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Looking Through the Prism: *Intelligent Automation for Modern Networks*

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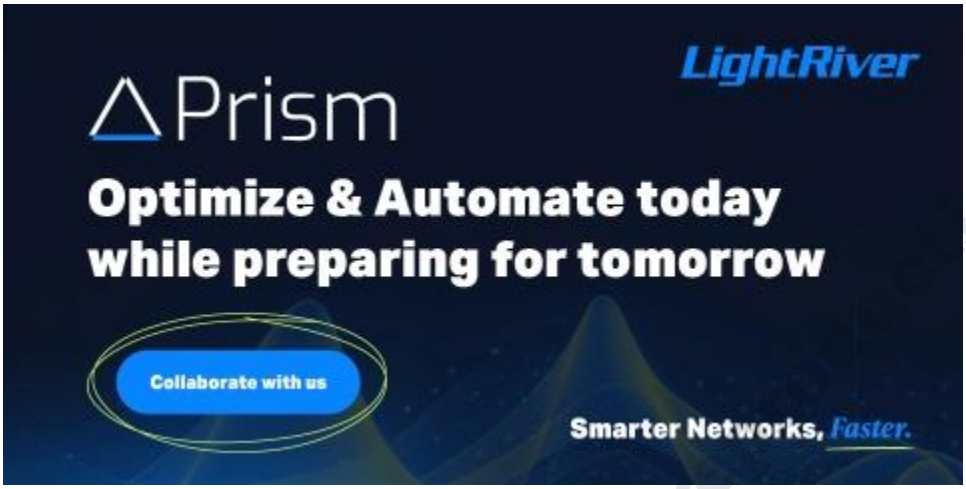
Networks are feeling the full force of AI-driven demand. Hyperscale data centers, cloud providers, and service operators are pushing fiber deployments harder than ever to feed low-latency generative models, agentic systems, and edge workloads that consume bandwidth at unprecedented scale. At the same time, the underlying infrastructure remains stubbornly complex—multi-vendor equipment spanning decades of technology generations, siloed management systems, tens of thousands of devices, and petabits of capacity that are often poorly understood or underutilized. Operators face constant pressure to contain costs, maintain five-nines or six-nines reliability, navigate supply chain constraints, and move toward autonomous network operations without massive rip-and-replace projects. The gap between raw network data and actionable intelligence has become one of the most expensive problems in the industry, demanding advanced optical network observability and AI-driven network automation.

Simplifying Network Complexity

Pipeline recently had an opportunity to sit down with stakeholders at LightRiver including Senior Vice President of Sales and Marketing Operations Walt Paskowski, Senior Vice President of Software Solutions, Jim Brinksma, and Vice President of Software Product Management, Marcelo McAndrew, to explore how the company's Prism® platform helps address the gap by translating network complexity into clean, operational intelligence to prepare organizations for the shift to autonomous networking.

LightRiver has built its reputation on closing the network-complexity gap. As a premier network productivity solutions provider, the company focuses on making connectivity simple across multi-vendor, multi-generational, multi-layer environments. Drawing on more than twenty-seven years of experience, LightRiver consults, commissions, automates, and optimizes networks for top-tier telecom carriers, large ISPs, data center operators, cloud providers, enterprises, governments, and utilities. The goal is always the same: simplify complex networks to optimize operations. It does this by leveraging existing assets to the fullest, reclaiming stranded capacity, reducing operational overhead, and enabling intelligent transformation toward fully autonomous networks.



Unlocking AI-Native Network Intelligence

Prism® is the latest evolution, presentation, and technical embodiment of LightRiver's mission. Prism is an intelligent, user-friendly network optimization platform that visualizes, controls, and optimizes optical networks across their entire lifecycle. It builds directly on the proven foundation of LightRiver's netFLEX® automation platform—deployed successfully in communications service provider environments for two decades—and evolves that capability with AI-native intelligence. Where earlier network management tools provided orchestration and automation, Prism delivers unified, real-time, and historical visibility that turns fragmented data into decisions operators can trust, seamlessly supporting legacy and multi-vendor network management.

The Prism platform's vision is clear: create an intelligent network layer that automates and optimizes operations so teams can concentrate on strategic priorities with minimal manual intervention. Its mission centers on revolutionizing complex network management by combining real-time and historical data, advanced AI, role-specific functionalities, and a natural human interface into a single, cohesive system. The value proposition addresses the core pain points head-on. Modern networks suffer from massive complexity—multiple vendors, disconnected management silos, deprecated equipment, and endless manual workarounds that cost millions annually in wasted resources, delayed provisioning, and reactive maintenance.

Prism integrates data from legacy and modern systems alike, normalizes it, and presents it through a secure, modular interface that aligns directly with how people actually work, facilitating AI-driven network automation. As an AI-native platform built with state-of-the-art design, it offers a comprehensive user interface alongside APIs for seamless integration with other systems, while maintaining direct network connectivity via T-API and netFLEXusing native device APIs such as TL1, SNMP, NETCONF, and RESTCONF for bi-directional, real-time exchange. This architecture ensures that operators can manage high device counts, immense capacity, and diverse generations without disruption, turning what was once a bottleneck into a growth accelerator.

Foundational Security, Compliance, and User-Centric Design

Security and compliance form a non-negotiable foundation for the Prism platform. Prism holds ISO 27001 certification for information security management and meets GDPR requirements, ensuring sensitive network data never leaves the system during AI processing. This matters deeply for regulated sectors such as utilities, government, and large enterprises that cannot risk exposure, particularly as data volumes explode with AI workloads.

The platform supports distinct user profiles, allowing customers to acquire exactly the information they need based on their specific roles. Executives receive high-level dashboards that track KPIs, ROI on network investments, and overall infrastructure health, replacing scattered spreadsheets with a unified view that supports strategic decision-making at the highest levels. Sales teams gain immediate insight into capacity availability and customer-specific opportunities, enabling faster monetization of underutilized wavelengths or routes and turning visibility into revenue growth.

Network planners access predictive analytics for capacity forecasting, topology planning, and CapEx allocation, identifying harvestable spares or nodes that can be optimized to reclaim power, space, and cooling while future-proofing expansions. Provisioning engineers benefit from automated workflows that accelerate service turn-up from weeks to hours, streamlining configuration management and reducing errors in high-volume environments. Operations teams monitor real-time performance, triage alarms, and troubleshoot proactively in network operations centers, shifting from reactive firefighting to predictive management. Maintenance groups manage schedules, analyze historical trends, and execute upgrades that keep legacy gear reliable and revenue-generating, extending the productive life of critical assets.

Shared capabilities are elevated to the organizational level, while custom portals, dashboards, and reports adapt to individual department roles and needs, providing tailored views that enhance productivity without overwhelming users. Most notably, Prism provides an AI interface that empowers users by providing a natural-language network interface via voice or text. Jim Brinksma, SVP of Software Solutions, highlighted this during our discussion: users can prompt the system to generate a dashboard showing all vendor X equipment exceeding 80 percent utilization in a specific region. The generative AI, which understands the front end, back end, and underlying data model, creates the view instantly. Users can then keep, edit, or discard the result without waiting months for a product

roadmap update. This approach empowers teams to achieve greater operational efficiencies, streamline customer outcomes, and accelerate innovation on their own terms.

Prism also seamlessly integrates within existing environments. It connects directly with third-party network management systems through standards-based APIs and links directly to devices via netFLEX using native protocols for bi-directional, real-time exchange. This ensures support for current networks, legacy gear, and future technologies without forcing premature modernization. Even when vendors deprecate cards or entire platforms, Prism continues to visualize the accurate state, full inventory, and maintain operational and revenue value, addressing a common frustration in long-lived carrier and enterprise networks.

Real-World Intelligent Automation for Modern Networks

The modern network now sits inside a feedback loop driven by the rapidly expanding demand for AI, Generative AI, and emerging Agentic AI systems. Each wave of enterprise, government, utility, and service provider adoption accelerates the construction of data centers, and each new data center in turn multiplies the demand for low-latency, high-capacity connectivity delivered at the speed of light. The cycle is not linear but compounding, because more AI workloads create more infrastructure, more infrastructure increases network complexity, and that complexity raises expectations for performance, customer experience, and cost efficiency – at a time when most services have become commoditized.

In practical terms, the network has become the backbone of modern operations, yet its operational burden is beginning to exceed what purely human-driven management models can sustainably support. This is not a theoretical concern but a structural one. Operators are expected to deliver flawless reliability, accelerate provisioning, protect margins, and support exponential traffic growth while managing multi-vendor, multi-generational environments that evolved through decades of expansion, mergers, and incremental upgrades.

Practical applications demonstrate the impact of intelligent automation. In fiber-constrained scenarios, Prism analyzes spectrum utilization and recommends optimal wavelength packing to free capacity and generate profitable revenue while new equipment is delayed by supply chain issues—a key spectrum optimization feature that directly impacts bottom-line performance. For post-merger integration—common among utilities and carriers—the platform monitors health across combined infrastructures to sustain six-nines reliability and smooth the transition. Equipment and supply chain optimization identifies redundant or harvestable assets, recouping costs, and informing upgrade decisions with data-driven confidence. Service provisioning automates routing and configuration, eliminating manual searches for available ports or space and accelerating service delivery in competitive markets.

The results speak clearly. Operators reduce operational expenses through automation, reclaim significant value from stranded assets, accelerate time-to-revenue on new services, and improve sustainability by optimizing power consumption. In merger and acquisition environments, Prism helps protect and even increase network valuation by extending the

life of critical legacy elements. As Marcelo McAndrew, vice president of software and product management, framed it in our discussion, the industry is moving from digital transformation—focused on access and visualization—to intelligent transformation, where data triggers automated actions, notifications, or hybrid workflows with human oversight only when necessary.

LightRiver's software evolution—from netFLEX's long track record in CSP deployments to Prism's AI-native design—mirrors the larger shift to fully autonomous networks. While many vendors retrofit or attempt to bolt AI models onto older architectures, Prism AI-native architecture was engineered from the ground up with domain expertise, robust engineering, expansive network management functionality, and secure intelligence at its core.

For service providers, data center operators, utilities, and enterprises navigating AI-fueled bandwidth growth and unrelenting complexity, Prism provides the clarity and control needed to transform confidently with intelligent network automation. It eliminates the "garbage in, garbage out" reality of network data into an accurate foundation of truth for efficiency, revenue protection, and long-term competitiveness. Operators ready to reclaim control of their infrastructure and accelerate the journey to autonomous network operations will find Prism a powerful ally.

To explore Prism and LightRiver's full suite of network automation solutions and optimization services, visit lightriver.com.