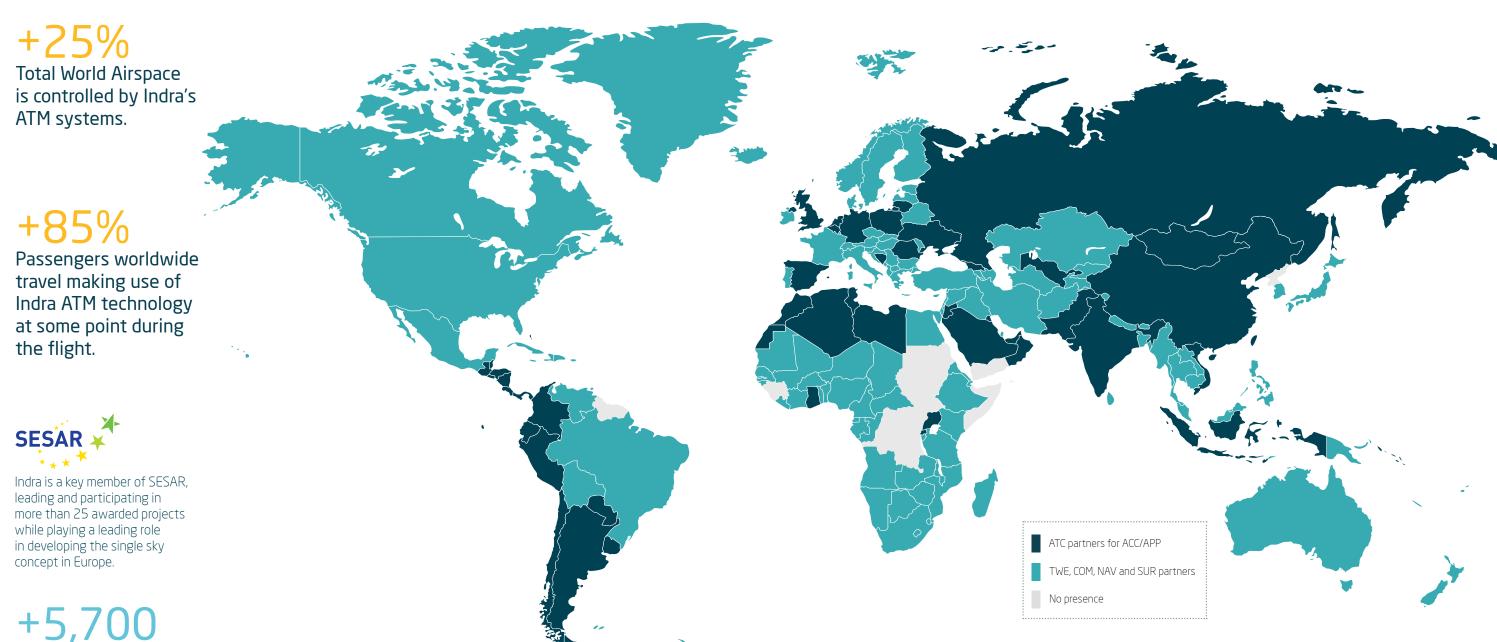


Air Solutions

More than 100 years partnering with countries to creating skies together

Air Solutions

Deployments in more than 180 countries with at least 5 airports



Indra Air Navigation







Indra Air

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.

Creating skies together

We partner with our clients to build the future together

Main Offices:

ındra

ındra

Deployments of ATM solutions.

Indra Air Automation

+725

+700

Indra Air Communications

+3,400



Surveillance +575



Information +225

Success in establishing long term partnerships with our customers.

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

Primary Surveillance Radar

Safety and operational efficiency in all weather

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

Installed at more than 1,600 airports worldwide.

Industry-leading for over 40 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 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 industry, fully compliance with ICAO and Eurocontrol standards management tools, automatic flight tracking system, automatic coordination between control position and control.

Centers, safety nets and medium term traffic prediction tools

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

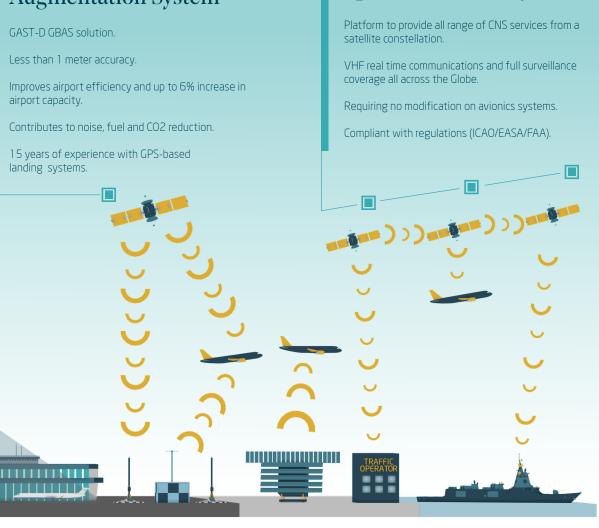
Represents the best tradeoff for ATC systems ranging from highly competitive COTS solution to full performance semi custom systems, generating a remarkable reduction of the total cost of overall system life cycle.

Operational in more than 300 ATS units worldwide. More than 25% air traffic worldwide is controlled by Indra's ATC system.

Ground Based Augmentation System GAST-D GBAS solution.

airport capacity.

15 years of experience with GPS-based



Monopulse Secondary Surveillance Radar

Smart ADS-B integration.

Fulfill ICAO requirements and achieve the highest expectations requested by Eurocontro

Fourth generation of MSSR radars.

Range 256 NM in enhanced mode S with 15 rpm.

Normarc Navaids: **DVOR** and **DME**

Doppler VHF Omnidirectional Range and Distance Measurement Equipment.

NORMARC DVOR Best radiated signal performance in the market.

maintenance

and monitoring.

in 1948. Over 72 years in service Real fully redundant system, control included. fully redundant system,

NORMARC DME

First DME in the world

was developed by Indra

control included preventive maintenance Open SW for remote routi nes performed remotely.

ADS-B

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

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

Full solid-state COTS based

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 enviroments.

High accuracy detection.

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

ADS-B Integrated

Indra Air Information

Reliable and resilient architecture that guarantees the availability of consistent and high quality Al data throughout the

Ensuring suitable and secure civil-military coordination.

ATM data chain.

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.

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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

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

Space based CNS system

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

Efficient use of time and energy through

High system performances in complex

Monopulse techniques in azimuth and elevation

flexible configuration.

environments (geographic, wind mills, etc...).

to detect aircrafts, drones and UAVs.