

# Nova adaptive service assurance

Right data, right time, in context





# Table of contents

## 01

Service assurance needs to adapt

## 02

Adaptive service assurance

## 03

NOVA adaptive service assurance platform

## 04

NOVA adaptive service assurance

## 05

Glossary

Page 3	Pages 4-5	Page 6	Pages 7-11	Page 12
Existing tools struggle to keep up	CSPs need intelligent, adaptive insight to transform	Platform components	Progressively unlock the value of automation For orchestrated, automated networks Platform coverage Solution coverage Unique viewpoint	Glossary

# Service assurance needs to adapt

Existing tools struggle to keep up in a world of:

<p><b>Operational complexity</b></p> <p>Meeting customer expectations is getting harder. Compounding factors:</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">CNF</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">VNF</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">MEC</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">5G SA</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">5G SLAs</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">IoT / mMTC</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">URLLC</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">Orchestration</div> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">Traffic growth</div> </div>	<p><b>Silent suffering</b></p> <p>Degradations define customer experience much more than outages. 90% go unnoticed<sup>2</sup>.</p> <div style="display: flex; align-items: center; justify-content: center; margin: 20px 0;">  <span style="font-size: 2em; margin: 0 10px;">&gt;</span>  </div> <div style="display: flex; justify-content: space-around;"> <p>Time to detect</p> <p>Speed of impact</p> </div>
<p><b>Diminishing visibility</b></p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around; align-items: center;"> <div style="background-color: #add8e6; border-radius: 50%; padding: 10px; margin: 5px;">Encryption</div> <div style="background-color: #add8e6; border-radius: 50%; padding: 10px; margin: 5px;">Traffic volume</div> <div style="background-color: #add8e6; border-radius: 50%; padding: 10px; margin: 5px;">Virtualization</div> <div style="background-color: #add8e6; border-radius: 50%; padding: 10px; margin: 5px;">Siloed systems</div> <div style="background-color: #add8e6; border-radius: 50%; padding: 10px; margin: 5px;">Probe scalability</div> </div> <p><b>80% of traffic will be invisible</b> to traditional service assurance systems by 2024<sup>1</sup>.</p>	<p><b>Big data bills</b></p> <p>Collecting and analyzing everything is expensive and slow.</p> <div style="display: flex; align-items: center; justify-content: center; margin: 10px 0;"> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">Collect</div> <span style="font-size: 1.5em; margin: 0 5px;">➤</span> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">Move</div> <span style="font-size: 1.5em; margin: 0 5px;">➤</span> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">Store</div> <span style="font-size: 1.5em; margin: 0 5px;">➤</span> <div style="background-color: #0056b3; color: white; padding: 5px; margin: 5px;">Analyze</div> </div> <div style="display: flex; justify-content: center; gap: 20px; margin: 5px 0;"> <span>\$</span> <span>\$</span> <span>\$</span> <span>\$</span> </div> <div style="background-color: #0056b3; color: white; padding: 10px; text-align: center; margin: 10px 0;"> <p>Cost of data</p> </div> <div style="display: flex; align-items: center; margin-top: 20px;">  <p>Some cloud bills for service assurance cost more than the solutions themselves.</p> </div>

**125 Gbit/s** per 5G probe

**100's** of probes required to monitor Tier-1 networks

**40 petabytes** to analyze per hour

**Orchestration, automation, CEX and 5G need precise, split-second insight, in context.**

**Old ways don't work**

**Assurance is now a network function**

It needs to be scalable, resilient and integrated like the ones it monitors.

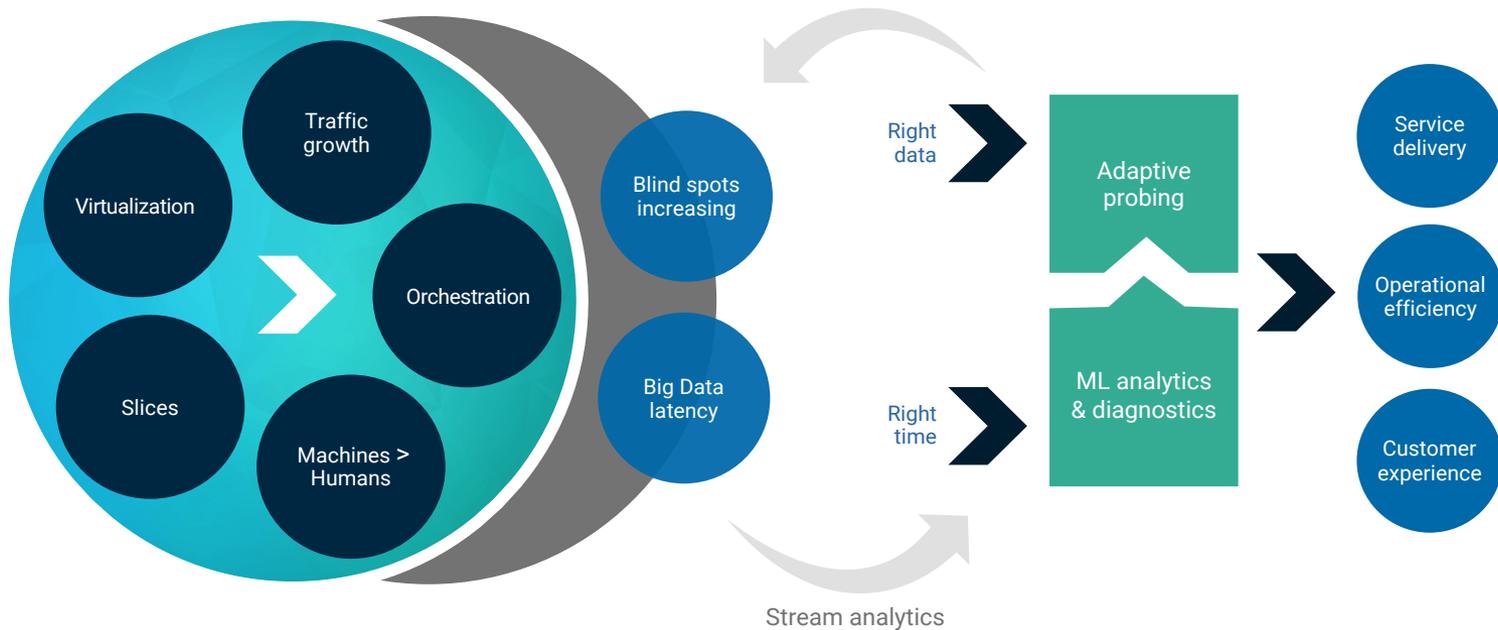


**A new approach is needed to close the loop**

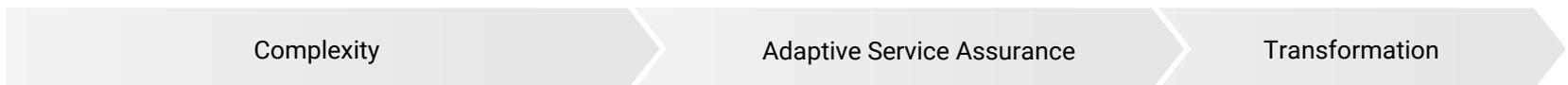
1. EXFO sales engagements with Tier-1 U.S. operators, 2020  
 2. Heavy Reading customer survey 2019, EXFO customer data and EXFO advisory board input  
 3. Estimates provided are based on 5G network probing requirements provided by leading Tier-1 North American operators

## Adaptive service assurance

CSPs need intelligent, adaptive insight to transform



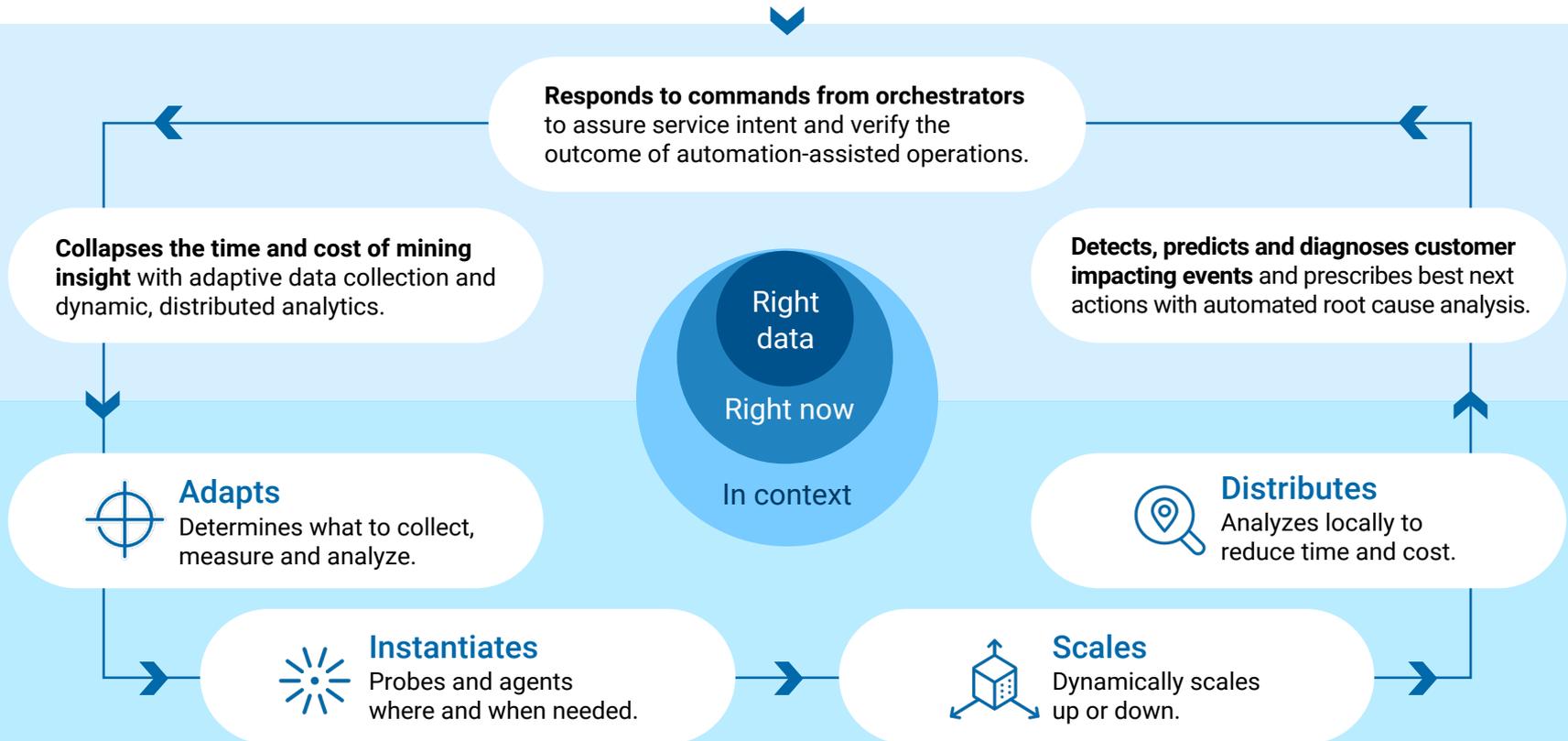
### Real-time, in-line



Operators are drowning in big data while losing access to insight at a time when they need to simplify operations and accelerate business outcomes.

## Adaptive service assurance

Adaptive service assurance uses AI-driven automation and analytics to shatter big-data overhead and **reveal the small data that matters in the moment** to enable real-time operations and network automation.



**Extracts context, insight and value from existing systems** by openly ingesting data from service assurance, B/OSS, network functions and more.

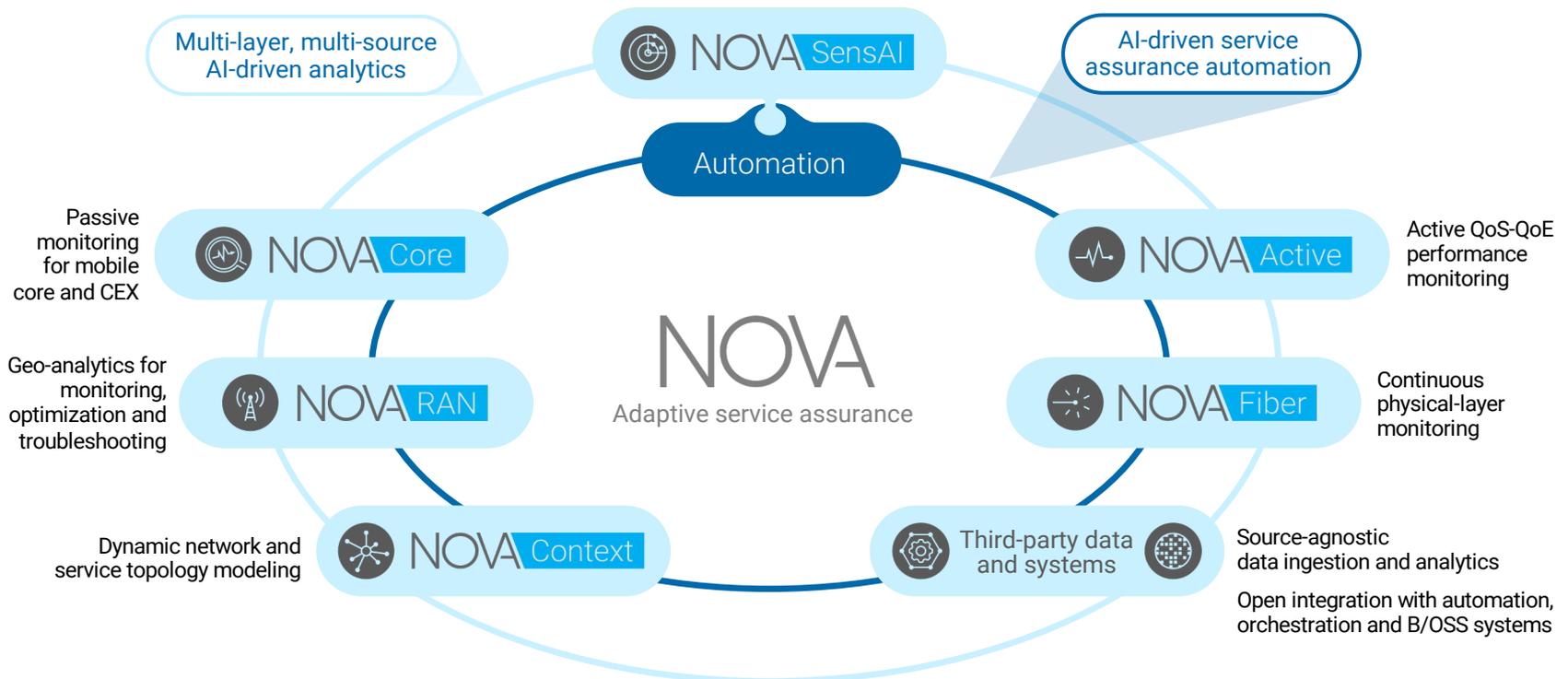
# NOVA adaptive service assurance platform

[Learn more](#)

Nova adaptive service assurance uniquely delivers contextual insights that relate service quality and customer experience to infrastructure performance across all layers and domains—fiber, core, cloud, RAN and transport networks.

Nova SensAI's modular analytics and automation platform integrates feeds from one or more monitoring domains. Nova platform components and third-party systems integrate to assure multi-vendor networks, services, applications and infrastructure.

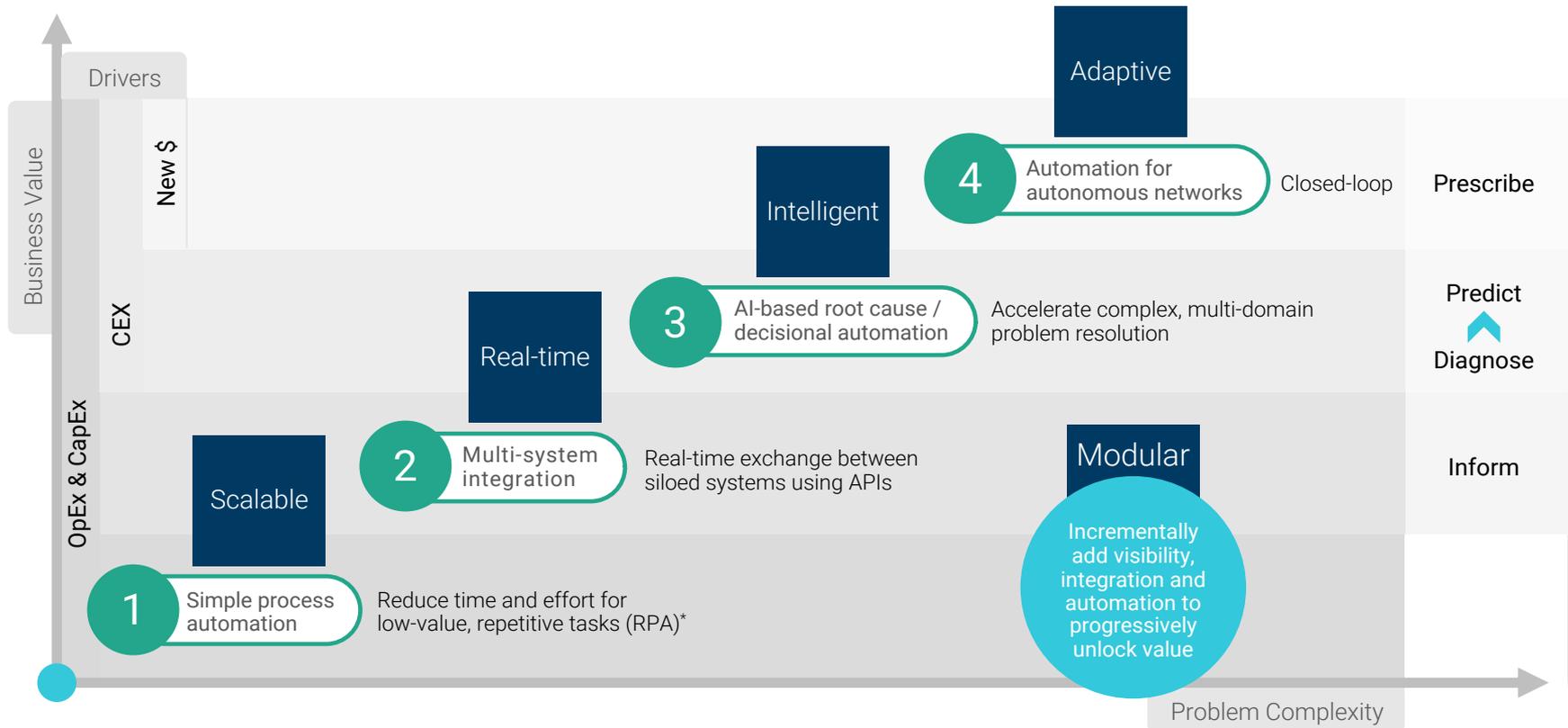
## Platform components



# NOVA adaptive service assurance

Progressively unlock the value of automation

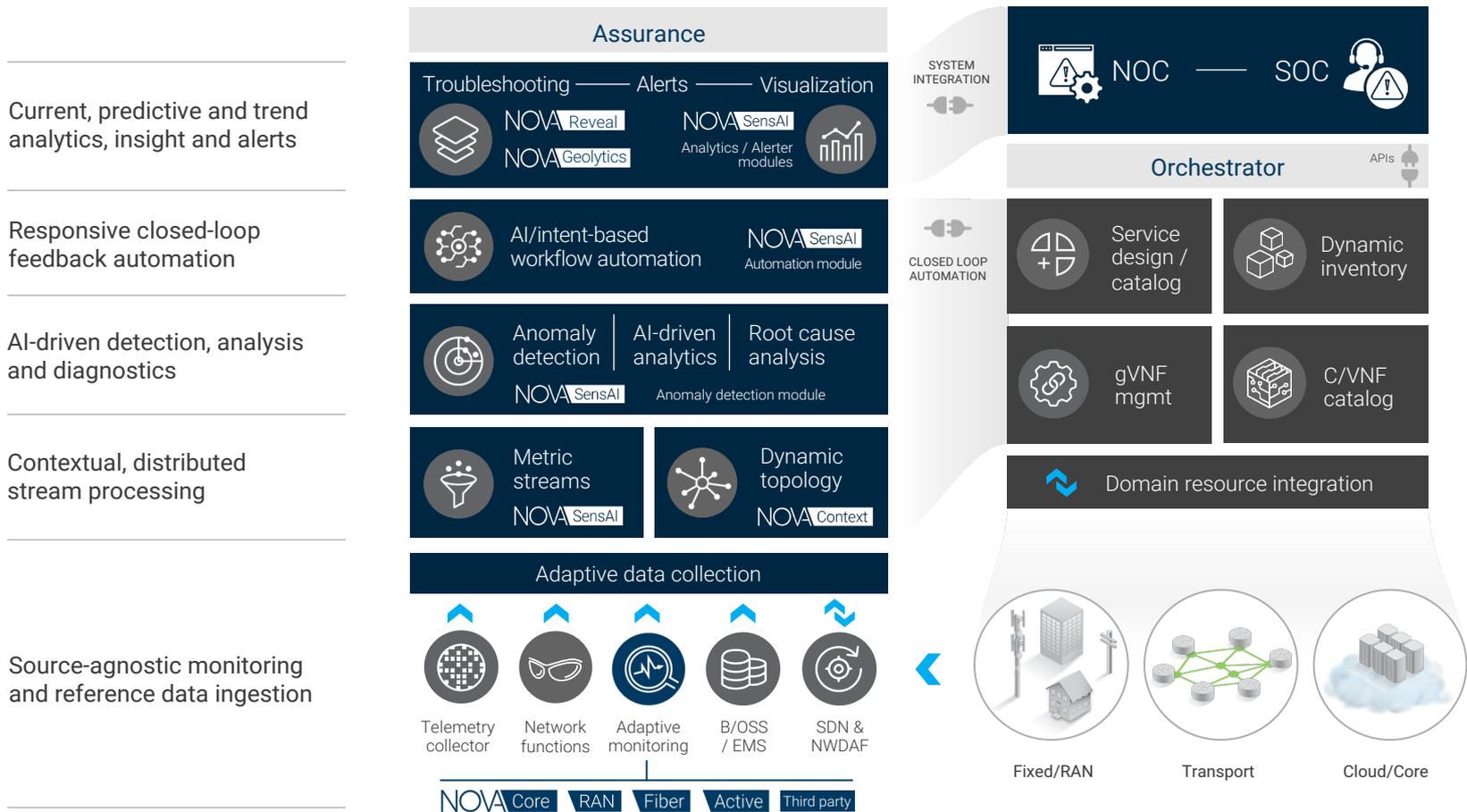
Automation is a journey. Each step adds incremental value. Delivering a new level of customer experience and generating new revenue requires intelligent automation that learns and adapts to current conditions. AI is required to move from simple scripted automation to predictive insight and autonomous action. Effective automation simplifies and accelerates operations.



RPA = Robotic process automation

# NOVA adaptive service assurance for orchestrated, automated networks

Cloud-native networks require close collaboration between man and machine. Because every automation journey is unique, the Nova platform is modular. Add components selectively to build an open, multi-vendor orchestrated network, incrementally.



Current, predictive and trend analytics, insight and alerts

Responsive closed-loop feedback automation

AI-driven detection, analysis and diagnostics

Contextual, distributed stream processing

Source-agnostic monitoring and reference data ingestion

# NOVA adaptive service assurance

## Platform coverage

Cloud-native 3G-4G-5G passive monitoring and troubleshooting from core-to-RAN

**Wireless**  
RAN and core



NOVA **Core**

In-depth visibility into network, services and subscribers across multi-vendor networks. [↗](#)

NOVA **RAN**

RF, device and network geo-analytics across multi-vendor networks, vRAN and ORAN. [↗](#)

NOVA **SensAI**

Automated detection, diagnosis and predictive analytics for customer-impacting events. [↗](#)

5G SA, MEC and  
enterprise SLAs

Full stack assurance from core to cloud, edge to customer

Adaptive data collection  
from existing  
third-party systems.



**Wireline**  
transport and  
services

NOVA **Active**

Integrated QoS and QoE visibility to assure network, voice, video, and application performance. [↗](#)

NOVA **Fiber**

Remote, proactive physical layer testing, monitoring and analytics for transport and access fiber networks. [↗](#)

NOVA **Context**

Dynamic topology maps relationships between infrastructure, services and customers for accurate fault isolation and root cause analysis. [↗](#)

xHaul, slices, MEC • Business services • DCI/Cloud • FTTx/Triple-play • IP transport

# NOVA adaptive service assurance

## Solution coverage

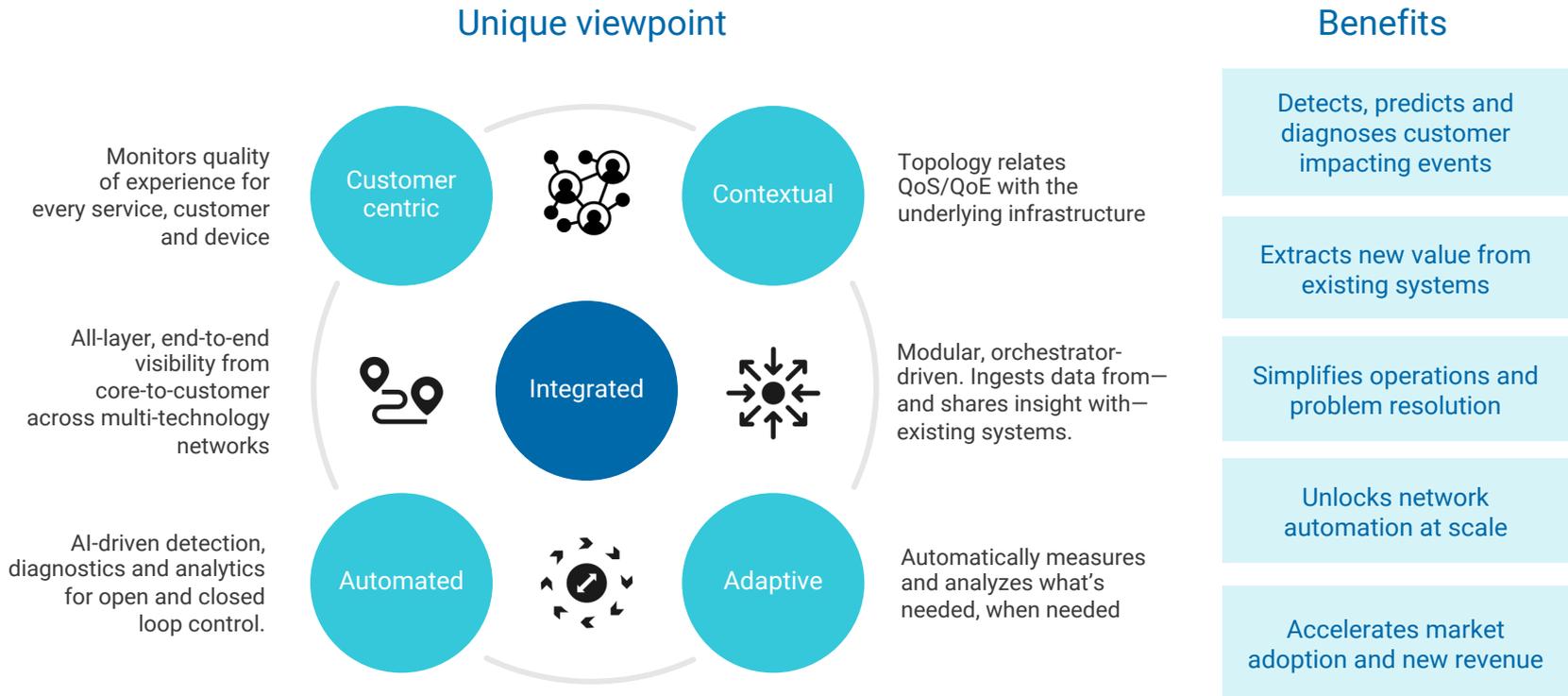
Service providers use the Nova platform to overcome operational challenges, advance automated cloud-native networks, accelerate new revenue and deliver a differentiated customer experience.

Modular solution components integrate with existing systems to provide real-time, prescriptive insight that breaks down siloes to get things done—simply and efficiently.

NOVA platform		Solutions and components*					
							
		SensAI	Core	RAN	Active	Fiber	Context
<b>Network performance</b>	Assure and optimize networks to enhance customer experience with an integrated view of network and service performance.	●			●	●	●
<b>Service quality</b>	Ensure every user and device gets the experience they need with an integrated view of application, network and infrastructure performance.	●	●	●	●		●
<b>5G and mobile</b>	Accelerate the deployment of 5G. Monitor and optimize 3G/4G/5G networks and services from core to RAN to customer.	●	●	●			
<b>Automated assurance</b>	Adaptive, automated insight for orchestrated networks with fast AI-driven problem detection and diagnostics for closed-loop control.	●	●	●	●	●	●
<b>Fiber monitoring</b>	Deploy, optimize, maintain fiber networks for 5G, enterprise and residential services with continuous physical layer monitoring and analytics.	●				●	
<b>OTT QoE</b>	Deliver exceptional quality of experience to differentiate and drive loyalty with network-aware OTT video and application monitoring.	●	●		●		

The Nova platform also assures the adoption of MEC, slices, private networks, and O-RAN.

# NOVA adaptive service assurance



<h2 style="margin: 0;">260</h2> <p style="margin: 0;">Service assurance platforms deployed globally</p>	<h2 style="margin: 0;">5,000</h2> <p style="margin: 0;">Pro-services projects completed over 10 years</p>	<h2 style="margin: 0;">1<sup>st</sup> in growth</h2> <p style="margin: 0;">Fastest growing service assurance vendor in 2020<sup>1</sup></p>
---	---	---



Proven expertise

1. Analysys Mason: Automated Assurance market report, 2021. EXFO Nova ranked #2 globally while growing 25% faster than the leading vendor

## Glossary

AI	artificial intelligence	NFV	network function virtualization
AMPU	average margin per user	NFVI	network function virtualization infrastructure
API	application programming interface	NPS	net promoter score
CNF	containerized network function	OTT	over the top
CSP	communications service providers	PNF	physical network function
eMBB	enhanced mobile broadband communications	QoE	quality of experience
IoT	Internet of Things	QoS	quality of service
LLC	low latency communications	SLA	service level agreement
LTE	long term evolution (4G)	SP	service provider
M2M	machine to machine	UR	ultra reliable
MEC	mobile edge compute	VNF	virtualized network function
ML	machine learning	VoIP	Voice over IP
mMTC	massive machine type communications	VoLTE	Voice over LTE



## EXFO corporate headquarters

---

400 Godin Avenue, Quebec City (Quebec) G1M 2K2 CANADA  
T +1 418 683-0211

---

Toll-free (USA and Canada)  
**1 800 663-3936**

[info@EXFO.com](mailto:info@EXFO.com)  
**EXFO.com**



**EXFO**

© 2021 EXFO Inc. All copyright and/or trademarks or service marks are the property of their respective owners. EXFO's copyright and/or trademarks or service marks have been identified as such. However, the absence of such identification does not constitute a waiver of EXFO's rights and does not affect the legal status of any intellectual property.