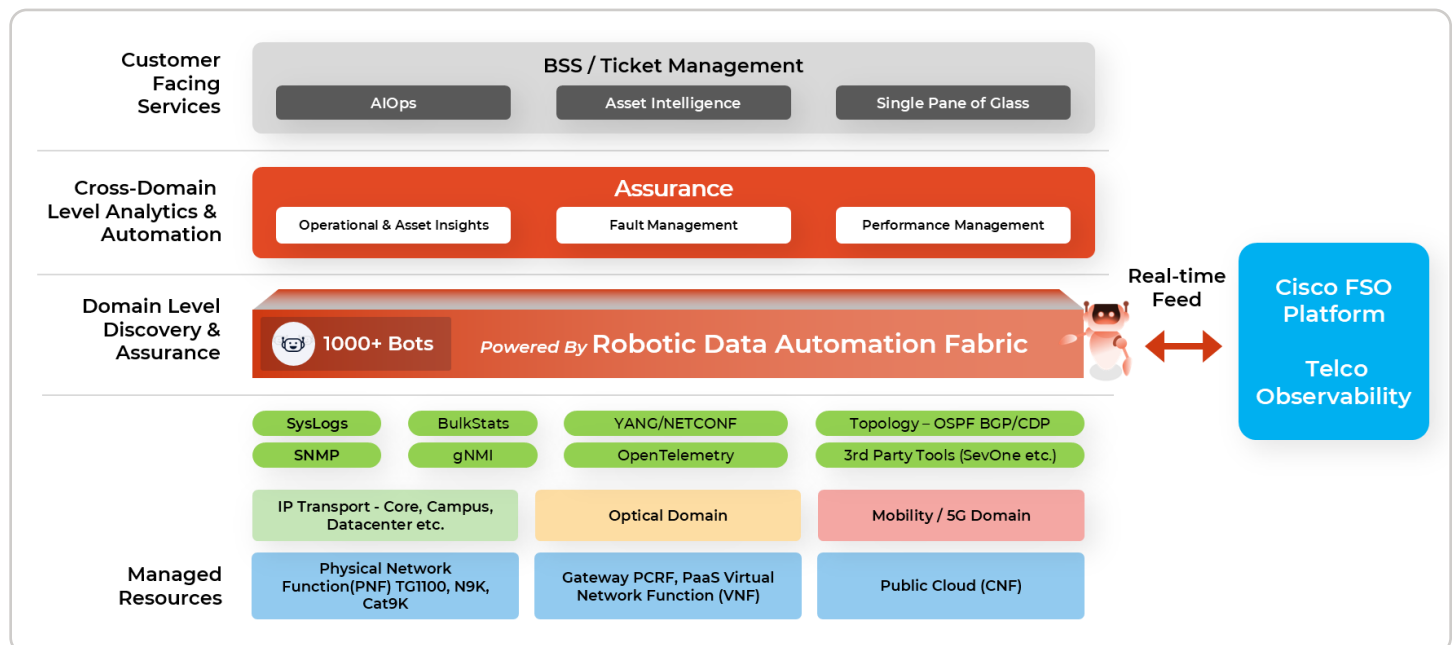# Modern Data-Driven
Telco Service Assurance

Digital-First Telcos are striving for service assurance, which has become the lifeblood for their business processes. But they are increasingly getting complex across legacy and cloud-native applications, multi-cloud distributed services, with the rise of edge and when leveraged with Kubernetes and microservices architectures. Service assurance needs full-stack observability; however, customers need an approach to tame the data deluge while enabling actionable insights. Full stack Observability is paramount to contextualize, automation, scale and nstantly remediate the root cause while delivering business outcomes.
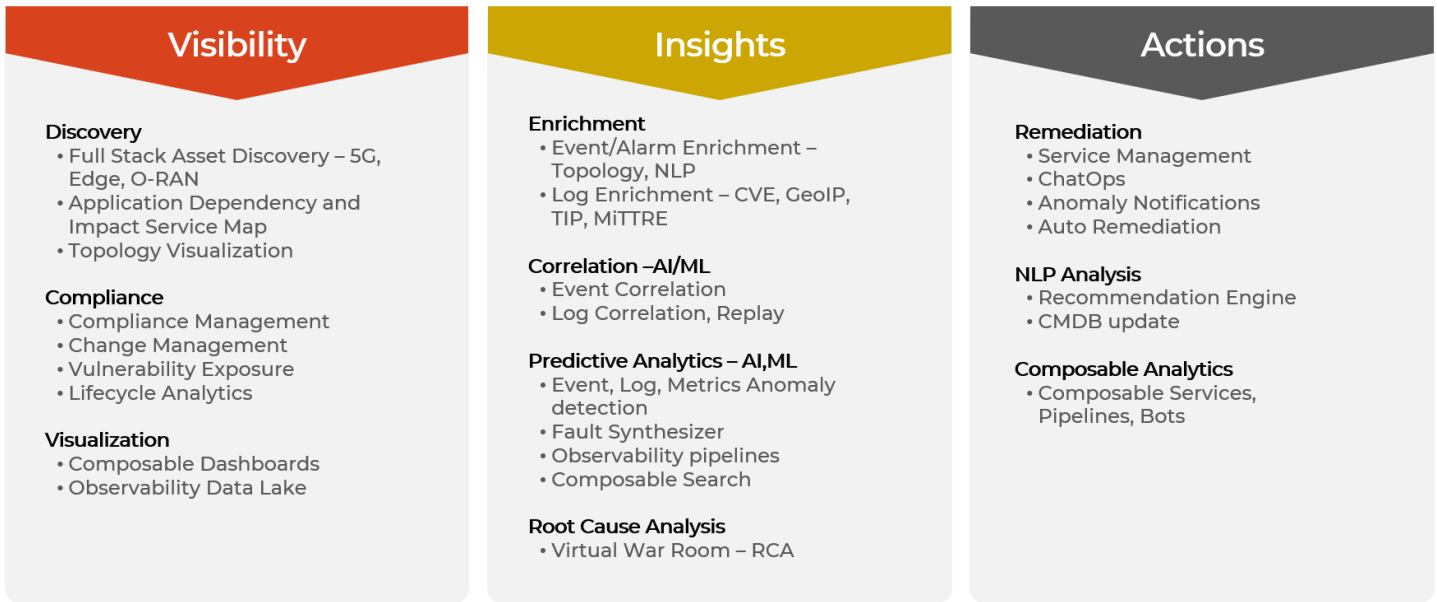
Challenges

Modern Telco deployments are complex and need the service assurance solution to support many new requirements

- Support for multiple domains e.g. DC/Campus/ Cloud, Mobility, Optical, 5G, IP Transport, etc.
- Siloed tools, future-proofing, and support for new data types
- Support for build & run use cases – transformation & operations (FM, PM, etc.)

- Persona-based Single Pane of Glass across Domains
- Intelligent Analytics & Automated close loop automation for operational efficiencies
- Deployment flexibility – On-premises, Hybrid, or Cloud Native
- Multi-Vendor and Multi-cloud support

Solution - Telco Service Assurance Reference Architecture

Solution

Visibility	Insights	Actions

Visibility

Discovery
- Full Stack Asset Discovery – 5G, Edge, O-RAN
- Application Dependency and Impact Service Map
- Topology Visualization

Compliance
- Compliance Management
- Change Management
- Vulnerability Exposure
- Lifecycle Analytics

Visualization
- Composable Dashboards
- Observability Data Lake

Insights

Enrichment
- Event/Alarm Enrichment – Topology, NLP
- Log Enrichment – CVE, GeoIP, TIP, MiTTRE

Correlation –AI/ML
- Event Correlation
- Log Correlation, Replay

Predictive Analytics – AI,ML
- Event, Log, Metrics Anomaly detection
- Fault Synthesizer
- Observability pipelines
- Composable Search

Root Cause Analysis
- Virtual War Room – RCA

Actions

Remediation
- Service Management
- ChatOps
- Anomaly Notifications
- Auto Remediation

NLP Analysis
- Recommendation Engine
- CMDB update

Composable Analytics
- Composable Services, Pipelines, Bots

Use Cases

Entire Tier1 Telco IT Network Infrastructure

- ▸ Alert Noise Reduction
- ▸ Incident Automation
- ▸ Performance Assurance
- ▸ Predictive Analytics
- ▸ Unified Visibility

Optical Transport Network

- ▸ Alert Noise Reduction
- ▸ Incident Automation
- ▸ Performance Assurance
- ▸ Predictive Analytics
- ▸ Unified Visibility

Bulkstats based Data Ingestion

- ▸ Performance Assurance
- ▸ Predictive Analytics

GNMI based Performance Management

- ▸ Performance Assurance
- ▸ Predictive Analytics

Replacement of Legacy Performance Mgmt. Tool

- ▸ Performance Assurance
- ▸ Predictive Analytics

Value Proposition

Fault Management

- ▸ Multi-layer visibility and monitoring
- ▸ Closed-loop automation, Root Cause Analysis
- ▸ Prioritized service impact. Supress extraneous alarms

Performance Management

- ▸ Real-time performance metrics and machine-learning baselining
- ▸ Anomaly and performance degradation detection
- ▸ Optimize resources and workloads

Automated Root-cause & Service Impact

- ▸ Correlate services impact and isolate the underlying infrastructure problem
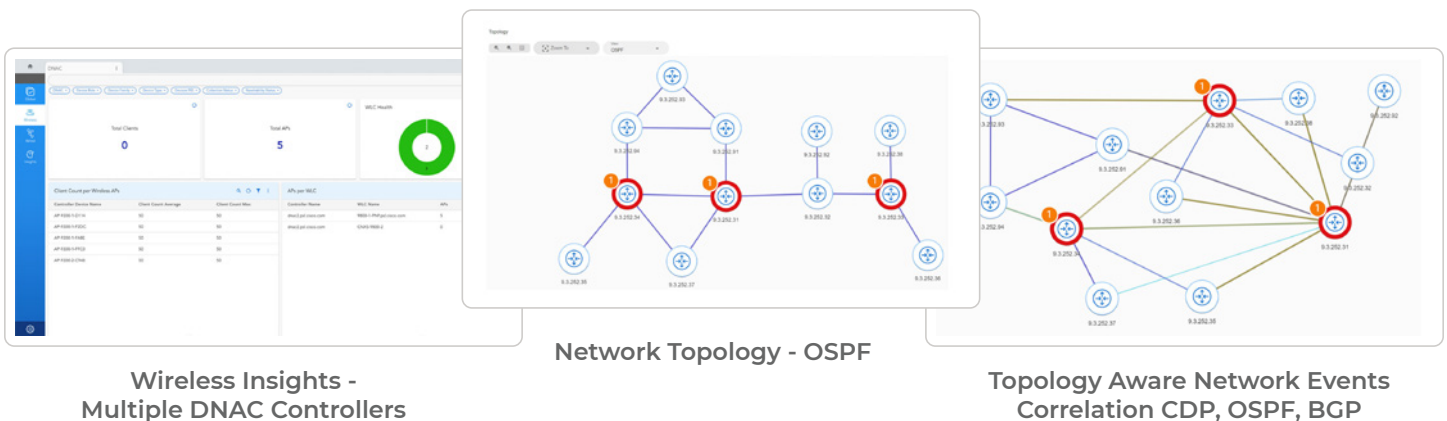- ▸ Automatically suppress extraneous alarms

Composable Analytics

- ▸ Abilit to ingest disparate data sources like SNMP traps, Syslog, GnMI, Bulkstats
- ▸ Automatically determine baselines and detect anomalies. ML-based analytics for deep actionable insights

Single Pane of Glass, Composable Dashboards

- ▸ Rapid development of dashoards and reports to visaulize data collected from all required sources (e.g. devices and controllers

Reliability, Availability and Scalability

- ▸ Active-active solution
- ▸ Ability to ingest millions of metrics
- ▸ Multi-tenant, microservices based architecture for on-premises, hybrid and cloud deployments

Wireless Insights -
Multiple DNAC Controllers

Network Topology - OSPF

Topology Aware Network Events
Correlation CDP, OSPF, BGP

For more information visit:
https://www.cloudfabrix.com

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