Today’s communications networks face ever-growing pressure to deliver increased bandwidth capacity while continuing to offer on-demand, content-focused services in a timely fashion.

The Nokia 1830 Photonic Service Switch (PSS), a scalable, modular optical transport system, addresses this need. A multi-reach photonic platform, the 1830 PSS is the first commercially available single-carrier 100G coherent technology. Building on the unique Zero-Touch Photonics approach, which enables easier operations, reduced costs, and accelerated time-to-deployment for wavelength services, the 1830 PSS meets the requirements for next-generation photonic networks. The 1830 PSS provides the flexibility, automation, and fast time-to-service capabilities of electrical-based transport networks utilizing next-generation technology and speed. The result: lower total cost of ownership, improved network performance, and longer network life cycles.
The 1830 PSS supports wavelength-division multiplexing (WDM) multiservice transport from access to core, transforming traditional WDM into a flexible transport layer with managed agile photonics, multilayer switching and services, and network intelligence. The 1830 PSS T/ROADM technology (Reconfigurable Optical Add-Drop Multiplexer) supports a wide range of applications and services such as Carrier Ethernet, mobile backhaul, and multicast video. Flexible ROADM configurations support a wide range of configurations including Colorless, Colorless and Directionless, and Colorless Directionless and Contentionless. With 1830 PSS scalable platforms ranging from compact access to converged Optical Transport Network (OTN)/WDM core, operators can optimize multiservice networks to meet unpredictable traffic demands.

The 1830 PSS portfolio provides terabit OTN switching and photonics capacities. The Photonic Service Engine enables high-performance 100G and an evolutionary path to 400G transport. Leveraging an intelligent control plane and integrated data, control, and management planes, the 1830 PSS simplifies network management for maximum multilayer performance and efficiency.

**Ensured Interoperability for a More Efficient Network**

A proven solution for global service providers and enterprise customers, the carrier-class 1830 PSS has also been added to the Approved Product List by the Defense Information Systems Agency (DISA) Joint Interoperability Test Command (JITC). JITC certification assures defense and civilian agency managers that the 1830 meets required specifications for critical networks and will work with other JITC-certified network hardware and software.

**Features Evaluated and Certified by JITC**

The following features of the 1830 PSS were certified by JITC for interoperability throughout defense and civilian agencies:

- Ethernet and Synchronous Optical Network (SONET)/Synchronous Digital Hierarchy (SDH) interfaces
- 10G and 100G coherent wavelengths
- Dense Wavelength Division Multiplexing (DWDM) and Coarse WDM (CWDM)
- LAN and WAN configurations on the 10GE interfaces
- High-availability optical protection switching

The 1830 PSS is also certified under the FIPS 140-2 Security Level 2 and Common Criteria standards.
At a Glance: the 1830 Photonic Services Switch

» Addresses the need for continuous scaling of bandwidth across the network, driven by bandwidth-intensive applications, video, and supercomputing
» Accelerates time to service: Integrated network and photonic layer management allows enhancement of services from the Network Operations Center (NOC) and efficient delivery of end-to-end services
» Simplifies planning, commissioning, and operations: Flexibility in network design and planning, plug-and-play turn-up, commissioning, and SLA assurance
» Optimizes network resilience: Provides colorless, directionless add/drop capabilities that enable restoration at the photonic layer. Zero Touch Photonics technology detects degraded performance before an outage occurs.
» Modular WDM and OTN networking options with end-to-end wavelength and optical demultiplexing unit (ODU) client mapping and switching
» The 1830 PSS-36 and PSS-64 scalable multi-terabit OTN switching options
» The new 1830 PSS-8 and PSS-16v2 provide up to 1.6Tbps of OTN switching in a compact platform.
» Scalable product size variants from access (PSS-2) to core (PSS-64)
» Interchangeable hardware items
» Cross-layer capabilities
» A common network management system for photonic DWDM and OTN functions

1830 PSS: Maximizing High-Bandwidth Network Services

Federal agencies and commercial organizations providing services between locations (including local, campus, and long-haul distances) will benefit from the flexible, high-bandwidth services that the 1830 PSS delivers. By combining up to 88 wavelengths on a single fiber pair, the 1830 PSS maximizes the use of fiber networks between research centers, data centers, and battlefield locations. For military and civilian network managers, the 1830 PSS means state-of-the-art bandwidth management, signal amplification, reduced costs, and longer-lasting networks.
LGS Innovations delivers mission-critical communications products, R&D, and supporting services to U.S. defense, intelligence, and civilian agencies, state and local governments, critical infrastructure operators, and commercial customers around the world. We create advanced solutions in wireless communications, signals processing and analysis, optical networking, photonics, routing and switching, and spectrum management.

These solutions drive mission success in Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR), cyberspace operations, and network assurance. By incorporating best-in-class commercial and custom technologies with a full suite of offerings in research and development, engineering, integration, and product applications, our solutions improve efficiency, reduce costs, and provide an information advantage to our customers.

LGS has a history and culture of innovation, and maintains strong ties to our Bell Labs legacy of inventive development. Our intellectual curiosity keeps us on the cutting edge of technology and leverages our 75-year history of creating next-generation communications solutions to support critical operations.

LGS Innovations is a U.S.-owned company headquartered in Herndon, Virginia, with offices across the U.S. and overseas. We employ more than 1,000 associates around the world, including 750 scientists and engineers. Do you have a passion for innovation? So do we. Learn more at www.lgsinnovations.com.