



LightRiver

△nIO

Solution Brief:

LightRiver Technologies

nIO™ Network

Inventory Optimization



Executive Summary

In today's fast-paced telecommunications landscape, accurate and real-time network inventory management is critical for utilities, service providers, and data centers to maintain operational efficiency and deliver reliable connectivity. LightRiver Technologies' nIO™ (Network Inventory Optimization) solution, integrated within the netFLEX® & Prism platforms, provides a vendor-agnostic, software-driven approach to auto-discover, manage, and optimize network inventory. By eliminating data silos and ensuring precise visibility into network assets at full scale, nIO reduces operational costs, identifies unused and underutilized assets, prioritizes network modernization and capacity migration planning, and supports mission-critical projects.

Introduction

Telecom networks are increasingly complex, with multi-vendor environments and exponential data growth driven by 5G, AI, and cloud services. Inaccurate or outdated inventory data leads to unused, underutilized, and stranded network assets across the network. This data problem plagues legacy networks, preventing operators from modernizing to meet the bandwidth needs of today. LightRiver's nIO solution addresses these challenges by providing real-time, actionable insights into network assets, enabling utilities (e.g., smart grids), service providers (e.g., 5G networks), and data centers (e.g., hyperscale interconnects) customizable and targeted solutions for each business's specific needs.

Use Cases Solved to Date Are:

- Identifying spare equipment for harvest and redeployment – *capital savings*
- Analyzing entire regions of networks ingress/egress transport services. Next producing prioritized plans targeting low-capacity networks first for consolidation and migration of the remaining legacy services to modern networks, including individual circuit cut-sheets. – *increase project speed*
- Non-legacy solution: Identify service-level consolidation opportunities to release poorly utilized optical spectrum on OTN networks. – *capital savings*

The nIO Solution

nIO, a core component of LightRiver's netFLEX® Optical Domain Orchestration and Control Software, is designed to optimize network inventory management.

Key Features Include:

- **Integration with netFLEX®:** Automatically queries and maps network elements, cards, and capacity across multi-vendor systems (e.g., Nokia, Ciena, Cisco), ensuring real-time accuracy without manual updates.
- **Comprehensive Inventory Management:** netFLEX tracks all network assets, including DWDM, OTN, SONET, and Ethernet, providing detailed data on usage, spare capacity, and vendor-specific attributes.
- **Custom Integrations:** nIO can import circuit and network inventory data via many different methods, at a large scale. The interpretation of that inventory data is developed to meet specific business needs and then combined with the real-time standardized network data from netFLEX for a complete and true picture of the network.
- **Actionable Analytics:** Data is reviewed from the entire network, allowing prioritization of plans for migrations, equipment harvesting, etc. The data, plans, and custom reports are provided through an online portal, allowing the customer to further customize outputs to meet additional needs as they come up.

nIO supports LightRiver's broader portfolio, including Factory Built Networks® for rapid deployment and flexors™ for sustaining engineering, creating a unified ecosystem for network optimization.

Benefits for Stakeholders

- **Service Providers:** Dramatically increases network transformation projects by prioritizing target networks or focused on specific central office/data center migration projects.
- **Data Centers:** Optimizes high-bandwidth interconnects for AI and cloud workloads, cutting latency and improving resource allocation.

- **Utilities:** Reduce capital spend by utilizing current network assets more efficiently.
- **Cost Efficiency:** Reduces OPEX by 20-30% through automated inventory reconciliation, eliminating manual audits and preventing downtime.
- **Scalability:** Adapts to evolving network architectures.

Case Study: Service Provider Network Upgrade

A Tier 1 service provider solved two problems at once:

- 1) Reduce capital spend for legacy SONET replacement equipment.
- 2) Increase network transformation velocity.

LightRiver deployed nIO to auto-discover and map 10,000+ network elements, identifying spare equipment in the network quickly, which eliminated their capital spend problem using equipment they already owned but were not able to locate efficiently. They replenished their warehouse spares target and are now creating revenue by selling excess equipment. Next, the inventory data was merged with real-time network data, analyzed per the customers' requirements for service migrations, and most importantly prioritized. The solution increased their network modernization efforts by 300% within the first quarter. nIO accomplished this by prioritizing which networks to migrate first, identifying the specific equipment requirements for service migrations at each location based on the actual traffic needs, and provided the plans allowing their team to refocus on the migration's execution, not where to start.

Conclusion

LightRiver's nIO solution revolutionizes network inventory management by delivering real-time visibility and automation in complex, multi-vendor environments. For utilities, service providers, and data centers, nIO increases project velocity, reduces costs, recovers unused assets, optimizes existing infrastructure, and supports future-ready networks. As tariffs and connectivity demands grow, nIO positions LightRiver as a leader in optical network optimization.

Discover how nIO™ can enhance your network operations.

Visit www.lightriver.com to schedule a demo or contact LightRiver Technologies at lrtsales@lightriver.com to see how nIO™ can transform inventory management for your telecom infrastructure.

About LightRiver

LightRiver is the premier network productivity solutions provider focused on enabling client success in the dynamic world of connectivity. Backed by our industry award-winning Factory Built Networks®, netFLEX® automation, Prism Orchestration, nIO (inventory optimization) and flexOPS™ sustaining engineering solutions, we consult, commission, automate, and optimize multi-vendor, software-controlled and open DWDM, MPLS, IPoDWDM and Carrier Ethernet networks for those that need the highest capacity, reliability, resiliency, and manageability that technology can deliver.

LightRiver is a portfolio company of Grain Management, LLC, a leading global investment firm focused on the telecommunications sector. LightRiver's team of experts deliver real value, with 99999's quality and unparalleled customer care in packet optical networking, by accelerating client growth and profitability.