution
- Dynamic, on-demand provisioning minimizes time-to-revenue and lowers opportunity costs
- Operational automation decreases costs by mechanizing manual and repetitive tasks associated with service management
- Automated network inventory and reuse avoids stranded resources and continuously optimizes network use
- Efficient resource management maximizes the number of services that can be established within a given network infrastructure

SPECIFICATIONS



TRANSPORT TECHNOLOGY

- FSP 3000

TOPOLOGY

- Point-to-point, ring, mesh and hybrid

PROTECTION & RESTORATION

- Path and link 1+1
- Optical UPSR/SNCP
- Optical mesh restoration
- Combined ring and mesh protection

DIVERSITY ROUTING

- Edge Disjoint
- Node Disjoint
- Shared Risk Link Groups (SRLGs)
- Generalized Inclusion and Exclusion Constraints

EXTERNAL INTERFACES

- Command Line Interface (CLI)
- TL/1




SNMP STANDARDS

- RFC-1850 (OSPFv2 MIB)
- ADVA Optical Networking Enterprise MIB

ROUTING & SIGNALING PROTOCOLS

- RFC 2328 (OSPFv2)
- RFC 2370 (OSPF Opaque LSA)
- RFC 3209 (RSVP-TE)
- RFC 3471 (GMPLS Signaling)
- RFC 3473 (GMPLS-RSVP)
- RFC 3477 (Unnumbered RSVP)
- RFC 3630 (OSPF-TE)
- RFC 4202 (GMPLS Routing)
- RFC 4203 (GMPLS-OSPF)
- draft-ietf-ccamp-rsvp-restart-ext
- draft-ietf-ospf-ospfv3-traffic
- draft-ietf-ccamp-crankback
- draft-ietf-ccamp-gmpls-addressing
- draft-ietf-ccamp-gmpls-alarm-spec
- draft-ietf-ccamp-gmpls-segment-recovery
- draft-ietf-ccamp-gmpls-recovery-e2e-signaling

ADVA OPTICAL NETWORKING SOLUTIONS

core & regional	<ul style="list-style-type: none">▶ Long haul transport▶ Metro core transport▶ Packet optical transport 
metro access	<ul style="list-style-type: none">▶ Wireline backhaul▶ Wireless backhaul▶ Ethernet access 
customer premise	<ul style="list-style-type: none">▶ Grid/Cloud computing▶ SAN connectivity▶ Corporate backbone 

For more information please contact an ADVA Optical Networking consultant or visit us at www.advaoptical.com

Data sheet, version 10/2009

 **ADVA**TM
Optical Networking