

# AGILECORE™ planning & engineering center

*Advances in photonic switching, DWDM transport, tunability and intelligent optical signaling available in the Innovance Networks' AgileCore product portfolio allow the creation of an Agile Photonic Network that provides cost savings and operational simplification, when compared to point-to-point and static transparent systems. Agile Photonic Networks and their associated metrics demand new tools to capture and compare their specific cost structures to those of traditional DWDM networks. Planning an optimized network architecture requires a toolset that allows the 'electrical' multiplexing layer (electronic cross-connects, switches and routers) and photonic layer to be planned in conjunction. Automated engineering tools provide the link from planning to deployment by providing a detailed visualization of equipment and connectivity to the user. By alleviating the planning and engineering processes through automation, carriers can proactively plan and more rapidly respond to network growth and churn.*

## **PLANNING & ENGINEERING THE "AUTOMATED CORE"**

The AgileCore Planning Center is a high-level multi-cycle and multi-technology network architecture application that examines the network cost and scale of Transparent Photonic, Point-to-Point DWDM and Electrical Multiplexing

technologies. Support for various electronic layer protection and restoration mechanisms such as mesh and rings allows capacity planning and grooming to be coordinated in a cost-effective manner with photonic layer routing decisions. Technology mix trade-offs can be examined to establish the most effective plan in terms of economic viability, such as examining the benefits of optical pass-through. Transition plans allow a traffic model to be grown to stress a network architecture, into which existing equipment can be factored. A common object model between Planning & Engineering Centers and the AgileCore MS allows for data upload from a real network to further enhance and refine network evolution of an installed base. The ability for information exchange and comparison of a plan with the deployed network provides an unparalleled mechanism for assessing network evolution and proactively scaling the network to meet customer demand.

## **AUTOMATED ENGINEERING SIMPLIFIES DEPLOYMENT**

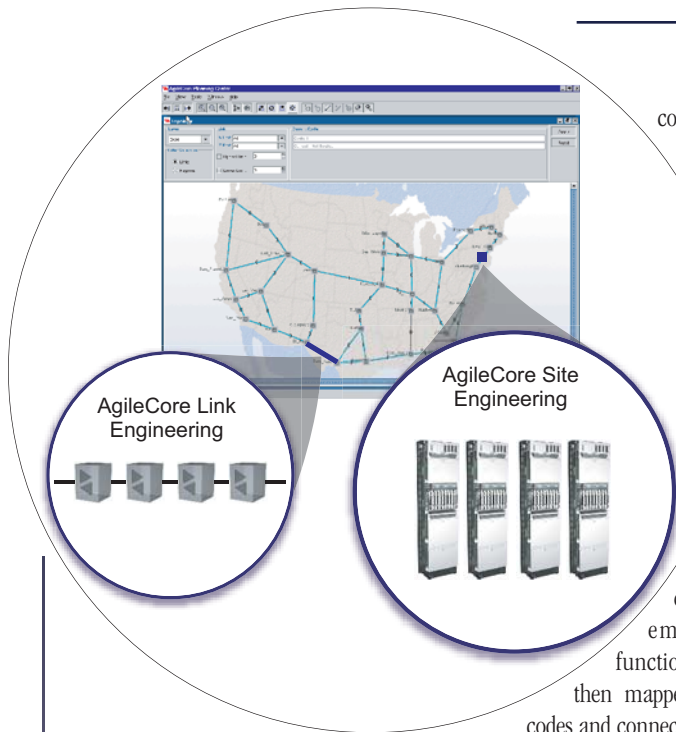
Link and Site Engineering Applications are used to create detailed site deployment plans for an AgileCore network once planning is

## **FEATURES & BENEFITS**

- A comprehensive toolkit covers network planning, link and site engineering, to build accurate costing and deployment views of an Agile Photonic Network
- Integrated photonic and electronic layer technology planning establishes the optimal economic mix between express wavelengths and sub-wavelength multiplexing and grooming
- Electronic layer protection and restoration requirements such as path diversity can be custom-mapped onto the photonic layer with other specific network constraints
- Network growth, transition and greenfield scenarios give the necessary breadth to plan, build and evolve the network
- Network data transfer between the Planning & Engineering Centers, the AgileCore Management System and multi-vendor planning applications
- Automatic selection of Transparent Photonic Switch, OADM, Terminal and Amplifier location and configuration for optimum economics and system performance
- Automatic configuration of shelf and bay line-ups with graphical output and per-site detailed ordering codes simplifies the engineering process



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**AGILECORE™ PLANNING & ENGINEERING CENTER**

complete. The configuration of the modular line, switching and gateway components to be able to accommodate arbitrary wavelength paths across a network is simplified by the engineering tools that take into account the capabilities of the system and use performance metrics common to the NOS embedded engineering functions. Configurations are then mapped into detailed ordering codes and connection diagrams down to the card and cable level for all sites in network.

The AgileCore Planning & Engineering toolkits provide a simple and efficient

mechanism for designing and implementing the Agile Photonic Network.

**INNOVANCE NETWORKS**  
*delivers a portfolio of agile, intelligent photonic networking solutions that enable service providers to build profitable, next-generation core optical networks. The Innovance Networks solution offers 'Just-in-Time' capacity and accelerates the deployment of services through the core, simplifies the network and reduces the cost of operations, while addressing the network scalability challenges beyond providing raw capacity.*

**AGILECORE PLANNING CENTER SUMMARY**

**OPTICAL LAYER DESIGN:**

- Transparent Photonic Networks
- Point-to-point DWDM
- Technology transition plans
- Shortest path or AgileCore routing modes
- SRLG mapping from Electrical multiplexing layer

**ELECTRICAL MULTIPLEXING LAYER DESIGN:**

- STS-1, OC-Nc Muxing and grooming
- Protection and restoration (1+1, ring, PCA, p-cycles, mesh)

**PRINCIPLE FEATURES:**

- Ordered demands simulate provisioning scenarios
- Multi-cycle planning to match budgetary cycles
- Client interface and line rates up to 40G
- Network inventory and cost for all scenarios
- Detailed output reports
- Power and floor-space estimates

**AGILECORE ENGINEERING CENTER SUMMARY**

**LINK ENGINEERING:**

- >Optimized link design driven from propagation algorithms
- EDFA, Raman, DCM selection and placement
- Interface to Planning Center for equipment selection data
- Interface to Site Engineering to drive site configuration

**SITE ENGINEERING:**

- Site specific plans (cards, shelves, bays and connectivity)
- Bill of Materials generation--Ordering codes
- Graphical shelf and bay line-up
- Cabling and connectivity requirements
- Commissioning settings

**RECOMMENDED PLATFORM REQUIREMENTS**

- Windows NT
- Pentium P3
- 512M RAM
- 20G Hard-Drive



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