SITA Connected ATM

- ICAO APAC Workshop on ATN Service

Speaker

Sarabjot Singh
Business Development Manager

SITA

For nearly 75 years, we've been a core part of the air transport community

Air Navigation Service Providers rely on our solutions and expertise to ensure safe, efficient operations, while SITA technology enables smoother, safer travel at every stage in line with evolving passenger expectations.

Our strategy and innovations are grounded in real industry needs, shaping the next generation of IT and communication solutions for air transport.

SITA

#80+

ANSPs use our services

#400+

Airlines use our AIRCOM® services

#150+

Countries connected by our VHF & VDL network

#2500+

Managed radios network

#1000+

Connected airports

#4500+

Employees worldwide

Our skies are busier than ever

Rapid traffic growth increasing ATM demand

Infrastructure must scale securely and reliably

Digital ATM services now essential to operations

More Airspace Users

IATA forecast nearly

40M flights

in 2025

Year on Year growth +4.6%

Passengers expected to reach

5.2B

in 2025

Year on Year growth +6%

Enabling ATC Communications

Connected ATM

The operational ecosystem for modern and safe air traffic communications

Infrastructure:

VDLm2 | ATC Network | ATN Backbone SATCOM

Operational Enablers:

CPDLC | DCL | D-ATIS | D-VOLMET | ADS-C | FANS | OCL | AIRCOMCats | DL-FEP

Customer Support:

MyFleet

A resilient, global communication backbone for ATM

01

Continuous aircraft ground connectivity

A reliable foundation for high-capacity, predictable connectivity across dense airspace.

02

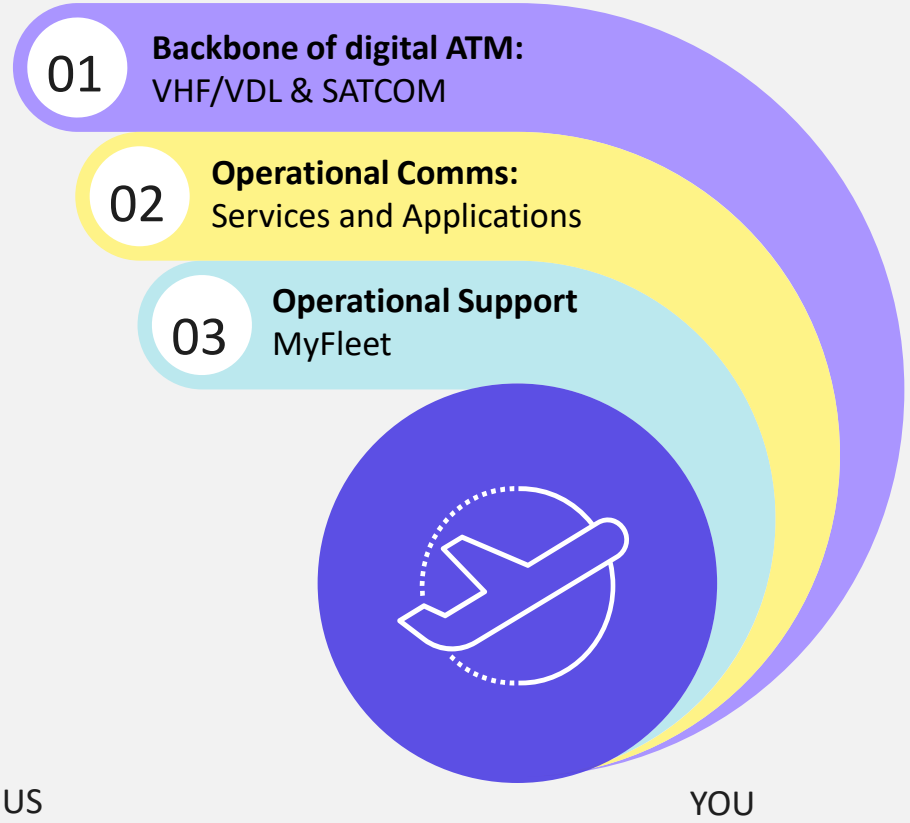
Standards based comms

Services for precise and standardized exchanges for safer and more efficient airspace management.

03

Customer Support

Clear visibility of network performance date for reliable, compliant, day-to-day ATM operations.



ATC Network

Global reach and exceptional performance for reliable and efficient connectivity worldwide.

Global Connectivity

Streamlined global connectivity with 24/7 customer support & advanced monitoring.

Innovation & Expertise

Cutting-edge innovation, expert engineering & ITIL-Compliant Processes.

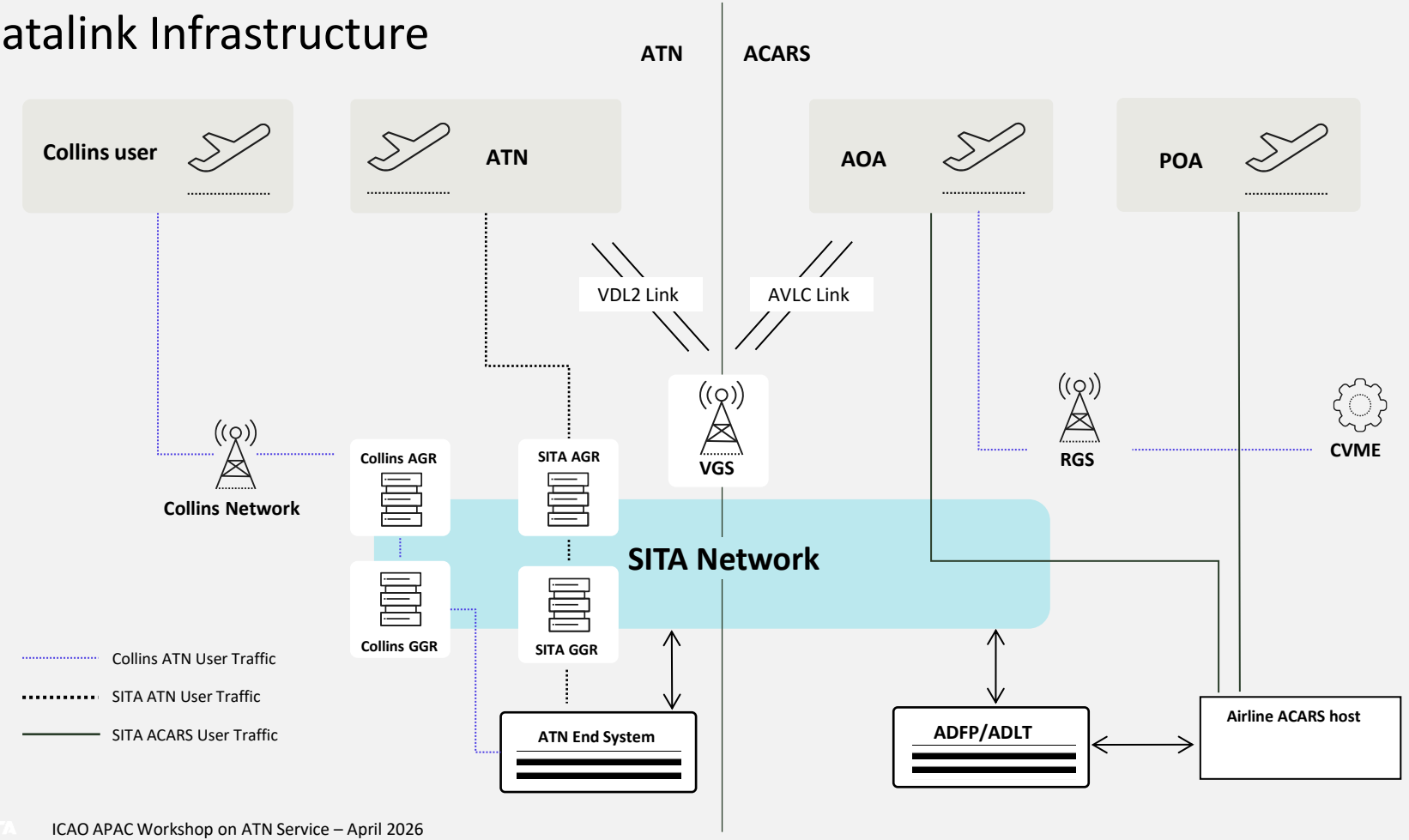
Enhance Safety

Optimized efficiency, global continuity, and proactive monitoring.

Secure & real-time communications

Supports multiple technology and connectivity options.

Datalink Infrastructure



AIRCOM® ATN Services

Optimizing communication with ATN services for enhanced Datalink compliance

Increased Capacity

CPDLC over ATN leads unprecedented levels of automation and a significant increase in airspace capacity.

Route Optimizatio

Enabler of Trajectory-Based Operations, leading to considerable fuel savings for air space users.

Reduced Workloa

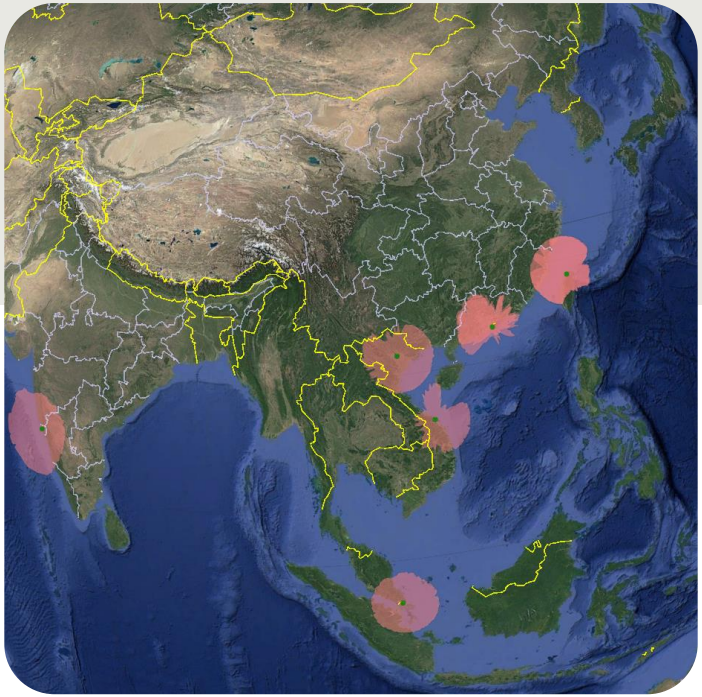
By providing better situational awareness and time management.

Efficient bit-oriented protocols

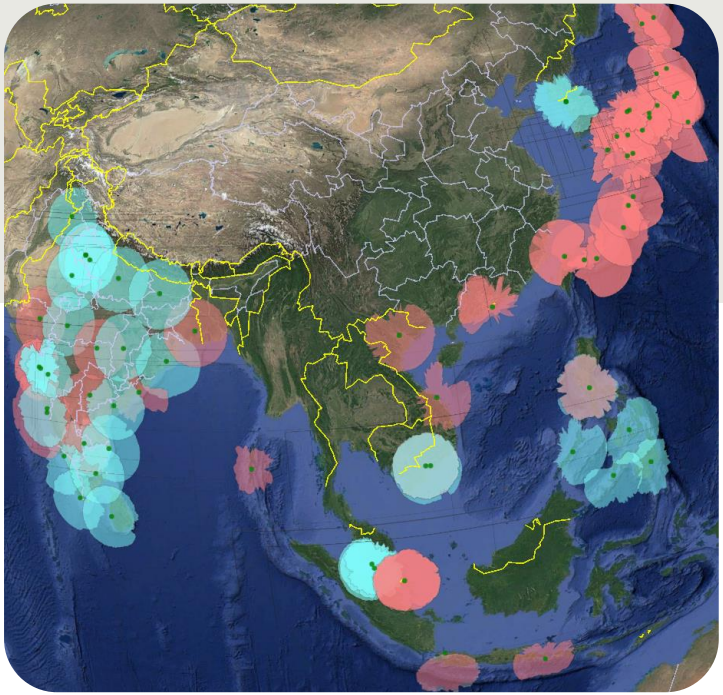
Superior to ACARS, enabling smooth CPDLC message exchanges in busy airspaces.

Global VDLm2 coverage regardless of national boundaries

2019



2026



- We provide global **VDLm2 air-ground** datalink services
- Our **SATCOM** datalink services (Inmarsat and Iridium) extend coverage to oceanic and polar regions.

- **Red**: online stations
- **Blue:** planned stations

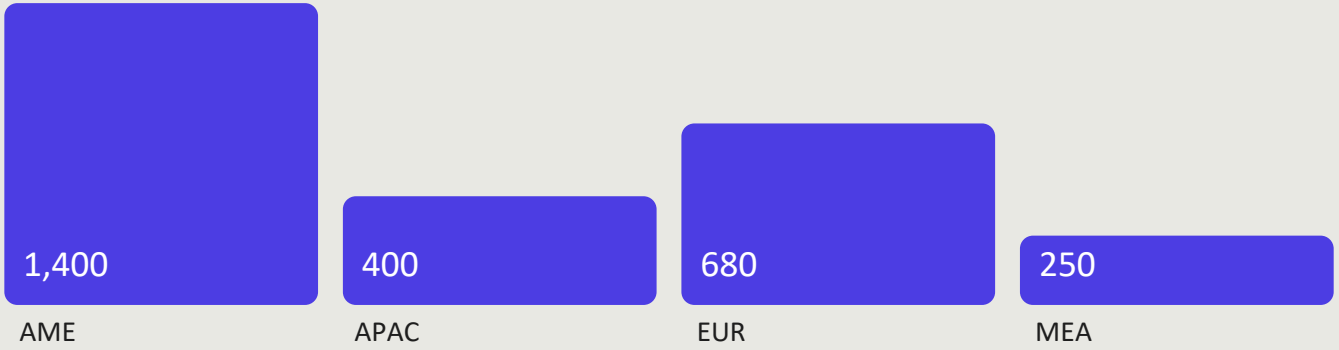
VHF/VDL Stations and expansion plans

...and many more on the way

Today

~2,700

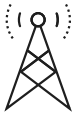
stations worldwide

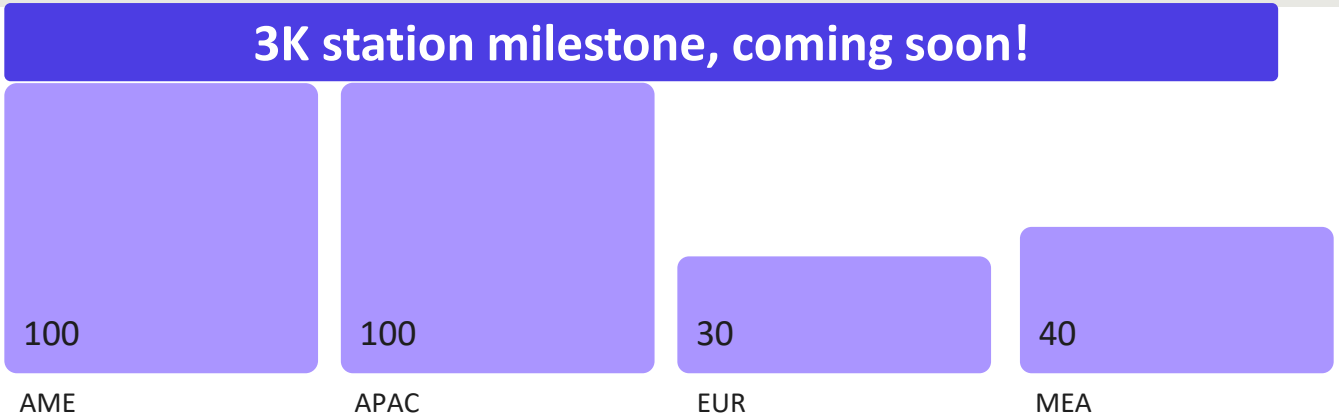


In active progress

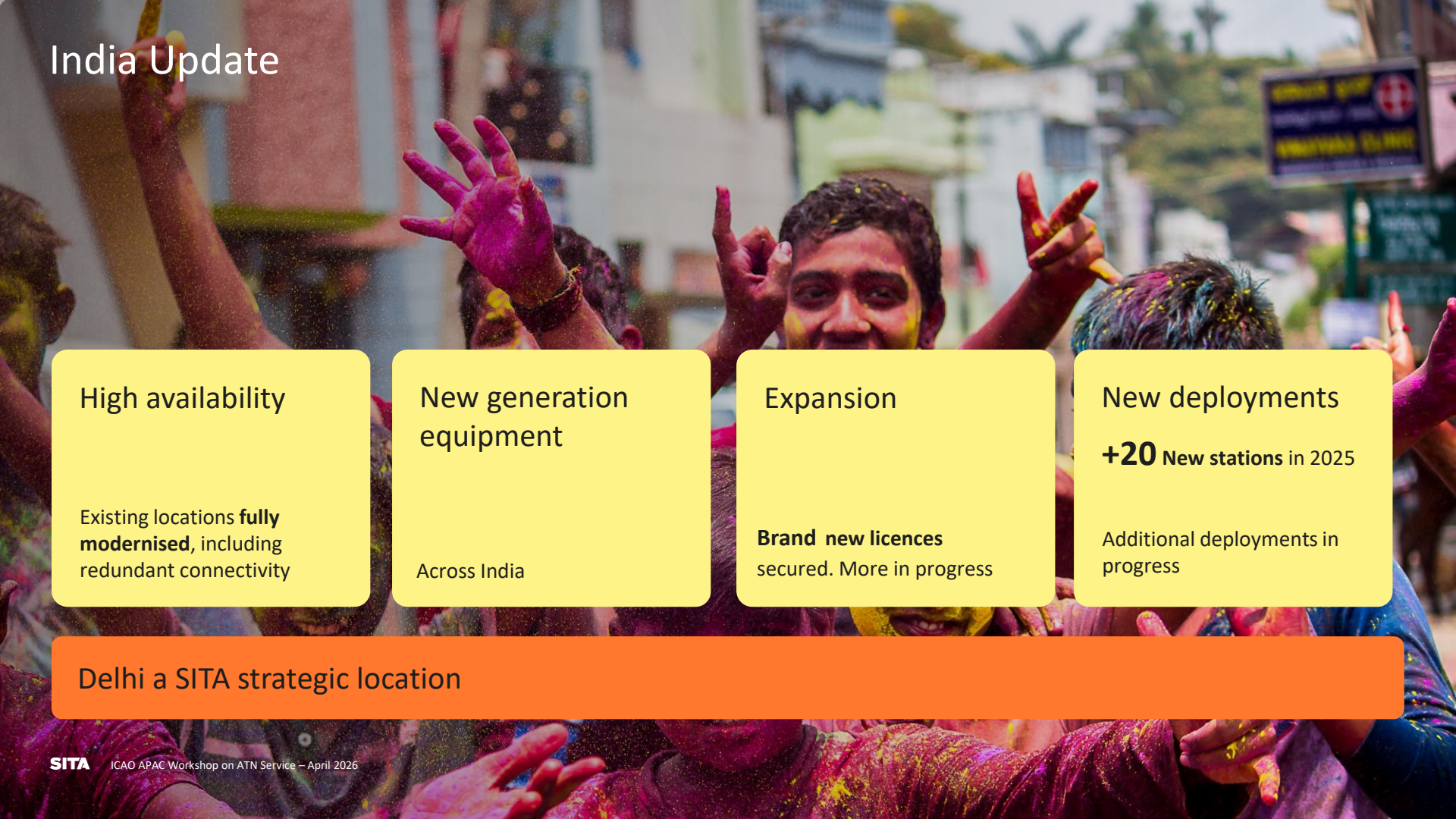
270+

stations worldwide





India Update



High availability

Existing locations **fully modernised**, including redundant connectivity

New generation equipment

Across India

Expansion

Brand new licences secured. More in progress

New deployments

+20 New stations in 2025

Additional deployments in progress

Delhi a SITA strategic location

Japan Update

+200

new generation radios, in operation

+60

locations across Japan

Best in class

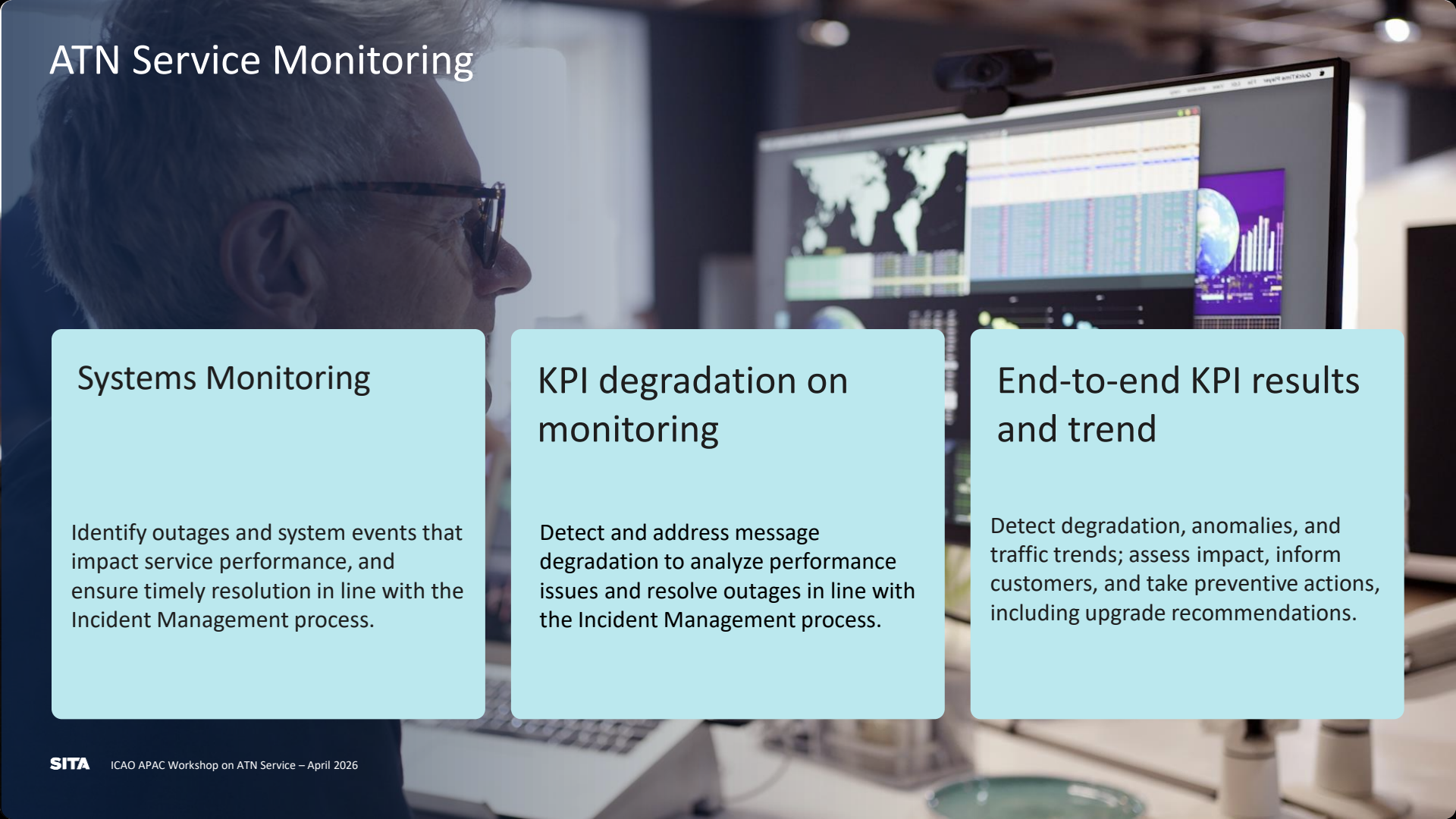
critical infrastructure and tools

Dedicated SITA team

in Japan

Partnership with Avicom

ATN Service Monitoring



Systems Monitoring

Identify outages and system events that impact service performance, and ensure timely resolution in line with the Incident Management process.

KPI degradation on monitoring

Detect and address message degradation to analyze performance issues and resolve outages in line with the Incident Management process.

End-to-end KPI results and trend

Detect degradation, anomalies, and traffic trends; assess impact, inform customers, and take preventive actions, including upgrade recommendations.

Our ATN Network Highlights

Our ATN Network Highlights

ATFCM* delay impact reduced from **500+** hours in 2024 to virtually zero

18% YoY increase in CPDLC traffic - more pilots than ever relying on digital comms

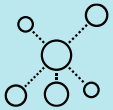
60%+ of aircraft connected via CPDLC on peak days

Proving the power of scalable, stable communications built for evolving aviation needs

Summer 2025: A Milestone in ATN Network Resilience

*Air Traffic Flow & Capacity Management

What ATN Network Resilience means for our customers



More efficient, data-driven operations

Greater situational awareness and faster response times

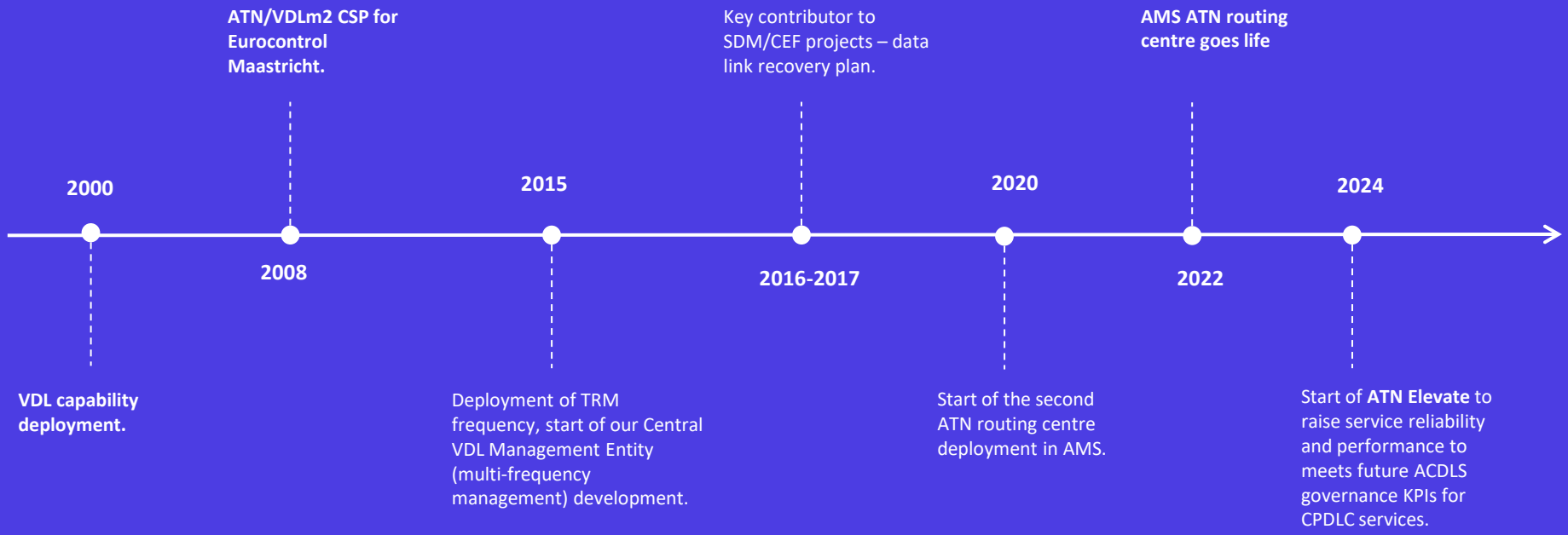
Operational continuity even under peak traffic conditions

Connectivity without complexity

Summer 2025: A Milestone in ATN Network Resilience

*Air Traffic Flow & Capacity Management

SITA's History in supporting the Datalink (ATN) in Europe



From Connectivity to Capability

From Connectivity to Capability

Controller–Pilot Data Link Communications (CPDLC)

Clear, unambiguous communication that reduces workload and supports safer decision-making.

Automatic Dependent Surveillance Contract (ADS-C)

Improved situational awareness and safety in airspace with automated position and intent reporting through connectivity.

Operational Impacts

Controller–Pilot Data Link Communications (CPDLC)

- Structured, standardized controller–pilot message exchange
- Reduced reliance on congested voice communications
- Clear, consistent delivery of instructions and clearances
- More stable operations in complex/oceanic airspace with reduced workload

Automatic Dependent Surveillance Contract (ADS-C)

- Automatic transmission of aircraft position and intent data
- Radar-like surveillance in remote and oceanic regions
- Enhanced situational awareness and traffic predictability
- Reduced uncertainty, less manual coordination, and safer traffic separation

Digital communication and surveillance working together

Controller–Pilot Data Link Communications (CPDLC)

+

Automatic Dependent Surveillance Contract (ADS-C)

Less frequency congestion during peak traffic periods

Reduced risk of miscommunication and read-back errors

More stable traffic monitoring in radar-limited airspace

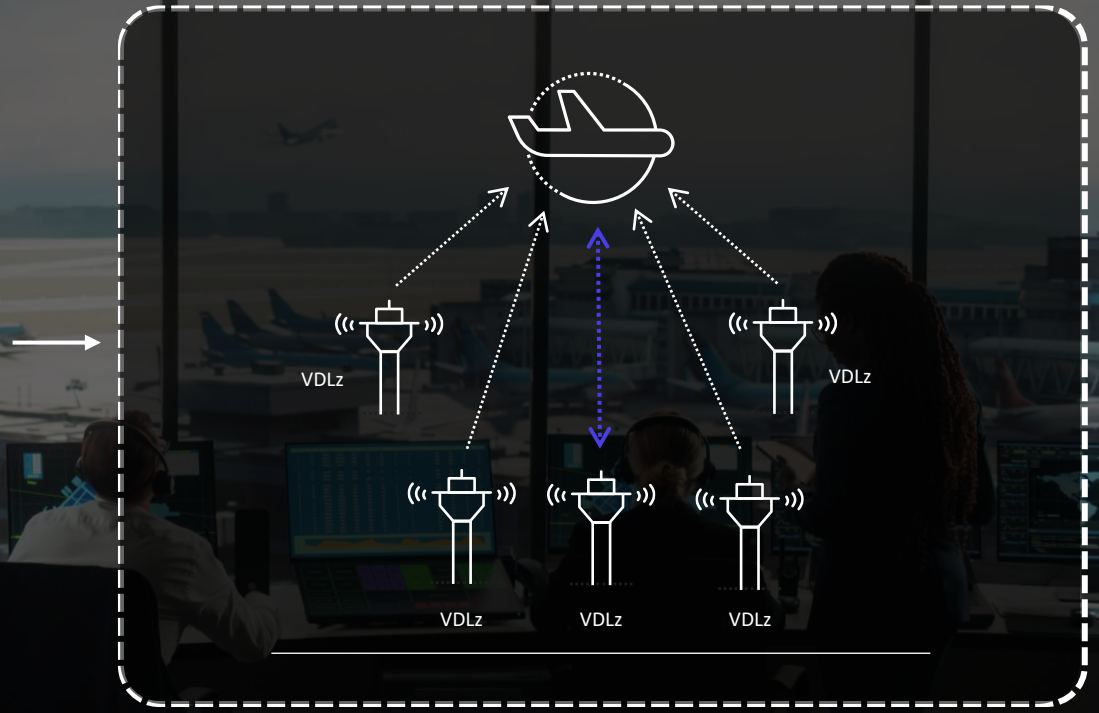
Lower cognitive load for controllers and flight crews

Super VGS

Enabling ATC Communications

Super VHF/VDL
Ground Station

A clustered virtual ground station setup to improve datalink performance, capacity, and resilience.



Why it Matters?

VHF/VDL infrastructure is a core asset for datalink services, with enhancements underway to support current and future traffic.

Growing Traffic

Traffic grows up to 15-20% per year, VDL will be loaded and could impact the latency for high-performance service.

Avoid Congestion

Independent VGS architecture can create collision and excessive handovers

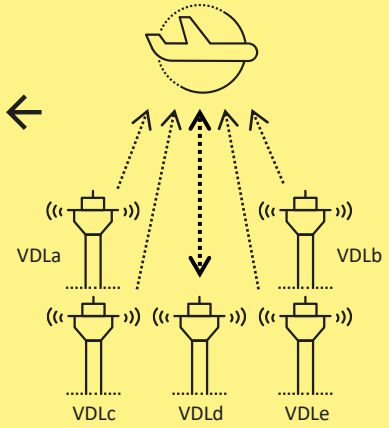
AOC–ATC Datalink Integration

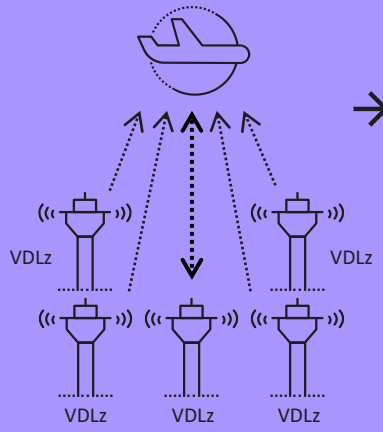
Affects Datalink on both AOC and ATC operations

SITA's Super VHF Ground Station: How does it work ?

As seen by the aircraft
(CMU tracking table)

VDL Station Address	Signal Quality (SQP)
VDLa	3
VDLb	5
VDLc	4
VDLd	6
VDLe	2





VDL Station Address	Signal Quality (SQP)
VDLz	6

Super VGS

Solution self-imposed constraints

- No change in Avionics software or standards
- Re-use of existing ground infrastructure

Increase network capacity, improve performance

- Reduce handoff and overhead
- Reduce handoff impact on aircraft roaming between VGS
- Benefit from antenna diversity
  - Downlink SR → multiple downlink copies received
  - Uplink SR → choose the *best* radio for uplinks

SITA’s Super VHF Ground Station: Operational Impact

Superior Performance

Consistent better uplink and downlink performance by eliminating handoff disruptions and reducing protocol overhead.

Performance benefits

- Uninterrupted connection
- Optimized uplink routing.
- Less burst traffic as less handoffs
- Latency improved at RF and application level
- Higher benefit with deployment on busy frequencies.

Increased Capacity

Extends the life of existing VDL infrastructure by increasing usable capacity and mitigating summer peak congestion.

Performance benefits

- Less overhead = 10–20% increased usable capacity
- Less retransmission = 10% increased usable capacity
- 30% overhead reduction → performance in summer comparable to performance in winter today)
- More aircraft can operate on the same channel with less degradation.

How To Move Forward – Deployment

2023/24

Deployment AOA/POA + validate ATN

Project Nairobi: 2 VDL radios combined in the Super VGS cluster

Project Kiwi: Full deployment in New Zealand with 6 VDL radios in cluster (XSNZ) – AOA only

Project Kangaroo: Large deployment in Australia with 11 VDL radios in cluster (XSA)

Project Viking: 3 VDL radios combined in a cluster (Finland) for a limited test period.

No CVME / only CSC

2025

Evaluation with ATN in Europe

Project Skywalker:

- Further development
- Deployment to evaluate Super VGS in a multi-frequency environment with live traffic & actual aircraft
- One cluster regional Super VGS layer deployment for test in Europe

2026

Market visibility & operational preparation

Project Skywalker: Implement improvement and evaluate in a similar environment (Feb-2026)

Communication

- Datalink User Forum
- Datalink Performance Monitoring Group
- Integrated Communications, Navigation and Surveillance
- AVICOM presentation
- ENAIRE (VDL partner) presentation

ATM Connect: Proven, reliable, and evolving

Proven Operational Progress

- Measurable performance and operational maturity
- Data-driven KPIs and proactive monitoring
- Improvements in performance and reliability

Scaled for High-Density

- Expanded VDLm2 coverage worldwide
- Multifrequency upgrades for more capacity and stability
- Ground network supporting datalink services at scale

Continuous Modernization

- Advancing Super VGS readiness to support higher performance
- Infrastructure evolution designed to absorb sustained traffic growth

Industry-Aligned, Collaborative Ecosystem

- Long-standing collaboration with airlines
- Long-standing collaboration with ANSPs
- Active reduction of fragmentation across ATM landscape

SITA