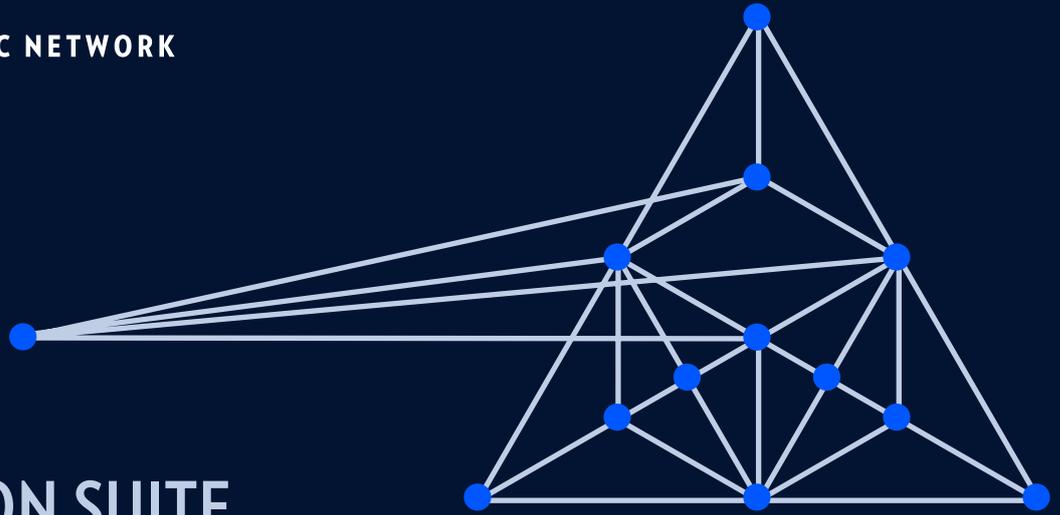# ECI | THE ELASTIC NETWORK

MUSE™

LIFECYCLE
AUTOMATION SUITE

GETTING THE MOST OUT
OF YOUR NETWORK

As a service provider, you are continually expanding and upgrading your network infrastructure to meet ever-increasing demands, and to establish a foundation for new revenue streams that exploit technologies like 5G, IoT, MEC, and NFV. The big challenge is how leverage the network to create and turn up new services rapidly, and to ensure network optimization, availability, and peak efficiency.

ECI's Muse modular software suite addresses this challenge head-on. Muse, in conjunction with ECI's Elastic transport solutions, constitutes the ELASTIC Services Platform. Powered by a carrier-grade PaaS, Muse delivers real-time control over a programmable network infrastructure and automates the service and network operation lifecycles. It guarantees that the right people and systems get the right capabilities for their requirements, through intuitive, easy-to-use user interfaces, or industry-standard APIs.

Automate service delivery
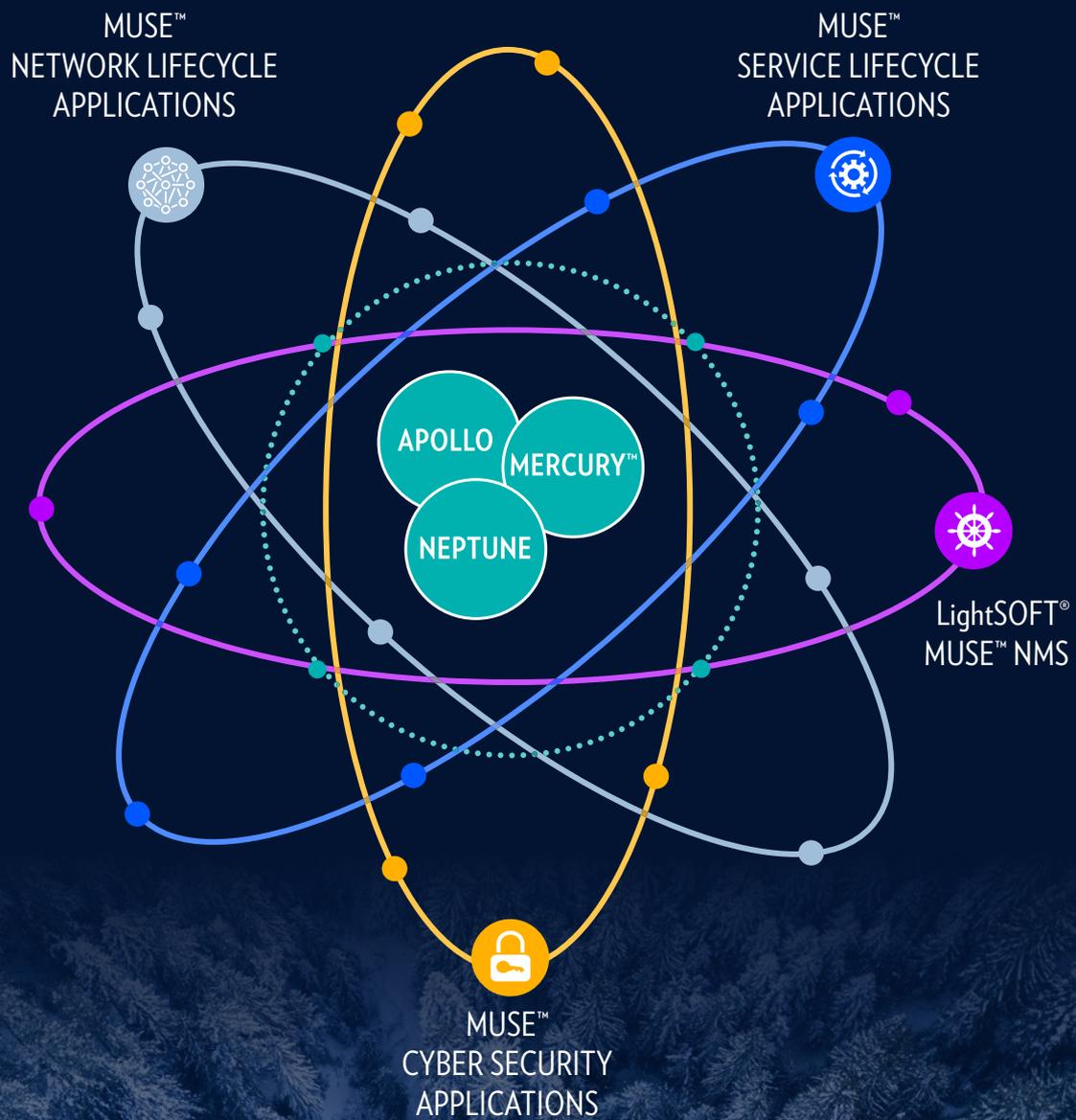
Innovate on top of a carrier-grade PaaS

Migrate smoothly and integrate seamlessly

Assure network performance

ELASTIC SERVICES PLATFORM DIAGRAM

MUSE™
NETWORK LIFECYCLE
APPLICATIONS

MUSE™
SERVICE LIFECYCLE
APPLICATIONS

APOLLO

MERCURY™

NEPTUNE

LightSOFT®
MUSE™ NMS
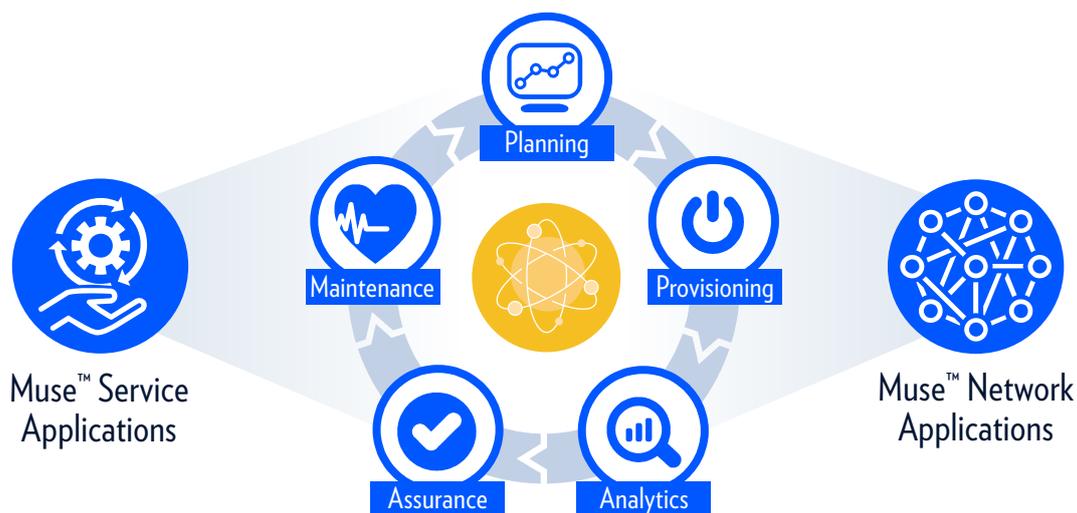
MUSE™
CYBER SECURITY
APPLICATIONS

AUTOMATE SERVICE DELIVERY

Muse is built for the emerging telecom world of advanced services that combine connectivity with virtualization. Starting with ready-to-use templates that cover the entire service lifecycle, Muse provides graphical tools to design complex services in a visual way – encompassing endpoints, virtualized network functions, service chains, SLA profiles, monitoring policies, and how to react in the event of failures.

Services can then be instantiated for individual customers via a user interface or API. Multi-constraint path computation algorithms provide optimal data paths between endpoints, and depending on the SLA profile, can arrange backup paths in the event of failures. Muse validates that the service is configured properly and can perform a quick SLA test before activation. While this process is automated, Muse allows an operator to preview the allocated resources before activation and make manual adjustments.

Basic and advanced service assurance options are available, based on capabilities from monitoring alarms and traffic to measuring service KPIs against historical trends, so that degradations can be recognized and addressed before they become severe.

ASSURE NETWORK PERFORMANCE

Service performance is only as good as the performance of the underlying network. Muse starts with a "what-if" planning tool to create an optimized network design for projected traffic and business constraints, for greenfield and brownfield networks. It then oversees effortless and error-free turn-up of new equipment. An auto-discovery capability ensures that Muse always has an accurate view of the underlying network.

Network assurance is based on policy, information, analytics, configuration optimization, and maintenance tools. The policy rules set expected behavior, thresholds, and restrictions, which determine assurance levels. Muse uses telemetry and other monitoring methods to gather information about network status, from traffic flows and resource utilization, to warnings and alarms.

Analytic engines evaluate this information against policy rules and suggest or automatically apply solutions, like traffic rerouting, or resource optimization, before conditions can affect services. In the event of hard failures, Muse exercises self-healing capabilities, like dynamic multilayer restoration, and makes a rich array of probes available to determine the source of the problem quickly, so that it can be fixed.

INNOVATE ON TOP OF A CARRIER-GRADE PAAS

Muse service and network applications are developed and deployed using cloud-native software techniques, like microservices and containers. This delivers the same DevOps benefits enjoyed by OTT competitors, who use a similar approach, to service providers. Applications can be 'continuously delivered', without waiting months for release updates, thereby easing migration and ensuring value in a timely manner.

Muse is based on a carrier-grade PaaS that provides deployment scalability and high availability for the lifecycle applications, from the network edge to SP data centers. Through open interfaces on the PaaS, Muse is open to 3rd party innovation, making it easy to incorporate applications and associated value from other sources, including your own tailored applications. Muse's architecture ensures true vendor-agnostic, real-time control of the network.
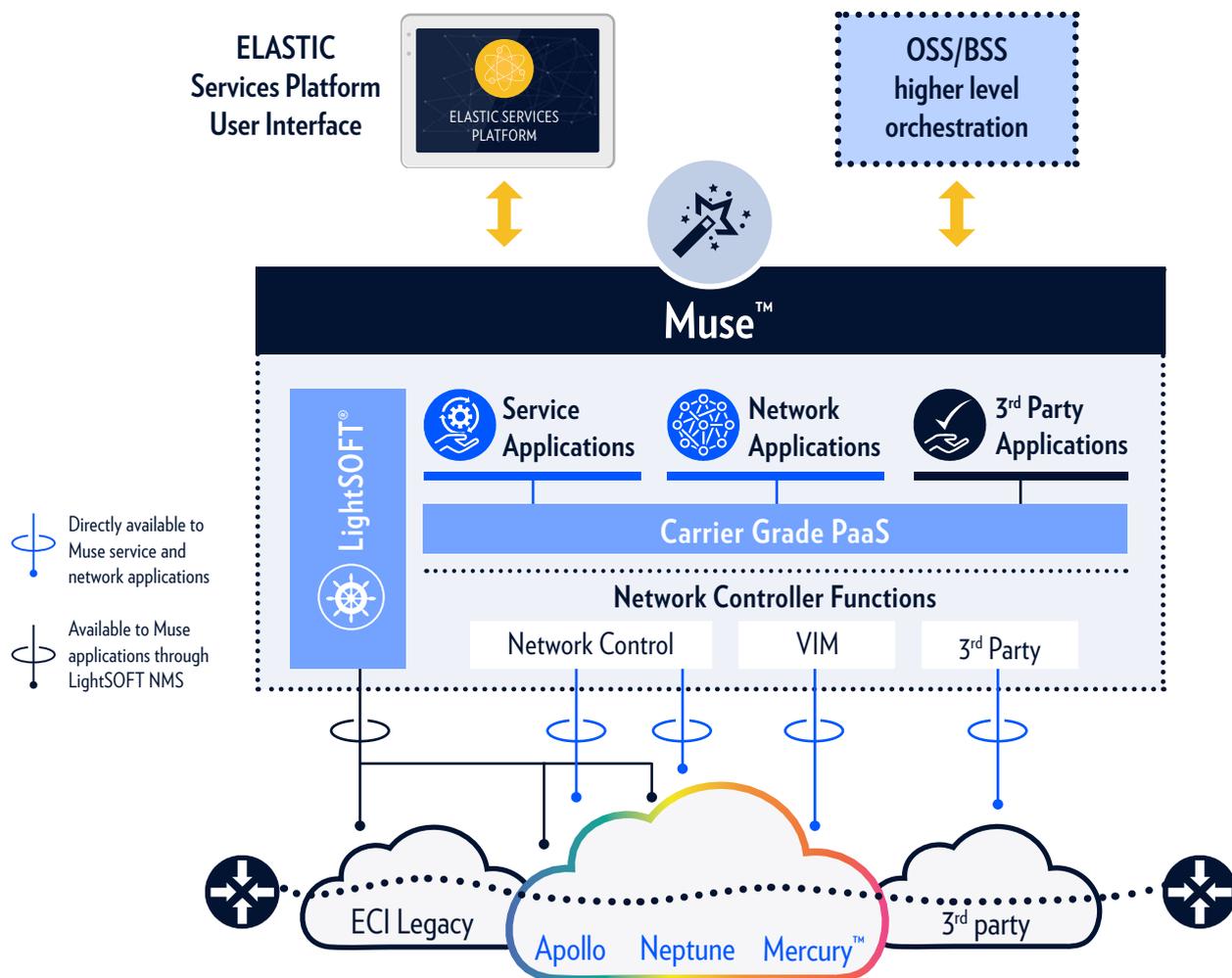
MIGRATE SMOOTHLY AND INTEGRATE SEAMLESSLY

Network modernization does not happen overnight. Inevitably, it starts with a brownfield network and operational infrastructure, incorporating advanced capabilities over a period of years. Muse is designed for this process in multiple dimensions.

Muse provides smooth functionality transition from ECI's industry-proven LightSOFT® NMS to automated, real-time control exercised by its service and network applications. In fact, Muse makes use of LightSOFT as an intermediary to its Neptune and Apollo packet-optical transport systems as the interfaces on these systems transition to an SDN-capable mode directly available to the Muse applications. Muse can also interface through adapters to 3rd party network equipment.

Muse fits within broader service provider modernization and automation initiatives by extending control using standard northbound interfaces. This enables Muse to interact directly with OSS and end-to-end service orchestration systems. Finally, as mentioned, Muse can directly incorporate 3rd party applications and innovation on top of its carrier-grade PaaS.

GET THE MOST OUT OF YOUR NETWORK

The Muse modular software suite lets you get the most out of your network. It creates and turns up new services rapidly, and ensures the network is optimized, available, and running at peak efficiency.

In an industry driven by the future, but tethered by the past, ECI's new ELASTIC Services Platform combines Muse modular software with ECI's elastic packet-optical transport, to meet some of the industries greatest challenges. It lets you focus on what is most important to you – launching new services and driving new revenue streams.
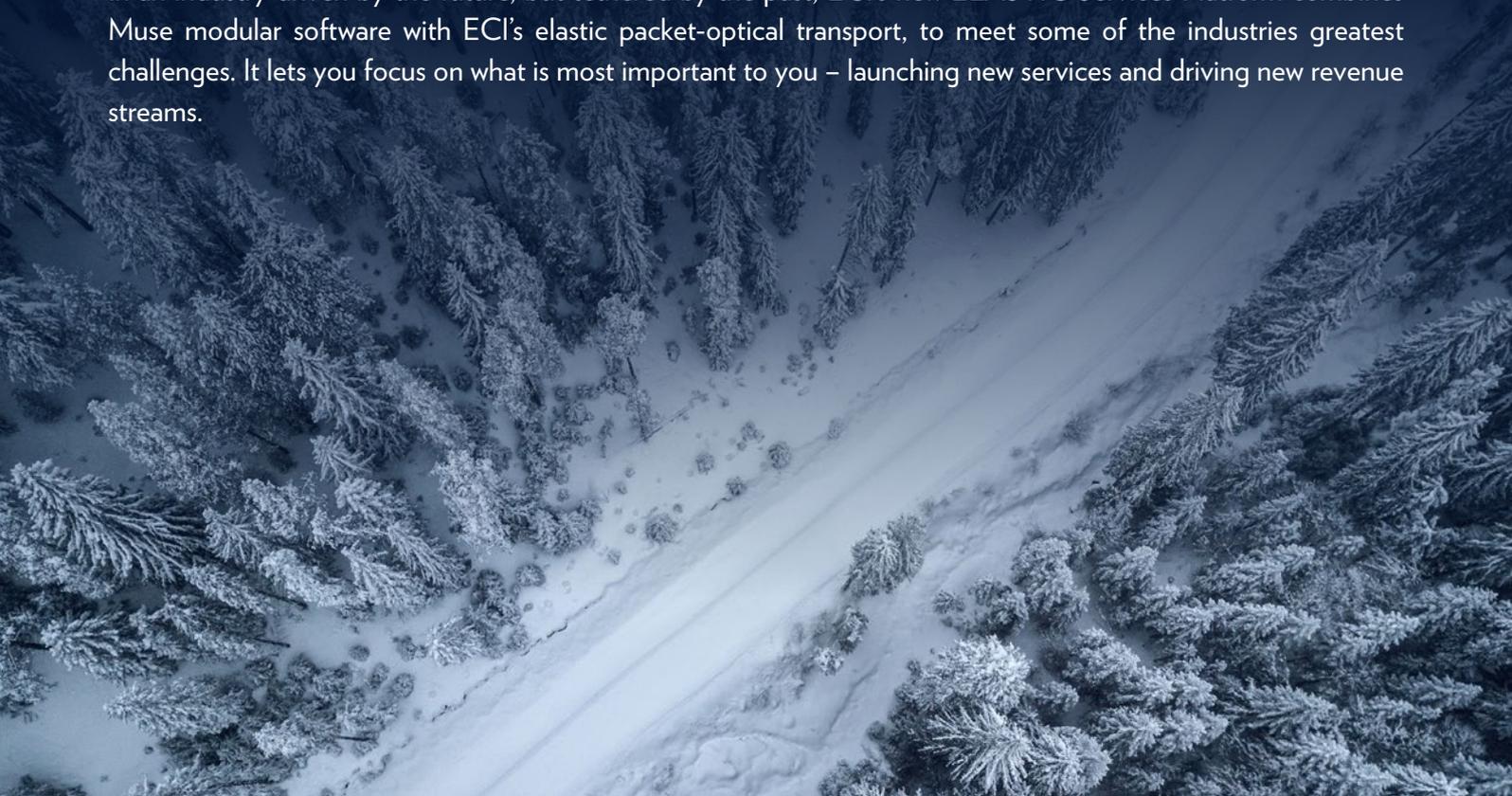
MUSE MODULAR SOFTWARE SUITE BENEFITS

Automate Service Delivery	**Deliver innovative new services** that combine real-time SDN connectivity with NFV virtualization, powered by a rich library of certified ECI and 3rd party VNFs.
	Design services rapidly, using ready-to-use templates and graphical tools that encompass endpoints, VNFs, service chains, and SLA profiles.
	Instantiate services for individual customers, using cutting-edge path computation algorithms that provide high-performance data paths between endpoints.
	Validate SLAs before activation to ensure that services are configured correctly.
	Assure SLAs proactively, by measuring service KPIs against historical trends so that degradations can be detected and addressed before they become severe.
Assure Network Performance	**Produce an optimized network design**, using a "what-if" planning tool that combines projected traffic and SP business constraints.
	Turn-up new equipment error-free, using design files, and auto-discover autonomous or unplanned changes taking place in the network.
	Manage performance assurance with a rich set of tools combining policy rules, telemetry information, and analytics.
	Deal with network performance issues proactively, through traffic rerouting and resource optimization, before conditions can affect services.
	Maximize services and network availability, by pinpointing hard problems rapidly, often even before they occur, and exercising self-healing capabilities, like dynamic multilayer restoration.
Innovate on Top of a Carrier-grade PaaS	**Enjoy DevOps benefits, like continuous application delivery**, through use of cloud-native software development and deployment techniques.
	Innovate and develop independent value-added applications, through open APIs on top of a scalable, high-availability PaaS.
Migrate Smoothly and Integrate Seamlessly	**Evolve smoothly from a brownfield network environment**, migrating interfaces and functionality from network management systems, to Muse real-time control applications.
	Integrate directly with OSS and higher level service orchestrators, through standard northbound interfaces.

Contact us to find out how Muse lets you get the most out of your network

ABOUT ECI

ECI is a global provider of ELASTIC network solutions to CSPs, utilities as well as data center operators. Along with its long-standing, industry-proven packet-optical transport, ECI offers a variety of SDN/NFV applications, end-to-end network management, a comprehensive cyber security solution, and a range of professional services. ECI's ELASTIC solutions ensure open, future-proof, and secure communications. With ECI, customers have the luxury of choosing a network that can be tailor-made to their needs today – while being flexible enough to evolve with the changing needs of tomorrow. For more information, visit us at **www.ecitele.com**

ECI®