



Air Solutions

Deployments in more than 160 out of 180 countries with at least 5 airports

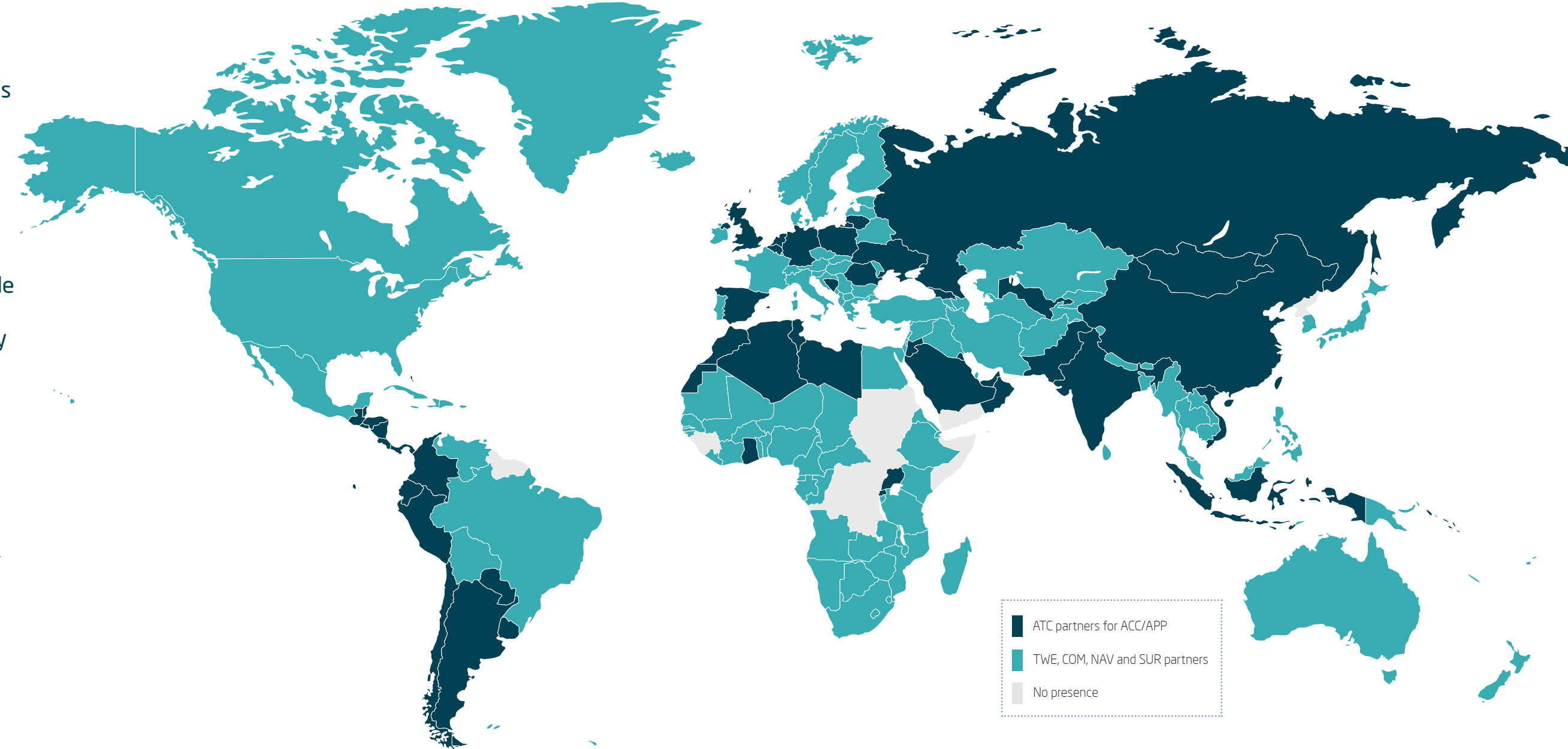
+25%
Total World Airspace is controlled by Indra's ATM systems.

+85%
Passengers worldwide travel making use of Indra ATM technology at some point during the flight.

SESAR
Indra is a key member of SESAR, leading and participating in more than 25 awarded projects while playing a leading role in developing the single sky concept in Europe.

+4,000
Deployments of ATM solutions.

-  **Indra Air Automation**
+400
-  **Indra Air Communications**
+550
-  **Indra Air Navigation**
+2,800
-  **Indra Air Surveillance**
+400
-  **Indra Air Information**
+100



After a very long journey, we are most proud of being trusted by our customers to enhance air navigation services worldwide:

+100
Years of experience in the ATM industry.

+99%
Success in establishing long term partnerships with our customers.

At the core
We partner with our clients to build the future together

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Indra reserves the right to modify these specifications without prior notice.

Air Solutions

More than 100 years partnering with countries to creating skies together

indra

indra

Helping our customers to creating the air navigation services of the future skies

Primary Surveillance Radar

Safety and operational efficiency in all weather conditions.

Adaptive and cross-redundant architecture.

Special processing techniques for multi path and anomalous clutter.

Well-proven wind farm mitigation techniques.

GAREX: Digital voice communication system

Indra's GAREX 300 is an ED-137 compliant full VoIP-based.

VCS for air traffic control which is built on tried & tested features from GAREX 220.

Deployed in Control Centres ACC and APP, ATC Towers, Simulators and Backup/Emergency.

HMI based on touch type TFT screens.

Great modularity, wide range of user configuration.

NORMARC NAVAIDS: ILS

Ultra Wide Aperture Instrumental Landing System.

Installed at more than 1,100 airports worldwide.

Industry-leading for over 20 years.

Optimised LVPs:
30% increase in low visibility capacity.
50% reduction of delay.

InNOVA Air Tower Solutions

Most comprehensive and technologically advanced portfolio of tower solutions based on Advanced Surface Movement Guidance and Control System (A-SMGCS), Surface Manager and Flight Data Processing.

Integration of air traffic display with several functions such as electronic flight strips, automatic taxi routing and guidance, stop bars and taxiway centerline lighting, meteorological information and departure & pre-departure and arrival sequencing.

Improves situational awareness, reduces workload for controllers, enhances communication and information sharing capabilities and increases operational safety.

ATC Automation System

Most advanced automated air traffic control system in the industry, fully compliance with ICAO and Eurocontrol standards and recommended practices in air traffic management.

Covers en-route, approach and tower control, as combined control solutions, comprising all the necessary elements and equipment to carry out the ATC services.

4D trajectory-based system that assists air traffic controllers to create conflict free plans, decreasing controller workload and increasing capacity while enabling pilots to fly on direct routes reducing flight diversions and time, fuel consumption and CO2 emissions.

High degree automation of control tasks including flight plan management tools, automatic flight tracking system, automatic coordination between control position and control.

Centers, safety nets and medium term traffic prediction tools among others.

Endorses a "What If" capabilities (conflict probe function) to warn controllers about potential loss of separation before issuing a tactical command.

Represents the best tradeoff for ATC systems ranging from highly competitive COTS solution to full performance semi custom systems, generating a remarkable reduction of the total cost of overall system life cycle.

Operational in more than 400 ATS units worldwide.
More than 25% air traffic worldwide is controlled by Indra's ATC system.

Ground Based Augmentation System

GAST-D GBAS solution.

Less than 1 meter accuracy.

Improves airport efficiency and up to 6% increase in airport capacity.

Contributes to noise, fuel and CO2 reduction.

15 years of experience with GPS-based landing systems.

Space based CNS system

Platform to provide all range of CNS services from a satellite constellation.

VHF real time communications and full surveillance coverage all across the Globe.

Requiring no modification on avionics systems.

Compliant with regulations (ICAO/EASA/FAA).

Monopulse Secondary Surveillance Radar

Smart ADS-B integration.

Fulfill ICAO requirements and achieve the highest expectations requested by Eurocontrol.

Fourth generation of MSSR radars.

Range 256 NM in enhanced mode S with 15 rpm.

Normarc Nav aids: DVOR and DME

Doppler VHF Omnidirectional Range and Distance Measurement Equipment.

NORMARC DVOR
Best radiated signal performance in the market.

Real fully redundant system, control included.

Open SW for remote maintenance and monitoring.

NORMARC DME
First DME in the world was developed by Indra in 1948.

Over 45 years in service fully redundant system, control included, preventive maintenance routines performed remotely.

ADS-B

Equipment designed to exceed requirements and recommendations of FAA/RTCA, ICAO, Eurocontrol and Eurocae.

High density traffic supported, process >500 tg/s. 250 NM coverage.

Full solid-state COTS based technology.

MLAT and WAM

Coverage bigger than 5 NM using only elements installed in airport areas.

Enhanced surveillance performances (ED-142, ED-117A).

Wide area multilateration extends the use of MLAT technology to TMA and ER environments.

High accuracy detection.

Supports high density traffic up to 30,000 replies per receiver.

ADS-B Integrated.

Aeronautical Information

Reliable and resilient architecture that guarantees the availability of consistent and high quality AI data throughout the ATM data chain.

Ensuring suitable and secure civil-military coordination.

Leading the implementation of the latest ATM data exchange formats.

Provides automated processes and seamless visualization tools.

Indra Air Drones

Cloud-based solution to integrate drones safely in the airspace.

UTM Hub and UTM Connect provide a complete set of services, following U-space and FAA roadmaps and covering the needs of every actor: ANSP, authorities, municipalities and drone operators.

Fully integrated with ATM solutions.

Simulation Systems

Full ATC and Tower control simulator, based on actual Tower, ATC and Communications Systems, for training EN-Route/Approach and Tower operations.

Provides full training for 2D/3D-TWR/APP/ACC controllers in a multisession and multi-exercise system providing evaluation reports automatically.

Fully functional system so it can be used as an emergency back up center.

Enhanced with artificial intelligence applications for voice control and exercises guidance, and virtual reality for the most immersive experience.

IRTOS: Remote Tower Optical System

Digital remote tower system with best image quality in the market based on 4K cameras, seamless stitched flattened panorama display, and high resolution night mode.

Most easy to use and best situational awareness by maximizing automated visual aids and ATC info integrated on screen.

Enhanced with autonomous visual functions based on advanced deep learning architectures.

3D Primary Surveillance Radar

3D detection and position estimation under extreme weather conditions, ground clutter and natural or human interferences.

Efficient use of time and energy through flexible configuration.

High system performances in complex environments (geographic, wind mills, etc.).

Monopulse techniques in azimuth and elevation to detect aircrafts, drones and UAVs.

High reliability.