

GO BEYOND

Assurance pour des services réseau résilients

Provider Connectivity Assurance (PCA)

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Track4/BK3

Portfolio innovations to power AI connectivity



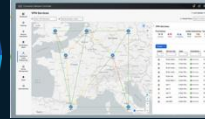
Routing infrastructure

1



IP / optical convergence

2



Network programmability

3



Observability and insight

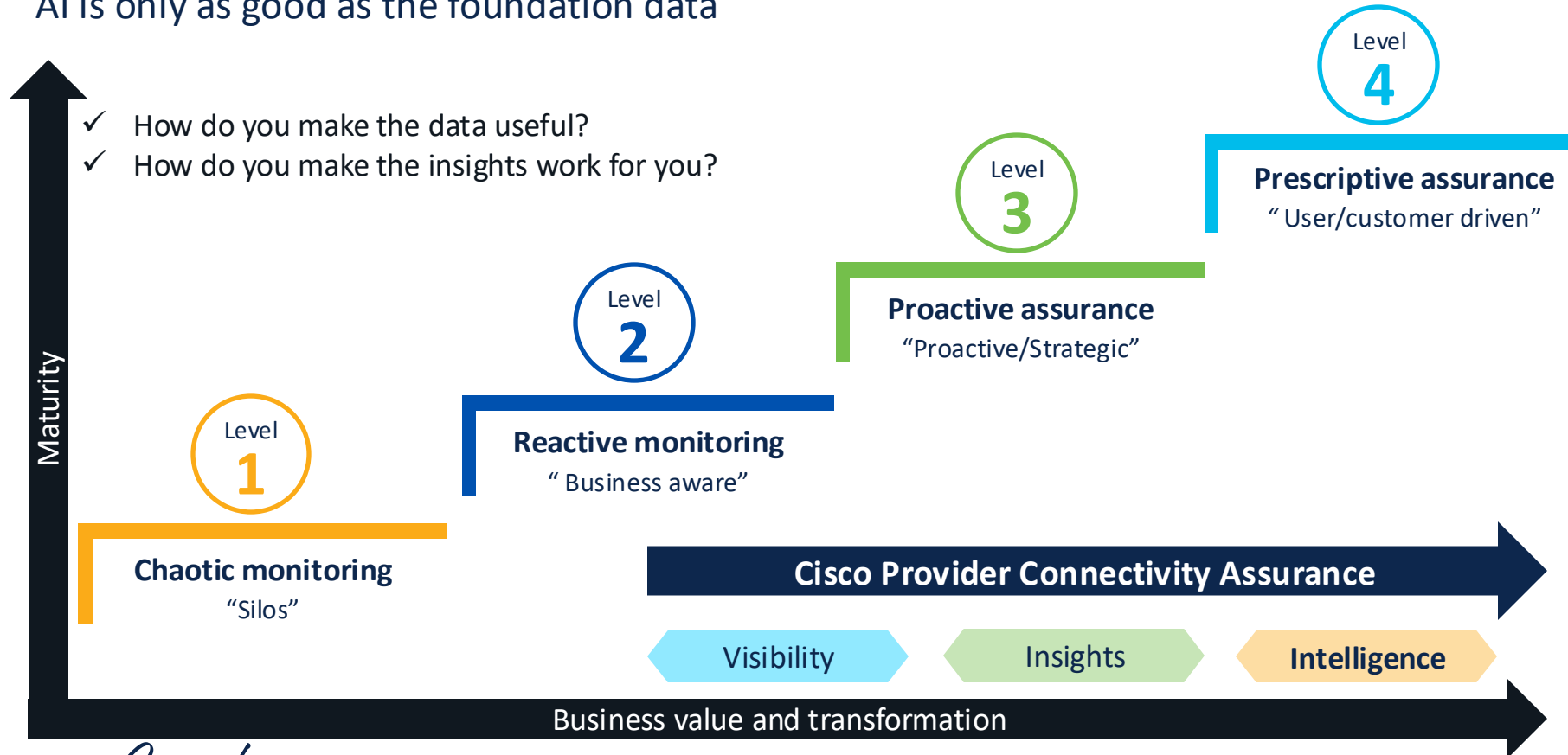
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Cisco Provider Connectivity Assurance
(PCA)

Real time visibility and insights for proactive
and predictive experience assurance

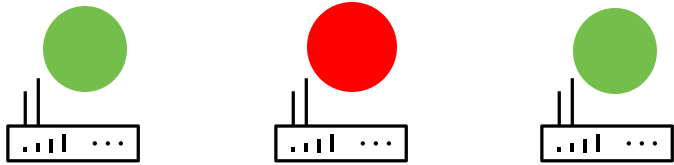
It's a journey to predictive assurance

AI is only as good as the foundation data



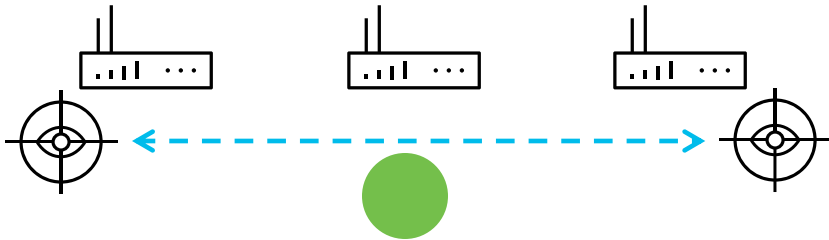
Service-centric assurance and visibility

Device-centric



You don't know if your customers/users or your network services are impacted

Service-centric



You'll know if network services are OK

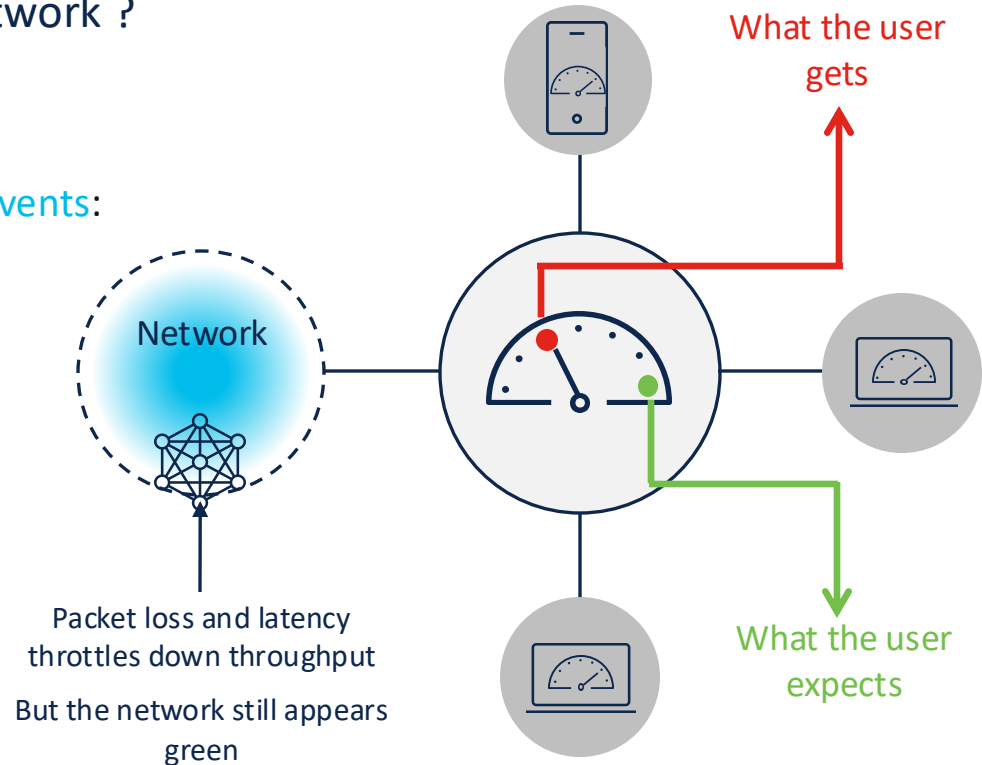
If not, you'll know impact and magnitude: what and where

Most network assurance tools are ineffective

My applications have issues ? Is the network ?

Without deep visibility into network **micro events**:

- 0.53% **packet loss** → 50% decrease in data throughput*
- 5 msec **delay** → 10% decrease in data throughput*
- 10 msec **jitter** → 10% decrease in data throughput*

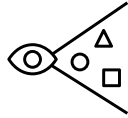
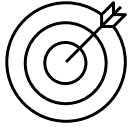


*Source: Tier 1 SP customer analysis

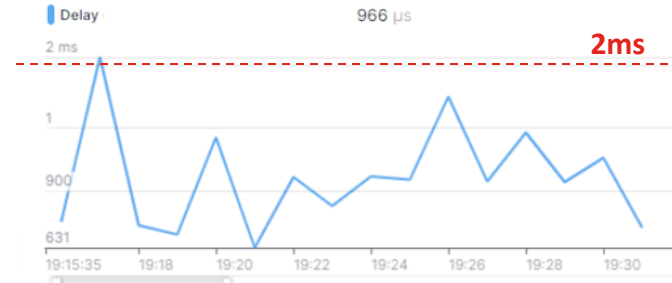
The right tool for the right job

Reliable data = Insightful outcomes

Accuracy and Granularity



Perception



Reality



User is impacted!
SLA is breached

Cisco Provider Connectivity Assurance (PCA)

Service
providers

Domain-specific

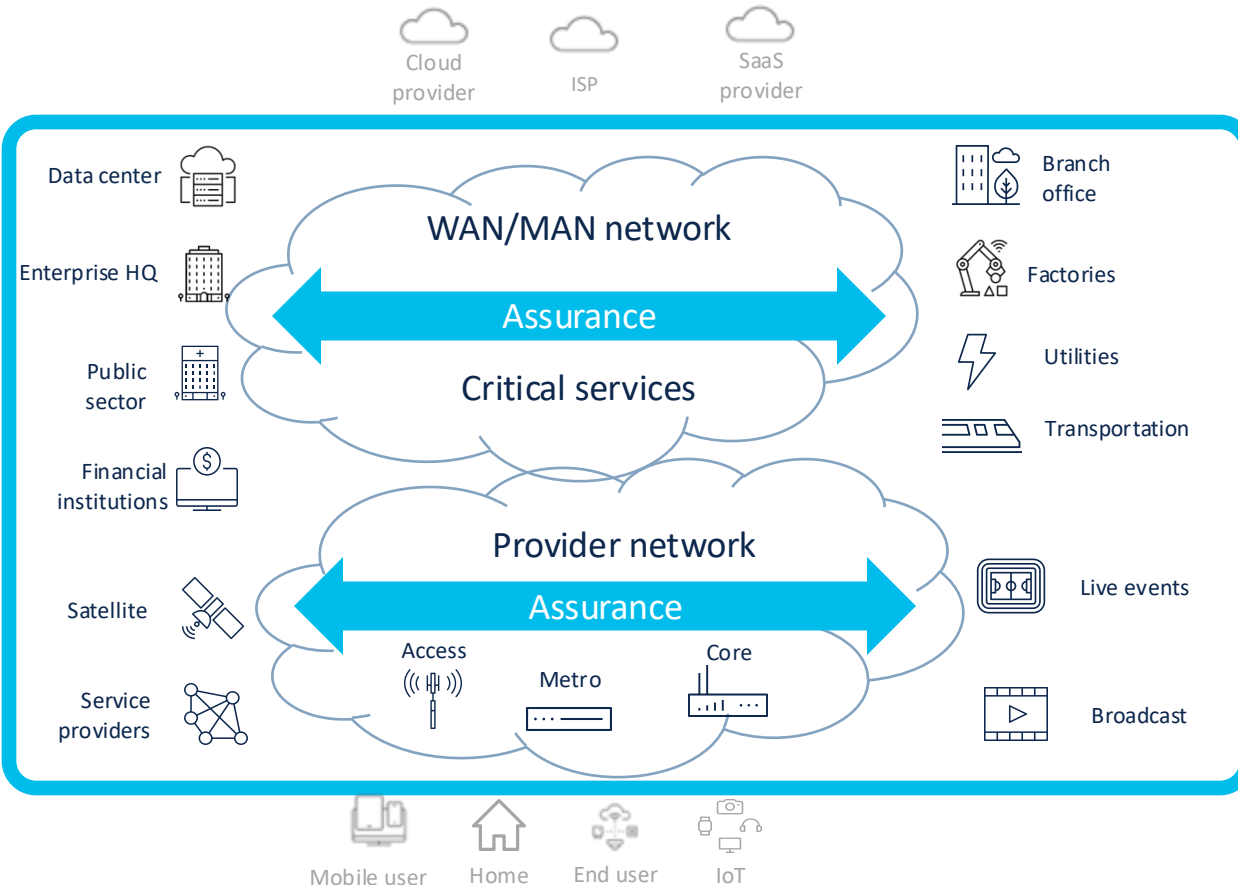


Deep network service insights for
network infrastructure

Enterprises
Critical network
infrastructure

Any network that needs service assurance

PCA domains



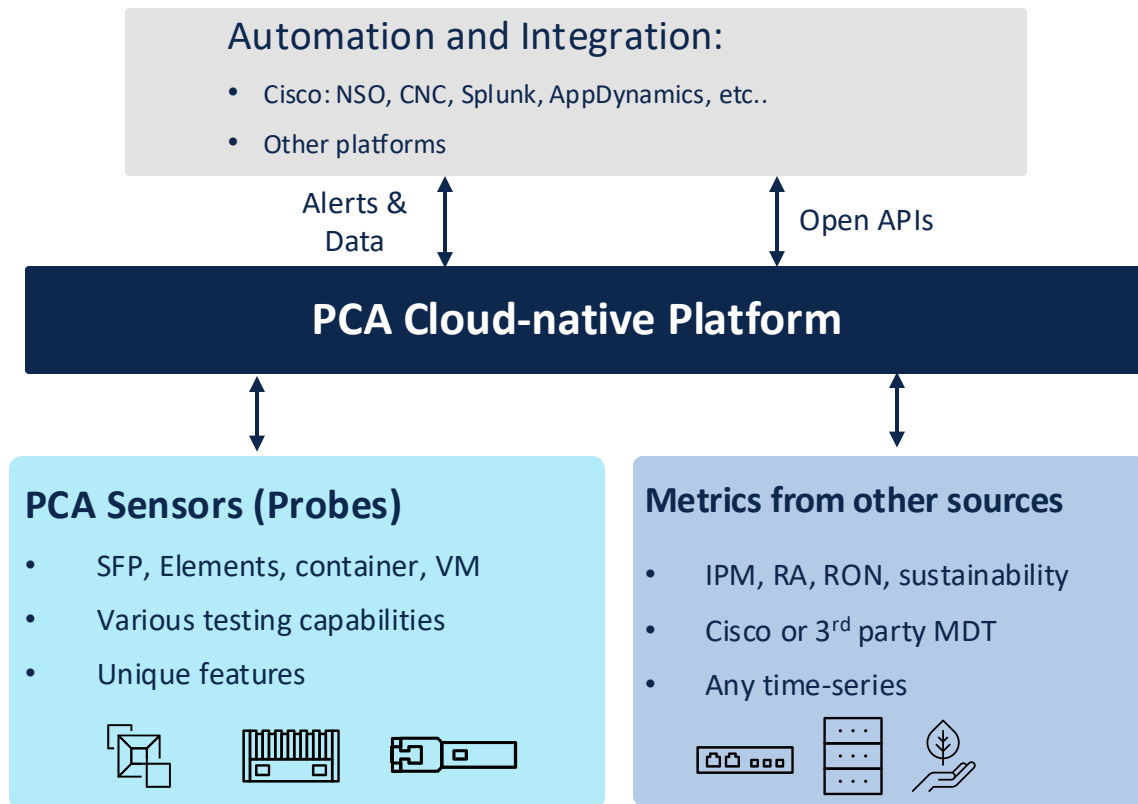
Critical networks:

- Factories, utilities, transportation
- Public sector
- Financial institutions
- Data Center Interconnect
- Enterprise to branch offices

Service providers:

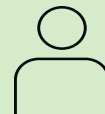
- Mobile/Access to core
- B2B and wholesale
- Satellite
- Live events and broadcast

Provider Connectivity Assurance Overview



PCA Analytics capabilities:

- Multi-tenant & RBAC
- Fully customizable
- Schema-less metadata
- Fully customizable
- Multi-personas
- Flexible deployment



PCA for service-centric visibility and insights

Visibility: Building the foundation

High-quality measurements

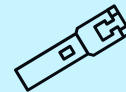
- Continuous and real-time
- Standards based
- Accurate microevents detection:
 - Sub-second granularity
 - μ Sec precision
- 50+ KPIs
- 1-way metrics
- Real path

Focus:

- Any flow, any segment
- Any vendor
- Any environment
- Any time-series data ingestion



PCA Sensors



PCA for service-centric visibility and insights

Insights: Making the data useful

Contextual assurance analytics

- Enrich for meaningful outcomes
- Visualize and report
- Multi-persona and end-customers

Proactive operations

- Detect abnormal conditions
- Context-rich alerting

Mitigate and remediate:

- Correlate, localize and diagnose
- Take corrective actions

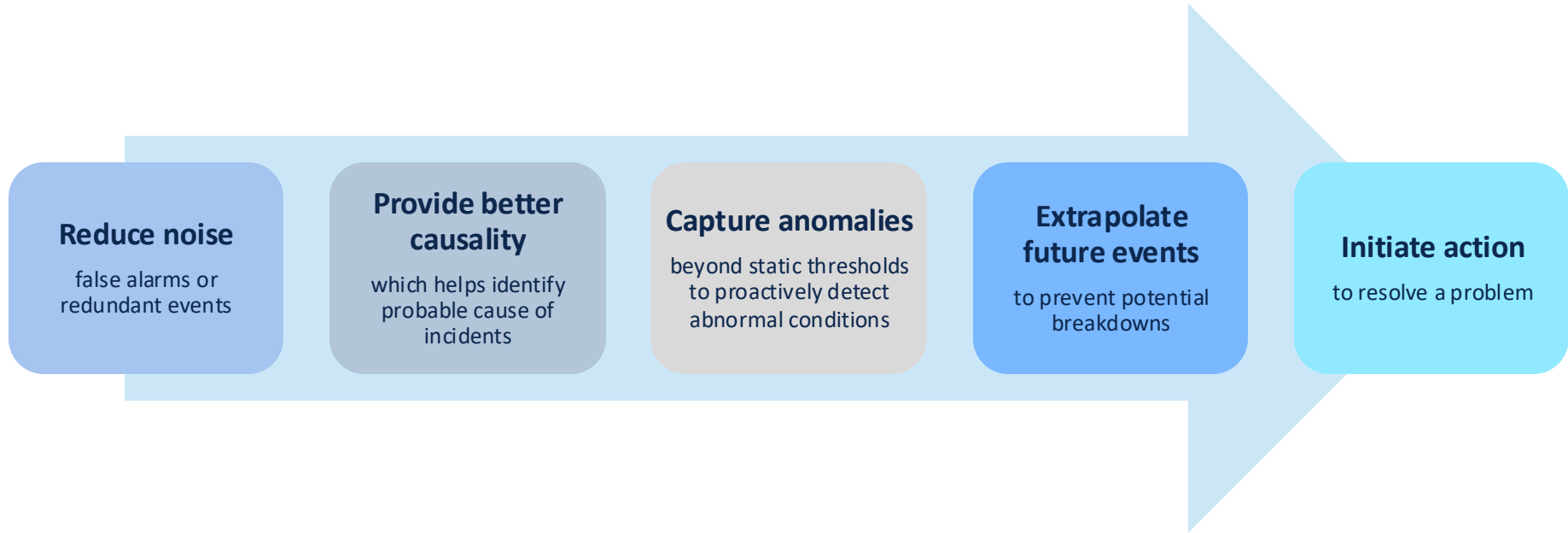
Predict and optimize:

- Extrapolate future events
- Automate workflows

Analytics: AI-driven Intelligence



AI-native advanced analytics



Provider Connectivity Assurance (PCA) is built on a big data stack allowing it to leverage machine learning to enrich our customer's end-user's experience

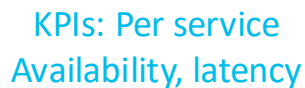
See, understand, and improve your network

- Network-wide and end-to-end service visualization
- Granular, Real-time metrics
- Multisource data ingestion
- Correlate performance across layers
- AI-enabled, rapid anomaly detection and predictive forecasts



Examples

Ultra-High Reliability and Ultra-low latency requirements



1. Scada: Critical traffic
2. Goose: Latency < 5ms
3. Teleprotection: Critical traffic, low latency

Key Capabilities: SFP Sensor Probes:

- Precision and accuracy of HW with flexibility of deployment
- Detection of latency and packet loss micro-events
- Assurance of L2 and L3 services

PCA Assurance for Utilities

Ultra-High Reliability and Ultra-low latency requirements



Overview per Service									
service	source	target	Packet loss %	Packet lo...	Delay (p95)	Delay (p95)	Jitter p95	Jitter p95	
			ALL SD AVG	ALL SD AVG	ALL SD AVG	ALL SD AVG	ALL SD AVG	ALL SD AVG	
scada	control center	substation-1	0%		1.31 ms		1.22 ms		
scada	control center	substation	0%		1.21 ms		1.18 ms		
goose	substation-1	substation-2	0%		15.9 μs		2.36 μs		

European Car Manufacturer - Smart connected Factory



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- Minimize factory shutdowns due to connectivity degradation
- Correlate OT/IT performance enabling team collaboration

- Granular resolution, μ S precision, proactive visibility across network
- Ingest, process and correlate IT and OT KPIs
- Baseline, alert, predict, automate

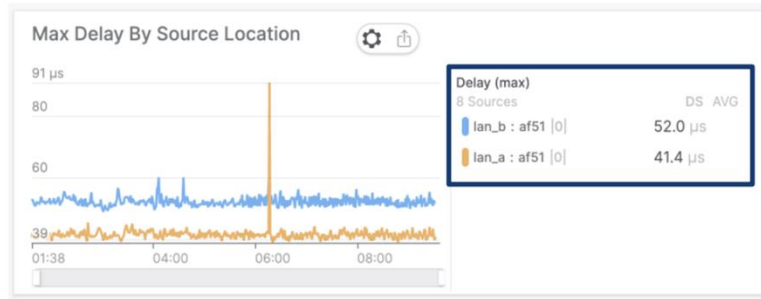
Cost of unplanned downtime in automotive industry is
\$2.3 million per hour*

PCA Assurance for Manufacturing

European Car Manufacturer - Smart connected Factory



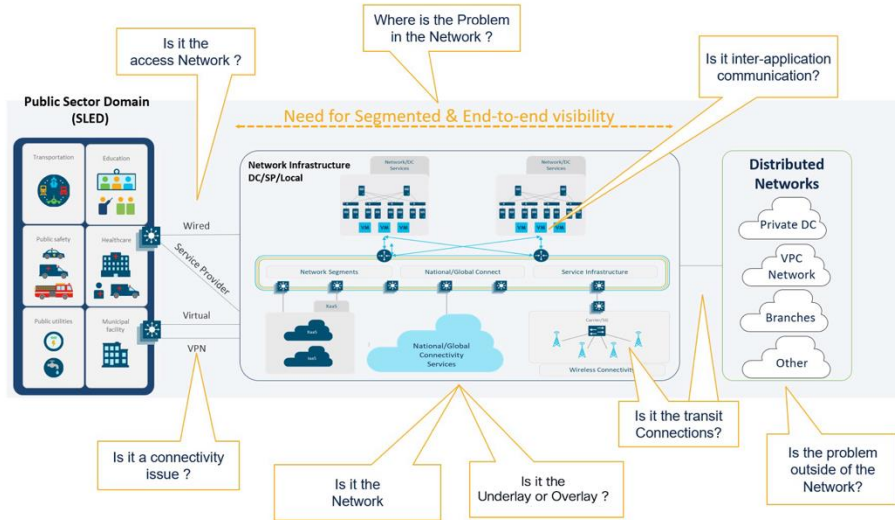
Accuracy: Ability to measure micro-second latency



Detection of short-lived spikes that could have an impact!



PCA Assurance for Public Sector



Transportation, Education, Public Safety, Healthcare,
Critical infrastructure.....

PCA Assurance Value:

- Ensuring high availability, low latency and meeting government SLAs is critical for public sector networks providing connectivity
- Resilient & predictable networks

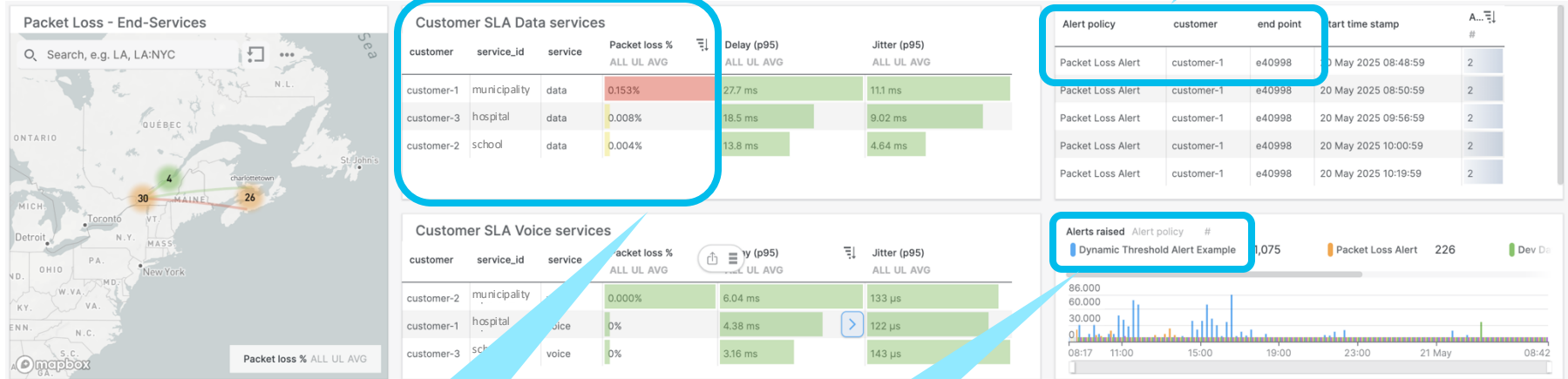
Key PCA Capabilities:

- SLA proof and validation
- Customer portal: internal/external real-time reporting
- Flexible deployment options:
 - HW/SW Probes and multi-vendor standard “reflectors”
 - Cloud, on-prem, air-gap

PCA Assurance for Public Sector

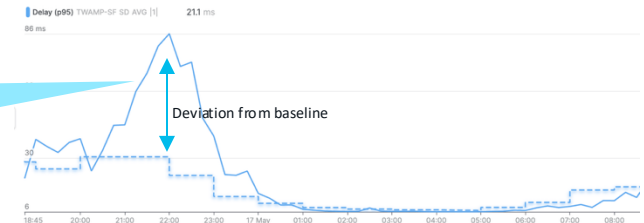
SLA validation

Alerts with context



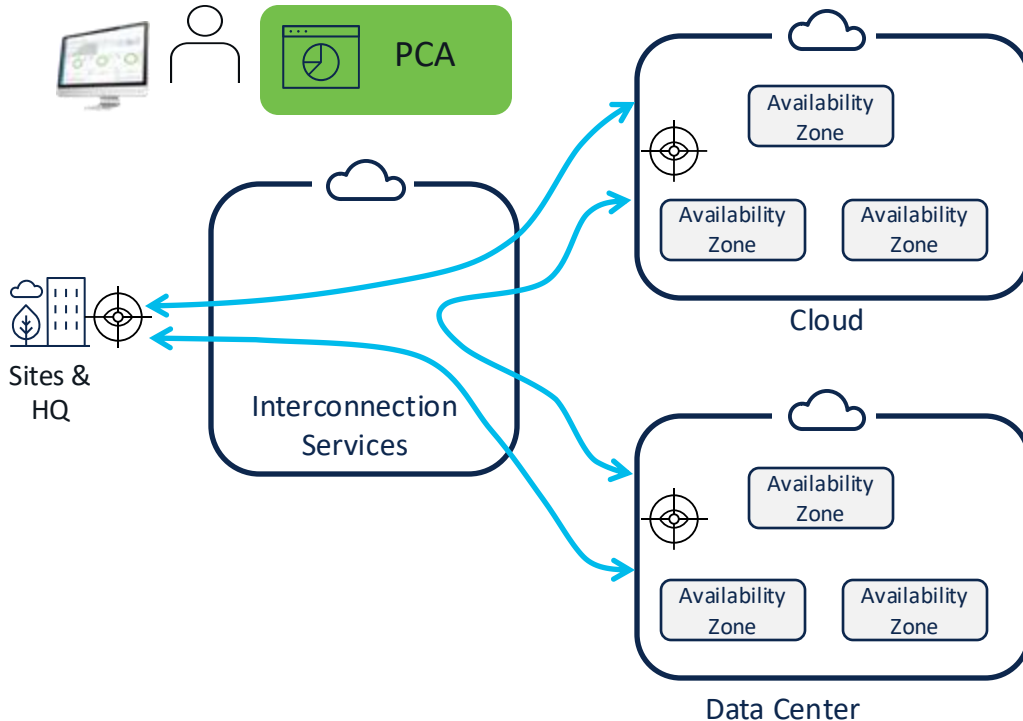
SLA's

Dynamic Thresholds:
Deviation from baseline



PCA Assurance for Financial Institutions

Critical WAN and multi-cloud assurance



Key drivers:

- IT connectivity must always be reliable and available
- Minimize latency and accelerate performance and throughput

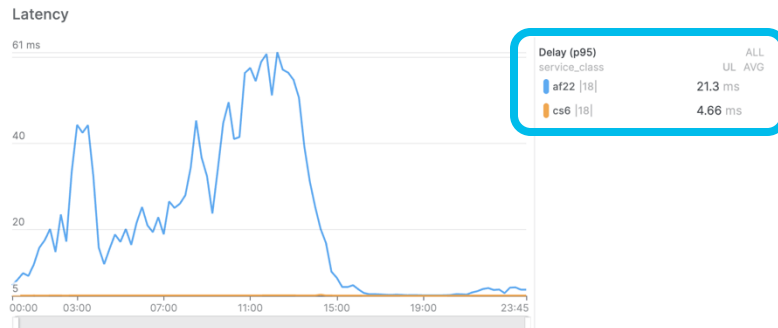
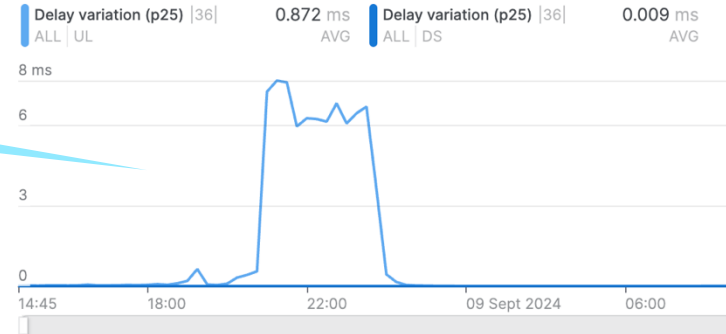
PCA Key capabilities and value:

- Granular and accurate visibility for latency sensitive and critical connectivity
- Proactive detection of micro-events affecting throughput
- Multi-domain visibility across Cloud, Data Center and sites

PCA Assurance for Financial Institutions

Is my network getting congested ?

Congestion Indication

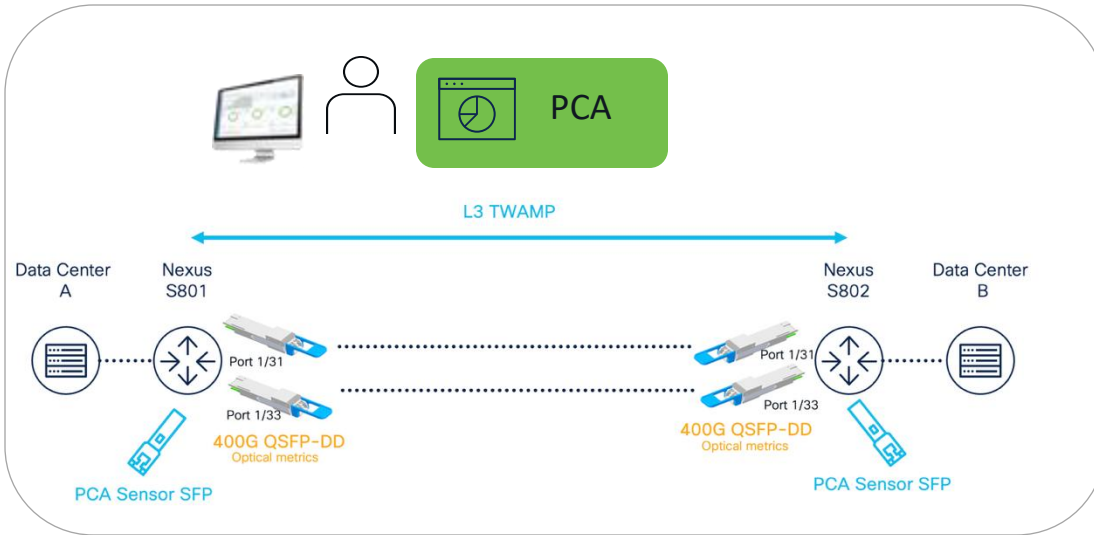


Is the priority traffic respected in case of issues?

PCA Assurance for Data Center Interconnect

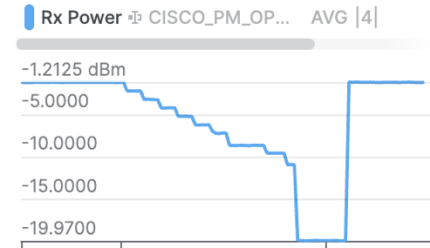
Correlate L3 service assurance with Cisco Coherent Pluggable Optics

Ingestion and correlation of optical metrics with L3 network transport metrics



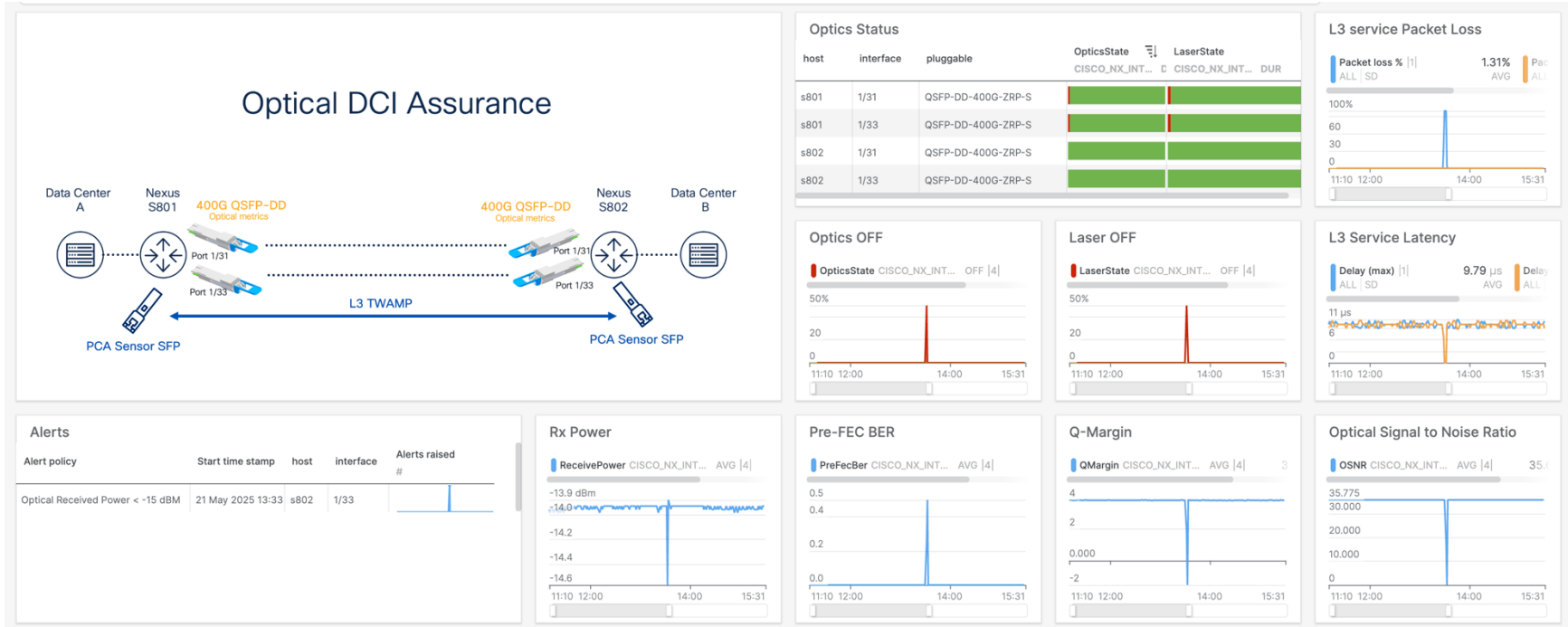
Detection of degraded conditions and alerting

Rx Power



PCA Assurance for Data Center Interconnect

Correlate L3 service assurance with Cisco Coherent Pluggable Optics

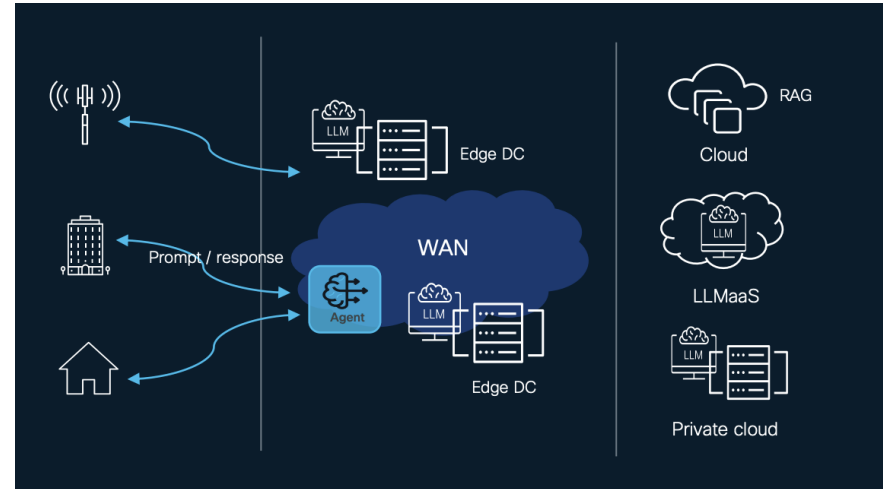


Assess the network for AI-readiness

AI is only as good as the network that supports it

- High Bandwidth needs
 - I.e: AI Inference/training generates significant traffic between DC across the WAN
- Low latency:
 - AI assistants are chatty, interactive – every 300msec increase leads to 30% drop engagements
- High resiliency:
 - Failures/error rate impacts significantly real-time, interactive experience

AI inference @edge, RAG, AI agents, AI assistants



Learn more at Cisco Live
Session: AIHUB-2013



Learn more about PCA

Proactive assurance
drives service quality



Outstanding user experiences



Differentiated services





Thank you

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