Shared Horizons

U.S. – India Aviation Cooperation Program: “Uddein Saath Saath - Together We Fly”








INSIDE

AIRPORT SECURITY EQUIPMENT IS SMART.

INTEGRATED AIRPORT SECURITY SOLUTIONS ARE SMARTER.

Leidos facilitates secure and efficient passenger movement at security checkpoints, while also enhancing the passenger experience. The integration of our ProPassage™ Automated Tray Return System and ClearScan™ CT scanner provides a best-in-class, smarter security solution where throughput can exceed 500 passengers per hour, per lane.

leidos.com/security-detection

leidos

రామ్మోహన్ నాయుడు కింజరాపు
राममोहन नायडू किंजरापु
RAMMOHAN NAIDU KINJARAPU

सत्यमेव जयते

नागर विमानन मंत्री
भारत सरकार
Minister of Civil Aviation
Government of India

06th January 2026

MESSAGE

Over the past eleven years, India's aviation landscape has undergone a profound paradigm shift under the decisive and visionary leadership of Hon'ble Prime Minister Shri Narendra Modi Ji. To maintain this momentum, we are committed to forging strategic international partnerships that capitalize on India's immense market potential.

The enduring partnership between the Ministry of Civil Aviation and the U.S.–India Aviation Cooperation Program (ACP) stands as a testament to our shared commitment to building a future-ready aviation ecosystem. I commend the ACP for its proactive role in fostering the bilateral synergy between Indian Government and US industry.

To ensure long-term sustainability, it is imperative that we deepen our cooperation further in next-generation aviation technologies including advanced air mobility and sustainable aviation fuels. One of my special focuses is on building a robust training ecosystem that supports the entire aviation ecosystem, including MROs, FTOs, Cargo and Passenger services.

I hold the view that for meeting demands of our rapidly advancing aviation sector, we must continuously evolve our industrial capabilities and academic expertise to global standards. In this regard, I look forward to building an even more robust partnership with ACP in 2026.

I wish the ACP and its members a successful year ahead!

(Rammohan Naidu Kinjarapu)

Ministry of Civil Aviation : Room No. 291, B-Block, Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi-110003
Tel. : 91-11-24610350, 24632991, Fax : 91-11-24610354

Your trusted partner for component MRO and engineering services

We deliver customized services based on your needs.

ACS-Thailand Capability

AAR Component Services - Thailand:
+66-33-265-000

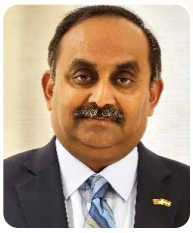
AAR Engineering Services - Singapore:
+65-6508-6460

AAR®

aarcorp.com

Message from the Co-chairs

Commander Arun Jyoti (Retd.)
ACP Co-chair (Industry) &
VP & Head – Government Relations
Smiths Detection India



S. Daniel Jacob, Ph.D.
ACP Co-chair (Government)
& FAA Attaché & South Asia
Senior Representative

"The Aviation Cooperation Program (ACP) reflects a long-standing and collaborative commitment between India and the United States—uniting public and private stakeholders to advance India's aviation priorities, while creating powerful opportunities for U.S. industry partnerships to support the nation's civil aviation ambitions.

Now in its 18th year, the ACP continues to serve as a dynamic platform where government and industry come together to innovate, solve challenges, and enable growth. With India poised to become the world's third-largest aviation market, the opportunities ahead for both countries' stakeholders in civil aviation are truly significant.

As India transitions from legacy systems to next-generation, future-ready aviation platforms, the ACP looks forward to successful partnerships in co-creating, designing, and delivering transformative civil aviation projects in 2026 and beyond—strengthen powering India's rapid growth in the civil aviation sector. leadership in the global aviation landscape.

We hope this annual diary becomes a record of your milestones, achievements, and progress throughout the year.

On behalf of the entire ACP membership, we extend our best wishes for a year of continued success and excellence in 2026."

(Commander Arun Jyoti (Retd.))

(Dr. Daniel Jacob)

PUBLICATION DATA

Edited & Published by

Sandeep Bahl
Executive Program Director
Mobile: +91 97171-95197
Email: sandeep.bahl@us-indiaacp.com

Coordinated & Designed by

Nidhish Jain
Program Assistant
Mobile: +91 98684-83500
Email: nidhish.jain@us-indiaacp.com

US-India Aviation Cooperation Program (ACP)
PHD House (Ground Floor),
4/2 Siri Institutional Area, August Kranti Marg, New Delhi-110016

Website: www.us-indiaacp.com

CESSNA CITATION

TODAY'S AMBITION. TOMORROW'S SUCCESS.

Cessna® Citation® aircraft make up one-third of business jets flying worldwide, creating a world of possibilities where you can pursue your dreams with confidence.

Explore more at cessna.com/citation

LONGITUDE | LATITUDE | **ASCEND** | CJ4 GEN2 | CJ3 GEN2 | M2 GEN2

Cessna
BY TEXTRON AVIATION

ACP Over the Years

2025

- ACP's "Year-End Get-Together" on December 16, 2025 at Hotel - Shangri-La, New Delhi
- ACP's Welcome Reception & Introduction Meeting with Secretary, MoCA on July 10, 2025 at Hotel - The Oberoi, New Delhi
- AVIA India – Aviation India Ahead, organized by Honeywell in association with the US-India Aviation Cooperation Program on March 25, 2025 at New Delhi
- ACP's participation at Aero India 2025, February 10-14, 2025 at Bengaluru

2024

- Grant Signing ceremony on Hisar Integrated Aviation Hub Technical Assistance between USTDA and HADC on December 9, 2024 at Haryana Bhawan, New Delhi
- ACP Members interaction with Sudhir Rajpal, Additional Chief Secretary - Civil Aviation Department, Govt. of Haryana on November 22, 2024 at Haryana Bhavan, New Delhi
- Symposium on Helicopter for Public Safety with MoCA, NDRF, NDMA, PHL etc. on November 8, 2024 at Hotel -The Leela Palace, New Delhi
- HMCA Mr. Naidu visited Collins Aerospace; Pratt & Whitney; Boeing facilities in Bengaluru and roundtable with ACP Members on 29th October 2024 at Hotel Taj Bangalore
- ACP Members roundtable with Ministry of Civil Aviation on October 15, 2024, Hotel – The Oberoi, New Delhi
- U.S. – India Aviation Summit, June 24-26, 2024 at Washington D.C.
- ACP's participation at Wings India 2024 from January 18-21, 2024 at Hyderabad
- ACP Members roundtable with visiting FAA leadership on January 15, 2024 at Hotel – The Leela Palace, New Delhi

2023

- ACP Members roundtable & Welcome reception in honor of Secretary, MoCA on October 23, 2023 at New Delhi
- ACP's Farewell reception in honor of Secretary, MoCA on October 23, 2023 at New Delhi
- ACP Members roundtable with Ministry of Civil Aviation on "Shared Best Practices for Future Needs" on July 24, 2023 at New Delhi
- ACP Members roundtable with Ms. Enoh T. Ebong, Director – USTDA & Mr. Rajiv Bansal, Secretary, MoCA on January 18, 2023 at New Delhi

2022

- ACP's roundtable meeting with P&W leadership on October 21, 2022 at New Delhi.
- 2nd phase of EDTP from August 14 – 19, 2022 in Washington D.C.
- ACP Members roundtable with Ministry of Civil Aviation followed by EDTP's closing reception on July 23, 2022 at New Delhi.
- ACP's Executive Development Training Program (EDTP) opening ceremony on July 18, 2022 at New Delhi.
- ACP's Farewell reception in Honor of Mr. Philip Matt Ingeneri, ACP Co-chair (Government) & Economic Growth Unit Chief, EEST – DOS on May 19, 2022 at New Delhi.

ACP Over the Years

- ACP Members roundtable meeting with Minister Scindia and Secretary Bansal, Ministry of Civil Aviation (MoCA) on 25th March 2022 during Wings India 2022 at Hyderabad.
- ACP Members meeting with GMR Leadership on March 24, 2022 at Hyderabad.
- ACP Members' participation at Wings India 2022, Hyderabad.
- ACP Members roundtable with Chris Carter, Director – FAA on March 22, 2022 at New Delhi.
- ACP's webinar "Global Crisis – Devastating New Impacts on Aviation" on March 10, 2022.
- ACP leadership's introductory meeting with Secretary Rajiv Bansal, MOCA on March 7, 2022 at New Delhi.
- ACP Members' meet and greet with Honeywell India's New President, Mr. Rajesh Rege on February 23, 2022 at Gurugram.

2021

- ACP's lunch in honor of Ex. Secretary MOCA, Pradeep Singh Kharola with a unique memento on November 24, 2021 at New Delhi
- ACP Members luncheon with Dr. Shefali Juneja, Chairperson of ICAO's Aviation Security Committee on November 18, 2021 at New Delhi
- ACP's webinar with MOCA; FAA & TSA on "Unmanned Aircraft System (UAS)/Unmanned Traffic Management (UTM)" on August 24, 2021
- USTDA-ACP Virtual Seminar on "Conversations on Sustainable Aviation and Climate Resiliency" on August 17-18, 2021
- Virtual Roundtable with Yamuna Expressway Industrial Development Authority / Noida International Airport Limited & ACP Member Companies
- ACP's webinar with AAI on "Water Resources Engineering & Waste Management"
- Boeing/USC's SMS Training Program with IAA
- ACP Members' own Society "US-India Aviation Cooperation Program" formed and received Certificate of Registration from Registrar of Societies
- ACP's webinar on "Future of Travel & Work Post COVID-19"
- ACP's participation at Aero India 2021 at Bengaluru

2020

- ACP-MOCA's open discussion on Aviation in US & India, post COVID scenario and exchange of New Year Greetings
- ACP-MOCA's interactions on "Ease of Doing Business – Airport Access"
- ACP's webinar with IAA "Navigating through COVID Clouds to Safer Cruising Heights"
- ACP's webinar "Restoring Confidence in Air Travel"
- ACP's participation at Wings India 2020 at Hyderabad

2019

- ACP' Year-End Get-Together at New Delhi
- ACP's annual "Innovation in Aviation" workshop 2019 at Hotel – The Oberoi, New Delhi
- ACP Members roundtable with Mr. Thomas R. Hardy, Director (Acting), USTDA & Mr. Pradeep Singh Kharola, Secretary, Ministry of Civil Aviation at New Delhi
- U.S.- India ACP India RTM - Air Navigation Services, July 28 – August 3, 2019 at USA

ACP Over the Years

- ACP Members Meeting with Dr. Guruprasad Mohapatra, Chairman-AAI at New Delhi
- ACP's participation at MOCAs' roundtable discussion on Skills Development at New Delhi
- U.S.- India ACP Aviation RTM - Airport Development, March 24-30, 2019 at USA
- ACP's participation at Aero India 2019, Bengaluru
- ACP's participation at MOCA's 2019 Global Aviation Summit, Mumbai

2018

- Webinar on update of MOCA's Global Aviation Summit 2019 at New Delhi
- Grant agreement signed for CNS/Airspace with AAI
- Grant agreement signed for AAAE/IAAE with IAA & GMRAA to provide Training, Accreditation Programs
- ACP's "Innovation in Aviation" workshop with Ministry of Civil Aviation at New Delhi
- Grant agreement signed for Executive Development Training Program (EDTP) with RGNAU at New Delhi
- RGNAU's Eminent Speaker Series with Mr. Mark Searle, University of California Berkeley at New Delhi
- ACP's Eminent speakers series with Hugo Yon, U.S. Department of State (DoS) & Kristen Davis, U.S. Department of Transportation (DoT)
- ACP Members roundtable with GoI & USG officials during US – India Aviation Summit at Mumbai
- 2018 U.S. – India Aviation Summit at Mumbai
- Announcement of MoU between ACP-MOCA on specialized aviation training at Wings India 2018, Hyderabad

2017

- Celebration of ACP's "10 years Anniversary Partnership" at New Delhi
- Celebration of "ACP Diwali Nite" at New Delhi
- Grant agreement signed for Sustainability Master plan of Kolkata and Lucknow Airports
- ACP's "Innovation in Aviation" workshop with Ministry of Civil Aviation at New Delhi
- Aviation Institute of Maintenance's "The Award Dinner" in partnership with ACP at New Delhi
- Airport construction codes + specifications and 777x Airport compatibility workshop with DGCA
- ACP Members meeting with Enoh T. Ebong, Acting Director-USTDA at New Delhi
- Creation of Sub-committee on Aviation and Aerospace Skills Development
- Eminent Speaker Series - Blockchain Technology & its effect on the Aviation Industry
- ACP's participation at Aero India 2017, Bengaluru
- ACP & RGNAU partnership to bring the first Executive Development Program (EDP) for Aviation in India

2016

- Memorandum of Understanding Signing: ACP & Rajiv Gandhi National Aviation University (RGNAU)
- Celebration of "ACP Diwali Nite" at New Delhi
- System Wide Information Management (SWIM) workshop with AAI
- Grant agreement signed for GAGAN Extension Business Case
- Memorandum of Cooperation (MOC) Signing: ACP & National Skill Development Corporation (NSDC)

ACP Over the Years

- ACP roundtable meeting in honour of Lee Zak, Director-USTDA & Sr. USG officials visiting India for US-India Strategic and Commercial Dialogue at New Delhi
- ACP farewell reception in honour of CJ Collins, ACP Co-chair (Government) & Sr. Representative to South Asia, FAA at New Delhi
- ACP Members meeting with Manish Kumar, MD & CEO, NSDC at New Delhi
- ACP Project workshop with Ministry of Civil Aviation at New Delhi
- ACP reception in honour of India Aviation 2016 participants at Hyderabad
- Memorandum of Cooperation (MOC) Signing: ACP & Bhogapuram International Airport Company Ltd., (BIACL)
- ACP Members roundtable meeting with Ministry of Civil Aviation (MOCA) during India Aviation 2016 at Hyderabad
- Grant agreement signed for Aviation Safety Technical Assistance Phase – II

2015

- ACP's Yearend social get-together at New Delhi
- ACP Members meeting with Lee Zak, Director-USTDA during 2015 US – India Aviation Summit at Bengaluru
- 2015 U.S. - India Aviation Summit at Bengaluru
- Workshop on Next Generation Surveillance and Safety using ADS-B Technology at New Delhi
- Grant agreement signed for ProVision Body Scanner System Pilot Project
- ACP Members meeting with USTDA's Global Procurement Initiative (GPI) team at New Delhi
- ACP Members luncheon with Secretary Anthony Foxx, DoT with Delegation at New Delhi
- ACP Members meeting with Hon'ble Minister of Civil Aviation & Hon'ble Chief Minister of Andhra Pradesh at Aero India 2015, Bengaluru
- ACP Members luncheon with Lee Zak, Director-USTDA at New Delhi

2014

- ACP's participation at India – US Technology Summit at Greater Noida
- Honeywell's Udaan' 14 in partnership with ACP on " Propelling India Aviation Growth" at New Delhi
- Grant agreements signed for Aviation Security Equipment Testing & Evaluation Program (ASETEP) & Aviation Safety Technical Assistance Phase – I
- ACP Members roundtable with Ministry of Civil Aviation at New Delhi
- ACP Members meeting with Arun M. Kumar, DG- FCS at New Delhi
- Farewell reception in honour of Margaret Hanson-Muse, Deputy Sr. Commercial officer at New Delhi
- ACP reception in honour of India Aviation 2014 participants at Hyderabad
- Grant agreements signed for Performance Based Navigation (PBN), Technical, Management, and Operational Development Training (TMODT) Phase – II and Airport Geographic Information System (AGIS) for Indian Airport

2013

- U.S. - India Aviation Summit at Washington D.C.

ACP Over the Years

- ACP Members meeting with Lee Zak, Director – USTDA at New Delhi
- Workshop on U.S. - India Aviation Security at New Delhi
- Seminar on General Aviation: The Next Steps at New Delhi
- Seminar on Bilateral Aviation Safety Agreement (BASA) regime at New Delhi

2012

- Honeywell's Udaan' 12 in partnership with ACP on " Indian Air Traffic Modernization & Airspace Decongestion" at New Delhi
- Grant agreement signed for Total Airspace and Airport Modeler (TAAM) at New Delhi
- ACP's participation at India Aviation 2012, Hyderabad

2011

- U.S. - India Aviation Summit at New Delhi
- Grant agreements signed for Technical, Management, and Operational Development Training (TMODT) Phase – I & launching GBAS at Chennai Airport
- Seminar on Airport Economic Reforms – Moving Ahead with Chairman AERA at New Delhi
- Indo – US Aviation Manufacturers Meet at New Delhi

2010

- Conference on Civil Aviation: Creating Sustainable Growth at New Delhi
- Grant agreement signed for Helicopter Safety Technical Assistance
- ACP's Roundtable Discussion on Airport Regulatory & Financing Best Practices
- ACP's participation at India Aviation 2010, Hyderabad
- Seminar on Automatic Dependent Surveillance – Broadcast (ADS–B) & Ground Based Augmentation System (GBAS)

2009

- U.S. - India Aviation Partnership Summit at Washington D.C.
- Grant agreement signed for Aviation Standard Technical Training
- Farewell reception in honour of R.K. Singh, Joint Secretary – MOCA at New Delhi

2008

- FAA conducts Air Traffic Management Training Program (ATMTP)
- Seminar on Indo – US Aviation Cooperation – Growth of Civil Aviation in India at New Delhi
- AAI Air Traffic Control Officers (ATCO) Manpower Assessment Study
- Seminar on Air Traffic Flow Management (ATFM)

2007

- U.S. - India Aviation Partnership Summit at New Delhi
- U.S. - India ACP Inaugural Session: ACP Formed
- MoU between: U.S. Department of Transportation, U.S. Trade & Development Agency and Ministry of Civil Aviation

ACP in Partnership with

नागर विमानन मंत्रालय
MINISTRY OF CIVIL AVIATION

Directorate General of Civil Aviation

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

BUREAU OF CIVIL AVIATION SECURITY

ACP Ongoing Projects

- Airport Emergency and Operations Management Pilot Project and Feasibility Study

ACP Past Successes

- Executive Development Training Program (EDTP)
- CNS/ATM Modernization Roadmap
- Sustainability Master plan for Kolkata and Lucknow Airports
- Business Case for GAGAN Extension
- Aviation Safety Technical Assistance Phase – II
- ProVision Body Scanner System Pilot Project
- Aviation Safety Technical Assistance Phase – I
- Aviation Security Equipment Testing & Evaluation Program (ASETEP)
- Airport Geographic Information System (AGIS) for Indian Airport
- Total Airspace and Airport Modeler (TAAM)
- Technical, Management, and Operational Development Training (TMODT) Phase – II
- GBAS Pilot project at Chennai Airport
- Technical, Management, and Operational Development Training (TMODT) Phase – I
- Helicopter Aviation Safety Technical Assistance
- Aviation Standard Technical Training
- AAI Air Traffic Control Officers (ATCO) Manpower Assessment

Mission

- The U.S.-India Aviation Cooperation Program (ACP) wasestablishedin2007asapublic-privatepartnership between the U.S. Federal Aviation Administration (FAA), the U.S. Trade and Development Agency (USTDA), the U.S. Departments of Commerce and State, Transportation Security Administration and U.S. Companies.
- The ACP supports the growth of the Indian civil aerospace sector by working directly with the Government of India (GOI) to identify and execute projects that encourage collaborations between US and Indian stakeholders, in the area of aerospace technology and best practices.

Objective

- Promote greater engagement between US and Indian Government agencies and industry to enhance civil aviation in India.
- Undertake projects that advance Cooperation in domains such as aviation safety, security, regulatory oversight and management.
- Provide training and technical assistance to accelerate excellence in aviation operations.
- Within India, increase awareness of, and facilitate access to, US expertise, technology and best practices to assist India's aviation growth.

Priorities

Foster and continue to develop stronger government to government ties

- RTMs to show case US strengths in multi hub operations, cargo/logistics, security and safety technology, air space integration and management.
- System Safety Approach: Promote risk-based data-driven decision making that is built on Safety Management System (SMS) principles to proactively address emerging safety risk by using data to make safer and smarter decisions.
- Support streamline regulatory process, harness innovation, and deploy new concepts, procedures and technology while maintaining environmental stewardship.
- Continued engagement to improve airport operations, safety, capacity, and innovation.
- Foster growth and safe integration of Unmanned Aircraft Systems operations in the present airspace ecosystem.
- Foster development of robust cyber security platform for applications in civil aviation.
- Explore a new paradigm in air traffic management to integrate UAS, Drones etc and to facilitate industry partners' program from low risk Visual Line of Sight (VLOS) operations to complex operations.
- Training and sharing of best practices on aviation operations, safety, and certification.

Air Logistics and Cargo

- Provide US expertise and technology to help modernize and improve efficiency of India aviation supply chains.
- Foster interactions and partnership between U.S.-India aviation cargo industries.
- Share knowledge and assist in development of Cargo Specific Airport Development and RCS style subsidy for cargo services.

Aviation Maintenance Repair and Overhaul (MRO)

- Explore opportunities for industry to partner on India's vision to develop an MRO hub.
- Industry-led MRO training to meet expected new demand.
- Creation of multiple aviation related parts bank to support MRO and airlines in the region.

Aviation Training

- Foster development of robust cyber security platform for applications in civil aviation.
- Foster partnership between ACP, Indian Airlines and Stakeholders, Global Universities and RGNAU to develop a world class Aviation University.
- Provide industry-led cooperation to accelerate excellence in airline operations and management.
- Assist in Development of advanced studies in Aviation Management (Aviation School) and Aviation Center of Excellence.

Aviation Security

- Cyber security, 5G integration and roll out.
- Upstream US bound cargo screening policy development, undertake projects to enhance cargo screening efficiency and effectiveness.

- Undertake projects that investigate use of digital technology and analytics to make airport passenger flows more efficient.
- Facilitate government to government interactions on transport security best practices and lessons learned.
- Facilitate implementation of seamless process for security access/clearances to aviation facilities for technical experts, pilots & engineers to promote technical cooperation and interaction.
- Standardize validation of CT field-performance and evaluate a predictive maintenance program.
- Undertake projects to enhance touchless screening and security by evaluating and validating the performance of checkpoint CTs, security scanners, and ASLs.

Airspace Optimization

- Continue cooperation on Communication, Navigation and Surveillance/Air Traffic Management (CNS/ATM) modernization building on developed roadmap.
- Foster US-India government and industry interactions on Unmanned Traffic Management (UTM) implementation in India and explore inclusion in overall CNS/ATM roadmap.
- Safe airspace integration, framework and policy for regulatory capacity building on UTM and Air Taxis.
- Safe integration of commercial space launch and re-entry into the current airspace infrastructure for Commercial Space Transportation (CST).

Sustainability

- Digitalization and cost optimization of RCS small airports (3-4 tier cities).
- Foster U.S.-India government and industry cooperation in furtherance of national and international aviation sustainability and climate goals.
- Work on creating guidelines and execution of green civil aviation (Sustainable aviation fuel, Electric Aircraft, Hydrogen technology etc).
- Ease of doing business related to induction of already ordered new equipments, aircrafts etc.

Interest in Helicopter manufacturing in India – need assistance in complete manufacturing

- Facilitate cooperation, joint development and available incentives for manufacturing.
- Identify and assist in sharing best practices related to Helicopters operations opportunities and to increase the economic viability of their usage.
- Evaluate export options for made in India helicopters.

acron aviation

Your trusted aviation partner

Delivering tailored solutions that add real value to your business

When you choose Acron Aviation, you're choosing more than advanced technology, you're choosing a partnership built on trust, collaboration and deep understanding of your operational needs.

Our customers benefit from OEM-certified avionics, world-class training systems and intelligent flight data solutions, all delivered through our customer-first approach. We listen, we understand, and we deliver tailored solutions that drive measurable results for your business.

Experience the difference partnership makes.
Visit **acronaviation.com**

Avionics | Flight Data Intelligence | Training Systems | Training Services

U.S. Commercial Service
U.S. Department of Commerce
U.S. Embassy New Delhi, India

The Commercial Section of the U.S. Embassy promotes U.S. exports, helps American companies do business overseas, and promotes foreign direct investment into the United States. As part of the U.S. Commercial Service's global network, with seven offices across India, over 100 offices in the United States, and more than 80 other international offices, we have many trade and export promotion resources to help you develop your business.

U.S. companies with a commitment to the Indian market can find opportunities in a diverse range of industry sectors. You can connect with these opportunities through our export promotion, trade counseling, business matchmaking, market intelligence, and other services. For more details, please go to: www.trade.gov/India

For Indian companies looking to invest in the United States or searching for U.S. suppliers, the U.S. Commercial Service can also help. For more details, please go to: www.trade.gov/selectusa-home and www.trade.gov/buyusa-india.

Services for U.S. companies include but are not limited to:

Commercial Advocacy: We work with the Advocacy Center at the U.S. Department of Commerce to coordinate U.S. Government resources to level the playing field on behalf of U.S. companies as they compete against foreign firms on foreign government and public tenders and procurements, both civilian and defense.

Single Company Promotion: The Single Company Promotion (SCP) provides U.S. companies with promotional services to help increase awareness of their products or services. This promotional event can be customized and may include seminars, press interactions, or receptions, with a targeted outreach campaign by the U.S. Commercial Service to invite attendees.

Gold Key Service: The Gold Key Service (GKS) arranges pre-screened one-on-one appointments with potential customers or business partners. The GKS services includes up to five appointments with pre-qualified customers, distribution channel firms, appropriate government officials, or other contacts, and optional escort by a U.S. Commercial Service industry expert for meetings.

International Company Profile: An International Company Profile (ICP) is a due-diligence check that helps U.S. companies evaluate potential business partners. An ICP provides a detailed background report based on a variety of research sources and can include an on-site visit by a Commercial Specialist; listing of the company's senior management; comments from company references; banking and financial information; and U.S. Commercial Service insights on whether the prospective partner could meet your business needs.

International Partner Search Plus: The International Partner Search Plus (IPS Plus) service provides U.S. firms with a list of up to five agents, distributors, or partners that express interest in your products or services based on our outreach, and includes virtual introductions via teleconference to the identified contacts.

Customized Trade Counseling: U.S. companies can benefit from customized trade counseling that provides information on market opportunities, market intelligence, market entry recommendations, the competitive landscape, regulatory issues, and other relevant information.

Digital Public Infrastructure for the Transformation of Indian Civil Aviation

By Murlidhar Mohol, Hon'ble Minister of State, Ministry of Civil Aviation

India's civil aviation sector stands today at an inflection point marked by unprecedented growth, rapid modernization, and a rising national ambition to position aviation as a key enabler of economic expansion. At the heart of this transformation lies the gradual but resolute expansion of Digital Public Infrastructure (DPI) across the aviation ecosystem. As with India's successes in digital payments, identity, and public-facing governance systems, aviation too is entering a phase where robust digital frameworks will redefine operating models, enhance safety and efficiency, and unlock new growth across passenger, cargo, and emerging air mobility segments.

The past decade has witnessed sustained growth in passenger traffic, an exponential rise in fleet capacity, the emergence of new airports under the UDAN scheme, and a wider geographical spread of air connectivity. This expansion, however, also brings complex operational demands—ranging from airspace optimization and aviation safety to airport capacity management and digital interfaces for passengers. The shift towards DPI-centric aviation systems has, therefore, moved from being aspirational to essential for ensuring scalability, resilience, and seamless service delivery. Against this backdrop, India has begun instituting a coordinated, whole-of-government approach to embed digital foundations within the aviation sector.

Digital Public Infrastructure, a game changer

In recent years, Government agencies and airport operators have incrementally implemented digital systems to modernize civil aviation. While many of these systems operate individually at high levels of sophistication, the larger vision is to integrate them into a unified digital ecosystem.

Airspace management today leverages a combination of advanced surveillance technologies, satellite-based navigation aids, modernized Air Traffic Management (ATM) systems, and automated decision-support tools. India's implementation of GAGAN, the satellite-based augmentation system jointly developed by ISRO and AAI, marks a foundational DPI element that not only enhances navigational accuracy but also lays the groundwork for modern airspace utilization, reduced separation minima, and fuel-efficient flight paths. Complementing this, various Air Traffic Flow Management (ATFM) systems help optimize enroute and terminal capacity by predicting demand and balancing it against available infrastructure.

At the airport level, **passenger-centric digital initiatives** have now become deeply embedded. The DigiYatra platform, built on facial recognition and secure digital identity verification, represents a milestone in aviation DPI. It enables paperless, seamless journeys while ensuring strict privacy

safeguards. Nearly all major metro airports have adopted DigiYatra, and the platform is expanding progressively to other airports. This system signals a transition towards nationwide, technology-driven passenger facilitation.

Similarly, airport operators across the country are adopting **biometric boarding, self-baggage drop systems, e-gates, automated security lanes, and AI-driven passenger flow management tools**. These interventions improve predictability of operations and reduce manual dependencies. Digital apron management, electronic flight progress systems, and e-logbooks are becoming standard practice for operational efficiency.

The **Directorate General of Civil Aviation (DGCA)** has also embarked on significant digital reforms. The e-GCA platform, which is in process, integrates licensing, training approvals, operator certification, and regulatory workflows, eliminates physical paperwork and ensures transparency and efficiency in compliance processes. The digitization of pilot licensing, aircraft registration, safety reporting, and training organization approvals will create a more accessible and auditable system for industry stakeholders. Such systems will help regulators shift focus from administrative tasks to oversight, safety audits, and capability building.

Cargo operations, a critical component of civil aviation, have also seen digital improvements. The **Air Cargo Community System (ACS)** and various customs-integrated platforms have reduced dwell time by streamlining documentation, enabling digital payments, and integrating stakeholders such as freight forwarders, customs brokers, airlines, and ground handlers. The digital transformation of cargo systems is integral to enhancing India's global competitiveness in logistics and facilitating the faster movement of goods across the supply chain.

The UAV and emerging air mobility segment is also being strengthened through DPI. The **Digital Sky platform** had introduced a pioneering approach by enabling online registration, drone authorization, flight permissions, and compliance workflows. Now integrated with e-GCA, the framework will become the backbone of electric Vertical Take-off and Landing (eVTOL) aircraft and urban air mobility (UAM) services tracking systems, and safety compliance.

Together, these initiatives represent the early architecture of a comprehensive aviation DPI ecosystem. However, to fully unlock India's aviation potential and address future complexities, deeper integration, scalability, and advanced digital capabilities will be essential.

Prospects and Pathways for DPI-Driven Transformation

Going forward, the transformation of Indian civil aviation through DPI will require a system-wide shift toward interoperability, real-time data exchange, predictive analytics, and secure digital platforms. The next phase of growth will be shaped by operational demands, rising traffic volumes, and the need for resilience against disruptions.

A central priority will be the **modernization and integration of airspace management systems**. As India's fleet expands, with a significant number of aircraft expected to join commercial operations by 2030, airspace complexity will intensify. DPI can enable a harmonized ATM environment where surveillance systems, navigational tools, flow management platforms, and airport operations centers exchange data seamlessly. Technologies such as trajectory-based operations, digital NOTAMs, time-based separations, and AI-enabled decision support tools will help optimize sector capacity, minimize delays, and enhance safety margins. A unified Air Traffic Management single-window digital platform can consolidate data

from radar systems, ADS-B sources, GAGAN, ATFM systems, and airline operations to provide real-time situational awareness.

The **airport ecosystem of the future** will rely increasingly on DPI-driven integrated operations centers that monitor passenger flows, turnaround times, gate allocation, baggage systems, and security queues in a unified interface. Real-time dashboards driven by IoT sensors, machine learning algorithms for predicting congestion, and integrated command centers can help airports plan proactively rather than reactively. Smaller airports, particularly those developed under UDAN, can benefit from cloud-based digital systems that reduce the need for heavy investment in physical infrastructure.

Passenger experience will continue to improve as DPI deepens its role. The expansion of DigiYatra into a full-lifecycle digital passenger platform—covering booking, travel insurance, airport retail, multi-modal transport connections, and feedback systems—can create a seamless journey from home to destination. Such a unified digital interface can reduce transaction frictions, enhance airport throughput, and improve service quality across touchpoints.

Regulatory systems will evolve with enhanced data-driven oversight. Future DPI layers can integrate operational, safety, and training data into analytical engines that provide regulators with insights into risk trends, compliance patterns, and emerging safety challenges. Predictive safety management systems using big data analytics will allow DGCA to move towards proactive safety oversight, early-warning indicators, and performance-based regulation.

Digital transformation will also play a decisive role in the future of **cargo and logistics**. A fully integrated Digital Cargo Community System linking customs, airlines, freight operators, and last-mile logistics providers can significantly reduce bottlenecks. End-to-end digital visibility of cargo flows, blockchain-based documentation, and AI-enabled load planning can bring efficiency to India's supply chain ecosystem. As India seeks to become a global transshipment hub, DPI-driven cargo reforms will be a competitive advantage.

In the domain of **emerging air mobility**, DPI will be pivotal. With increasing interest in drone deliveries, surveillance operations, and the longer-term prospects of eVTOL-based mobility, India must prepare for a digitally managed low-altitude airspace. A fully automated Unmanned Traffic Management (UTM) system integrated with conventional ATM systems will be essential. DPI will enable automated flight authorization, route de-confliction, remote ID tracking, compliance monitoring, and AI-assisted traffic coordination. A comprehensive UTM-ATM integrated digital backbone, can position India as a leader in safe, scalable new-generation air mobility systems.

A parallel area of opportunity lies in sustainable aviation. DPI-enabled platforms can help track carbon emissions, optimize flight trajectories for fuel savings, enable electronic environmental reporting, and support the transition to sustainable aviation fuels through transparent supply chain tracking systems. As India moves towards its sustainability commitments, digital systems will play a crucial enabling role.

Looking ahead, the government's vision for aviation DPI extends beyond deploying advanced digital tools. It seeks to create **foundational, interoperable layers** that standardize interfaces, ensure secure data flows, enable integration across stakeholders, and allow both government and private players to innovate on top of shared digital platforms. This approach—similar to India's digital governance models in other sectors—ensures scalability, inclusiveness, and resilience.

However, realizing this full potential will require addressing challenges. Ensuring cybersecurity across aviation infrastructure will be paramount. With rising digitalization comes greater exposure to cyber risks. Establishing robust cybersecurity frameworks, regular audits, data encryption protocols, and real-time threat detection systems will be essential to safeguard operations. Equally important will be **capacity building**, ensuring personnel across ATC, airlines, airports, regulators, and security agencies are equipped to manage new digital systems. Interoperability standards must be strengthened to avoid the emergence of siloed systems.

Finally, the successful implementation of aviation DPI will depend on effective collaboration between central ministries, regulators, airport operators, technology providers, airlines, and academia. A coordinated institutional approach will allow seamless integration and shared ownership of digital transformation goals.

Towards safer and accessible skies

India's civil aviation sector is witnessing a pivotal moment as it prepares for exponential growth over the coming decades. Digital Public Infrastructure stands at the center of this transformation, offering the foundations needed to enhance safety, modernize operations, empower passengers, and unlock new modes of air mobility. With strong policy intent, institutional collaboration, and sustained investment, India has the opportunity to build one of the world's most advanced, inclusive, and future-ready aviation ecosystems. Digital transformation is no longer a supporting function; it is the engine powering the next phase of India's civil aviation journey—ensuring that the skies remain safe, efficient, and accessible for all.

सत्यमेव जयते

नागर विमानन मंत्रालय
MINISTRY OF CIVIL AVIATION

Airports as Economic Engines: Driving Growth, Connectivity, and National Prosperity

By Vipin Kumar, IAS, Chairman, Airports Authority of India

Executive Summary

India's civil aviation industry has been transformed, deliberately, in a radical way – from a valuable offering to a powerful driver of national economic development and social diversity. The direction is clear, driven by strategic thinking, continued development, and a proactive policy environment, positioning the sector at the forefront of the country's development efforts. As an indicator of such growth, annual passenger traffic is forecast to surge to between 3 billion and 3.5 billion by the year 2047, a spectacular increase that confirms aviation's growing role in the national economy. Currently, the sector contributes roughly US$54 billion to GDP and supports 7.7 million jobs. The physical proof could be found in doubling the number of operational airports from 74 in 2014 to 164 in 2025, a dream to expand the network out to 350-400 airports by 2047, which is a key pillar of Viksit Bharat, the vision of Hon'ble Prime Minister, Shri Narendra Modi.

This paper presents an analysis of the Indian aviation ecosystem, extending the achievements in the past decade to the vision of the future. Our analysis exposes a distinctive, growth-oriented policy environment combining market liberalization along with government policies to encourage selective democratization of air travel. We emphasize future-proofing the infrastructure with a dual strategy of brownfield optimization of current hubs and large-scale greenfield development, such as the case of the expansion plans for Delhi, Chennai, Kolkata and the launch of Navi Mumbai International Airport.

Moreover, the report outlines India's progressive trend towards regulation and makes it known as being an emerging leader in the future frontier of aviation technology. This is especially the case for early drone and Advanced Air Mobility (AAM) technologies that are being pre-emptively implemented for technological integration. Importantly, we highlight the necessity to fill strategic voids that currently inhibit the sector's capability, that is, much outsourcing of Maintenance, Repair and Overhaul (MRO) work, as well as the growing deficiency of pilot training capacity. Filling these gaps will unleash immense economic value and foster a new era of national self-security.

Lastly, India's commitment to responsible growth is framed as a central pillar within its strategy. This point has manifested through the innovative transition to 100 percent green energy in its airports and a pragmatic, morally sound response to international environmental mandates like CORSIA. So, Indian aviation is not strictly a tale of quantitative expansion but a story of qualitative transformation and a disciplined direction to a new era of global aviation leadership for India.

Indian Aviation: Legacy of Transformation and a Vision for a New Era

A Journey Through Time & The 'Viksit Bharat 2047' Vision

The history of Indian aviation is a tale of progressive evolution. It started on February 18, 1911, with an inflight demonstration flight-the precursor to work that would eventually become one of India's top priorities and a national strategic asset.

The period after 2014 is seen as a golden age. Strong government initiatives, monumental infrastructure construction and an increasing participation of enterprises in the process had to ensure smooth operations in this space. This era also turned India into the third largest market for domestic aviation in the world. There was an increase in passenger travel levels over pre-pandemic levels not seen during the previous 5 years but with continuing positive changes now being experienced everywhere around us.

The entire national aviation strategy has become intimately tied to the ambitious "Viksit Bharat 2047" programme, the vision of Hon'ble Prime Minister, Shri Narendra Modi – a comprehensive blueprint for India at its most advanced state by its 100th year of independence. The aviation sector is central to this picture with a clear intention of increasing the operational airport network from 164 in 2025 to an ambitious 350-400 by 2047. This is not just a numbers game; it's a strategic push to build connectivity and a new wealth generation model for tier-two and tier-three cities to promote regional prosperity and growth that is inclusive and fair.

As the first of its kind in India, the National Civil Aviation Policy (NCAP) 2016 lays the strategic blueprint for the industry's growth. Several key elements of this policy have transformed the world of aviation to an alarming extent.

The Regional Connectivity Scheme (RCS), now titled UDAN (Ude Desh ka Aam Nagrik -Let the Common Citizen Fly) is a flagship initiative put in place to make flying affordable and accessible to the masses by establishing viability gap funding (VGF) for flights to underserved and unserved airports.

UDAN Achievement Metric	Current Status (2024)	Impact
Operational Routes	625 routes	Enhanced regional connectivity
Airports Connected	90 (including 15 heliports, 2 water aerodromes)	Expanded aviation network
Total Passengers	1.49 crore passengers	Democratized air travel
Flights Operated	2.8 lakh flights	Regular connectivity maintained
Investment Utilization	₹3,751 crores (83% of allocated funds)	Efficient resource deployment

The National Civil Aviation Policy 2016 significantly liberalized international operating conditions by replacing the erstwhile 5/20 rule with a more flexible 0/20 framework. This critical regulatory shift immediately granted Indian airlines greater freedom to expand globally. Specifically, under these new guidelines, an Indian carrier is now permitted to commence international operations as soon as it meets a minimum domestic operational threshold: either possessing 20 aircraft in its fleet or ensuring 20% of its total fleet is operational on domestic routes—whichever metric results in the higher number. Furthermore, a key

advantage of this revision is the elimination of any prerequisite time period for domestic operations before an airline can start flying internationally.

NCAP 2016 also provided a new framework for airport development and management. It favoured a hybrid-till model for next tariffs, in which 30% of revenue from non-aeronautical activities are converted to cross-subsidization of aeronautical fees. This financial model seeks to harmonize the economic feasibility of airport operators with the affordability of services to airlines and passengers. Also, the policy aimed to increase the domestic MRO (Maintenance, Repair, and Overhaul) sector, through tax rationalization and simplified procedures.

These levers reflect a cohesive and holistic approach to promoting the whole aviation ecosystem involving infrastructure, connectivity and economic viability.

Global Policy Benchmarking: India and ICAO

The comparative perspectives of global aviation policy frameworks under the International Civil Aviation Organization (ICAO) are useful for understanding India's unique and evolving approach. ICAO promotes harmonised international standards and recommended practices (SARPs) that ensure safety, efficiency, and environmental sustainability across member states, while encouraging local adaptation based on national priorities and levels of development.

India's aviation policy framework—reflected in the National Civil Aviation Policy (NCAP) and implemented through flagship initiatives such as the Regional Connectivity Scheme (UDAN)—embodies this principle of balanced alignment. It combines market-driven mechanisms with targeted viability gap funding (VGF), shared between the Central and State Governments, thereby creating an economically sustainable and politically resilient model of regional air connectivity.

Unlike a purely deregulated or fully subsidised system, India's approach fosters an ecosystem in which major hubs such as Chennai and Kolkata Airports act as growth anchors, complemented by the development of smaller regional airports. This shared-cost model reinforces inclusivity, operational viability, and long-term resilience, while remaining consistent with ICAO's global vision for safe, efficient, and equitable air transport development.

The following table provides a clear, high-level overview of the Indian civil aviation sector's robust expansion across key operational and financial parameters, underscoring the success of the current policy direction:

Performance Metric	FY 2022-23	FY 2023-24	Growth (%)
Revenue from Operations (₹ Crores)	11,424.90	14,962.76	31.0%
Passenger Traffic (Millions)	324.0	376.0	16.0%
Aircraft Movements	2.8 Million	3.2 Million	14.3%

Measuring India's Ascendancy: A Data-Driven View

The Economic Engine

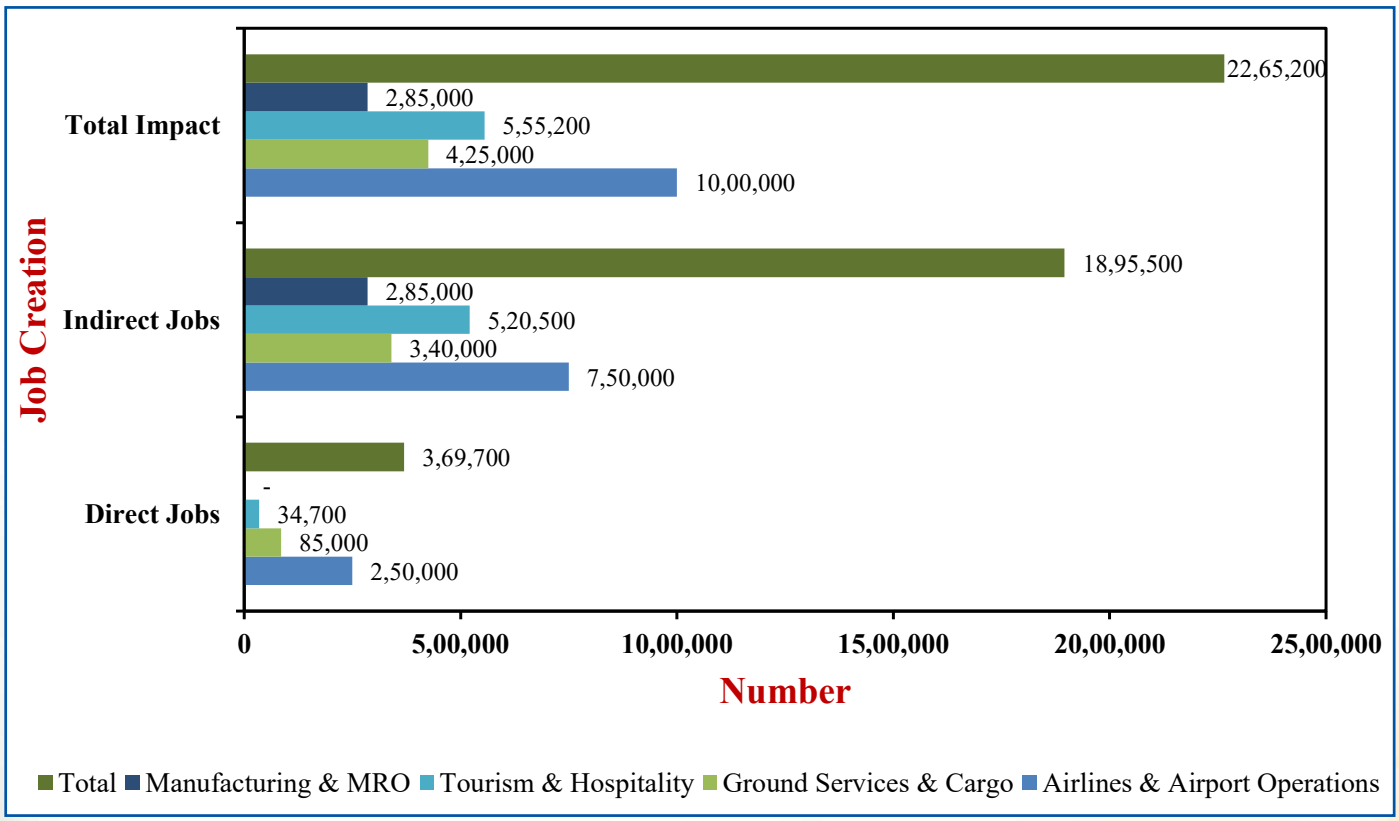
The Indian aviation sector has become a major economic force in the country. In 2023, the industry's aggregate annual contribution to India's Gross Domestic Product accounted for

nearly $53.6 billion with almost 1.5% of GDP. Its ability to create jobs is equally impressive, underpinning 7.7 million jobs at a national level. This overall employment comprises individual positions (369,700 workers directly working at the core operations of aeronautics, airports and services for the navigation of air traffic), as well as indirect jobs and induced jobs. This employment extends beyond basic operations to encompass various ancillary and support services – from ground handling, logistics, retail and hospitality – all of which underscore the strong economic multiplier effect of the sector. The strong growth in passenger numbers is evidence of the sector's dynamic nature and its contribution to national development with a reported 15% increase year-on-year in total air passengers handled in FY24.

Global and Domestic Benchmarking

India's civil aviation market has a history of explosive growth and is in a leading position to expand air traffic worldwide. By 2040, annual passenger traffic in the country is expected to grow at rate of more than 6.2%, the fastest of the world major economies, and far exceeding the world average of 3.9 per cent. This explosive growth is evidenced by historical performance: domestic traffic has exploded threefold over the last decade, compared with more than two-fold international traffic.

Outside of passenger operations, the air cargo sector is also on a strong path. India's air freight market is set to grow at the pace of 6-9% per year until 2029 – and it does so comfortably ahead of the global air freight market's average (and in



particular sub-regional) growth in comparison with the rest of the world. International air cargo is especially strong, with an estimated 19% growth in 2024 in the market. This growth is extremely centralised -- with 90% of India's air cargo capacity under the control of six of the major airport hubs and, thus, the importance of specific infrastructure works in national logistics.

Futureproof the Future

With data-driven projections – the evolution of Indian aviation is inherently the result of structural, rather than simply cyclical, growth and that it is underpinned by demographics and economy. And there is a critical paradox here: despite hosting nearly 20 percent of the world's population, India still produces only 4 percent of the total global air traffic. This is not a flaw but a strong signal for the huge growth that comes next when penetration of air travel takes off in the future in rapid growth due to rapidly increasing disposable incomes and burgeoning middle class. That optimism is bolstered significantly by international body projections.

According to the International Air Transport Association (IATA), it is estimated that India's total annual passenger traffic will triple over the next twenty years, indicating the country's emergence as a world aerospace powerhouse. Even though the domestic market will continue to be the leading growth engine, global connectivity will increase substantially, but so does the global network. By 2043, the nation will have seen an estimated 17.7 billion passenger traffic worldwide (17.7 billion by 2043 and 22.3 billion by 2053) and India as ranked in the top three markets, being consistently amongst the top three markets, top 3 amongst them United States and China.

In order to satisfy the skyrocketing demand, Airbus now forecasts that India will need 2,840 new planes in the next twenty years. That sustained and unprecedented want will be the engine of ambitious plans to improve national infrastructure and human capital.

The Airports Authority of India (AAI): The backbone of infrastructure and strategic enabler

Expand infrastructure and increase capacity

The Airports Authority of India (AAI) remains the backbone of India's civil aviation framework, encompassing the planning, construction, upgrading, operation, and maintenance of a vast network of airports across the country. One of the most significant achievements of the past decade has been the rapid expansion and modernization of airport infrastructure, with the number of operational airports increasing from 74 in 2014 to 164 in 2025. Infrastructure development has been pursued through a dual strategy—optimising existing brownfield hubs while simultaneously developing greenfield projects to meet future demand. The expansion strategies at Chennai International Airport and Kolkata's Netaji Subhas Chandra Bose International Airport exemplifies this balanced approach.

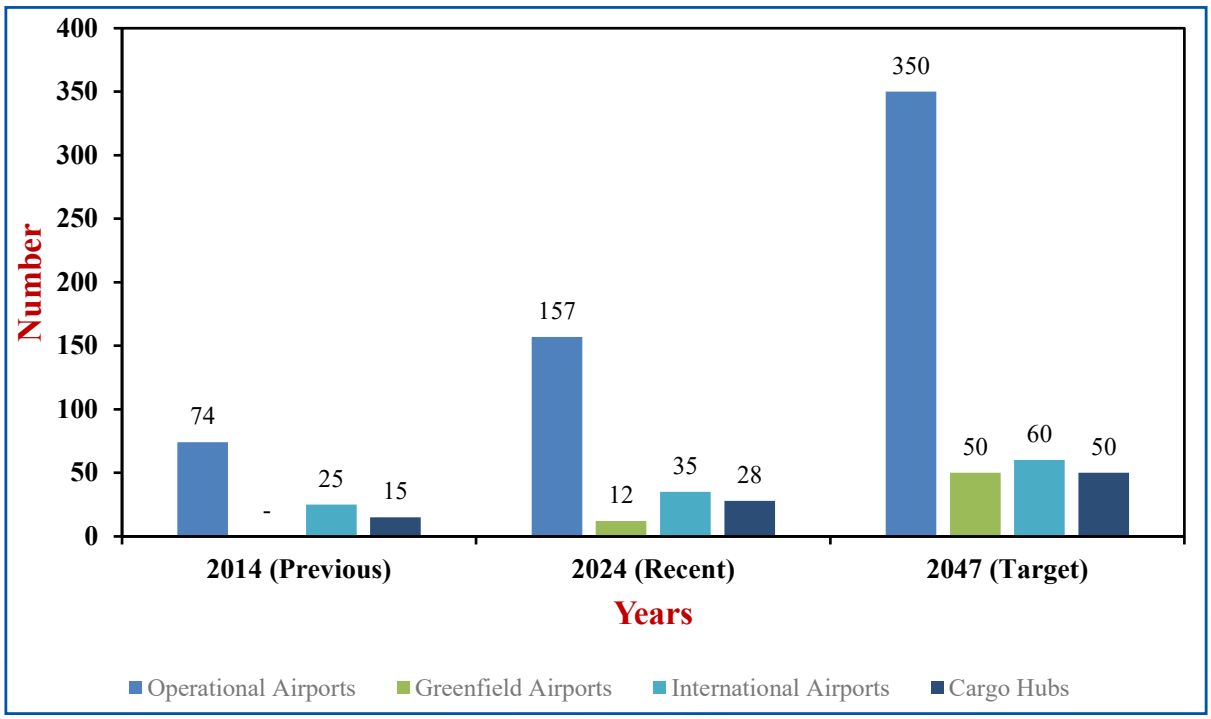
At Chennai Airport, a major brownfield modernization programme is underway, involving the reconstruction of the old international terminal and the construction of a new integrated terminal complex (T2), which will expand the airport's total handling capacity from approximately 23 million passengers per annum (MPA) to nearly 35 MPA by 2027. The project also incorporates advanced aerobridge systems, upgraded taxiway configurations, and an expanded apron area to improve airside efficiency and safety in line with ICAO Annex 14 standards.

Simultaneously, Kolkata Airport is undergoing a comprehensive capacity enhancement initiative

Chennai Airport

to address rapid traffic growth in eastern India. The planned expansion includes the addition of a new integrated terminal building, expansion of the cargo complex to handle over 0.25 million tonnes of cargo annually, and airfield upgrades to increase runway throughput to 65 movements per hour. The introduction of a dedicated General Aviation enclave and the proposed Maintenance, Repair and Overhaul (MRO) facility will further strengthen its role as a regional aviation hub.

Together, these developments reflect AAI's forward-looking strategy—grounded in ICAO's global frameworks for sustainable airport infrastructure planning—to create a balanced ecosystem of high-capacity metropolitan hubs and regionally connected airports, ensuring resilience, inclusivity, and long-term operational excellence.



Strategic Land Planning for Next-Gen Aircraft

The most vital resource is forward-looking land planning in the competitive arena of global aviation. India's focus on aviation is making an important pivot for the country; one that knows that airports must be designed to address the needs of aircraft and innovative mobility concepts that will pervade what they can do tomorrow. Our brownfield hubs already scarce, and at least some of them severely stretched, are what the basic challenge is to build upon. In these older sites, changes to integrate and accommodate these new wide-body jets such as the Airbus A350 and Boeing 777X lead to an extremely complex and expensive reengineering process, involving a long runway or extended taxiway, that obviously only leaves them with a limited future of modernization.

That limitation is precisely what legitimises the national focus on greenfield development. A new airport is not just a substitute; it's a blank canvas on which genuinely future-proof design can be written. Beginning from a clean slate, planners can bake in agility for technologies that are only recently transitioning from concept to reality. Navi Mumbai International Airport's master plan guarantees that airside infrastructure—and its numerous planned runways—are certified for the largest wide-body aircraft of its kind at an early stage, cementing NMIA's status as one of the most important international gateways for the coming few decades. More critically, the planning has included purpose constructed, dedicated real estate for air platforms of the future. The conscious provision of a new GA terminal and a new heliport is an intelligent assertion that the future of flying air traffic will be multimodal. This mix will be designed with a focus on a hybrid approach combining static fixed-wing operations with the developing arena of Urban Air Mobility (UAM), enabled by eVTOLs (electric Vertical Take-Off and Landing vehicles).

In designating these specialized zones from the start, NMIA avoids the expensive modifications that older airports will inevitably have to adapt towards such as in order that they might be fully integrated with air taxis and other new forms of last-mile connectivity—which ensures that India's new-generation airports will be built to ensure they take full advantage of the revolution-oriented economic opportunities that the next chapter of flights offers.

The most critical criterion for success in modern airport planning is not merely the number of flights handled, but the seamless integration of airports within the wider network of urban, regional, and national transport systems. India's contemporary aviation development strategy recognises this, placing a strong emphasis on multimodal synergy as a cornerstone of national logistics efficiency; where the coordinated flow of passengers and cargo enhances both connectivity and economic productivity.

This comprehensive vision is exemplified by ongoing initiatives at Chennai and Kolkata airports. The Chennai Airport Multimodal Integration Plan, being implemented in coordination with the Chennai Metro Rail Limited (CMRL) and Indian Railways, aims to establish direct connectivity between the airport terminals, metro lines, and suburban rail systems. This will reduce transfer times, streamline passenger interchange, and promote greater use of public transport-a key sustainability objective endorsed by ICAO's Global Air Transport Connectivity Framework.

Similarly, at Kolkata, plans are underway to strengthen multimodal access by integrating the airport with the New Barrackpore–Airport–New Garia Metro Corridor, alongside upgraded road linkages via the Eastern Metropolitan Bypass. These interventions are designed to ensure that the airport functions not as an isolated transport node but as a multimodal hub within the broader

Kolkata Airport

urban mobility ecosystem, supporting the rapid expansion of trade, tourism, and regional development in eastern India.

Such integration embodies the global best practices advocated by ICAO-focusing on connectivity, operational efficiency, and environmental sustainability. The strategic alignment of aviation and surface transport infrastructure serves a triple mandate: to optimise system utilisation, enhance the passenger experience through seamless movement, and position the airport as a nucleus of urban and economic transformation. An airport should not function just as a terminus but as a central and connected point of connection among the entire logistics matrix of the nation.

A New Era of Regulation: Fostering Innovation and Safety

The Six-Groups Paradigm

India's regulatory approach to future aviation is marked for its forward-looking nature and systematic thinking. The Directorate General of Civil Aviation (DGCA) has established itself as an increasingly forward-looking authority, with six teams dedicated to developing requirements and guidance for Advanced Air Mobility (AAM). This is an integrated strategy to ensure the effective adoption of these technologies, before they are put to broader use in commercial markets. These groups' attention will cover the entire ecosystem of AAM, all the way from the airframe to the ground structure.

The working groups work to:

- **Type Certification**: Formation or design of airworthiness standards for new vertical take-off and landing capable aircraft (VCA).
- **Crew Licensing**: Creating new standards and training pathways for pilots of these new aircraft.
- **Air Operator Permits**: Obtaining the appropriate permits for commercial AAM traffic. · UAS Traffic Management (UTM): Designing applications to allow drone and eVTOL traffic to integrate safely into the national airspace, separate from conventional air traffic.
- **Maintenance, Repair and Overhaul (MRO)**: Developing the framework for MRO required of this new fleet.
- **Vertiports**: Providing guidance on the design, operation, and authorization of the necessary landing infrastructure.

The multi-pronged, concurrent evolution of this technology serves as a clear signal to global technology innovators and investors that India is

going to be far more than a market for innovative future types of aviation machines; it's a partner in designing laws that will ensure their safe, effective applications.

Integration of Drones, eVTOLs and Emerging technologies

India will no longer be just dependent on steel and concrete to realize the country's ambition to be a leader in global aviation, but will rather be able to do so through a proactive regulatory approach to prepare for what flight would mean in the future. The Government has been rushing to reform the regulations in the fields of drones, Electric Vertical Take-Off and Landing (eVTOL) vehicles and so forth.

The Drone (Amendment) Rules, 2024, are a huge liberalization of regulations. Through simplifying registrations and the elimination of the passport, the government has democratized drone technology. Acceptance of alternatives provides such tools for a much wider audience as alternative government-issued identification, to a very large extent, particularly in rural areas. This shift is essential to unlock the enormous use of drones in agriculture, targeted logistics, surveying, and emergency response in the rest of the country.

File photograph of eVTOLs

Importantly, the government is taking a step ahead of the next wave of aerial mobility by establishing the ground rules for eVTOLs. The Directorate General of Civil Aviation (DGCA) has written guidance for the specification of type certification of VTOL-Capable Aircraft (VCAs) and for the designing and operation of "vertiports" as well. This pre-emptive rulemaking marks an important policy milestone, enabling India to align its regulatory framework with emerging global standards under the International Civil Aviation Organization (ICAO). By formulating clear and forward-looking rules governing new categories of aircraft-including those designed for powered-lift operations and advanced air mobility (AAM)-India, is positioning itself to ensure operational safety, certification integrity, and seamless integration within the evolving international aviation ecosystem. India is ensuring that, on this new technology's development stage, the regulatory pathway for it being rolled out will be well set once it gets its feet firmly planted, ready to launch such flying vehicles into the nation's airspace.

The Era of a Modernizing Airspace Management

India's airspace management modernization is an ongoing, tech-enabled endeavour to improve on and enhance safety, capacity, and operational efficiency through continuously updating the infrastructure. At the core of this evolution is the adaptation and deployment of the GAGAN (GPS-aided Geo-augmented Navigation) system, a collaborative effort of partnership between the AAI, ISRO, and BEL. GAGAN revolutionizes navigation to scale over the whole ecosystem and supports a more accurate and effective flight path. Outside of navigation, a variety of activities are being executed including the deployment of FUA (Flexible Use of Airspace), a more advanced type of system that will help to optimize the use of high-volume civil and military air traffic. Also,

Unmanned Traffic Management (UTM) systems are essential to safely incorporate new aerial technologies such as drones and eVTOLs. Remote/digital ATC & real-time analytics data collection will be the future of air traffic control (ATC) and will make it possible to make rapid and data-driven decisions to guarantee that the ATC is robust and prepared for future projects.

Development of Regulatory Framework

Apart from the management of airspace, the civil aviation regulatory bodies are also undertaking major reforms to enhance overall aviation safety and professional oversight. As an immediate answer to the aviation industry concerns, new and phased-in revisions are being rolled out in order to ensure appropriate crew rest and greater safe performance of safer practices for industry and piloting in the field in the flight safety of Flight Duty Time Limitations (FDTL) for pilots; the revised FDTL will be established by way of proposed changes through a phased process. The certification process of the Radio Telephone Operators (RTO) has also been refreshed so that all communications staff have been officially trained and equipped for air traffic exchange. Furthermore, the government has introduced the Aircraft Accident Investigation Bureau (AAIB) as an independent agency to bring it consistent with international best practices and ICAO Annex 13 standards. This vital part has the effect of separating the role of accident investigation from that of regulatory oversight; to maintain objectivity and transparency in safety reviews. This dedication extends to building human capital and technical excellence.

Leading the Green Aviation Transition

India's commitment to environmental sustainability is a defining characteristic of its modern aviation strategy. The nation has emerged as a global leader in the adoption of green energy in airport operations, with 73 airports now operating on 100% green energy. This initiative positions India at the forefront of sustainable aviation practices.

The success of this strategy is best exemplified by the achievements of the country's major hubs. Delhi's Indira Gandhi International Airport (IGIA), for instance, has achieved Net Zero Carbon Emission Airport status (Level 5) under the Airport Council International's (ACI) Airport Carbon Accreditation (ACA) program, well ahead of its 2030 target.

This achievement was a result of several key initiatives, including the installation of a 7.84 MW solar power plant, the adoption of electric vehicles and TaxiBots, and the implementation of an ISO 50001:2018 Energy Management System. Major airports like Delhi, Mumbai, Hyderabad, and Bengaluru have all achieved Level 4+ ACI Accreditation, reaching carbon neutrality status and demonstrating their commitment to reducing their environmental footprint.

Conclusion & Recommendations: A Blueprint for a Global Aviation Hub

India's aviation sector is more than just a mode of transport; it is a powerful economic engine and a strategic enabler of national prosperity. The journey from 74 operational airports in 2014 to 164 in 2025, with a vision to reach 350-400 by 2047, is a clear demonstration of the transformative power of a well-articulated strategic vision and sustained investment. The sector's substantial contribution of $54 billion to the GDP and the generation of 7.7 million jobs underscores its critical role. The sector's future growth is not speculative but is grounded in the reality of a massive, under-penetrated domestic market and a proactive policy framework designed to foster innovation and inclusivity.

The Airports Authority of India (AAI) is actively fulfilling its dual role as both developer and

operator in the nation's infrastructure drive by undertaking multiple greenfield airport projects. These new-build projects, located on undeveloped sites, are crucial for expanding the national aviation network beyond congested metro hubs, especially in underserved regions. By leveraging its extensive experience in Air Navigation Services (ANS) and airport management, AAI ensures these greenfield facilities are designed with modern, future-proof capacity, directly supporting the government's mandate for rapid, inclusive regional connectivity under the UDAN scheme.

India's aviation sector is more than just a mode of transport; it is a powerful economic engine and a strategic enabler of national prosperity. The journey from 74 operational airports in 2014 to 164 in 2025, with a vision to reach 350-400 by 2047, is a clear demonstration of the transformative power of a well-articulated strategic vision and sustained investment. The sector's substantial contribution of $54 billion to the GDP and the generation of 7.7 million jobs underscores its critical role. The sector's future growth is not speculative but is grounded in the reality of a massive, under-penetrated domestic market and a proactive policy framework designed to foster innovation and inclusivity.

The strategic blueprint for the future is clear. It requires a continued focus on future-proofing infrastructure through a hybrid model of brownfield optimization and greenfield development, as seen in the ambitious plans for Delhi and Mumbai. It demands a forward-looking regulatory approach that pre-emptively addresses the challenges of new technologies like drones and eVTOLs, as demonstrated by the Civil Aviation Regulatory Body's six-group paradigm earlier. Most importantly, it calls for a candid recognition of key strategic gaps, particularly in the MRO and FTO sectors, which, if bridged, would unlock significant economic value and enhance India's self-reliance.

To solidify this vision, comprehensive Master Plans have been prepared for all operational airports, setting a clear roadmap for 2047. This extensive exercise aligns perfectly with the Prime Minister's dream of a 'Viksit Bharat' ensuring that aviation becomes a cornerstone of national development. The strategy emphasizes not just major hubs, but also connecting Tier-2, Tier-3, and remote cities through schemes like UDAN, promoting small aircraft operations, and developing heliports. By focusing on this last-mile connectivity, we share the vision of democratizing air travel, making it affordable and accessible to the 'Aam Nagrik', and transforming once-remote areas into vibrant economic centres by the centenary of our independence.

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

Source of data- Open internet platform & AAI records.

The Catalyst in India's Aviation Boom: A Simulator Infrastructure Revolution

By Dr. Sharad Kumar, Chief Advisor, Airports Authority of India

India's aviation sector has become one of the world's fastest-growing aviation market. New airports are rising across the country, fleets are expanding at historic speed, and passenger demand shows no signs of slowing. Yet beneath this rise lies a critical gap—one that doesn't involve runways, terminals or airspace at all.

It involves dimly lit, motion-enabled rooms where pilots learn to handle engine fires, hydraulic failures, wind shear, microbursts and catastrophic system breakdowns.

It involves the heart of aviation safety: Simulators.

The Silent Backbone of Aviation Safety

Full Flight Simulators (FFS) are where pilots learn the skills that are necessary licensing requirements. They reproduce cockpit environments with extraordinary realism, allowing trainees to rehearse emergencies and complex procedures without risk. They are also mandatory for type-rating and recurrent checks—requirements that grow sharper as aircraft become more technologically advanced.

A nation with 1,700 aircraft already on order by domestic airlines and a projected requirement of nearly 30,000 additional pilots to operate these aircraft, India's simulator infrastructure may not be sufficient for tomorrow's need. A substantial portion of Indian pilots still travel to Dubai, Kuala Lumpur, Singapore, Europe or the US to complete basic training and licensing requirements.

The cost is enormous—financially, operationally and strategically.

A Billion-Dollar Gap Waiting to Be Filled

India today has just about 32 full-flight simulators located within the country, while around 36 DGCA-approved simulators used by Indian operators are located overseas. This means that a significant share of India's mandatory pilot training and recurrent checks are being done on foreign infrastructure, despite the fast-expanding domestic fleet.

In terms of aircraft type distribution, the majority of available simulators cater to Boeing B737, Airbus A320 and ATR-72 fleets, with only limited availability for other aircraft categories. This narrow concentration further constrains training flexibility as India's fleet mix rapidly diversifies.

The shortage of domestic simulators drives up airline training budgets, extends cadets' waiting time for type-ratings, and contributes to substantial foreign exchange outflow. Business aviation operators face an even bigger challenge, with limited simulator options for aircraft such as

the Citation 560XL, King Air B200, Hawker 750, Falcon 2000, Gulfstream types and critical rotary-wing platforms.

This shortage affects not just airlines, but India's overall aviation standards. Limited access means fewer training slots, slower licensing timelines, and reduced opportunities for advanced proficiency checks. As India's fleets scale, this gap threatens to become a brake on growth.

But it is also a rare opportunity—one that the Airports Authority of India (AAI) is uniquely positioned to unlock.

AAI's Land Advantage: Turning Airports into Training Ecosystems

AAI's land portfolio across major airports gives India an extraordinary advantage. By allocating well-connected, airport-side land to training organisations on long-term leases, AAI can seed new simulator hubs in cities where demand already exists- Delhi, Chennai, Kolkata, Bengaluru (HAL), Jaipur, Pune, Ahmedabad, Guwahati, Lucknow, Trichy and others.

Pilots prefer training close to active airport zones for good reason: ease of travel, hotel access, crew coordination and immediate operational relevance. Simulator providers prefer it because utilisation increases dramatically when training centres are tied to urban airspace and crew flow.

With the right push, these locations can evolve into full-fledged aviation training clusters, drawing airlines, FTOs, OEM partners, and thousands of pilots each year.

The Industry Is Ready—The Infrastructure Must Catch Up

India's leading training companies—FSTC, CAE, Sim Aero, Alfa Aviation—are all prepared to scale. Several are exploring new cities. OEMs like Airbus, Boeing, Embraer and ATR know the demand curve and recognise India's potential as a long-term training hub. Airlines are vocal about the need for domestic capacity, especially as they induct new aircraft at record pace.

Across the ecosystem, one sentiment is shared:

India's simulator infrastructure needs to grow as fast as its fleet.

A Pathway to Global Leadership

The global market also tilts in India's favour. Simulator shortages plague the Middle East, Africa, Latin America and parts of Asia-Pacific. Training costs abroad are rising, waiting periods are lengthening, and airlines worldwide are searching for affordable, tech-forward training destinations.

India can become that destination.

Cost-effective infrastructure, skilled engineers, a strong regulatory framework and rising aviation volume position India to become a net exporter of simulator training- much like its transformation into an IT and medical tourism leader.

If developed right, India can attract foreign cadets, draw regional operators, and carve out a new identity as a global skilling hub.

The National Dividend: Safety, Skills, Revenue

Expanding simulator infrastructure offers a triple advantage:

Safer Skies: More simulators mean more frequent checks, better crew coordination courses, and a higher baseline of operational readiness for pilots.

Skilled Workforce: Simulator centres require engineers, instructors, technicians, software experts, and maintenance specialists—creating thousands of high-skill jobs.

Sustainable Revenue: For AAI, long-term leasing of underutilised airport land provides a stable non-aero revenue stream while boosting local airport economies.

Additionally, indigenous simulator capability supports **Atmanirbhar Bharat** and **Skill India** by enabling large-scale domestic skill development, strengthening long-term aviation self-reliance, and significantly reducing foreign exchange outgo.

A Moment India Cannot Miss

India's aviation ascent will not be sustained by aircraft orders and new terminals alone. It requires a deep, resilient training architecture capable of producing pilots who match global standards in skill, competency and safety consciousness.

The foundation of that architecture is simulator training.

With AAI, airlines and training providers aligned, India stands at the cusp of a transformation- one that could redefine how the world trains its pilots.

If India seizes this moment, the question will no longer be why pilots travel abroad for training, but why international airlines aren't already sending their cadets to India.

The runway for India's next aviation leap is ready. It begins not in the skies—but in the simulator.

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

India's Aviation Sector: Soaring to New Heights of Growth and Connectivity

By Anil Gupta, Member (Planning), Airports Authority of India

India's aviation sector is currently experiencing unparalleled growth, driven by increasing passenger demand and robust government support through progressive policies. Over the past decade, the industry has undergone a remarkable transformation, positioning India as one of the leading players in global aviation. As of 2025, India is consolidating its position as the third-largest domestic aviation market, following the US and China.

This growth trajectory is set to continue in the coming years, with India's aviation sector poised for rapid expansion over the next decade. India's expanding middle class, currently estimated at over 400 million people, represents a massive untapped market for air travel. As disposable incomes rise and air fares become more competitive with rail travel, first-time flyers are entering the market in unprecedented numbers. The Indian government's sustained commitment to the sector's development has played a pivotal role in this success. A series of strategic initiatives, focused on strengthening infrastructure, enhancing connectivity, and fostering a more competitive market, have been implemented to support this growth.

Our Hon'ble Prime Minister highlights India's unprecedented advancement with the following words: "In recent years, India's aviation sector has advanced at an unprecedented pace, Today, India stands among the fastest growing domestic aviation markets in the world." – Shri Narendra Modi.

Expanding infrastructure: a key pillar of growth

India's aviation infrastructure has expanded at an unprecedented pace. The number of operational airports in the country has more than doubled, increasing from 74 in 2014 to 164 in 2025. The government's goal of achieving 350 operational airports by 2047 further highlights the ambitious vision for the sector. This transformation offers a crucial opportunity for aviation stakeholders to enhance their capabilities, anticipate future demands, and collaboratively address the challenges associated with rapid expansion.

The Airports Authority of India (AAI), as the nation's sole Air Navigation Service Provider (ANSP) and its largest airport operator, has been instrumental in driving this growth. AAI is responsible for the development of both new airports and the augmentation of existing infrastructure in line with India's increasing aviation demands. In addition, AAI is enhancing air navigation services to improve operational efficiency and ensure safe and reliable air travel.

AAI has established a strong workforce, employing around 16,000+ permanent employees and an additional 20,000 contract staff across the country. This robust workforce allows AAI the flexibility to

deploy personnel efficiently in response to varying demand and operational needs. Furthermore, AAI has invested significantly in training infrastructure, including three specialized air traffic control training centers and various other institutes dedicated to different aviation-related cadres. We have also established Civil Aviation Research Organisation (CARO) at Hyderabad, which plays a key role in advancing research and development in the Indian civil aviation sector. With its emphasis on innovation and technology, CARO helps drive improvements in air traffic control systems, air navigation services, and airport operations, contributing to a more efficient and future-ready aviation ecosystem that benefits all our stakeholders to supports the vision of Aatmnirbhar Bharat.

Indian Aviation Academy (IAA) is a premier Indian Aviation Academy operates as a joint training academy of three key organizations: Airports Authority of India (AAI), Directorate General of Civil Aviation (DGCA), and Bureau of Civil Aviation Security (BCAS). This institute focuses on education, training, and research across all aviation domains. IAA aims to establish itself as a center of excellence in the Asia-Pacific region for quality aviation education and research.

Regional connectivity: enhancing inclusivity and economic growth

The Regional Connectivity Scheme (UDAN), launched in 2016, has been a transformative force in expanding India's aviation footprint. The scheme has revitalized existing airstrips and developed modern airport infrastructure in underserved regions, bringing air travel to remote areas and enhancing socio-economic inclusion. The Airports Authority of India has played a pivotal role in the successful implementation of UDAN. As of 2025, under UDAN, 649 routes have been operationalized, connecting 93 underserved and unserved airports, including 15 heliports and 2 water aerodromes. The scheme has already benefited over 1.56 crore passengers, underscoring its significant impact on regional connectivity.

Looking ahead, 50 additional airports are expected to be launched under the UDAN scheme by 2025, further connecting India's remote and geographically isolated regions. These developments will play a crucial role in boosting regional economic growth and improving access to essential services, particularly in emergency situations.

In 2024–25, India's domestic aviation sector recorded 33.5 crore passengers, marking a 9.1% year-on-year growth. International passenger traffic also showed strong momentum, rising to 7.7 crore passengers, which represents a 10.7% increase compared to the previous year.

Airport infrastructure and passenger experience

In FY 2024-25, AAI marked significant milestones in the development of world-class airport infrastructure. Notable projects include the inauguration of Solapur, Rewa, Ambikapur, and Sarsawa airports, and the laying of foundation stones for new terminal buildings at Varanasi. These initiatives demonstrate India's commitment to enhancing both operational efficiency and passenger experience.

In FY 2025-26, AAI continued its momentum with the construction of new terminal buildings at Hisar and new civil enclaves at Bihta Airport, among other initiatives. Additionally, the newly inaugurated terminal buildings at Patna, Datia, Satna, and Tuticorin airports, an interim terminal building at Purnea Airport are set to transform regional air travel, further expanding the network of modernized airport infrastructure. These projects mark a significant leap forward in India's

aviation sector, laying the groundwork for future growth and improved connectivity.

In an effort to enhance the travellers' overall experience, AAI's new airport terminal buildings are offering a distinctive sense of place by integrating regional art and cultural elements into their design. These terminals are not just gateways to travel, but also immersive experiences that connect passengers to the unique heritage of the surrounding areas. At Tuticorin Airport, the maritime legacy of the port city is brought to life with larger-than-life sculptures of ships and waves, along with vibrant paintings celebrating Tamil Nadu's cultural traditions like Jallikattu. In Purnea, the intricate Madhubani paintings by Padma Shri awardee Shanti Devi and the vibrant fish motifs of Dulari Devi's artwork reflect the rich folk traditions of Mithila, while Godna art by Shivan Paswan Ji tells timeless stories through bold lines and sacred motifs. Similarly, the Patna Airport incorporates depictions of the iconic Chhath Puja festival and Guru Gobind Singh Ji, capturing the spirit of Bihar's cultural and spiritual life. These carefully curated art pieces not only enhance the passenger experience but also celebrate the diverse and rich heritage of the regions, making every visit to an AAI-operated airport a cultural journey.

Technological innovations and sustainability initiatives

India's aviation sector is undergoing significant modernization through initiatives like the Greenfield Airports Policy, which facilitates the development of new airports on unused land via public-private partnerships. This strategy aims to decongest metro hubs and expand the country's aviation infrastructure. To further enhance the travel experience, the government introduced Digi Yatra in 2022, a paperless, contactless passenger processing system using facial recognition technology. By March 2025, over 52.2 million passengers had used this service, and the Digi Yatra app, available on both Android and iOS, has been downloaded by more than 12.1 million users. Additionally, the Drone Rules 2021 have streamlined regulations, opening up India's drone sector for wider commercial use. The Production-Linked Incentive (PLI) scheme, with Rs 34.79 crore disbursed in FY 24-25, has further boosted domestic drone manufacturing, reducing reliance on imports and strengthening India's self-reliant drone ecosystem.

The sector is also making significant strides in sustainability. The Airports Authority of India's Sustainable Green Airports Mission (SUGAM), launched in 2023, aims to promote environmental best practices across AAI-operated airports. As on date, 87 airports operated by AAI are powered entirely by green energy, marking a significant step towards India's commitment to achieving net-zero emissions by 2030.

Expanding the aviation ecosystem: future outlook, new terminals/ airports maintenance and training

AAI is rapidly charting a comprehensive roadmap to expand existing airports and develop new ones in line with India's accelerating aviation growth. With Indian carriers placing orders for more than 1,500 aircraft, the nation's air traffic, airport capacity, and fleet size are projected to rise to 3,500 by 2047.

Passenger traffic is also set for a dramatic surge—expected to double to 500 million by 2030. To meet this expanding demand, AAI is constructing new Terminals / Expansion at Leh, Jodhpur, Goa, Vijayawada, Rajahmundry, Belagavi, Hubballi, Kadapa, Chennai (Part-II), Udaipur, Jammu, Agra, Darbhanga, Imphal, Bagdogra, Bihta, Varanasi, Keshod and Greenfield at Dholera & Kota, fully equipped with modern, scalable, and efficient infrastructure.

In parallel, significant strides have been made in establishing Flying Training Organizations (FTOs) to meet the rising need for skilled commercial pilots, ensuring that India's human resource capabilities grow in step with its aviation ambitions.

Currently, there are 40 Flying Training Organizations (FTOs) established across India, offering a diverse range of aviation training programs. These are spread across various states, including Bihar, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, and Uttar Pradesh.

These institutions are helping to shape the future of aviation in India, offering a wide range of training opportunities for aspiring pilots and aviation professionals across the country.

The rapidly expanding civil aviation industry presents a compelling case for the growth of the Maintenance, Repair, and Overhaul (MRO) sector in India. While the industry is still in its early stages, rising consumer demand, an increasing fleet size, and favourable policy interventions are driving its development. The growth of India's MRO sector is expected to bring several benefits, including reduced foreign exchange outflows, increased employment opportunities, enhanced domestic MRO capabilities, and quicker turnaround times for airlines and carriers.

Conclusion

India's aviation sector is set for a transformative journey by 2047, driven by rapid growth, technological innovation, and sustainability. With plans to expand to 350 operational airports and a fleet of 3,500 aircraft, India is poised to become a global aviation leader. The government's focus on infrastructure, regional connectivity, and workforce development ensures the sector can meet rising demand, with passenger traffic expected to reach 500 million by 2030.

AAI's investments in expanding the Indian airport network, upgrading Air Navigation Systems, training & research, and sustainability initiatives like the Green Airports Mission (SUGAM) will pave the way for a future-proof aviation ecosystem, aligning with the vision of Aatmnirbhar Bharat, empowering India's self-reliance in aviation. The growth of the MRO sector will reduce dependence on foreign services and create jobs, strengthening India's self-reliance.

By 2047, India's aviation sector will not only drive economic growth and inclusivity but will also set new standards for global air travel, making it more connected, efficient, and environmentally sustainable.

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

Digi Yatra: India's Pioneering Step Toward Seamless, Secure and Sovereign Air Travel

By Suresh Khadakbhavi, CEO, Digi Yatra Foundation

As India prepares to host Wings India 2026 in Hyderabad, we proudly showcase a flagship success story of the country's civil aviation's passenger processing ecosystem: Digi Yatra.

As of 2025, the platform crossed 18 million app downloads and facilitated more than 75 million contactless passenger journeys across 24 airports, with another 17 on the anvil. It is an industry-led initiative promoted by the Ministry of Civil Aviation (MoCA) and developed, operated, and maintained by the Digi Yatra Foundation, a not-for profit entity under section-8 of the Registrar of Companies' Act 2013.

What began as a visionary concept in 2015 has grown into India's largest decentralised biometric travel-identity ecosystem - one that is entirely built, owned and operated within India. At its core, Digi Yatra re-imagines the airport experience for domestic travellers. One where a registered passenger walks into the terminal, looks briefly at a camera at the entry e-gate, security checkpoint and boarding gate, and proceeds without the need to show an ID card or boarding pass.

Built on four core pillars (connected passengers, connected flying, connected airports, and connected systems), the platform ensures a unified and seamless experience. With Digi Yatra, the face becomes the single token, the smartphone becomes the secure vault, and the journey becomes frictionless.

How the seamless journey unfolds

The passenger experience is simple and straightforward. It begins with a single, secure registration. After downloading the Digi Yatra mobile application (available on Android and iOS), a passenger registers once using their mobile number and Aadhaar-based authentication through DigiLocker or UIDAI. A live selfie is captured, encrypted and used to create a Verifiable Credential (VC) that remains stored exclusively on the user's device. No biometric data or PII ever resides in any central repository, mitigating the risk of data loss, theft, leakage and pilferage.

Before heading to the airport, the passenger either scans the boarding pass or clicks on the airline App to push the PNR directly to the Digi Yatra app with due consent for sharing the credentials to the Departing Airport Verifier. This triggers the creation of a temporary, cryptographically signed credential that is shared in advance with the departure airport. Airport Verifier retains this data only up to 24 hours of the Scheduled Time of Departure (STD) of their flight, within which the Credentials are automatically and irrevocably deleted.

On the day of travel, dedicated Digi Yatra lanes equipped with high-speed facial-verification cameras validate the live face against the pre-shared credential within seconds. The entire process, starting from terminal entry to boarding, is paperless, contactless and remarkably

swift, which not just shortens the queues but eases the burden on airport security, airline and airport Passenger support staff.

A foundation built on Privacy by Design (PbD)

What truly sets Digi Yatra apart from biometric programmes elsewhere is its uncompromising commitment to data sovereignty and privacy.

Unlike systems that upload facial templates to central servers, Digi Yatra follows a Self-Sovereign Identity (SSI) model anchored in global W3C standards for Verifiable Credentials on Universal Wallets and Decentralised Identifiers. Credentials sharing is explicit, consensual and time-bound.

The architecture harnesses the security of distributed-ledger principles via Hyperledger Aries and ACA-Py. It delivers the benefits of decentralisation while ensuring high throughput. Public-private key cryptography, live-face detection and end-to-end encryption further fortify the ecosystem. Regular audits by CERT-In empanelled agencies, ISO 27001 certification and compliance with India's Digital Personal Data Protection Act provide independent assurance of robustness.

From vision to nationwide reality

The idea that would become Digi Yatra took shape in 2015 during a passenger-experience design workshop at an Airport in India. A small pilot with Jet Airways in January 2017 validated the concept, paving the way for formal approvals and creation of the Digi Yatra Policy which was published by the Ministry of Civil Aviation, the Bureau of Civil Aviation Security in consultation with the Unique Identification Authority of India (UIDAI).

The not-for-profit Digi Yatra Foundation was established with the Airports Authority of India (26% shares) and five leading private airport operators - Delhi (DIAL), Mumbai (MIAL), Bengaluru (BIAL), Hyderabad (HIAL), and Cochin (CIAL) - as equal shareholders for the remaining 74% of the shares. This collaborative industry-led initiative with MoCA governance has been a model for rapid, standardised rollout across Airports in India.

A soft launch commenced on 15 August 2022 at Delhi, Bengaluru and Varanasi airports, followed by the public app release on 1 December 2022. Through carefully orchestrated phases, the service expanded to Hyderabad, Kolkata, Pune, Mumbai, Cochin, Vijayawada, Ahmedabad and other airports by mid-2024. As of November 2025, 24 airports are live, with Phase V underway to onboard 17 more by March 2026, taking the total to 41 by the end of FY 2025-26.

Tangible impact across stakeholders

For passengers, the transformation was immediate and profound. Checkpoint clearance that once took several minutes in conventional queues, now averages 4–8 seconds. Frequent flyers, senior citizens, families with children have emerged as the biggest beneficiaries.

Airports report 15–20% higher throughput with existing infrastructure, reduced staffing pressure at manual counters and measurable gains in on-time performance. Airlines benefit from faster boarding and lower gate-related delays. From an environmental perspective, the shift away from printed boarding passes and physical document checks has slashed paper consumption significantly, aligning with UN sustainability goals.

Security agencies appreciate the elimination of human error in identity verification and the audit trail inherent in a digital, cryptographically signed workflow.

Technology under the hood

Built ground-up for scale, the platform runs on

AWS cloud with asynchronous processing that allows credentials to be shared up to 48 hours before travel, eliminating peak-hour bottlenecks. The mobile app, developed in React Native, delivers a consistent experience across platforms. Backend services in Python, JavaScript, combined with RabbitMQ message queues and TLS-encrypted channels, ensure low latency and high availability.

Each new airport receives its own verifier node, maintaining decentralised control while enabling seamless nationwide interoperability. Six Indian regional languages are already supported in the app, with all 22 scheduled languages slated for rollout, with this, the aim is to break the language barrier in using Digi Yatra App, make it amenable to use by citizens in a language of their choice and comfort.

The road ahead: From national asset to global benchmark

The immediate priority is to complete domestic coverage, but the long-term vision is far more ambitious. Upcoming features include electronic passport-based enrolment, opening the door for international travellers. Alignment with ICAO Digital Travel Credential standards and the IATA One ID initiative positions Digi Yatra for cross-border interoperability to offer an end-to-end Seamless and Hassle-Free International Travel both at the Departing Airport in India and also the Destination Airport across the world. While this would need a deeper collaboration and finalisation of the passenger processes, the Digi Yatra Team with Support from MoCA is already working with other Ministries including MEA, MHA and BOI. The bold vision is to enable a Borderless World.

Beyond aviation, the reusable Verifiable Credential framework holds immense potential. Hotels, ride-hailing services, rail networks and tourist sites could accept the same consent-based digital identity, creating a unified mobility and hospitality ecosystem. Early discussions are underway for geo-fenced airport services, spot travel insurance and seamless inter-modal transfers.

In an era where data sovereignty is a strategic imperative, Digi Yatra demonstrates that a nation can deploy cutting-edge biometric technology at a continental scale without compromising citizen privacy. By placing control firmly in the hands of the individual and deleting travel data within 24 hours, India has built a template that balances convenience, security and trust. From a thoughtful sketch on a Bengaluru whiteboard to a platform now serving tens of millions, Digi Yatra is more than an airport facilitation tool. It is a declaration that seamless travel and strong privacy are not mutually exclusive.

In the years ahead, when travellers worldwide walk through airports using only their face and phone, many will trace the blueprint back to an Indian initiative “Digi Yatra” that dared to re-imagine identity itself. That future is no longer approaching. It is already taking flight!

One Rogue Drone Can Shut Down an Airport. Who Will Pay to Prevent It?

By Smit Shah - President and Anushka Sikka, Associate Manager - Public Policy, Drone Federation India

"Imagine a packed airport on a Monday morning. Boarding gates full. A single drone, small enough to fit in a backpack, crosses into the approach path. Within 40 seconds, three inbound flights are diverted, ATC is scrambling, and operations grind to a halt. This is not science fiction. This is the new normal airports must prepare for."

India's civil aviation ecosystem is entering a new phase of complexity as drones become more accessible, capable and deeply embedded across sectors. The proliferation of drone technology has brought significant benefits across industries, from agriculture to logistics, but it has also introduced new security challenges. The dual-use nature of drones, both in terms of their components and their final applications, has made it increasingly difficult to control their misuse. Many of the technologies that enable commercial drones, such as high-resolution cameras, autonomous navigation systems and long-endurance power sources, are equally applicable to military or malicious purposes. This overlap has enabled both state and non-state actors to exploit drones for illicit activities, including terrorism, espionage and smuggling. Additionally, there has been a surge in drone sightings and incursions near airports, which are either accidental or malicious in nature.

Aviation infrastructure such as commercial airports have recently become lucrative targets for non-state actors to deploy drones for causing disruption and creating a massive security scare. A disruptive incursion done using drones can have serious safety, security and economic consequences. On July 22, 2014, as an Airbus A320 was descending to land at London's Heathrow Airport, the pilot spotted a drone resembling a helicopter just 700 feet above ground. The U.K.'s Civil Aviation Authority (CAA) later confirmed that the unidentified drone had flown dangerously close to the commercial aircraft, which had a capacity of 180 passengers. The incident was rated as a "serious risk of collision", the highest level of concern the CAA assigns. Despite investigations, authorities couldn't trace the drone, which had vanished from sight and didn't register on air traffic control systems.[1] This close call marked the beginning of a wave of similar drone-related events worldwide. This included three incidents in the United Arab Emirates in 2016 that temporarily shut down operations at Dubai Airport, and one of them also closed Sharjah International Airport.[2] Similarly, operations at Gatwick Airport in 2018

1 https://www.theguardian.com/world/2014/dec/07/drone-near-miss-passenger-plane-heathrow
2 https://www.ndtv.com/world-news/drone-halts-traffic-at-dubai-airport-1586626

were abruptly suspended following reports of two drones flying in proximity to the airfield. Incoming flights were diverted to alternate airports. This incident resulted in approximately 140,000 passengers being stranded and inflicted financial losses amounting to tens of millions of pounds on the industry.[3] Such incursions have highlighted the critical need for robust counter-drone measures at airports.

India has also witnessed such drone sightings, the most recent being at Imphal International Airport in October 2025. The Indigo flight from Agartala to Imphal reported the sighting of a drone on its final approach path from the city side, at an altitude between 3600 and 4000 feet.[4] Similar disruptions have been reported in Amritsar and Jammu Airport. As a result, flight operations were disrupted, causing chaos and uncertainty for numerous passengers.

These incidents have exposed a structural blind spot in airport security. For decades, aviation security architecture has been engineered around terrestrial, perimeter-based, and passenger-focused threats. It was never designed to detect or respond to a small, low-observable aircraft flying above the ground and navigating directly into controlled airspace.[5] This blind spot is reflected in the technical limitations of the detection and response systems airports use today for drone incursions. Airports have radars powerful enough to track jetliners 200 km away, but many still struggle to reliably detect a drone from a kilometre out.

Despite rapid experimentation with Counter-UAS technologies, current airport detection architectures remain fragmented and technically constrained. Some drones today can fly entire missions with no radio signals at all, making the best RF detectors blind. A systematic review in Elsevier Journal of drone detection in airport environments finds that while radar offers long-range coverage and RF sensing achieves high classification accuracy, each modality has significant blind spots, and robust performance only emerges in multi-sensor systems that are still costly and immature for widespread deployment.[6] Small multi-rotor drones often have radar cross-sections between those of birds and large insects, making them difficult to distinguish from clutter and biological targets.[7] Visual, acoustic and RF-based methods also struggle with diverse drone sizes, dynamic flight behaviour and confusion with other flying objects, leading to false alarms and missed detections.[8] Moreover, RF-based detection must operate in already congested spectrum around airports, which can complicate reliable sensing. However, the greater interference risk comes from RF jamming and other active countermeasures, which regulators tightly restrict near airports because they can disrupt communications and navigation systems.[9]

The challenge is sharpened further when viewed against how security infrastructure is currently financed at Indian airports. According to a PIB statement by the Ministry of Civil Aviation, airport operators are responsible for provisioning a wide

3 https://www.standard.co.uk/news/uk/cost-of-gatwick-drone-chaos-expected-to-run-into-tens-of-millions-a4030751.html
4 https://www.ndtv.com/india-news/flight-ops-temporarily-suspended-at-imphal-airport-after-drone-sighting-9406256
5 https://www.sciencedirect.com/science/article/pii/S2590005625001389
6 Ibid.
7 https://eprints.gla.ac.uk/164563/7/164563.pdf
8 https://www.mdpi.com/1424-8220/24/1/125
9 https://www.mdpi.com/2079-9292/14/12/2483

suite of safety and security systems. These include in-line baggage screening, explosive-trace and metal detection systems, perimeter intrusion detection systems, X-ray baggage inspection, fire-safety installations, and aircraft-rescue related equipment.[10]

These are capital-intensive assets but fall squarely within the operational and regulatory scope of the airport operator, and their costs are typically recovered through user fees and aeronautical charges. In contrast, certain specialised or national-security-sensitive systems, such as radiological detection equipment, have been funded by the central government through BCAS, reflecting a recognition that some threat domains extend beyond the remit and cost-recovery ability of individual airports.[11]

India already allocates security responsibilities across multiple entities, depending on the nature of the threat and its national relevance. Against this backdrop, C-UAS technology is situated at the intersection of airspace surveillance, aviation security, and law-enforcement response. Its functions span multiple domains, making it unsuitable to assign to a single stakeholder. Without an ascertained financing model for C-UAS technology, it remains stranded between stakeholders, slowing adoption despite urgent operational need.

This ambiguity also creates a cost-recovery dilemma. Unlike terminal security equipment, C-UAS systems cannot be easily linked to passenger-based revenue streams. Thus, making it difficult for airport operators to justify the investment. At the same time, the public-good nature of airspace security limits the ability of governments to rely solely on airport-level funding.

International frameworks, including ICAO and ACI principles on security cost allocation, emphasise, cost-relatedness and equitable allocation. Supported with shared responsibility and national oversight for emerging threats such as these. [12] [13] India therefore requires a scalable and interoperable financing model that distributes costs sensibly across stakeholders while ensuring consistent protection across its airport network.

A pragmatic path forward for India is a blended funding model that aligns national security priorities with the operational capabilities of airport operators. Given that airspace protection is inherently a sovereign responsibility, the central government through the Ministry of Civil Aviation should underwrite a significant portion of the initial capital expenditure for C-UAS deployment. This can take the form of partial direct funding or long-term, low-interest capital loans earmarked specifically for security modernisation, enabling airports to adopt advanced systems without distorting their balance sheets or aeronautical charges.

Airport operators can finance partial installation, integration, maintenance and lifecycle upgrades of these systems. This shall be in alignment with their role in adoption and management of other security and operational technologies. This hybrid approach balances fiscal burden on the government and ensures consistent deployment across airports of varying sizes. It also preserves

10 https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1777191
11 Ibid.
12 https://www.icao.int/sites/default/files/2025-02/9082_10ed_en.pdf
13 https://www.aci-asiapac.aero/advocacy/economics/policy-area/airport-charges

regulatory coherence by allowing the central authority to standardise technical specifications, software protocols, data-sharing frameworks, and training requirements for technology that has national security implications.

Thus, this blended model offers the financial realism and institutional clarity needed to jumpstart nationwide C-UAS adoption. Once the financial mechanism is defined, airports can start investing in dedicated detection systems. This also allows technologies to be standardised across airports and gives vendors the stability they need to scale and improve their products. Additionally, challenges like integration with existing surveillance layers, interoperability across airports, and establishing common response protocols, become far easier to resolve when funding is consistent and predictable. In essence, a stable financing framework acts as the catalyst that turns C-UAS from isolated pilots into a mature, nationwide airspace-protection mechanism. Airports once secured their boundaries on the ground. Now, they must secure boundaries that move at 250 km/h in three dimensions.

DRONE FEDERATION INDIA (DFI)

India's Aviation Ascent: A Framework for Sustainable Growth

By Amitabh Khosla, Country Director – India, Nepal & Bhutan, International Air Transport Association (IATA)

India's place in global aviation has changed dramatically over the last decade. With record aircraft orders, impressive growth, and world-class infrastructure developments, India is now firmly established as the third largest market (domestic & international departing passengers) for aviation in the world.

India's rapidly modernizing and expanding aviation sector is a huge, good news story for the country. The aviation industry in India employs 369,700 people directly and generates US$5.6 billion of economic output. When you include the additional benefits that aviation brings, such as tourism, the number rises to 7.7 million jobs in India and US$53.6 billion in economic contribution. That is 1.5% of India's GDP!

IATA in India

The International Air Transport Association (IATA) has been a partner to India's aviation development. Today, 4 Indian scheduled carriers are IATA member airlines, with the latest being Air India Express. And a whole host of IATA's over 360 airline members globally, operate to India – enhancing India's global air connectivity. Our focus in India has been on supporting the needs of our member airlines, and the safe and sustainable growth of the broader Indian aviation sector.

We had the privilege of hosting the 80th IATA Annual General Meeting and World Air Transport Summit in New Delhi in June 2025. This was the first time the AGM had been back in India after 42 years. The event brought together global aviation leaders, CEOs, and policymakers to New Delhi, spotlighting India's strategic importance and the opportunities it offers. The AGM served as a platform to showcase India's aviation vision and to engage in meaningful dialogue on the challenges and enablers of growth. The highlight of course was the keynote delivered by the Hon'ble Prime Minister of India, delivering a message of growth and optimism to the global aviation leaders in attendance.

India's Airline Sector

We are witnessing a remake of India's airline sector. Air India's rebirth with new ownership is placing renewed focus on its service – with exciting developments in its fleet and product offering. And IndiGo has built-up a very impressive footprint across India and regionally. With a world-leading market capitalization, there is enormous confidence in its prospects.

India's consumers have never been so well-served by its domestic carriers – with a rapidly expanding network, additional frequencies and connections, and growing competition. And with gateway airport capacity expansions in Delhi, Mumbai, Bangalore and Hyderabad, along with the imminent commissioning of second airports in Delhi and Mumbai, the potential for further aviation development is well-laid.

Critically, India has the talent needed to achieve

a growing future, unlike many parts of the world which are facing some challenges. With the highest proportion of female commercial pilots in service, India clearly demonstrates that aviation is a solid career choice regardless of gender. And more great jobs will be created as India recognizes the opportunity for greater investment in maintenance, repair and overhaul facilities.

Priorities for Indian Aviation

We must not take for granted the continued success of India's aviation future. There is more work to be done. In particular, I would highlight three areas: costs, airspace, sustainability and the consumer.

Costs: Aviation is not a high margin industry. At the global level, the net profit margin is just 3.6%. So every cost, charge, and tax matters. India would do well to look at rationalizing fuel (ATF) costs; easing out some of the complex compliance and regulatory burdens for the industry; and continued oversight on airport user charges and their linkage to service and performance standards.

Airspace: The amazing developments in India's airport infrastructure need to be matched with developments in India's airspace. With thousands of aircraft due to join India's fleet in the coming years, investments to further modernize airspace management are critical—in particular for oceanic and continental airspace.

Sustainability: Airlines' global commitment to achieve net zero by 2050 is determined and firm. We expect the bulk of aviation's decarbonization to be achieved with sustainable aviation fuel (SAF), which is a real opportunity for India. India is the third largest ethanol producer and consumer in the world. This is proof of the potential for it to become a key SAF producer utilizing the Alcohol-to-Jet (AtJ) pathway. This would contribute to India's energy security, propel the aviation sector's growth and enhance India's hub status in the region – delivering enormous social and economic benefits for India's development. IATA's SAF Registry now includes Air India and Indian Oil, and domestic SAF production is expected to begin in 2026. Certification frameworks are being developed through partnerships with NABCB and ISCC, and Book & Claim mechanisms are under discussion.

Consumer: As passenger traffic grows, a renewed focus on streamlining processes and enhancing facilitation will be critical. Faster and more efficient processing – without compromising security or privacy – will allow India's infrastructure to keep pace with demand. This consumer focus should also extend beyond airports to include visa and immigration processes. India's e-visa system, introduced in 2014 and now available to nationals from over 175 countries, has been a major enabler of travel. But as India aspires to become a global hub for MICE and business travel, there is an opportunity to modernise and simplify the experience – making it more predictable, user-friendly, and aligned with India's ambitions as a tourism/MICE destination.

Importantly however, on India's **tourism growth**, the hazardous air quality prevalent in Delhi and north-India is an issue that could adversely impact India's attractiveness as a destination – and certainly needs to be addressed.

Conclusion: A Call to Action

India's aviation future is bright – but favorable outcomes are not guaranteed. The choices made today will shape its trajectory for decades. IATA remains committed to working with all stakeholders to ensure that India's aviation sector not only grows, but thrives.

Akasa Air: A Reflection of India's Energy, Ambition, and Humility

By Vinay Dube, Founder and CEO, Akasa Air

Millions of Indians are discovering the freedom of flight. According to the International Air Transport Association (IATA), India has now emerged as the world's fifth-largest aviation market, handling 241 million passengers in 2024, an 11.1% increase over the previous year. But this doesn't just indicate a growth in numbers; it reflects a growth in possibilities. This sustained demand, driven by rising incomes, regional development, and shifting consumer behaviour, signals that India is entering its most consequential decade for civil aviation. Drawing from lived experiences of several decades spent in the aviation industry across nations, it is evident to me that India is not simply participating in global aviation growth; it is shaping its next frontier.

It is against this backdrop of rapid growth and expanding opportunity that we founded Akasa Air. Based on the philosophy that building a sustainable airline requires consistency, discipline, and long-term thinking, our ambition has always been to build an airline that is trusted, dependable, and durable, with foundations that can support India's aviation ambitions for generations ahead. At the heart of this ambition is a service philosophy focused on delivering consistently high-quality customer experience across every touchpoint, ensuring that every interaction with Akasa meets the standards expected of a modern, future-ready airline.

Akasa Air's commitment to India's long-term growth

Akasa Air was conceived not merely as a commercial venture but as a platform to contribute meaningfully to India's development. From inception, Akasa Air was designed with a clear roadmap: responsible, sustainable, and technology-led expansion, with service excellence at its core. Every strategic choice, from fleet induction to route planning, is reflective of a long-term view of India's requirements as one of the world's fastest-growing aviation markets.

Our investments, whether in aircraft, infrastructure, digital systems, or training, are structured to strengthen India's aviation ecosystem and support its emergence as an international aviation hub.

Delivering a new benchmark in consumer experience

At Akasa Air, service excellence is not a function; it is the foundation of our identity. We listen closely to the evolving expectations of the Indian traveller, and this informs how we design, operate, and refine our product. Our approach is rooted in thoughtful, human-centred service: seamless boarding, intuitive in-flight touchpoints, and genuinely caring interactions that feel personal rather than transactional. Every detail is built around reliability, warmth, and comfort, ensuring that flying with Akasa feels distinctively easy and enjoyable.

Our goal is simple: to make every journey an efficient, comfortable, and memorable experience that reflects the needs of today's modern traveller and sets a new standard for what an airline should deliver. This philosophy underpins the choices we make across our fleet and operations.

Our fleet comprises of brand-new, modern aircraft that offer significantly lower cabin noise, superior air filtration, and advanced pressurisation systems, ensuring unmatched passenger comfort. We offer the best legroom, an elevated in-flight dining experience, and a cabin crew known for their warmth and professionalism. These are deliberate investments aimed at creating a dependable, predictable and elevated experience for every traveller, whether they fly once a year or every week.

At Akasa Air, accessibility is not just about pricing; it is about ensuring every passenger feels welcome, supported, and empowered. Our initiatives, such as pet-friendly service, Pets on Akasa, offering safety manuals and in-flight dining menus in Braille, and creating a fully inclusive WCAG-compliant website for people with visual, cognitive, physical, and auditory disabilities, reflect our commitment to universal access.

In a diverse market like India, consistency is a key driver of trust. By staying true to reliability, service excellence, and inclusion, Akasa Air is expanding the nation's flying population while setting new standards for what inclusive and responsible aviation can look like.

Connectivity: Bridging India's regional and global potential

Connectivity is the lifeblood of economic and social transformation. Akasa Air has focused on building a balanced network that supports regional mobility while simultaneously expanding India's global aviation footprint. In just three years, we have expanded to a fleet of 30 aircraft, becoming the fastest-growing airline in global aviation history. We have served over 22 million passengers, operated over 130,000 departures, including 1,25,000+ domestic and 5,100+ international flights, and transported more than 1,40,000 tonnes of cargo. These metrics reflect not only scale but the role that Akasa Air is playing in strengthening India's aviation ecosystem.

Today, we connect 26 domestic and six international cities, linking Tier-2 and Tier-3 regions with metro hubs and emerging global gateways. Akasa Air became the first Indian airline to take to international skies within just 19 months of commencing operations, a milestone that underscores both our ambition and India's rising aviation capability.

Our network plays an important role in improving access to employment, education, and healthcare, while also enabling tourism and trade. As India expands its international presence, Akasa Air's growing global operations will help showcase Indian service quality to wider markets. This, we believe, contributes to India's aviation credibility, strengthens bilateral ties, and supports the country's aspiration of becoming a major aviation hub.

Our long-term network vision is aligned with India's economic priorities: to reduce time-to-market distances, integrate unserved and underserved regions into the ever-expanding aviation network, and enhance mobility across both domestic and international corridors.

Safety: The cornerstone of our operations

Safety is the foundation on which Akasa Air has been built, and it continues to guide every operational decision we make. Our leadership and core teams bring decades of frontline aviation experience, which has shaped a culture where

safety is not a procedural requirement but a daily mindset. Earning IOSA registration, the global gold standard in operational safety, within just three years of operations, is a testament to the experience, discipline and professionalism of our teams. We operate with a simple belief: safety is not a box to be checked; it is a culture that must be lived every day.

We also recognise that aviation safety is a shared national responsibility. To strengthen industry-wide collaboration, Akasa initiated the Chiefs of Flight Safety (COFS) platform, bringing together safety leaders from Indian operators to exchange best practices and elevate standards as an industry collective. As India's aviation sector scales rapidly, a unified commitment to rigorous safety practices will define the quality and credibility of our growth. Akasa Air will continue to lead with integrity, transparency, and an unwavering safety-first mindset.

Sustainability: Aviation with responsibility

For aviation to remain a driver of national development, sustainability must stay central to operational strategy. At Akasa Air, we view sustainability not as an ancillary programme, but as an operating requirement.

As India's greenest airline, Akasa Air has taken several steps to reduce its environmental impact, including opting for fuel-efficient engines, sustainably curated crew uniforms and eco-friendly inflight meal packaging. One of the early strategic decisions of Akasa Air was to refrain from adopting the practice of the ceremonial water cannon salutes at flight and route inaugurations. Together, these initiatives have helped us save approximately 4,80,000 litres of water to date.

As we scale, our sustainability agenda will remain deeply integrated into our strategy, because long-term success must go hand in hand with long-term responsibility.

Investing in India's talent pipeline

Aviation is a highly skilled industry, and India's long-term growth will depend on the quality and depth of its talent pool. At Akasa Air, our strongest competitive advantage is the talent, passion, and professionalism of our team. Akasa has expanded to a workforce of over 4,700 people in record time. Our growth has also enabled us to indirectly support several thousand additional families by helping create related jobs across the aviation ecosystem.

As India ushers in a decade, destined to redefine the future of civil aviation, we are committed to nurturing talent that will lead the industry forward. At the heart of this commitment is the Akasa Aviation Learning Academy (AALA), a state-of-the-art training and development centre to build a future-ready workforce.

What we find most rewarding at Akasa is witnessing the career progression of our people. A significant number of Akasians have already moved into higher-responsibility roles across operations, engineering, customer experience, and leadership tracks, reflecting the strength of our learning systems and the ambition of our teams.

This emphasis on growth and capability-building is one of the reasons Akasa Air is emerging as an employer of choice. We are deeply proud that so many Akasians have been able to accelerate their careers with us, and we remain committed to creating opportunities that help talented individuals realise their full potential while contributing to India's aviation future.

Our approach to talent development is anchored in genuine employee centricity. We strive to build

a workplace where individuals feel respected, supported, skilled and empowered. By investing deeply in people, Akasa is helping build the talent backbone that India's fast-growing aviation sector requires. Each new role created, each skill upgraded, and each career nurtured strengthens India's position as a global aviation leader.

Akasa Air: A reflection of India

Akasa Air is an embodiment of India's spirit. We are built on the principles that define our nation: resilience, ambition, inclusivity, and optimism. Our focus on technology, sustainability, and operational rigour is reflective of India's globalising identity.

Our ethos aligns with India's own trajectory: modern, ambitious, yet grounded in values. Our vision embodies the country's aspirations, blending ambition with ethics, technology with human warmth, and scale with attention to detail. Our unwavering focus on service excellence is inspired by India's timeless ethos of 'Atithi Devo Bhava', ensuring that every customer experience reflects the warmth, respect, and care that define our country's cultural fabric.

India's aviation story is entering its most transformative chapter. At Akasa Air, we are proud to play a part in shaping the future of air travel, building connectivity, investing in talent, and advancing sustainability. Our journey is still in its early chapters, but our mission is clear: to contribute meaningfully to India's aviation future responsibly and with an unwavering focus on trust and dependability.

Akasa Air

IT'S YOUR SKY

Change is in the Air: Air India's Transformation Takes Flight in 2026

By P Balaji, Group Head, Governance, Risk, Compliance and Corporate Affairs, Air India

When Air India embarked on its historic transformation journey in 2022, the vision was clear: to become a world-class airline that India could proudly call its own. For the past three years, much of this work has been behind the scenes, including modernizing systems, upgrading infrastructure, training people, and building capabilities for the future. Now, as we step into 2026, that future is ready to take off.

This will be the year when customers truly experience the most visible change at Air India.

From Blueprint to Reality

Air India's transformation is one of the most ambitious in aviation history. With one of the largest aircraft order books globally, 570 aircraft on firm order, we are scaling up to stand among the world's biggest carriers. But beyond numbers, the change is about redefining the passenger experience, both in the air and on the ground.

Since privatization, the focus has been has on strengthening Air India's foundations, revamping technology systems, improving operational processes, and investing in people. These efforts were largely invisible to customers, but they were critical to building a strong platform for growth. Today, that groundwork is paying off. In 2026, travellers will see and feel the difference every time they fly Air India.

Cabins Reimagined

The transformation will now be seen where it matters most, the onboard experience for

passengers. In October 2025, Air India completed the retrofit of its narrowbody fleet interiors, which serve domestic and short-haul international routes. Today, 82% of these aircraft feature upgraded cabins, and by the end of 2026, nearly all domestic flights will be operated by new or upgraded aircraft.

The real game-changer, however, is our widebody upgrade program. The first two of Air India's legacy Boeing 787-8 aircraft are undergoing a complete transformation in Victorville, California. They are receiving new interiors, modern inflight entertainment systems, and Wi-fi connectivity, among many other upgrades. By mid-2027, the entire legacy B787 fleet of 26 aircraft will be upgraded, with two-thirds completed by the end of 2026. These aircraft primarily serve Europe, Australasia, and Southeast Asia, meaning travellers on these routes will soon experience Air India's new world-class product.

Adding to the excitement, the first brand-new Boeing 787-9 aircraft, built specifically for Air India, has been delivered, and will soon be deployed on its long-haul route. Throughout 2026, six new wide-body aircraft, which will be a mix of Boeing 787-9s and Airbus A350-1000s aircraft, will join the fleet, alongside dozens of narrowbody aircraft. These aircraft will feature state-of-the-art cabins, cutting-edge entertainment systems, and connectivity options that rival the best in the world.

A Premium Experience

The transformation isn't just about hardware. Air India has rolled out a new international menu, upgraded its wine and beverage offerings.

The new global menu draws inspiration from India's diverse culinary tapestry, from the royal kitchens of Awadh to the coastal flavours of southern India, while incorporating global influences through Pan-Asian, European Bistro, and geo-specific star dishes.

This was introduced on most international ex-India routes, including flights from Delhi to London

Heathrow, New York, Melbourne, Sydney, Toronto and Dubai; from Mumbai and Bengaluru to San Francisco; and from Mumbai to New York, to name a few and is being progressively rolled out across all international sectors as well as on domestic routes.

Guests travelling First Class will enjoy gourmet meals, artisanal breads, signature desserts, and bespoke wine and champagne pairings. Business Class offers multi-course gourmet meals with customisable options and curated beverage pairings, while Premium Economy and Economy feature upgraded meal trays with balanced, wholesome options with familiar regional flavours and enhanced presentation.

We are also continuing to roll out Premium Economy. There are 104 narrow-body aircraft, offering 76,000 premium economy seats weekly and as the widebody retrofits progress, Premium Economy will expand to more international routes, giving travellers more choice and comfort.

By the end of 2026, more than half of Air India's wide-body fleet will feature modern inflight entertainment systems, plush seating, and Wi-fi connectivity. This means passengers can stay connected, stream content, or simply relax in a cabin designed for comfort and style.

On the Ground

Change is also visible at airports. Air India recently unveiled its flagship Maharaja Lounge at Delhi International Airport and is also building a new domestic lounge there. Lounges in San Francisco and New York are being refreshed, complementing the popular Bangalore lounge. These spaces are designed to offer a seamless, premium experience for travellers before they even board their flight.

The Maharaja Club loyalty program is evolving too, with expanded redemption options and partnerships. Maharaja Club is now transforming

into a well-rounded group loyalty program, allowing passengers to use points to buy Air India Express flights, and soon also earn points when you take Air India Express flights, so that wherever you fly across the Air India group network, you can be recognized for your loyalty and be rewarded and or redeem the miles that you've earned.

Air India now boasts over 100 interline partners and more than 20 codeshare agreements, up from zero at privatization in 2022. This means greater connectivity and convenience for passengers traveling across the globe.

Investing in People, Building the Ecosystem

Behind the scenes, Air India is continuing to invest in strengthening the Indian aviation ecosystem. The Aviation Academy in Gurugram is a case in point. The academy trains over 2,000 aviation professionals daily, including cabin crew, pilots, and engineers from across Air India and Air India Express. In 2025, we inaugurated a new simulator facility with Airbus and in time there will be a total of 21 simulators for Airbus and Boeing aircraft that will train pilots across the Air India group.

In addition to the aviation academy, we will soon be opening a flying school in Amravati, Maharashtra, which will train 180 commercial pilots a year.

We are also building a maintenance, repair and overhaul base in Bengaluru, which will also commence operations towards the end of 2026, and that will eventually be able to perform base maintenance on 12 aircraft at a time.

To support the maintenance facility with the necessary talent, we are opening an aircraft engineer training school in Bengaluru, which is also on track for opening in 2026.

2026: The Year of Visible Change

By the end of 2026, 81% of Air India's international flights and nearly all domestic services will feature upgraded aircraft. With new lounges, enhanced menus, modern cabins, and cutting-edge technology, Air India is not just changing, it is setting a new benchmark for Indian aviation.

The journey is far from over. With hundreds of new aircraft scheduled for delivery in the coming years and continued investment in people, technology, and infrastructure, Air India is poised to become one of the world's leading airlines.

Change is in the air. And in 2026, you'll feel it every time you fly Air India.

एअर इंडिया
AIR INDIA

As Boeing and Airbus Define Today's Fleets, Hybrid Aircraft Shape Tomorrow's Regional Aviation

By Kamal Hingorani

Why a cost-effective, sustainable 100-seat aircraft could upend short-haul aviation economics

For millions of travellers since the 1990s, air travel has been defined by a generation of narrow-body aircraft's build by Boeing and Airbus that transformed how the world moves. These dependable workhorses enabled affordable flying at scale, sparked the low-cost airline revolution, and opened air connectivity to cities and communities previously off the aviation map.

These narrow-body aircrafts are marvels of engineering but they are optimized for a specific mission profile: carrying 150 to 200+ passengers over medium ranges (2,000 to 5,000 km). When airlines use these aircraft for short hops (Typical in the Indian subcontinent and Intra-Europe routes) they are effectively flying with dead weight.

The aviation industry is approaching a defining inflection point. Platforms and systems that served the industry well in the late 20th century are increasingly misaligned with the economic, environmental, and operational realities of the 21st. As pressure mounts for sustainability, affordability, and efficiency—particularly in high-frequency short-haul markets across India and EMEA—the traditional one-size-fits-all model is showing clear limitations.

The future of flight will not be unlocked by marginal changes in size or incremental technology upgrades alone. It requires a fundamental rethink of propulsion, energy architecture, and mission-specific design. Today, we are often forcing legacy solutions into new use cases—effective, perhaps, but inefficient, complex, and wasteful. It is akin to using a blunt instrument for a precision task.

Across the industry, the largest incumbents have slowed or pushed out their most ambitious clean-sheet programs in areas such as electric and hydrogen propulsion, constrained by challenges around energy density, storage, certification, and ground infrastructure. This pause, while understandable, creates a rare window of opportunity.

It is in this gap that new entrants can emerge—companies unburdened by legacy platforms, industrial inertia, or entrenched supply chains. By designing aircraft around specific routes, frequencies, and operating economics from day one, the next generation of manufacturers

can redefine short-haul aviation with cleaner propulsion, simpler systems, and radically lower operating costs.

The next chapter of aircraft manufacturing may not be written by scaling existing paradigms, but by reimagining them entirely. There is a vacuum and a desperate need for a 100-seater aircraft optimized for short-haul networks. This missing middle is the sweet spot for regional connectivity: small enough to be filled profitably on thinner routes, yet large enough to form the backbone of a robust network connecting cities, regions, and countries.

Any new aircraft type is compounded by a crisis in propulsion. Engine OEMs are hitting the physical limits of gas turbine technology. Recent years have seen widespread grounding of aircraft due to issues with turbofan engines. The Pratt & Whitney GTF with issues originating in high-pressure turbine disks have grounded hundreds of aircraft globally. Airlines have faced catastrophic operational disruptions because the turbines under extreme heat, vibrations, and stress are failing faster than expected. Industry does not just need a better turbine; it needs to eliminate the turbine altogether. We need a propulsion unit that moves away from the complexity of expanding gas at 1,500°C.

The blueprint for this future is not coming from the massive hangars in existence but from the academic corridors of IIT Madras, an engineering institute from India.

At the Indian Institute of Technology (IIT) Madras, a fundamental rethinking of aviation is underway and the research emerging from the team there focuses on the crown of sustainable aviation: high-energy-density storage and novel propulsion.

The limitations of current Lithium-Ion batteries are well known. To crack the code for a 100-seater aircraft, the team is spearheading research into Metal-Air Batteries which theoretically offer energy densities comparable to jet fuel without the heavy containment tanks required for hydrogen or the volatility of lithium chemistries. The team is also exploring a novel Hybrid Engine that forgoes the need for turbines and patenting technologies that integrate Hybrid Engines with Aluminum air batteries. The vision is an aircraft where the engine is not a separate pod hanging off the wing, but an integrated propulsion system that distributes thrust across the airframe, reducing drag and eliminating the single-point-of-failure risks of massive gas turbines.

Imagine a 100-seater aircraft designed specifically for the 1000-2000 km range.

- **No Turbines:** Powered by distributed propulsion units which do not require high compression ratios
- **Metal-Air Energy:** Utilizing metal-air packs that offer the range needed for regional hops.
- **Low Maintenance:** Electric motors have a fraction of the moving parts of a gas turbine. Plus, no high thermal cycling which requires frequent maintenance

This aircraft would revolutionize connectivity

globally. It could connect growing cities with metro cities at a fraction of the cost per seat-kilometre of current planes, and with significantly higher speed and comfort. The science is sound. Patents for Metal-Air chemistries and hybrid propulsion architectures have already been filed. The conceptual frameworks for the airframe are in place.

What is missing is capital

For over four decades, today's aircrafts have been the backbone of global air travel, reliably connecting cities and economies. But expecting these legacy platforms to carry the next 40 years of regional and short-haul connectivity is a strategic misstep. The underlying physics are misaligned, operating economics are under growing strain, and the environmental cost is no longer sustainable.

Across the industry, the push for truly disruptive propulsion and clean-sheet aircraft has slowed, creating a rare opening for new leadership. This moment calls for bold investment in fundamentally different ideas—designed from the ground up for regional routes, high utilisation, and dramatically lower emissions.

India is uniquely positioned to seize this opportunity. Visionary work emerging from IIT Madras and their breakthrough research in metal-air propulsion, points to a new class of aircraft that could redefine short-haul aviation. With the right policy backing, industry participation, and patient capital, this technology can move from laboratory to runway.

The next great workhorse of regional aviation need not be an incremental evolution of the past. With focused support and funding, it could be conceived, designed, and built in India.

AAR Provides Comprehensive Aftermarket Solutions Worldwide

AAR CORP. is an independent aerospace and defense solutions provider of a wide range of products and services to commercial and government customers in over 60 locations around the world. Operating in the industry for 70 years, AAR is involved in various aspects of the aerospace industry, including aircraft maintenance, repair, and overhaul (MRO) services, as well as the supply and distribution of parts and components. They provide a full range of aircraft and engine services for commercial, military, and regional operators and are segmented into different operating segments. Leveraging an extensive global network in the APAC region, AAR is strategically positioned to provide customers with industry leading products and services, while actively expanding their footprint in the region.

Parts Supply and Distribution

One of AAR's largest divisions is Parts Supply and Distribution. As a trusted aircraft parts supplier

and aircraft parts distributor, AAR delivers a broad range of products, from factory-new components to dependable used serviceable material. The Company maintains one of the industry's largest and most complete inventories of airframe rotables, landing gears, auxiliary power units (APUs), quick engine change (QEC) kits, line-replaceable units (LRUs), and accessories. They stock over one million items from more than 250 manufacturers and can offer exchanges to customers across the globe.

Airframe MRO

AAR has 6 Airframe MRO facilities across North America with established programs supporting dedicated fleets and / or multiple nose-to-tail lines of maintenance, including the A320 family, B737 family, and E170 / 175 / 190. Combining the latest technology and customer feedback to enhance aircraft inspection and repair processes, AAR's Airframe MRO facilities use innovative solutions to provide hands-on training for their aircraft maintenance technicians (AMTs). Their airframe repair capabilities for commercial and government customers include aircraft heavy maintenance, airframe modifications, and airframe upgrades.

Component Services

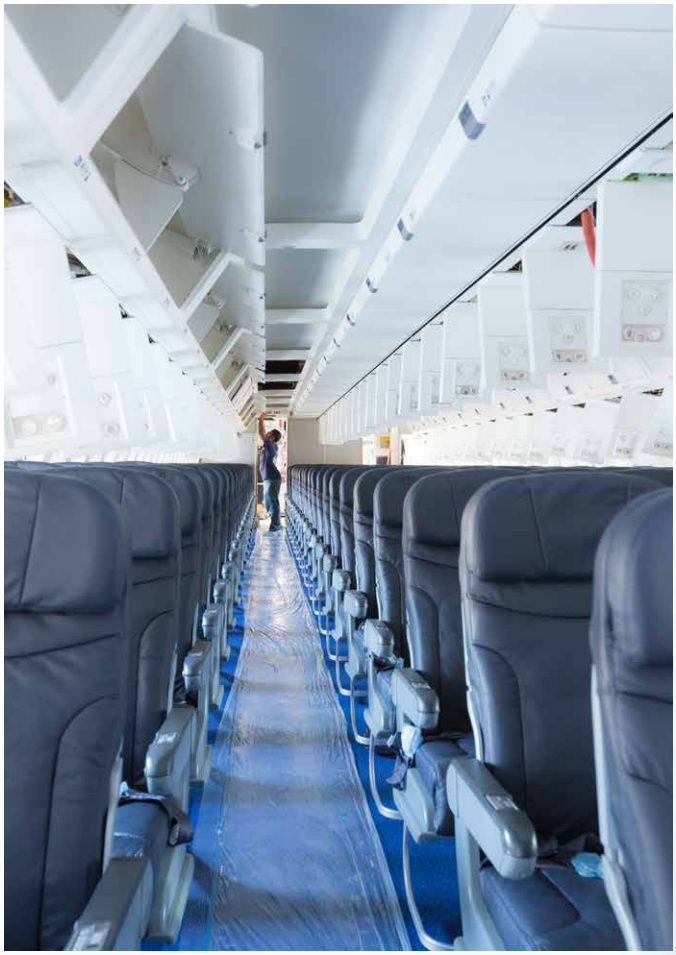
With MRO capabilities including avionics, interiors components, nacelles, airframe structures, engine and airframe accessories, along with wheels and brakes, AAR has created a full nose to tail component services offering. With numerous

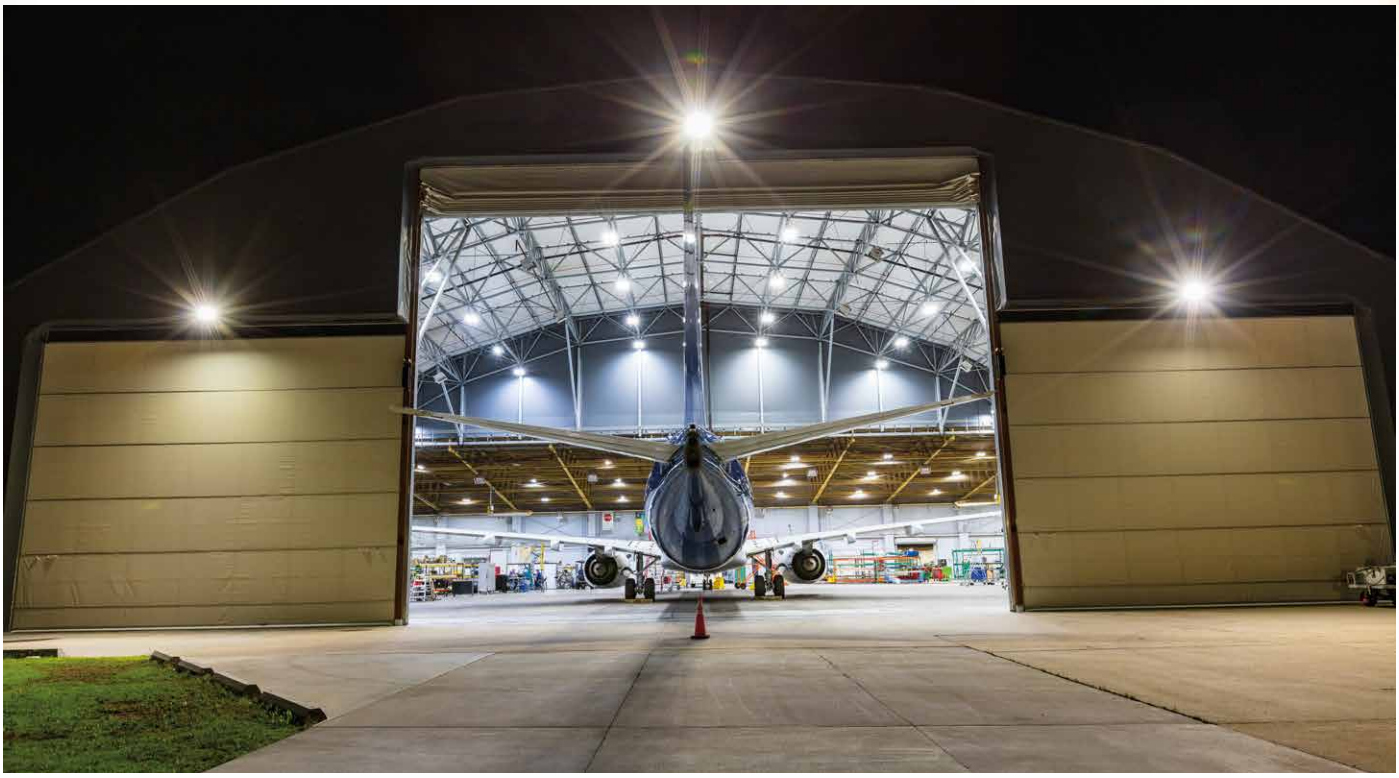
growth opportunities in the APAC region, AAR offers a comprehensive portfolio of MRO services in the region including airframe and engine accessories, nacelle components, radomes, and wheels and brakes for any commercial platform.

To meet the growing demand in the APAC region, AAR recently announced the formation of a joint venture with Air France Industries and KLM Engineering & Repair supporting next generation aircraft nacelle components. With this joint venture, AAR will expand their capabilities portfolio and create more effective solutions to serve the growing APAC region. This joint venture will be located within AAR's facility in Thailand.

Engineering Services and interior modifications

Along with their maintenance, repair, and overhaul (MRO) capabilities in the APAC region, AAR offers extensive engineering services for aircraft interiors along with being an industry leading provider of aircraft cabin and avionics upgrades, reconfigurations, and modifications. They have an experienced Engineering Services team that has accomplished 100+ Federal Aviation Administration (FAA) and European Union Aviation Safety Agency (EASA) supplemental type certificates (STCs), amendments, validations and minor modifications.





They provide complete engineering, integration, certification, and procurement services. Their engineering and design services combine innovation with practicality, focusing on creating functional yet aesthetically pleasing aircraft interiors. AAR's proven program management approach ensures a seamless project from start to finish, offering turnkey services to support the full cabin modification process and securing all required regulatory authority approvals.

PMA

AAR has an extensive list of parts manufacturer approvals (PMA). As an alternative to OEM parts, they provide quality PMA parts. AAR has added many interior components to their PMA portfolio that they are proud to showcase. Their offerings include cabin light lenses, window shades, and trim strips, all designed to enhance the cabin experience of the A320 and B737NG, MAX, 757, and 767 aircraft.

The AAR team is continuously working on developing a multitude of interior products, ensuring they remain at the forefront of aircraft interior solutions. Creating PMA alternatives provides customers with a less expensive alternative to the OEM. AAR Component Services offers a true collaborative approach to PMA development and PMA management, which has helped AAR earn exclusive PMA deals.

AAR's subsidiaries

Trax^{SM} offers critical software applications to a diverse global customer base of airlines, MROs, and government aircraft operators supporting approximately 5,000 aircraft. Trax's comprehensive solutions support maintenance activities and

create the system of record required by airlines, MROs, and government aircraft operators. Their eMRO platform is a leading-edge application designed to cater to virtually every aspect of aircraft maintenance and fleet management. Customers can manage their maintenance operation from their desktop or remotely from their phone or tablet. Their eMobility platform, part of the Trax eMobility Suite, provides real-time information and transactions, delivering the most comprehensive mobile solution available for airline and MRO maintenance organizations.

Aerostrat is a well-established long-range aviation maintenance planning software provider used by airlines, MROs, and cargo companies to automate complex scheduling, ensure production capacity, and simplify aircraft allocation. Aerostrat's flagship tool, Aerros, provides long-range heavy maintenance planning solutions to operators and MROs, regardless of the maintenance ERP system in use. Today, Aerros supports more than 5,000 aircraft.

Airinmar®, a leading independent provider of component repair cycle management and aircraft warranty management solutions, offers a range of flexible support services and systems designed to optimize customers' existing infrastructure and reduce their MRO operational costs. Airinmar reduces its customers' operating cost through the utilization of its innovative online management systems and back-office cost control services.

Through these key areas of AAR's business, they are able to offer their customers a comprehensive portfolio of capabilities. AAR's dedication to quality, safety, and delivering exceptional solutions, combined with their commitment to Doing It Right®, is what truly sets AAR apart.

AAR®

ADS-B In: Powering the next generation of safety and efficiency in US-India aviation

By Robin Glover-Faure, Chief Customer Officer, Acron Aviation

As air traffic grows and airspace becomes more crowded, a challenge keenly felt in both the US and the rapidly expanding Indian aviation market, the industry faces mounting pressure to improve efficiency while maintaining the highest safety standards. Achieving this relies not only on updated procedures but on innovating to raise standards, equipping pilots and air traffic controllers with advanced tools to make quick, confident decisions, particularly during critical operational moments like take-off and landing, final approach, or in poor visibility.

Recent data from the FAA[1] paints a clear picture of the stakes, with the US recording persistent risk in zones where aircraft operate in close proximity, and decisions are made in seconds. The potential for these risks has led to significant bipartisan movement in the US Congress toward a mandate for ADS-B In equipage for commercial, general, and military aviation, highlighting the technology's role as a critical, next-generation layer of defense.

But the risks don't stop on the runway. In congested airspace, during visual approaches, or when navigating low-visibility conditions, maintaining safe and consistent aircraft spacing is crucial. This is where ADS-B In has started to quietly transform the rules of engagement - an advanced technology that enables aircraft flight crews to receive real-time information about the identification, position, altitude, and velocity of nearby aircraft, information previously available only to air traffic control (ATC). Whilst ADS-B Out broadcasts an aircraft's position to ATC and other aircraft, ADS-B In allows pilots to actively receive and process this real-time traffic data directly in the cockpit.

Technology that looks ahead

Recent operational trials on American Airlines' A321 fleet, conducted in partnership with the FAA at Dallas Fort Worth (DFW) in Texas, US, demonstrated how ADS-B In-equipped aircraft achieve tighter spacing and shorter final approaches, without compromising safety. Two years of these trials have consistently shown that the ADS-B In system results in improved runway throughput, greater fuel efficiency, enhanced situational awareness, and elevated safety. Specifically, at DFW, this translated into the potential for four to five additional landings per hour on each runway. This increase in runway throughput directly translates into new revenue opportunities for both airports and airlines, enabling greater operational capacity without the need for costly new infrastructure. Unlike traditional systems that rely solely on radar and ATC voice instructions, ADS-B In delivers real-time traffic data directly to the cockpit, giving pilots a forward-looking view of traffic up to 120 nautical miles out.

1 https://www.faa.gov/air_traffic/technology/adsb/documents

During the DFW operation, aircraft using SafeRoute+ from ACSS (a joint venture between Acron Aviation and Thales) saw a 20-second reduction in average arrival time, a 12-second drop in runway threshold spacing, and 14% shorter final approaches in low visibility. Controllers reported zero separation incidents: A clear demonstration of how layered traffic awareness enables both higher throughput and improved safety. The FAA has published a formal Benefit report summarizing all the benefits demonstrated during these operations.

For pilots, these tools aren't just passive displays. Applications like Airborne Traffic Awareness, CDTI Assisted Visual Separation (CAVS/CAS), Interval Management (IM), and In-Trail Procedures (ITP) support proactive decision-making, whether during transatlantic flights, congested terminal areas, or challenging weather. The technology not only reduces the risk of separation loss, but it also cuts go-arounds and minimizes visual contact loss in critical phases. Furthermore, ADS-B In can provide free weather and traffic information (FIS-B and TIS-B) directly to the cockpit, eliminating the need for costly subscriptions and providing a more complete traffic picture by integrating data from both ADS-B equipped and non-equipped aircraft.

The implications are significant: safer skies don't have to come at the cost of efficiency. In fact, the two are becoming increasingly intertwined.

Pilots as partners

One of the most profound shifts ADS-B In enables is the evolving role of the pilot. Rather than reacting to ATC instructions, pilots become active collaborators in separation assurance, armed with

the same dynamic traffic data seen by controllers. In the DFW trial, pilots reported a significant boost in situational awareness, citing the intuitive interface and enhanced coordination with ATC. Pilots in the trial unanimously saw this as a safety enhancement.

This shared understanding is crucial in complex airspace. Whether executing visual approaches or navigating turbulent descent paths, cockpit-based guidance allows for smoother handoffs, fewer surprises, and more stable arrivals.

What's emerging is not just a new set of tools, but a new model of airspace management, one that blends human expertise with machine-driven precision.

Safety, sustainability, and scale

The benefits of ADS-B In aren't limited to collision avoidance or approach streamlining. FAA modelling suggests substantial fuel and emissions savings when the technology is adopted at scale. The DFW operations alone demonstrated the potential for an equipped airline to realize millions of pounds in fuel savings, thousands of tons in CO_2 reduction and up to 20% increase in capacity at a single operational hub. This increased precision means airspace can accommodate more flights, benefiting airlines with higher scheduling flexibility and the potential for increased revenue through improved fleet utilization.

That's why retrofit solutions like SafeRoute+ are gaining traction. Installed via software onto existing ACSS T3CAS or TCAS 3000SP systems, SafeRoute+ avoids expensive hardware overhauls, offering airlines a faster, more cost-effective path to safer, greener operations. Investing in this technology early also positions airlines to comply with emerging regulatory mandates as global aviation authorities, including those focused on the US-India corridor, push for greater adoption of next-generation air traffic management technologies. Evidencing this growth in demand, American Airlines is currently equipping its entire Airbus fleet with this technology. This large-scale commitment involves both line-fitting new aircraft and retrofitting existing ones, demonstrating the viability and value of the solution across a diverse, modern fleet

A safety toolkit for modern aviation

In aviation, innovation rightly proceeds with caution. However, the evidence from DFW is increasingly hard to ignore: when pilots are equipped with better tools, the system performs better across safety, efficiency, and environmental metrics.

The challenge now is ensuring momentum. For ADS-B In technology to reach its full potential, adoption must accelerate. This momentum is building in the US with key safety legislation, and it must be mirrored in other high-growth areas. That requires regulatory support, airline investment, and continued collaboration between OEMs, tech partners, and authorities - a mission well-aligned with the goals of the US-India Aviation Cooperation Programme (ACP).

OUR FOCUS:

YOUR OPERATIONAL READINESS

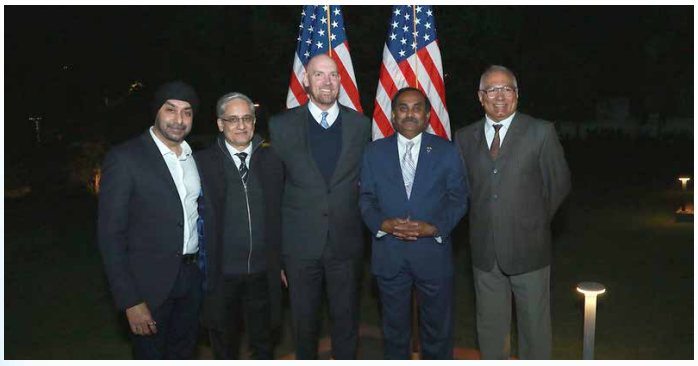
You have to be ready for anything. That's why Bell has been an unwavering partner to law enforcement agencies since 1948, delivering a range of trusted platforms for varied missions. Backed by our industry-leading global support, your team remains ever-prepared for any call that comes your way.

BELL

bell.co/publicsafety

ACP Activities Over the Period

Celebration of ACP's "Year-End Get-Together" on December 16, 2025 at Hotel - Shangri-La, New Delhi



Thank you meet at CDA Jorgan K. Andrews's residence on December 9, 2025

AAR and Air France Industries KLM Engineering & Maintenance complete formation of xCelle Asia joint venture on December 10, 2025

ACP Activities Over the Period

Congratulations to P&W's Ashish and team on 100 years of P&W's celebration on December 8, 2025

Congratulations to FedEx team for opening their amazing facility at BLR AISATS Logistics Park on December 2, 2025

Congratulations to United Airlines team - celebrating 20 years of nonstop DEL-EWR service on November 8, 2025

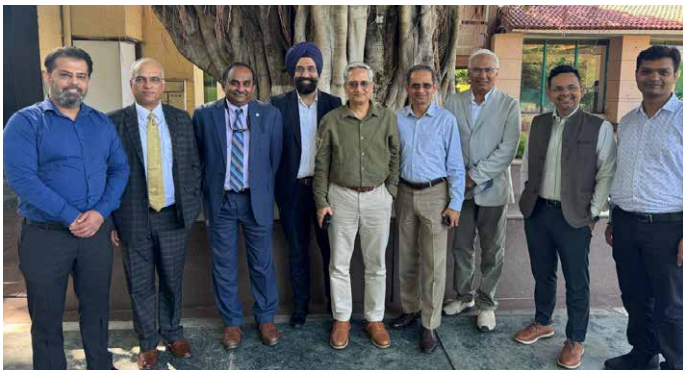
Congratulations to Turner team on their 60th Year Anniversary and for some of the iconic work they have done under Jairam, Atul and Lucas on October 31, 2025

ACP Activities Over the Period

Congratulation to Collins Aerospace for an awesome opening of largest aerospace manufacturing facility in India on November 11, 2025

ACP Secretariat visited Smiths Detection's office. Thank you, Commander Jyoti, for insightful discussions and hospitality on October 24, 2025

Great to meet Joe & Nikhil from L3H and discussed potential of growth in India on October 7, 2025



ACP Governing board meeting on September 15, 2025 at The Delhi Golf Club, New Delhi

Boeing's Salil Gupte address the class at RGNAU School of Management during the Aircraft Financing and Leasing program on August 5, 2025

ACP members at BCAS New Delhi office to Introduce and welcome New DG Rajesh Nirwan on July 25, 2025

ACP Activities Over the Period

AAR'S MoU signing with Thai Airways on July 25, 2025

ACP's Welcome Reception & Introduction Meeting with Secretary, MoCA on July 10, 2025 at Hotel – The Oberoi, New Delhi

ACP's Welcome Reception & Introduction Meeting with Secretary, MoCA on July 10, 2025 at Hotel – The Oberoi, New Delhi

ACP members meeting with Mr. Kadu, Director - Logistics at DPIIT on July 10, 2025

IATA's AGM held in New Delhi on June 2, 2025

Recognised Ashmita Sethi (past Co-chair (Industry)) of ACP for her contribution and support to ACP on May 30, 2025

ACP Activities Over the Period

Good discussions with Secretary Sinha, MoCA at his office facilities on May 22, 2025

Recognised Sundresh Sarup (past Co-chair (Industry)) of ACP for his contribution and support to ACP on May 25, 2025

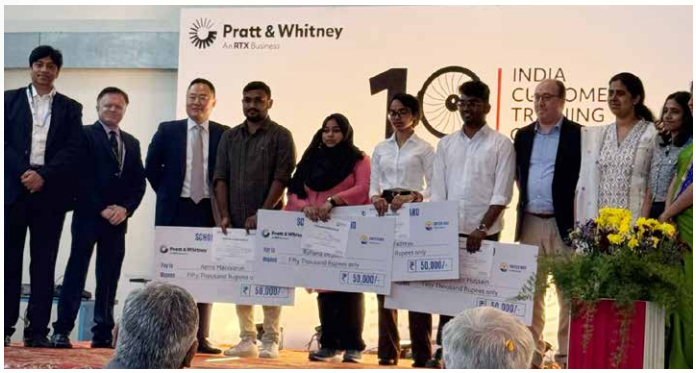
HMCA Naidu graced AVIA India - Aviation India Ahead, organized by Honeywell in association with ACP India on March 25, 2025 at New Delhi

HMCA Naidu graced AVIA India - Aviation India Ahead, organized by Honeywell in association with ACP India on March 25, 2025 at New Delhi

Meet with the Hon'ble Minister of State, Mr. Mohol, and brief him about the Aviation Cooperation Program (ACP) and our ongoing initiatives on March 20, 2025

Great moderation by Rahul Shah from AAR on India as emerging MRO hub on March 26, 2025

ACP Activities Over the Period



Congratulations to P&W for celebrating 10 years of India customer training center on February 21, 2025

A good exchange of thoughts on aviation infra development with Chairman AAI and Ashish's Honeywell team on February 21, 2025

RTX was awarded the Sunrise Sector Pioneer award in invest Karnataka for investment in manufacturing on February 12, 2025

USTDA's Sarah, Jenny and Pablo met JS Ao, MoCA & team for the evaluation of projects on January 20, 2025 at New Delhi

USTDA's Sarah, Jenny and Pablo met DG Kidwai, DGCA for the evaluation of projects on January 20, 2025 at New Delhi

USTDA's Sarah met ACP member companies for the evaluation of projects on January 20, 2025 at New Delhi

American Airlines Proudly Serves India

By Ronce Almond, Managing Director, Head of International Government Affairs

American Airlines offers convenient daily flights connecting Indira Gandhi International Airport (DEL) in New Delhi, India, with New York John F. Kennedy International Airport (JFK). This daily flight operates year-round and provides seamless connections between India and destinations in the United States including Chicago (ORD), Dallas Fort Worth (DFW), Washington, D.C. (DCA), and more.

American offers an extensive global network that spans more than 350 destinations in more than 60 countries worldwide. With more than 6,500 peak daily flights, customers have more travel options on American than any other U.S. airline.

Customers can also connect from destinations across India with our partner IndiGo. Members of American's AAdvantage® loyalty program

can earn miles when flying on eligible IndiGo flights marketed by American. This includes connecting flights from Delhi to Mumbai (BOM), Ahmedabad (AMD), Lucknow (LKO), Hyderabad (HYD), Bengaluru (BLR), Amritsar (ATQ), and more. When traveling with IndiGo on flights marketed by American, customers receive complimentary seat assignments and a vegetarian meal with non-alcoholic drink on flights with a meal service. Flagship® Business customers on an American-marketed connecting itinerary including IndiGo receive priority benefits including IndiGo's 'Fast Forward' service and complimentary lounge access where available.

American is a founding member of the oneworld alliance. Travelers can also earn miles and enjoy priority benefits with AAdvantage® status on 14 partner airlines including British Airways, Qatar Airways, Qantas, Finnair, Japan Airlines and others. The oneworld alliance enables customers in India to access to a vast global network of more than 900 destinations, with key connections to major hubs such as London, Tokyo, Hong Kong, Doha, etc. in addition to American's daily flights to New York.

American's flights to New Delhi operate on Boeing 787-9 aircraft offering up to 285 seats. This includes 30 lie-flat Flagship® Business seats. Travelers flying in this cabin have access to premium lounges at airports including DEL and JFK, priority check-in and boarding, chef-inspired multi-course meals, inflight amenity kits featuring rotating skincare products, premium bedding and more. American also offers pajamas and mattress pads for Flagship® Business customers traveling between DEL and JFK.

In addition, customers also have the opportunity to book in one of 21 Premium Economy seats. Premium Economy offers more legroom, wider seats with extendable foot rests, amenity kits, a blanket and lumbar pillow and chef-inspired meal services.

In Main Cabin, American offers pillows and blankets and a complimentary meal service and beverage selection. All customers can sit back, relax, and enjoy their flight with complimentary inflight entertainment via seatback screens. American's Boeing 787 aircraft also offer Wi-Fi for purchase to browse the internet, catch up on work or stay connected with friends and family.

Travelers departing JFK for DEL or transiting through JFK from DEL on connecting itineraries have access to premium lounges in partnership with British Airways in accordance with purchased cabin class and AAdvantage® status.

Flagship® Business customers and AAdvantage Platinum® status members can access the Greenwich LoungeTM featuring elevated dining, a wine table, shower suites and expansive seating. Celebrate the love of flying with unique cocktails at The Bridge Bar in the Greenwich Lounge™ experience. The menu features Aviation American Gin and Betty Buzz mixers, by Ryan Reynolds and Blake Lively, for a refreshing pre-flight drink in a mid-century modern setting. Or, relax in a high-end tap room at The Tasting Room in The Greenwich Lounge™ experience featuring Brooklyn Brewery, a global independent craft brewer and pioneer of the American craft beer revolution. Savor beers on

Power outlets are also available at every seat.

draft and flights paired with lighter fare dishes like Beer Braised Bratwurst and French Onion Grilled Cheese.

AAdvantage Platinum Pro® and Executive Platinum® customers can access the Soho Lounge™ experience. Overlook airfield and runway views, the lounge also offers a la carte dining via mobile ordering, cocktail tastings, phone booths, shower suites and chef-inspired meals and elevated beverages.

Customers who purchase a Flagship Business® Plus fare can access the Chelsea Lounge™ experience, which is American's most exclusive lounge offering at JFK. Featuring a elegant and modern atmosphere, the space also includes a circular champagne bar, curated meals from James Beard Foundation chefs, hand-crafted cocktails, shower suites, and a fireside lounge for relaxation.

American's offerings between New Delhi and New York are available for purchase at aa.com or through American's mobile app.

American Airlines

Charting a Course for Collaboration: A Conversation with Atlas Air Worldwide's Graham Perkins

By Graham Perkins, Senior VP, Sales and Marketing, Europe/Middle East/India/Africa (EMEIA), Atlas Air

As India emerges as a global aviation and logistics powerhouse, opportunities for international collaboration have never been greater. Shared Horizons sat down with Graham Perkins, Senior Vice President, Sales & Marketing, at Atlas Air Worldwide, to discuss how the company—operator of the world's largest fleet of Boeing 747 freighters—is engaging with India's fast-evolving aviation ecosystem and what's next for sustainable growth across the skies.

Q: India's aviation and logistics sectors are expanding rapidly, supported by economic growth, e-commerce, and infrastructure investment. From your vantage point at Atlas Air, how do you see this evolution contributing to India's export economy in the years ahead?

Graham Perkins: India is one of the most dynamic trade markets in the world right now. As the country continues to strengthen its manufacturing base and expand its role in global commerce, we are seeing strong and sustained demand for fast, reliable, and scalable air cargo solutions. Indian companies increasingly need to get their goods to market quickly—whether that's textiles, electronics, pharmaceuticals, or e-commerce products—and air cargo is the most effective way to do that.

India is becoming a strategic global hub, connecting commercial markets in new ways. The country's investments in airport infrastructure, logistics corridors, and its skilled workforce are foundational to long-term growth. But that's just the beginning. We want to be part of India's export growth story—supporting manufacturers and logistics providers as they scale their international reach, bringing Indian goods to global markets.

Q: Atlas Air serves a range of high-value sectors through weekly flights from Delhi. Where do you see opportunities to deepen partnerships with Indian companies to support continued growth?

GP: There's enormous potential for collaboration and partnership. Currently, there is no Indian main-deck long haul cargo airline, and that's a gap Atlas Air is well positioned to help fill by partnering in the local market. As the world's leading global provider of outsourced aircraft and aviation operating services, we have the experience, network, fleet capacity, and operational flexibility to engage collaboratively with Indian businesses that are seeking to expand globally and to support those growth plans with added capacity.

We currently operate weekly flights into Indira Gandhi International Airport (DEL), transporting consumer technology products for onward distribution and we see additional potential in the region.

Atlas has a track record of engaging successfully with companies in markets across Asia, the Middle East, and Europe to enhance their connectivity

and growth, while supporting trade. We want to bring that same approach to India, helping to develop customized, scalable solutions that align with local ambitions.

Q: Atlas Air's global experience and flexible operating model support customers across more than 80 countries. How do those strengths position you to contribute to India's ambitions to become a global logistics hub?

GP: Atlas operates the world's largest fleet of Boeing 747 freighters—17 747-8Fs, 39 747-400Fs, and four Large Cargo Freighters (LCFs)—along with 777 and 767 aircraft across cargo and passenger operations. That scale allows us to serve customers globally by connecting more than 330 stations worldwide.

Our model is designed around partnership. Our customers include some of the world's largest e-commerce, express, and logistics companies. We offer dedicated, tailored, reliable capacity that supports their business goals. That same approach can bring value to India's expanding logistics network, supporting Indian companies and global brands that rely on the country as a manufacturing and export base.

Ultimately, we see our role as helping Indian companies get their goods to the world—safely, efficiently, and sustainably—while strengthening the country's position as a cornerstone of global commerce.

Q: India's government has prioritized sustainability across industries, including aviation. How are Atlas Air's sustainability goals influencing your strategy and how might they align with India's own objectives?

GP: Sustainability is central to our One Atlas Strategy, how we operate and invest for the future. Across our fleet and network, we are advancing initiatives focused on fleet modernization, operational efficiency, and sustainable aviation fuels (SAF).

Our widebody cargo fleet includes 17 Boeing 747-8 Freighters and 13 Boeing 777 Freighters—among the most capable and environmentally responsible widebody aircraft ever built—and we are investing in technologies and methodologies that further reduce emissions, from optimized flight planning to continuous descent approaches.

India's emphasis on sustainability and green infrastructure aligns closely with our own priorities. As opportunities for SAF production and adoption expand in India, we are keen to collaborate with partners to integrate those solutions into our operations. For us, it is about supporting India's sustainability vision while continuing to deliver reliable, efficient global transport for our customers.

Q: Wings India 2026, taking place in January, is a signature event for India's aviation sector. From Atlas Air's perspective, what role do platforms like this play in advancing the country's aviation and logistics ambitions?

GP: Wings India has become a vital forum for collaboration, innovation, and strategic dialogue in one of the world's most dynamic aviation markets. It brings together government leaders, industry stakeholders, and global partners to exchange ideas, explore opportunities, and tackle shared challenges as India accelerates its emergence as a global trade and logistics hub.

India is at a pivotal moment. The manufacturing and export sectors are expanding rapidly, infrastructure investments are unlocking new connectivity, and sustainability is increasingly central to how the industry operates. Wings India provides a powerful platform to showcase that progress, strengthen partnerships, and chart the path forward.

At Atlas, we see India's aviation development as critical not only for the region but for the global supply chain. We have witnessed firsthand how resilient air cargo infrastructure drives economic expansion and connects markets and we want to be part of that story—working alongside and supporting Indian airlines, logistics providers, and manufacturers to help deliver the capacity and solutions that are a pivotal part of the country's ambitions.

Congratulations to the organizers of Wings India and the aviation community in India on the continued success of the event. The ideas and collaborations that emerge will help define the next chapter of India's role in global commerce, and Atlas looks forward to contributing to that journey as a trusted partner.

About Atlas Air Worldwide

Atlas Air Worldwide (Atlas) is a global leader in outsourced aviation logistics, providing what customers value most: advanced aircraft, flexible, reliable, safe operations, and world-class service. Atlas is at the center of the global economy, delivering on behalf of a diverse, marquee roster of shippers, eCommerce, logistics and transportation, express, airline, sports and entertainment customers.

Atlas is the parent company of Atlas Air, Inc., Titan Aviation Holdings, Inc., and Polar Air Cargo Worldwide, Inc. Together, we operate the world's largest fleet of 747 freighters and offer the broadest array of Boeing 747, 777, and 767 aircraft for cargo and passenger operations, connecting to more than 330 stations in over 80 countries.

India is becoming an integral part of our global network. Atlas currently operates weekly flights in and out of Indira Gandhi International Airport on behalf of customers, transporting export garments and fashion products for distribution across the globe, as well as consumer electronics being shipped into the country for Indian customers. We fully anticipate our presence in India will continue to expand in the years ahead as we partner locally to support what will surely be a growth story.

ATLAS AIR
WORLDWIDE

Keeping Victoria Safe and Powered, One Flight at a Time

By David Sale, Managing Director - Asia Pacific, Bell

The arrival of summer brings sunshine and life – in the form of helicopters – to the skies above Victoria, Australia as the low and steady hum of rotor blades echoes the sweet note of nature's transition from spring.

For Powercor, a leading power distribution company, summer means one crucial thing: inspecting and maintaining more than 77,000 kilometers (approx. 50,000 miles) of overhead powerlines and the surrounding vegetation to keep homes, businesses, and communities safe and connected.

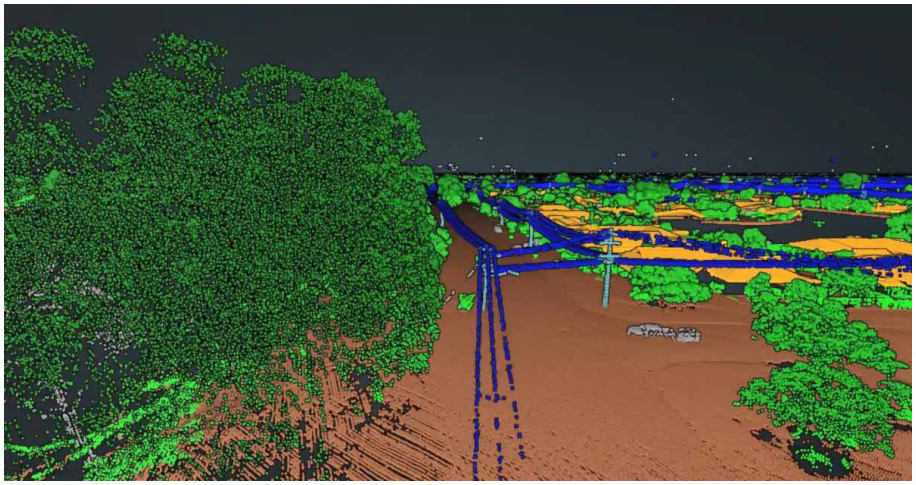
Beating the heat

Due to a generally hot, dry and drought-prone climate, 'bushfires are an intrinsic part of Australia's environment', as Geoscience Australia aptly stated.

According to the Australian Government's Department of Agriculture, Fisheries and Forestry, a total of 46.9 million hectares (35%) of Australia's total forest area was burnt over the period 2016 / 17 to 2020 / 21.

Therein lies the challenge, not just for Powercor, but for several other distribution networks across the country's six states. Is there a way to mitigate and prevent bushfires caused by flammable, overgrown vegetation entangled with powerlines, especially when current inspection programs are falling short?

Traditionally, powerline inspection work is carried out from the ground – crews, slinging binoculars,



logging hundreds of hours and thousands of kilometers over rugged terrain in camera-mounted vehicles. However, the limitations of ground-based inspections grew hard to ignore for Powercor as they faced delays, overlooked vegetation risks, struggled with data inconsistencies, and battled difficult terrain while trying to manage the daunting task of inspecting over 750,000 spans (space between power poles) every year.

Powercor's answer was up in the air, literally.

A Bell 407GXi and two Bell 505s form the backbone of their programme that is reshaping the way powerline inspections are conducted in Australia, centered on the belief that improving inspection accuracy is the only way to secure the safety of wider Victoria. Led by Ian Wallace, chief pilot and head of operations, and Ayce Cordy, head of vegetation management, Powercor is the first network provider in the country to implement a fully aerial, LiDAR-based inspection model.

Mounted with RIEGL cameras that have in-built LiDAR sensors, real-time 3D scans are generated as different Powercor crews fly overhead (at about 500 to 1,200 feet above ground level), giving them centimeter-accurate scans of the distance between powerlines and vegetation. The data collected tells Ian, Ayce and their teams where exactly they should be cutting, tracks growth rates and shapes planning for the season ahead, allowing them to pinpoint and prioritize high-risk vegetation before it can even become a threat.

The results were immediate.

"We were able to complete in eight months with helicopters what used to take 12 months on the ground," Wallace explains. "That time efficiency gives us a critical head start in planning and clearing vegetation because the annual task of managing the 13 to 15 million trees along our network is enormous."

The single-engine advantage

The single-engine Bell 407GXi delivers exceptional performance and reliability, setting the highest of benchmarks for its class of light helicopters.

With a powerful Rolls-Royce Model 250-C47E/4 turboshaft engine, extended fuel capacity, IFR capability and smooth four-bladed rotor system, it offers Powercor the endurance and performance

Powercor's Bell 407GXi on display at Avalon Australian International Airshow 2025

needed for long, demanding inspection routes, especially in Victoria where wind and weather can shift in an instant.

Complemented by a set of Bell 505s, Powercor's fleet is built on the kind of agility and maneuverability only afforded to single-engine aircraft, enabling them to tackle any terrain as they fly, in and out of wind, along a distribution network that constantly meanders, contours the ground, weaves through tight corridors and low-level passes.

Wallace added, "You would think that turbulence is a big concern for us, due to the kind of conditions that we fly in, particularly in mountainous areas, but it rarely is and I put that largely down to the four-bladed rotor head of the Bell 407GXi, which creates stability and gives us peace of mind."

As Australia faces increasing risk of climate-driven bushfires, Powercor's aerial inspection program is not just a leap in operational efficiency – it is a frontline defense in safeguarding the lives, land, and infrastructure of Victoria.

"Keeping Victorians and Victoria safe and powered is at the heart of what we do, and the only reason why we strive to improve our inspection and vegetation management programs continuously. The bushfire fight in Australia never stops – and neither will we," Cordy concluded.

Advent of Artificial Intelligence in Aviation

By Sushant Rabra, Partner, Digital Consulting and Dhaval Raut, Director, Mobility and Logistics, KPMG India

Global Aviation Trends and India's Position

Aviation industry has undoubtedly been one of the core enablers for economic growth across the globe. Despite the prevailing geopolitical tensions and global uncertainties, the strong growth momentum exhibited by the aviation industry is a testament to the impeccable resilience of the industry and growing demand for air travel.

Commercial Aviation sector was severely impacted by the pandemic. However, the **global air traffic**[1] surpassed the pre-COVID (2019) peak and is estimated to register 4.3 billion passengers in 2025. Further, strong air cargo demand continues to support the growth of aviation in the volatile market with value of air freight growing at ~25% YoY, compared to a growth of 7% YoY across other modes of transport.

Growth of aviation in **India**[2], on the other hand, resonates with the global trends with growths exceeding the global averages. By connecting over 350 million pax in 2025, the traffic is further expected to grow at a CAGR of ~5.8% YoY achieving a pax traffic for ~720 million pax by 2040 aided by robust economic growth, increased airport and airline investments and sound economic growth outlook.

Key Challenges in Indian Aviation

Despite the positive outlook on Indian aviation, the growth comes with its own set of challenges that have enhanced market risks in an industry fabled for razor-thin margins. On one hand, while the ongoing uncertainties, capacity and supply chain constraints and regulations have elevated the costs of operations, changing passenger expectations for a seamless and connected journey coupled with increased competition has made optimization of expenditure an arduous task. Traditional approaches for cost optimization may provide only limited opportunities.

Further, the passenger demographics globally is witnessing a change. The share of Gen Z passengers for air travel is on the rise with growing demand for international & leisure travel. This trend has resulted in a shift towards passengers increasingly expecting tech enabled customer experience, mobile first end to end travel experiences with smoother & personalized journeys. In a market driven by competitive fares, ability to command higher yield depends on monetizing experience: dynamic pricing, ancillary bundles, and proactive disruption management.

Sources: 1. IATA_Industry Statistics, 2. KPMG Analysis on Cirium data , IATA_India Air Traffic, 3. FAA 4. SITA report

Emergence of Artificial intelligence (AI) Transformation

Despite extensive digitization much of the operations and decision making rely heavily on human effort and judgement. According to the FAA, approximately 80% of aviation accidents are related to human factors[3] As per a recent report from a leading tech provider in aviation space 72% of the airlines and 74% of the airports surveyed, were expected to increase their IT expenditure in 2025 with AI being a key area of focus for 62% of airlines and 48% of the airports[4].

Artificial intelligence is emerging as a decisive force in reshaping how aviation functions by introducing advanced solutions that can learn, adapt and optimize continuously. In an industry built on precision, safety and coordination, AI is steadily becoming embedded into operational and commercial backbone of the aviation ecosystem by augmenting human expertise rather than replacing the same.

a. Leveraging AI for Operational Efficiency

Airlines across the world have been implementing AI with a focus on achieving operational efficiencies & optimizing customer facing services. On the operational front, the application of AI ranges from automation of back-office tasks to enabling predictive maintenance of aircraft and optimizing flight paths. This has resulted in optimized operations for the airline and significant cost savings. For example, a leading low-cost carrier achieved substantial fuel savings and cost reductions through AI-powered flight routing solutions. Similarly, a major global airline leveraged AI-driven back-office automation to rationalize management roles and improve manpower efficiency, while another pioneering carrier significantly reduced maintenance-related cancellations through predictive maintenance programs.

The interest in embedding AI into operations is equally strong within airport ecosystems, where a leading international airport has adopted AI-based solutions to optimize airside operations and improve efficiency. Developed in-house, this solution monitors aircraft movements, ground service equipment, and vehicle traffic, and uses AI-driven algorithms to optimize resource utilization. The potential impact is immense. AI-driven operational efficiencies can deliver hundreds of millions in annual savings per airline through fuel optimization, predictive maintenance, and manpower rationalization, while airports stand to gain from streamlined airside operations and improved resource utilization

b. Leveraging AI for commercial

AI is increasingly finding use to commercial decision making not only for airlines but also for airports seeking to maximize aeronautical and non-aeronautical revenues. For airlines, AI facilitates a fundamental shift from static rule-based pricing and segmentation to continuous demand driven optimization. For example, a leading global carrier has deployed AI-powered revenue management systems to make more accurate and responsive pricing decisions. At airports, AI is redefining commercial strategy by utilizing passenger movement data, dwell time, spending behavior, etc. to enable dynamic planning, targeted promotions and variable pricings.

c. Leveraging AI for customer experience

Aviation faces a unique challenge to balance capacity with service quality in highly uncertain operating environments. Multiple airlines are implementing AI for improved passenger experience to drive higher yields. Some airlines use AI to predicts passengers on sold out flights who are likely to sell back the tickets in exchange for a seat on a different flight, or credit enabling resale of the ticket at 2.5x price. On similar lines,

another has implemented AI tools for targeting customers with right set of personalized ancillary deals leading to a boost in ancillary revenue. Airlines in India have also adopted AI-driven solutions, such as customer-facing chatbots that provide real-time flight updates, baggage information, and seat selection. At the airport level, a pioneering international hub has introduced AI-powered facial recognition systems to enable a seamless, paperless journey from check-in to boarding. This transformation is critical as Gen Z travelers demand mobile-first, tech-enabled, and frictionless experiences. AI equips airlines and airports to meet these expectations, converting convenience into loyalty.

AI adoption in aviation – Challenges and Opportunities

While airlines and airports are increasingly moving towards AI, there exists challenges which make the adoption a slow and complicated transformation process. These include resistance related to transforming the overall business processes and culture for implementing the technology. Heavy reliance on legacy IT systems also contributes to the inertia for adopting AI. Data maturity and integrity are another critical gap despite vast data availability, much of it resides in silos with inconsistent standards.

AI offers substantial potential across operations, revenue management, and customer experience, but without a clear value filter and governance model, initiatives risk becoming costly experiments rather than strategic investments. The path forward requires disciplined execution: robust data governance, unified platforms, and strong collaboration between technology and business teams. Coupled with continuous training and change management, these steps will unlock AI's full potential and ensure investments deliver measurable, sustainable returns.

Conclusion

India's aviation sector stands at the threshold of unprecedented growth driven by surging passenger volumes, expanding fleets, and ambitious infrastructure plans. Yet, scale alone will not secure success. The industry faces mounting challenges: capacity constraints, evolving passenger expectations, and razor-thin margins. Globally, AI is already reshaping aviation, from predictive maintenance and optimized flight paths to hyper-personalized customer experiences. Leading aviation firms have already demonstrated their potential to cut costs, reduce delays, and elevate service quality.

For India, AI is not an incremental upgrade but a structural shift and a strategic imperative. To unlock its full potential, organizations must adopt a disciplined approach anchored in clear value discovery, robust governance, and measurable ROI, supported by unified data platforms and strong change management. The question is no longer whether AI will reshape aviation, but how effectively and how quickly India can harness it to deliver sustainable growth and competitive advantage.

Driving Efficiency and Security Through An Integrated Checkpoint

By Nicholas Ortyl, Chief Engineer for Aviation and Critical Infrastructure, Leidos

Automation is helping airports worldwide address a significant challenge – how to screen millions of travelers and their bags without security checkpoints becoming chokepoints.

Stronger security typically meant slower throughput, while efforts to improve efficiency often risked loosening safeguards. That balance is now shifting. By integrating millimeter-wave body scanners, computed tomography (CT) baggage scanners, trace-detection systems and artificial intelligence (AI) into a unified architecture, airports can achieve both: higher security standards and faster passenger movement.

A Checkpoint That Works as One

Traditional checkpoints operate in fragments. Depending on the country, a traveler removes outerwear, belts, shoes and electronics, steps into a body scanner and waits while their bag moves through the baggage scanner. Depending on the results of the scan, the bag could be diverted for secondary screening and sometimes undergoes chemical swabs. Each stage is often disconnected from the next, creating delays, uncertainty and inconsistency.

An integrated checkpoint brings these technologies into one orchestrated flow. Millimeter-wave body scanners provide rapid and safe, non-intrusive scans that highlight concealed threats without compromising a passenger's privacy. CT scanners, supported by advanced automatic tray return systems, capture volumetric images of baggage, applying advanced threat detection algorithms that identify explosives or prohibited items while allowing passengers to leave approved electronics and liquids in their bags. Automated tray-return systems, especially advanced systems with smart sequencing technology, keep trays flowing in order, eliminating the slowdowns that can occur when trays stack up or run short, ensuring a steady rhythm of passengers. Trace-detection systems add a final molecular layer when a more advanced secondary screening is required, analyzing samples of air or surfaces for explosive residues.

When these elements are tightly connected, the checkpoint becomes a cohesive system. Most passengers move through with minimal interruption, while security operators no longer must manually move trays down conveyors. Intervention typically only occurs when an algorithm identifies an anomaly, freeing personnel to focus on other critical security needs. This type of checkpoint functions as a secure, high-throughput layer, instead of being a friction point in the passenger's journey.

The Role of Artificial Intelligence

The leap in performance is driven not only by hardware but also by AI. CT systems increasingly use AI-driven analysis to distinguish everyday clutter from genuine threats, dramatically

reducing false alarms. This lowers the number of manual bags searched and accelerates the flow of travelers.

Body scanners also benefit from AI enhancements, with smarter algorithms improving detection sensitivity while cutting down on false alarms that would otherwise trigger unnecessary pat-downs. This “alarm-only” approach ensures security staff direct their attention to precisely where it matters. Each avoided false alarm saves time and enhances the passenger experience, without any loss of vigilance from a security standpoint.

With thousands of travelers per hour, the time saved with each traveler adds up to significant throughput gains. For airports handling record volumes, the efficiency impact is profound.

Centralized Data Management

Open architecture software platforms are increasingly helping airports integrate data from security screening systems, providing actionable insights to proactively track, measure, share and act on key operational data.

Not only can airports enhance their security posture through improved algorithms, but they can also use performance and other data to adjust operational processes in real time to mitigate and prevent bottlenecks at the checkpoint. With features including a centralized command view, central image processing and threat image projection, airports have a broader view of the entire security screening operation and can better forecast capacity and resource needs. Remote screening can be deployed to optimize operations using algorithms to help aid and streamline the decision-making and review process.

Adapting to Evolving Threats

While global standards set the baseline for detection, airports often face regional challenges from specific smuggling patterns to emerging homemade explosives. The strength of modern, open-architecture platforms is their ability to adapt.

Algorithms can now be customized, including integrating multiple algorithms into the same CT scanner, for example, to detect threats beyond the

global baseline. Whether that means identifying bulk currency, narcotics, or newly developed explosive compounds, this approach helps ensure airports can mitigate threats as they emerge. Adaptive AI enables software to evolve in step with intelligence updates, ensuring that local threat environments are addressed without undermining throughput.

In effect, airports can combine the universality of international detection standards with the specificity of local intelligence, creating a security posture that is both consistent and responsive.

Enhanced Security Improves the Passenger Experience

Perhaps the greatest achievement of integrated checkpoints is that they challenge the old assumption that stronger security must come at the expense of convenience. Automation allows both goals to be achieved simultaneously.

The checkpoint of the future will feel like a seamless filter most travelers hardly notice rather than a stop-and-go gauntlet.

For passengers, the benefits will include: keeping electronics and liquids in bags, spending less time divesting personal items and moving through with fewer interruptions. For operators, AI tools will reduce the cognitive strain of scanning endless

images, allowing them to concentrate on a smaller number of true alarms.

With adaptive algorithms and open architecture, checkpoints can remain responsive to new threats, deliver a better experience for passengers and a more sustainable workload for security personnel.

About Leidos

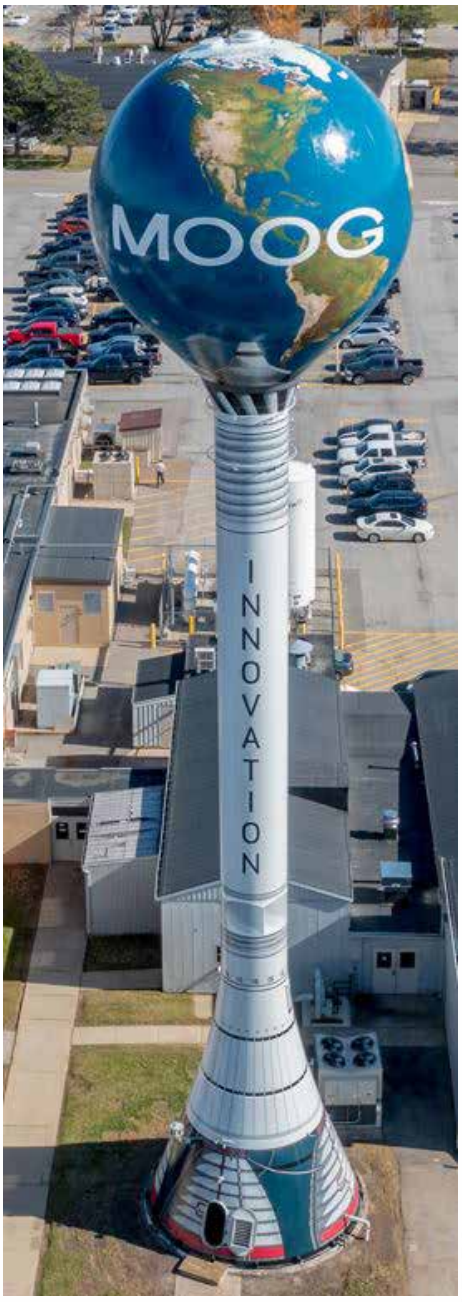
For decades, Leidos has delivered innovative technologies to make travel and trade smarter and more efficient. With more than 32K products deployed across 130+ countries, Leidos provides integrated security solutions for aviation, ports and borders and critical infrastructure customers around the world.

MOOG – The leader in Aircraft Flight Control Actuation Systems

By D. Krishna Mohan, Regional Director, Business Development (Middle East, Africa & India), MOOG

Moog is a designer, manufacturer, and integrator of precision motion control products and solutions. Our high-performance systems control military and commercial aircraft, satellites, and space vehicles, launch vehicles, missiles, and marine systems. We are world leaders in flight control systems and critical control products for the aircraft industry. We provide premier motion and flow control solutions provider for the space and defense industries. Moog has over 13000 employees globally with sales over $3.0B.

Our engineers have developed the capability to design and manufacture the most advanced motion control products for aerospace, defense, industrial, and medical applications – where precise control of velocity, force, acceleration, and fluid flow are critical. Our motion control portfolio has expanded to include all forms of actuation technology, sophisticated control electronics, and system software. We are



positioned today on virtually every aircraft in the marketplace.

We are a leading integrator of precision motion control systems, and our products reflect the culture that our people embrace – a culture where the opportunity to solve a challenging control problem is always welcomed.

Innovation is how we grow as a company. We

are investing in future technologies that we believe will have a great impact in industries from space, defense, aircraft, industrial, medical, and more. We're leveraging new technologies with our amazing employees to come up with groundbreaking ideas.

Moog India Technology center

Moog India was established in 1990. With the impetus from the Aircraft Group, Moog India Technology Center (MITC) was pioneered in 2008 in Bengaluru, India with a focus on research & design on Aerospace. It has witnessed strong growth since then in the areas of design, development, and integration of precision motion control systems for commercial & military aircrafts, business jets and avionics HW & SW. Our facility is equipped with state-of-the-art, best-in-class infrastructure to bolster our services and delivery capabilities.

Moog India Technology center is spread across 4 acres in Electronics city, Bengaluru. The facility houses more than 250 professionals with leading-edge engineering expertise. With significant capital investment, company is surging ahead to create further opportunities for professionals in the field of aerospace and defense.

Being one of the major design centers for Moog Aircraft Group, we are focusing on investing our talent pool on research and development of aerospace and defense technologies. Be it development of sensors, or Actuators or composite materials or Flight worthy electronic components, the India technology center is partnering with various suppliers in the region to be ahead in the market.

Moog India has Federal Aviation Administration (FAA) conformity inspection delegation for aircraft LRU qualification programs of major Aircraft OEMs. This is a significant cost savings in terms of resources and time.

Supplier/ Partners footprint & collaboration with MSME

Moog believes in connected and sustainable ecosystem for the industry as well as for the society. Moog has established robust supplier base and continues to develop new partners in India and surrounding regions. Moog has closely worked with these suppliers and has brought them up in speed and quality over the period of time. Notably, these suppliers are part of the supply bases in local region and are serving the wider industry needs.

Moog is partnered with nearly 40 Aerospace suppliers in the region for Machining, Special Process, Calibration, Test Equipment, Cable Harness, PCBs, and other commodities. We are associated with nearly 50 MSME suppliers as on date. We are continuously exploring options to develop suppliers for other commodities of the Aircraft. This has created more than 200 indirect

employments from Moog. With an intention to further bolster the growth of Aerospace and defence segments in the region, Moog continuously works with suppliers and partners to improve their skill which in turn helps the society.

In collaboration with our Aerospace suppliers, Moog is developing complex actuation components for aerospace & defense applications. These components are used on various aircraft platforms.

Value creation

Moog is part of various Industry bodies, such as, InAQG, SAE, AMCHAM & ACP. Through these associations, Moog is closely connected with Indian Government officials, industry and academia for knowledge dissemination and wider values creation. Moog has been part of the various Standards bodies; creating Standards for the global Aerospace Industry.

In 2016, Moog India took the initiative to establish an Indian chapter of the International Aerospace Quality Group (IAQG) under the Asia-Pacific Aerospace Quality Group (APAQG), called as InAQG. The aim of InAQG is to enable the Indian Aerospace and Defense industries to align with and contribute to Global Aerospace Quality Standards and the membership has now grown to over 120 companies, which includes both Indian and global OEMs.

A significant number of Moog experts have been associated with the national level events as organizers, speakers, Juries, and mentors. Moog has been sponsoring multiple events every year to support the eco-system of the aerospace and defense industry. Moog has been associated with various universities in designing curriculum for technical courses. Moog has developed and built various types of science equipment and donated to the technical institutes in local region to assist students in practical learning of Science and Technology.

On social front, Moog has been deploying its CSR funds in various areas, such as, education, medical infra-structure, support to the special needs for physically and mentally challenged citizens, elevating life standards of the destitute and underprivileged citizens, etc.

Skill development / Industry Academia

Moog India has actively partnered with many local institutes/universities and support in skill development of young engineers by giving opportunity to learn on the job through our short term and long-term internship programs for graduate and post-graduate students. We support industry visits that helps students to understand aerospace industry, Moog's contribution and they get to see our actual working set-up, labs and overall facility tour.

Our subject matter experts visit various institutes/ universities as jury for events and deliver guest lectures to share industry experience and expectations to connect academic subjects to industry application. We participate as jury/guest in special events (such as Aerothon, Aerocon, etc.) that encourages budding engineers to showcase their technical talent and learn from expert mentors.

Co-development

Moog has collaborations with several Indian partners to provide solutions for Indian Aerospace & Defense market needs. Genesys Aerosystems, a Moog company, is working on many of the Indian Defense programs furthering the relationship between India and US on Aerospace and defense technology. Moog is working closely with Indian MSMEs, HAL, NAL, and other establishments since 2018, to have local development & service of state-of-the-art Avionics.

Moog Headquarters - East Aurora, New York

Working with HAL on new and upgrade of the glass cockpit for Dornier 228 aircraft

Working with NAL on development of complete Avionics system for SARAS MKII

Moog is proud to have associated with the prestigious LCA program since its very early days.

Moog Actuation system on LCA has performed with great reliability. Moog has supplied multiple ground equipment's and simulators for various programs of HAL and other defence bodies. Moog has worked with some of the domestic aerospace companies for testing services. Apart from this, Moog India has established capabilities for MROs globally and can support similar initiatives in India.

With our decades lasting relationship with Indian military programs and our expanding engagements in the Asian regions, Moog see tremendous opportunities to engage in the newer areas. If need be, Moog will be open to explore engagements in local region either directly or through any suitable partners.

MOOG

Securing the Sky: How Integrated Screening is Powering India's Next Aviation Leap

India's aviation sector is expanding at a pace unmatched by most global markets. With passenger traffic projected to exceed 400 million annually by 2035 and more than 70 new airports under development, the nation's airport infrastructure is being reimagined for scale, safety and sustainability.

At the heart of this transformation lies security screening. Once viewed as a necessary bottleneck, it is now recognised as a critical enabler of operational efficiency, passenger experience and regulatory compliance.

"Screening will increasingly become part of a living network, not a fixed process," says Richard Thompson, Head of Digital and Innovation at Smiths Detection. "India's airports are entering an era where resilience, automation and adaptability will matter as much as detection capability."

Smiths Detection, recognised globally for its threat detection and screening technologies, is helping shape a new model for airport security, one built on data, automation and intelligent system design. Its ecosystem of solutions, combining Computed Tomography (CT), Artificial Intelligence (AI) and X-ray Diffraction (XRD), delivers the detection accuracy regulators demand while improving throughput, lowering energy use and reducing total cost of ownership.

Checkpoint Screening: The Passenger Experience Reimagined

Few areas of an airport have a greater impact on traveller satisfaction than the checkpoint. Traditional processes requiring passengers to remove electronics and liquids create queues and slow throughput.

The HI-SCAN 6040 CTiX is transforming this experience. Using computed tomography to produce rotatable 3D images, it allows passengers to leave laptops and liquids inside their bags without compromising security. Its AI-driven automatic threat detection enhances accuracy and consistency, enabling screeners to focus on genuine alarms.

Globally, more than 1,500 CTiX units are now installed at leading airports. At Milan Linate, the system helped reduce screening times by up to 50 percent, with 90 percent of passengers clearing

security in under five minutes.

For India, where the Indian Authorities are in the process of evaluating Computed Tomography (CT) technology for checkpoint screening, this solution represents a pivotal opportunity to advance both operational efficiency and the passenger experience. It delivers improved energy performance, integrates seamlessly within existing checkpoint configurations, and is fully compatible with advanced iCMORE software for the automatic detection of lithium batteries, weapons and other restricted items.

Rational:

- *"Represents a pivotal opportunity to advance" - slightly more elevated than "presents a significant opportunity."*
- *"Operational efficiency and the passenger experience" - flows better in journalistic tone.*
- *"Integrates seamlessly" instead of "integrates smoothly" - consistent with your article's earlier phrasing.*
- *Removed "advanced" repetition before "iCMORE" for cleaner rhythm (you can keep it if you want stronger emphasis).*

Hold Baggage CT: Building the Backbone of Modern Security

Behind the terminal, a different transformation is taking place. Hold-baggage screening, often less visible to passengers, is where efficiency and resilience have the greatest operational impact.

Smiths Detection's SDX 10080 SCT brings dual-energy CT technology to this vital stage. Designed for both hold baggage and air-cargo screening, it represents a new generation of high-speed, energy-efficient, and future-ready Explosives Detection Systems (EDS).

The system combines dual-energy CT imaging with an optional dual-view LineScanner, generating high-resolution 3D and 2D images that allow operators to rotate, zoom and analyse bags with exceptional precision. With throughput rates of up to 1,800 bags per hour and dynamic calibration that removes the need for system stoppages, the SDX 10080 SCT keeps luggage moving even during peak travel times.

Its air-based cooling system eliminates the need for external chillers, significantly reducing power consumption and maintenance costs. A bearing-less gantry design lowers mechanical complexity, improving uptime and extending service life.

"We built the SDX 10080 SCT as a platform, not just a product," explains Susanne Kruppa, Senior Product Manager for Hold Baggage Screening. "It's ready for today's standards such as ECAC 3.2 and TSA 7.3, and prepared for tomorrow's. Airports can add new algorithms or integrate future technologies like Diffraction without replacing the core system."

For Indian airports, where CT for hold baggage is not yet mandated, the SCT provides a compelling business case. By increasing throughput, cutting false alarms and reducing operational costs, it helps justify the investment, turning compliance into measurable performance gain.

Innovation Beneath the Concourse: Diffraction for Hold Baggage

While CT technology revolutionises imaging, some materials remain difficult to distinguish based on density alone. Enter Diffraction (XRD), the next stage in Smiths Detection's roadmap for multi-layered screening.

The SDX 10060 XDi uses X-ray Diffraction to analyse materials at a molecular level, identifying each substance by its unique "diffraction fingerprint."

This allows operators to differentiate between items that appear identical under CT, for instance distinguishing plastic explosives from food or powders.

When used alongside CT systems, Diffraction becomes a powerful alarm-resolution tool, automatically confirming benign items and minimising manual rechecks. It is particularly suited for high-risk baggage and air-cargo applications, where accuracy and efficiency are equally vital.

For the Indian market, where regulators are still shaping the long-term roadmap for CT and advanced detection, Diffraction represents an important future capability, one that airports can plan for now within a modular, upgradeable platform like the SDX 10060 XDi.

A Connected, Future-Ready Ecosystem

What truly sets Smiths Detection apart is its commitment to integration. Through Open Architecture, all its systems, from CTiX to SCT and XDi, can share data, algorithms and operational insights across a single, connected platform.

This connectivity enables remote screening, predictive maintenance and AI-based performance monitoring, helping operators balance workloads and optimise resource use. It also supports risk-based screening, where decisions can adapt dynamically to passenger volume, flight schedules or evolving threat intelligence.

"Our goal is to make security part of a living digital network," Thompson notes. "By connecting systems and data, we give airports the flexibility to scale efficiently while staying compliant and resilient."

Lifecycle Partnership and Local Impact

Technology is only as effective as the partnership behind it. Smiths Detection supports its systems through a global service network spanning nearly 180 countries, including a long-established presence in India, where its engineers provide training, predictive maintenance and rapid on-site support.

This commitment has recently deepened with the opening of Smiths Detection's Global Customer Experience and Training Centre in Gurugram. The new facility serves as both a technology showcase and a capability hub, enabling customers and partners to experience the latest CT, AI and digital solutions first-hand while developing local expertise.

Both the HI-SCAN 6040 CTiX and SDX 10080 SCT are software-led platforms, allowing airports to add new detection algorithms or integrate emerging systems without major hardware replacement. This flexibility not only lowers total cost of ownership but ensures continued compliance as BCAS and international standards evolve.

Local collaboration remains central to the company's strategy. Smiths Detection works closely with Indian agencies and service providers to align with government priorities such as Make in India, Digital India and sustainable airport development. These initiatives, combined with open-architecture flexibility, help ensure that investments made today continue to deliver value well into the future.

"We earn partnership status by solving for the airport's long game, not the next procurement cycle," Thompson adds. "Our goal is measurable outcomes, stronger detection, faster throughput and long-term resilience."

Supporting India's Vision for Growth

With India investing heavily in greenfield airports, smart terminals and digital infrastructure,

advanced CT screening offers not only stronger security but also alignment with the nation's broader goals: operational excellence, sustainability and global competitiveness.

Smiths Detection's three core technologies, CTiX for checkpoints, SCT for hold baggage, and Diffraction for molecular-level analysis, embody this holistic vision. Together, they form an adaptable ecosystem that grows with regulatory change and passenger demand.

As Indian regulators and airport operators continue to evaluate the phased introduction of Computed Tomography (CT) technology at checkpoints, its adoption, already proven and widely accepted across leading global airports, represents a significant opportunity for India. CT-based screening enhances passenger facilitation by reducing queuing and enabling smoother processing, while simultaneously improving operational efficiency through lower false-alarm rates and higher throughput. Equally important, it supports national sustainability objectives by delivering measurable energy savings and long-term lifecycle efficiencies for airport management.

Security and passenger experience no longer have to compete. With the right technology strategy, they can advance together, paving the way for a new era of safe, seamless and sustainable aviation in India.

Security you can trust. Efficiency you can measure. Readiness for what's next.

For more information, visit www.smithsdetection.com.

smiths detection

Built Around You: Personalization in Aircraft Design

By Stephen Chong, Marketing Manager - APAC, Textron Aviation Inc.

Beyond a convenient form of transportation, business aircraft can be a great productivity tool to save travelers valuable moments that money alone cannot buy. While it's hard to quantify the experience of flying private, one thing is certain: whether you're flying with clients, colleagues, or loved ones, their travel experience matters above all else.

The cabin experience is one of the most personal and distinctive aspects of aircraft ownership. From the overall aesthetic to the finest details, aircraft cabins are thoughtfully designed to suit a wide range of owners and missions. They can serve as in-flight offices, serene relaxation havens, or tailored spaces for both leisure and business.

Because preferences and tastes are deeply personal, potential aircraft owners often wonder how to make their aircraft interior truly their own.

Thanks to the expertise of Textron Aviation's interior design team, what begins as a blank canvas becomes a bespoke masterpiece—exuding the personality of each owner and bringing their unique vision to life.

With an aviation heritage going back nearly a century, each aircraft produced and delivered by Textron Aviation to customers has its own story, mission and purpose. From the exterior paint scheme to the intricate stitching patterns inside, each aircraft is a one-of-a-kind creation.

And just like the aircraft itself, the journey to achieve this level of personalization is unique. There's no one-size-fits-all approach. The constant, however, is the team of dedicated designers and engineers at Textron Aviation who guide owners every step of the way.

"In terms of personalization opportunity, you can really put your stamp on it," says Shelby Page, Interior Design Manager at Textron Aviation. "It's more fun from a design perspective because there is more time to personalize, there can be multiple renderings and there's no feeling of a rushed decision."

Page explains that what starts with an initial conversation about color palettes and swatches quickly evolves into a collaborative partnership with a shared goal.

Allison Placzek, Interior Design Specialist, agrees. She and Page emphasize that communication and flexibility are key a successful design process.

The design is kickstarted at the initial specification session, where the interior design team gains an understanding of each customer's individual vision, style and taste. But there isn't a need to bring anything to the table right away.

"Customers don't need to bring any materials or a specific color scheme," says Placzek. "We just ask them to come with an open mind. But if they do have ideas, it's great to know those up front so we can be ready."

As Cessna Citation jet cabins have evolved with each new model, so too have their interiors. Premium materials like Italian leather, silk, and natural wool fibers enhance comfort while offering sustainable benefits—without compromising on luxury and elegance.

But cabin customization goes far beyond fabrics and finishes. With a collaborative spirit and deep product knowledge, Textron Aviation's interior design team empowers customers to dream big.

"We have so many different groups at our disposal to be able to customize things. It could be a unique seating configuration or a bespoke couch. We have access to the original engineering and people who have worked here for 20 or 30 years who did the last two iterations," says Page. "It means we know the product better than anyone."

This attention to detail is what aircraft owners have come to expect from Textron Aviation. It's a standard that extends beyond crafted interiors to every aspect of aircraft design and manufacture.

"I want customers to see themselves in the aircraft for years to come—something they'll be happy with in the long run," Page concludes. "It should feel like a home away from home, and the personal touch helps us get there."

Small, personalized details can make a big, lasting impact on the cabin experience. Whether it is distinctive seat stitching with monograms, contrasting thread and quilted leather inserts, custom accent lighting or wireless connectivity platforms, Textron Aviation's designers thrive on exceeding every customer's expectation.

"We love saying yes. The more we can say yes, the more fun our job is," says Page with a smile. "It's incredibly rewarding to be able to say, 'Yes, we can do that.'"

FOR MORE INFORMATION

See how the expansive portfolio of Cessna Citation business jets and their cabin experience can transform personal travel. Visit cessna.txtav.com/jets

Cessna | Beechcraft

BY TEXTRON AVIATION

United Airlines

By Harvinder Singh, Director - Business Services & Head - Middle East & India, United Airlines

United Airlines, Inc. (United) is the only U.S. airline to consistently serve India for nearly two decades. Currently, United is operating a daily flight between Delhi and Newark/New York City, which it has operated since 2005. United's India flights are conveniently timed to connect to the airline's extensive network of destinations throughout the Americas beyond Newark and to points across India such as Mumbai, Bengaluru, Chennai, and many others via United's partner Vistara Airlines beyond Delhi. At United, "Good Leads The Way". With U.S. hubs in Chicago, Denver, Houston, Los Angeles, New York/Newark, San Francisco and Washington, D.C., United operates the most comprehensive global route network among North American carriers and is now the largest airline in the world as measured by available seat miles.

From Delhi fly nonstop to New York/Newark and explore 270 destinations across the Americas. The flights are operated on a state of-the-art Boeing 777-200ER featuring up to 48 United PolarisSM business class lie-flat seats, 21 United Premium PlusSM seats, 39 Economy PlusSM seats and 149 United Economy^{SM} seats.

United Polaris business class

- Lie-flat beds providing up to 198cm of sleeping space
- A feature-rich seatback entertainment system and personal entertainment device with noise-reducing headphones
- Chef-designed menus and a selection of award winning wine and champagne
- Sleep-themed amenity kits including spa quality products
- Cooling gel memory foam pillows and Saks Fifth Avenue luxury bedding — including pillows, blankets and duvets
- Dedicated check-in counters and security lanes, priority baggage handling and priority boarding with Premier AccessSM
- Access to United Polaris lounges and select airline partner lounges

United Premium Plus

- Plush seats with 96 cm of legroom, more recline and more space than most United Economy Plus and United Economy seats
- Individual power outlets and USB chargers
- Adjustable leg and footrests for additional comfort
- Upgraded dining options on dinnerware with flatware, a cloth napkin and complimentary alcoholic beverages
- A feature-rich seatback entertainment system and personal entertainment device with noise-reducing headphones
- Saks Fifth Avenue luxury bedding, including a pillow and blanket

United Economy®

- Ergonomically designed seats with up to 81cm of legroom
- Blankets, pillows and earphones

- Complimentary meal service, featuring a 3-course meal, house beer and wines, soft drinks, tea and freshly brewed illy coffee
- A feature-rich seatback entertainment system and personal entertainment device

The United app

Before their trip, customers should download their all-in-one travel tool that includes:

- Bag tracking
- Ability to store boarding passes
- Dynamic boarding times
- United Private Screening
- Travel Ready Center

Stay connected while you fly

We offer United Wi-FiSM on all mainline aircraft and two-cabin regional aircraft. Customers can purchase a United Wi-Fi plan onboard to gain full Internet access, enable text messaging and more.

Customers can also activate the free messaging plan on all Wi-Fi equipped aircraft*. The plan allows you to send and receive text messages using most apps that send messages over Wi-Fi (such as iMessage, WhatsApp, etc.)

*Except select 757s, 767s and 787s. SMS messages can't be sent or received because they can only be sent over a cellular network.

United customers in India may book flights by visiting united.com or contacting United reservations on 91-124-4315500 (Delhi), or via their travel agent.

UNITED AIRLINES

A STAR ALLIANCE MEMBER

Digitization at Airports

Airside Operations and an AI Perspective

By Maninder Singh Grewal, CEO - iPrime Services Pvt. Ltd. and Authorized Partner of Veoci in India/Africa/Asia

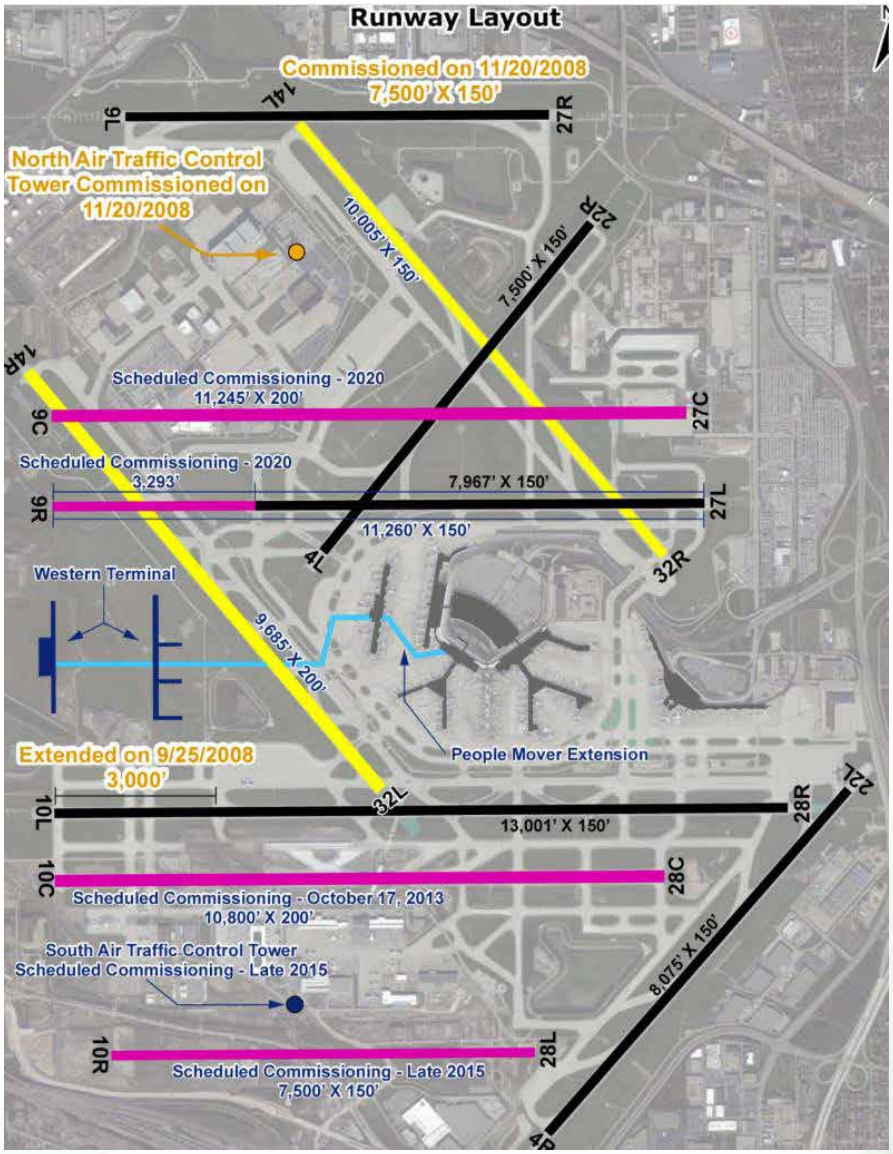
The primary aim of any digitization exercise at an airport is to increase compliance and safety. By digitizing operations and building safety oversight, airports enable real-time situational awareness across the airport and make data available in the many inspection formats defined by FAA/ICAO or local regulators.

This fosters a culture of compliance and safety throughout the organization.

On the terminal side, airports are investing heavily in digital platforms and digital twins to understand better and enhance the passenger experience. This covers the passenger from arrival at the airport to takeoff and on the return side, from landing to departure from the terminal curb.

However, post-COVID air travel is growing exponentially, and to meet this demand, most airports now feature multiple runways, which increases the complexity and the time required for inspections and safety maintenance.

This complexity and increased



volume are leading to the construction of airports with multiple runways. DEL has 4 runways, and ORD has 8! The Jhewar airport, the second for the National Capital Region, is planning 4 runways, as is the Navi Mumbai airport.

The digitization of the Airport Airside is now a focus area, with siloed legacy applications being replaced by airside platforms that offer multiple solutions on a single foundation.

Areas That Can Be Digitized

- All Airside Operations covered by DGCA CARS and FAA/ICAO guidelines
- Wildlife Hazard Management System, including centralized compliance reporting
- All CNS, Electrical, and Civil Inspections and Work Orders
- Asset Management, including signs and lights
- Leases Management on the Airside and Terminal side
- Airside Vehicle and Driving Permit, including violations tracking and fines
- PERCOW (Permission to Carry on Work): Airfield Work Permit System
- AOCC functions, including near misses and wildlife reporting
- Training & Proficiency Development
- Training and certifications mapping for HR
- Safety Management Systems per DGCA CAR
- Compliance Management with auto-reporting for all violations
- Unified single portal for compliance reporting to DGCA across all airports
- Emergency Planning, Response, Notification, and Crisis Management Services (web-based and mobile application), including Land Side
- Soft Services Audit System
- Business Continuity Management System (BCMS)
- Enterprise Risk Management
- Land and Terminal Side Crisis and Incident Management, in addition to Airside Scenarios

Shared Platforms & Single Data Repository Examples of Data Sharing

Aircraft Registration and Certification

An Air India 737 flew 11 times but never had DGCA certification: Anything could have happened. How would a data platform prevent this?

At the regulator level, there will be a database of all aircraft permitted to fly. At the first stage, the airline could not have made any flight plan if the plane had not been cleared. This would be a mandatory condition.

If such a flight plan had been made, airport access and validation of flight plans linked to the database could have flagged this immediately, and alerts could have been sent to the Airline and DGCA.

Finally, as a resort, an automated alert programmed into the solution/integration would have alerted the DGCA to the infringement.

With the platform-based solution approach, the same database would have been shared, preventing mistakes.

Wildlife Reporting

An airport operator must report details of Bird Strikes and other wildlife sightings and incidents to the DGCA.

With a single database, data can be added in real time via a form available to the airport but controlled by the DGCA.

Airports with digitized wildlife management

solutions would be required to send data in real time to the system and trigger automated alerts to the DGCA based on the severity of the incident.

Crisis & Incident Triaging

Triaging incident and crisis response could be categorized to automatically alert DGCA to specific critical incidents or crises at an airport. As a drill progresses, the DGCA could monitor it in real time rather than waiting for a post-drill analysis from the operator.

These are just examples of where early alerts to DGCA could enhance productivity and safety.

Safety Management Systems (SMS)

Safety management Systems are now mandatory for all airports as per DGCA and ICAO rules.

This starts with assessing and categorizing risk. Risk can take many forms, and a professional hazard assessment exercise is the best way to initiate this process. Categorizing risk and then correlating it with parameters such as weather, wildlife, air traffic, seasons, expansion, and construction work at airports requires processes and the use of AI for a valid assessment.

Once airport operations are digitized, the data can be mined by AI to generate future' what if 'scenarios, pre-empting and mitigating

Core Objectives

Safety Policy

Focuses on establishing an environment that enables effective safety management. It is founded on a safety policy that outlines your organization's commitment to safety. It normally includes:

- Safety Objectives and priorities,
- Senior management / Accountable Executive's commitment and safety leadership,
- The Organizational structure and resources to meet safety goals, and
- The safety responsibility and accountability are at every level within the organization.

Hazard Identification

This involves systematic activities to identify hazards, assess operational risk, and control and mitigate it. Effective hazard identification requires a structured approach to safety data collection and management that produces insights and generates intelligence from operational and internal process data.

Safety Performance Monitoring and Measurement

Proactively monitoring safety performance with tailored indicators is crucial to mitigating risk effectively. These safety performance indicators measure the effectiveness of safety risk controls in preventing undesirable safety outcomes.

The safety performance monitoring process should utilize various safety data, including incident investigations, reporting systems, reliability program reports, training records, and safety audit results.

Safety Promotion and Culture

Focuses on sharing safety trends, knowledge, good practices, success stories, and lessons learned, aiming to increase safety awareness, change behaviors, and create a culture of safety first. The SMS system would encourage staff participation in maximizing SMS performance. Some suggestions on how to shift from reactive to predictive and prescriptive decision-making:

AI and Near Term AI Goals:

- Improve safety, efficiency, and resource

utilization on the airside across the areas listed above.

- Unifying the high volume and velocity of data from disparate sources (sensors, schedules, logs) to generate insights that tell staff exactly what to do next.
- Shift from reactive operations to predictive and prescriptive decision-making to improve safety, efficiency, and resource utilization on the airside (runways, taxiways, apron, gates, hangars, signage, lights, radars, ground service equipment, etc.)

Key Challenges

The sheer volume and velocity of data from disparate sources require a unified system to generate actionable insights for operational staff. The Airport Information depository is a massive database and presents an excellent opportunity for AI use.

Disparate systems require multiple middleware solutions to amalgamate data for AI tools to produce actionable insights; hence, a single platform with numerous hosted solutions and a single multitenant database is necessary. This consolidates all data in a single database, from which data mining and subsequent use of AI tools can extract predictive insights.

The use of AI in applications leads to high levels of automation, reducing workforce requirements.

Examples of Operational Use Cases:

Safety & Conflict Prediction (Runway/ Taxiway):

- Tracking Runway Incursions with Sensors and GPS devices:
- Data Required: Map movement patterns of all surface assets (aircraft, ground vehicles, ATC clearances).
- Actionable Insight: Predictive Incursion Alerts and Optimized Routing Clearances to Air Traffic Control (ATC) seconds before a potential conflict arises

Predictive Maintenance (Infrastructure/ Equipment):

- Data Required: IoT sensor data from runway/ taxiway lighting systems, gate equipment (e.g., passenger boarding bridges), and ground support equipment (GSE) vehicle performance logs.
- + Actionable Insight: Failure Probability Scores and automated Work Order Generation to fix an aging lighting circuit or an impending bridge malfunction before it causes an operational delay.

Data Transformation for AI

The focus must be on transforming raw data into Prescriptive Analytics—insights that tell operations staff exactly what action to take next, rather than just presenting a dashboard of past events.

Example of a Digitized Airport

A pilot in Canada

Background

Veoci has implemented a platform-based solution covering airside digitalization in Canada, where the Ministry of Transportation of Ontario Province operates 29 airports.

A core set of solutions, critical for compliance and safety, was first implemented, followed by a subset of specialized and customized integrations.

Core Solutions – Compliance, Safety, and Drills

- Airside Inspection and other requirements

covered by FAA Part 139/ICAO Annex XIV – Aerodrome Operations Manuals

- Safety Management System (SMS)
- Wildlife Hazard Management is a focus for many.
- AVP/IDP/Permits/Violations
- Crisis and Incident Management

Additional Solutions

- Vehicle Maintenance Management
- Asset Management
- Aircraft Parking Management
- Integration with Weather feeds
- Integration with the NOTAM system
- AOCC and ARFF participation

Project Goals

- The primary objective was to provide the operator with a single, integrated software platform that provides situational awareness and offers decision support across individual airports and national headquarters.
- Standardization of processes across the airports.
- Streamline and standardize crisis response and run drills on all crisis and incident scenarios
- at any airport. This would fill gaps in the SOP and make employee and external stakeholder responses more intuitive rather than reactive.
- To see if such digitization was acceptable to employees of various levels. For example, bird watchers on the runway would be required to enter data directly into the system via their smartphones and capture wildlife sightings in real time.
- Reduce the need for fully trained and experienced staff by replacing individual pockets of personal knowledge with a process and a system.
- Increase productivity and reduce workforce requirements.
- To customize software for local conditions, such as low connectivity or language.
- To provide the central office with a dashboard showing real-time situational awareness across the system
- Compliance: Ensure compliance by making data available on demand in real time, rather than burying it in paper files.

Outcome:

These projects have been highly successful, meeting all stated goals. Airport employees have enthusiastically adopted the platform because it significantly reduces the time spent generating voluminous reports and searching through countless paper records for compliance. In fact, at some airports, we exceeded the initial scope by developing additional solutions for PERCOW, AVP/ADP, violation tracking, parking bay management, and lease revenue accounting.

This increased productivity enables airports to handle more flights and passengers. Compliance requirements, including all documentation and reporting aspects, are now standardized and available on demand.

Compliance is an integrated core feature built into the system, with comprehensive mapping of all procedures and processes defined by Regulators.

Furthermore, safety audits and drills conducted across the airport increase awareness, making the response to accidents and crises intuitive and predictable for all employees.

About us:

Founded in 1955 as a construction company, Iprime evolved by applying computing advances of the 80s and 90s to construction billing, turning an internal project into a successful business. With the shift to cloud technology and global

At ACI New Delhi- Feb 2025

OEM partnerships, Iprime enabled customers to modernize operations and improve profitability.

As Co-Chair of NASSCOM's Noida Chapter, the team launched two flagship conferences focused on applied computer science and data-driven innovation. Both are now established NASSCOM events shaping future-ready technologies.

Veoci:

Founded in 2011 in New Haven, Connecticut, Veoci is a leader in no-code process digitization, supporting 400+ clients and thousands of digitized workflows. The platform is now advancing AI through embedded applications and Vibe Coding.

Veoci serves over 150 airports worldwide, including major hubs like DFW, SFO, and DEN, and supports 29 airports for Ontario's Ministry of Transportation. Its airline crisis management solution is widely used by leading global airlines.

With 24/7 support from its Noida office and development support from iPrime, Veoci has delivered major aviation programs, including large-scale airside operations digitization and airline emergency response systems spanning 75+ locations, driving expanded BCP and resilience initiatives.

iPrime Simply Original

veoci®

iPrime
Simply Original

veoci®

Comprehensive Airport Operations Software

Veoci works with 200+ airports globally

INSPECTIONS/WORKORDERS
ADP/AVP/Violations Tracking
TRAINING & CERTIFICATIONS
DAILY LOGS
CRISIS
RESPONSE MANAGEMENT
REGULATORY COMPLIANCE
SAFETY MANAGEMENT
SYSTEMS

& MORE...
ONE SOFTWARE PLATFORM

www.iprimeserv.com | www.veoci.com
www.iprimeserv.com/iprimeaero/airport.html

Engineering Complexity at Scale: Integrated Solutions for Modern Aviation Campuses

By Gaurav Dhumal – Business Development Manager and Aradhana Mulay – Business Development Manager, WPM

The global aviation sector, particularly the rapidly expanding market in India, is transforming airports into vast, complex, interconnected campuses. New facilities are being added, existing terminals are being upgraded, and aging infrastructure is replaced often without halting daily operations. The success of these massive programs now hinges on designing coordinated systems, rather than isolated assets, demanding a new, integrated approach to engineering aviation developments.

Walter P Moore delivers this coordinated vision by leveraging a multidisciplinary platform that integrates structural, civil, diagnostics, and construction engineering services. We focus on ensuring that critical elements from the terminal, it's roof, head houses to gate houses, to their underlying transit systems work together efficiently, resiliently, and economically over the entire assets lifecycle.

Balancing Architecture, Performance, and Flexibility in Terminal Buildings

Terminal buildings are central to the passenger experience, often featuring iconic architectural forms, long-span roof structures, and open concourses. However, these elements must achieve more than just impressive aesthetics; they must enable efficient operation, passenger safety, and long-term flexibility.

Modern projects require structural strategies that support adaptability to minimize disruption, cost, and waste when future reconfigurations like expansion, modified circulation, or system upgrades are required.

- **Engineering for Open Space and Longevity:** The demand for large, **column free spaces** is non-negotiable for operational efficiency. At Houston's George Bush Intercontinental Airport (IAH) Terminal C North, WPM designed the roof supported by just eight exposed **V shaped columns**, allowing the structure to span over 184 feet. This provided the desired open concourse while maintaining the necessary **lateral strength** against hurricane force winds.

George Bush Intercontinental Airport (IAH) Terminal C North

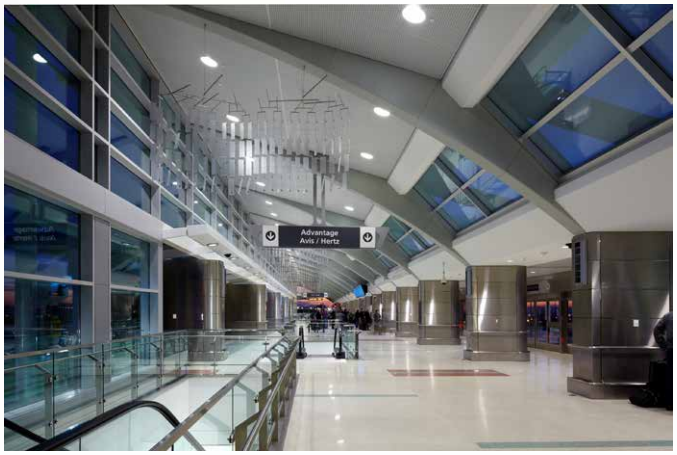
Tampa International Airport Automated People Mover Station and Guideway

- **Seismic and Security Resilience: In seismically active regions, performance-based design** is paramount. The San Francisco International Airport (SFO) Air Traffic Control (ATC) Tower employed a **cast in place concrete core** with **vertical post tensioning** to provide a **self-centering action**, ensuring that this **mission critical facility** remains operational even after a Maximum Considered Earthquake (MCE) that is expected to occur once in approximately 2500 years. The base facility (IBF) was further protected by **blast resistant design** along the roadway for resilience against accidental loads or malicious non-state actors.
- **Integrating Digital Delivery for Cost and Schedule**: Employing **digital workflows** and **high fidelity LOD 400 models** is critical to **project control**. On projects like the Louis Armstrong New Orleans International Airport (MSY), this approach delivered structural steel bids that were $800,000 lower than anticipated and saved eight weeks across design and fabrication, demonstrating the power of integrated **digital tools**.

Infrastructure Systems that Support Passenger Movement

An airport's true functionality is determined by the infrastructure systems that govern the movement of passengers, vehicles, and baggage. These systems, encompassing parking, transit, and access roads, demand coordinated planning equal to the terminal itself.

- **Optimizing Landside Traffic and Parking**: Efficient circulation requires **accurate forecasting**. Walter P Moore utilizes Micro Simulation Modeling (VISSIM) for **landside road network assessment**, allowing teams to test multiple scenarios based on decades of forecasted demand. This approach was key for optimizing access and curbside utilization for **prominent upcoming projects** in the region, identifying congestion zones and network inefficiencies early in the planning process. Walter P Moore's simulation study for a major international airport development in India provided the client with the essential quantitative data to select the most cost-effective and efficient arrival and departure infrastructure alternative.
- **Automated People Movers (APMs)**: APMs are vital for distributing **high volumes** of passengers and reducing congestion. At Tampa International Airport (TPA), WPM used advanced digital workflows, including parametric modeling, to optimize the APM routing and structural solutions for a new



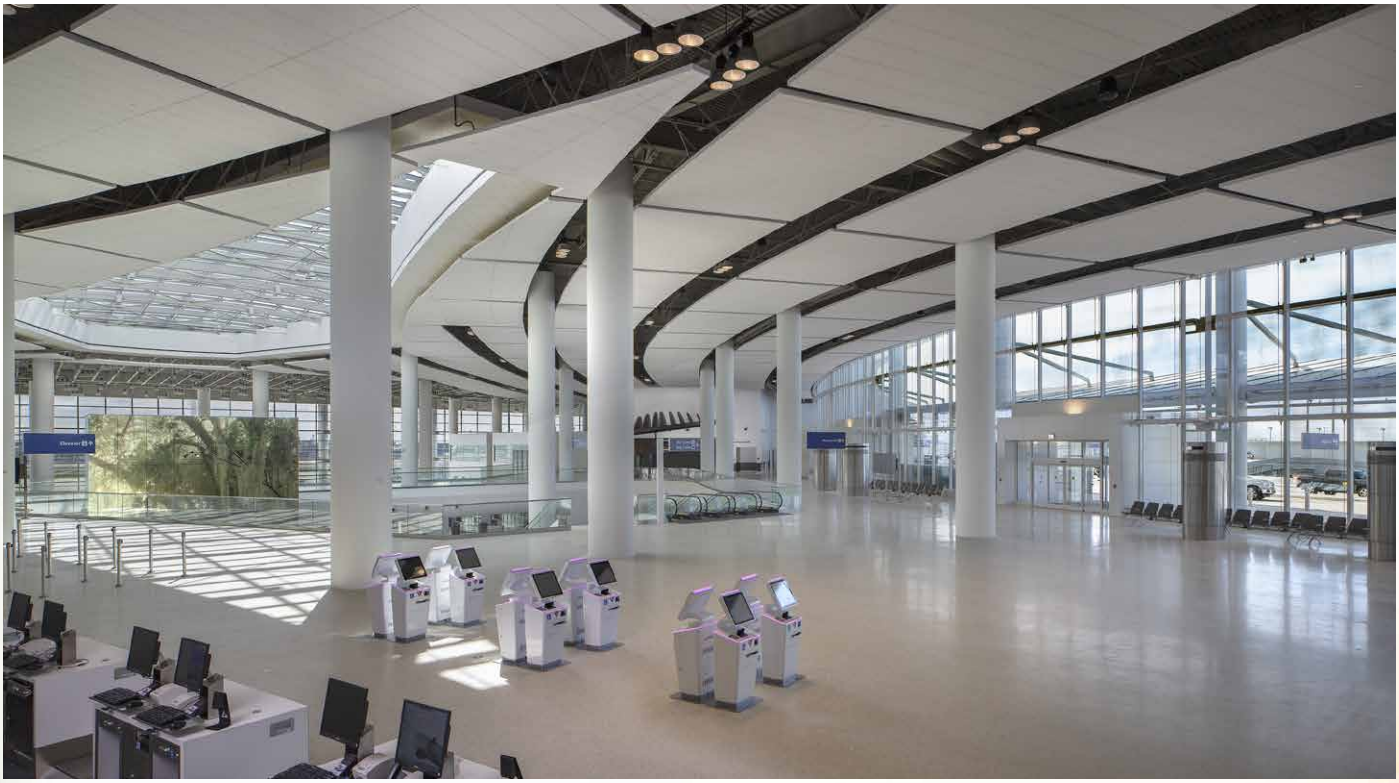
Hartsfield Jackson Atlanta International Airport

1.4-mile guideway and stations. The system removes nearly three million vehicles from TPA's roads annually, reducing **carbon emissions** and improving passenger experience.

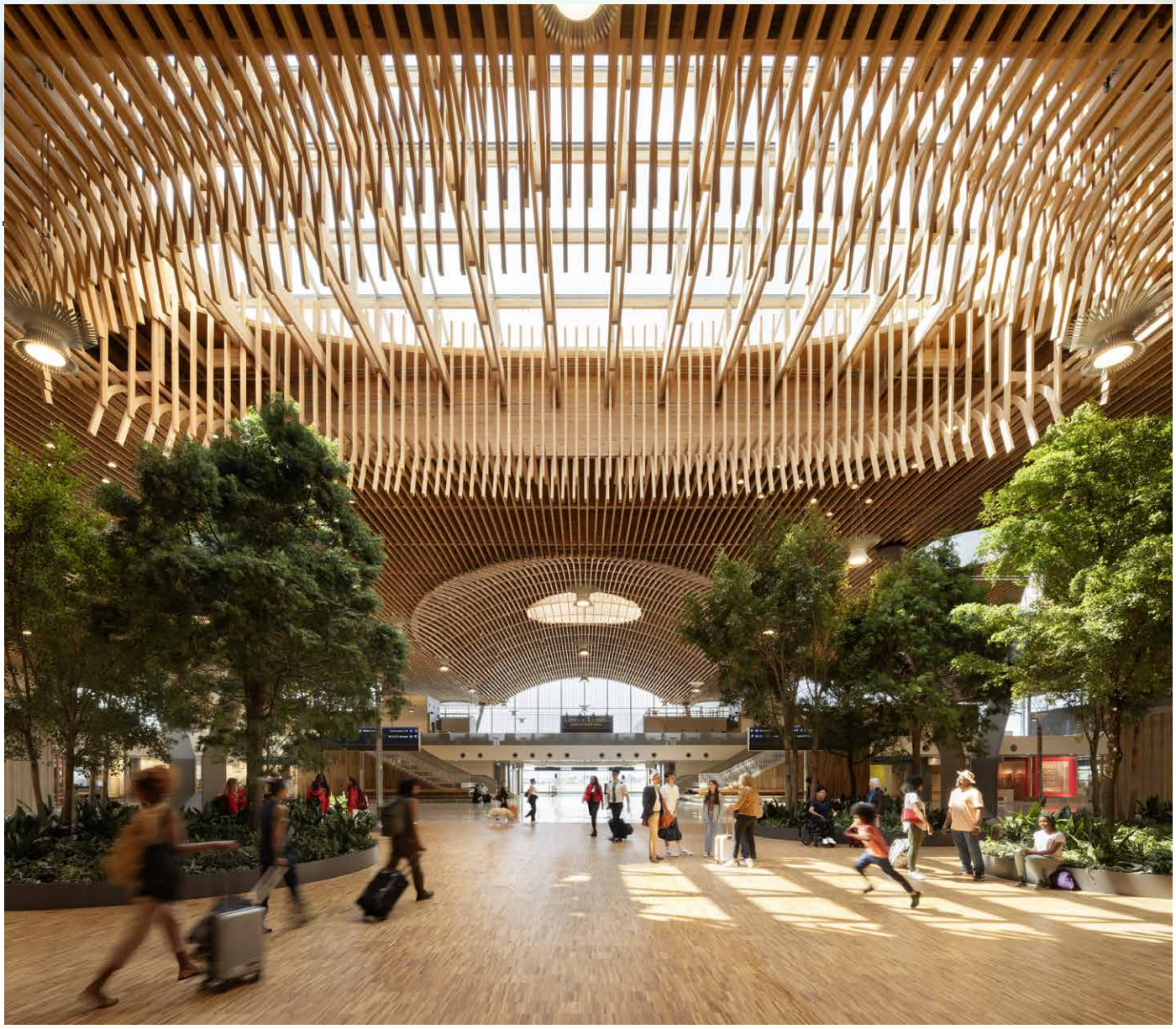
- Water Resiliency and Sustainability: Achieving on-site water self-sustainability through tailored rainwater harvesting is vital for future airport expansions. Sustainable planning integrates water management into infrastructure design. Walter P Moore's water resources engineers are actively assisting a large international airport in South Asia in achieving 'water-positive' status. This involves hydrological modeling and detailed design of rainwater harvesting and storage systems to mitigate flash floods and meet the high demands of a growing campus.

Constructability, Phasing, and Modular Approaches

Most large aviation programs are constructed in stages within an active, sensitive operational



Louis Armstrong New Orleans International Airport (MSY)



Portland International Airport (PDX) Terminal Core Redevelopment

environment. This makes construction planning focus on safety, access, and minimal disruption as a design priority.

- **Modular Construction for Speed**: Strategies that employ modular or prefabricated components significantly reduce **on-site work** and speed up project delivery. At the Portland International Airport (PDX) Terminal Core Redevelopment, the new roof was assembled in sections (cassettes) **offsite**, transported, and launched into place above the **operational terminal**. WPM developed complex **erection engineering** and **temporary works designs** for this **logistics heavy approach**, accelerating the project timeline and minimizing **safety risks**.
- **Construction Phasing and Logistics**: Maintaining **operational continuity** during construction requires meticulous **phased design approaches**. For concourse expansions, where new structures are often built on top of and between existing operational facilities (e.g., in the middle of active concourses at Hartsfield Jackson Atlanta International Airport), WPM coordinates construction logistics to maintain access, safety, and **operational service levels**.

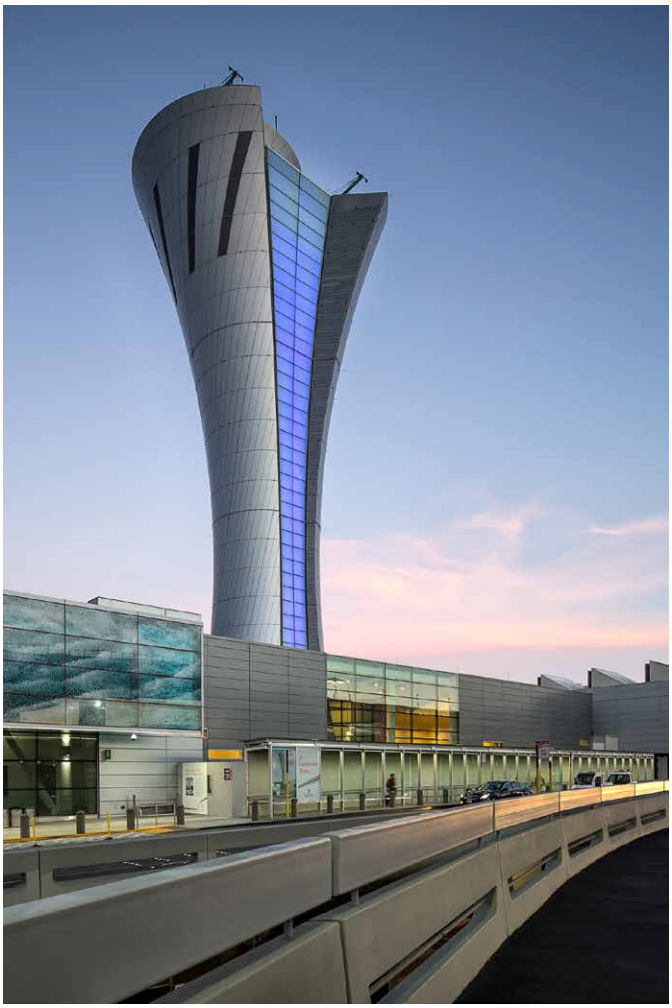
Coordinated Outcomes and Long-Term Performance

The goal of integrated engineering is to deliver aviation campuses that are coordinated, resilient, and adaptable to future uncertainty.

Walter P Moore's commitment to this goal is reflected in our process, which emphasizes:

- **Seamless Integration**: Resolving functional and structural conflicts digitally before they become expensive **field issues**.
- **Sustainable Material and System Selection**: Guiding projects toward **long term sustainability goals**, including **Embodied Carbon-based assessment** and utilizing durable materials for reduced maintenance.
- **Holistic Risk Mitigation:** From protecting ATC towers from earthquakes to identifying deterioration in terminal façades using AI and drones, WPM manages risk across the entire **asset lifespan**.

As aviation campuses evolve, integrated engineering is not just a preferable approach; it is essential for the delivery of the high performance, resilient, and sustainable environments required by the dynamic US India aviation market.



San Francisco International Airport (SFO)
Air Traffic Control (ATC) Tower

Beyond the Horizon: How Indian Airlines Must Reinvent Customer Experience to Compete Globally

By Sandeep Bahl, Executive Program Director, US-India Aviation Cooperation Program

As India's aviation sector enters a historic expansion phase, its airlines face a defining moment. Competing internationally is no longer about simply adding widebody aircraft or expanding into long-haul markets. The competitive environment has evolved sharply: global travellers are now comparing Indian carriers not only with established network airlines, but also with ultra-luxury Gulf carriers, digitally advanced Asian airlines, and hybrid LCCs that combine efficiency with surprising levels of comfort.

At the same time, **customer expectations have fundamentally shifted**. Today's travellers—whether flying across India or internationally—demand **seamlessness, personalisation, speed, transparency, and predictability**, delivered through a **blend of intuitive digital experiences and authentic human** service. Convenience is no longer a premium—it is the baseline expectation. Whether booking, checking in, navigating airports, or resolving disruptions, customers want effortless journeys powered by real-time information and proactive service rather than reactive problem-solving.

For **Indian travellers**, this expectation is shaped by rapid digital adoption, a rising middle class, and increasingly global travel exposure. For **international travellers** visiting India or flying Indian carriers, expectations are benchmarked against global best-in-class standards. This means airlines must deliver consistency across all segments—economy to premium—and all touchpoints—from mobile app to boarding gate to baggage carousel.

What Does This Require?

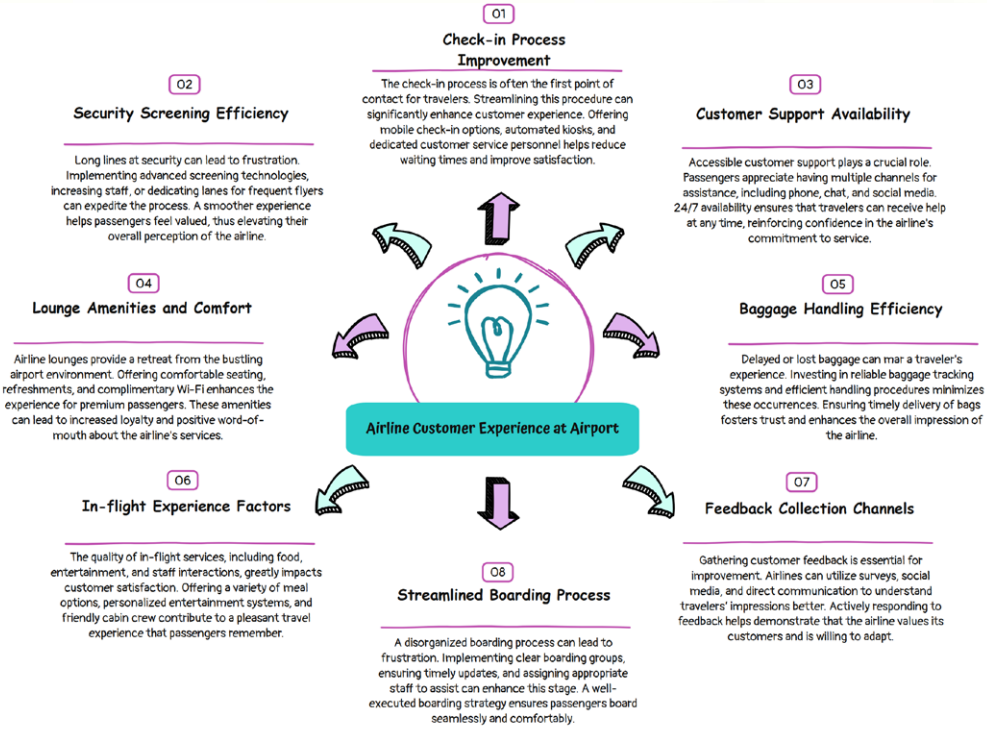
This requires:

- **A new mindset** that sees customer experience not as a department but as a strategic growth engine.
- **New tools** including AI-powered personalisation, real-time data visibility, automation, and unified customer identity across channels.
- **A fundamentally new operating model**—one that integrates airlines, airports, regulators, ground handlers, and technology partners into a seamless service ecosystem.

1. The New Competitive Reality

Indian airlines now operate in a dramatically more competitive environment and must compete across multiple dimensions:

- **Gulf mega-carriers** offering unmatched luxury standards, global connectivity, and flawlessly coordinated hub experiences.
- **Leading Asian full-service airlines** (Japan, Korea, Singapore, Hong Kong) known for precision, hospitality, and consistent service excellence.



- **US and European network carriers** rapidly modernising their cabins, loyalty programmes, and digital retailing strategies, including NDC-driven personalisation.
- **Hybrid business-model carriers** from East Asia that blur traditional lines, offering competitive pricing with selectively premium features.
- **Ambitious low-cost carriers** in India and the region transforming efficiency into customer value through speed, app-based journeys, and smart ancillary products.

This competition is no longer about aircraft, seats, lounges, or inflight meals alone.

It is about the strength of the **end-to-end customer-experience ecosystem**—from search and booking to baggage delivery; from irregular-operations management to loyalty engagement; from digital predictiveness to human warmth.

The winners will be those who:

- Deliver **operational reliability and predictability**.
- Use **AI-driven personalisation** to tailor service to each customer.
- Provide **transparent, real-time information** at every step.
- Integrate across **airline–airport–vendor–regulator ecosystems**.
- Create **emotional loyalty**, not transactional loyalty.

In short: *airlines are no longer selling seats—they are selling confidence, control, and peace of mind throughout the journey.*

2. Starlink-Derived Connectivity Is Rewriting the Inflight Experience

With the rollout of Starlink, OneWeb, and next-generation LEO constellations, connectivity is becoming the most important part of the onboard experience.

Passengers expect:

- High-bandwidth video streaming
- Real-time work collaboration
- Messaging synchronisation
- Cloud-based workflows
- Personal devices replacing traditional IFE screens

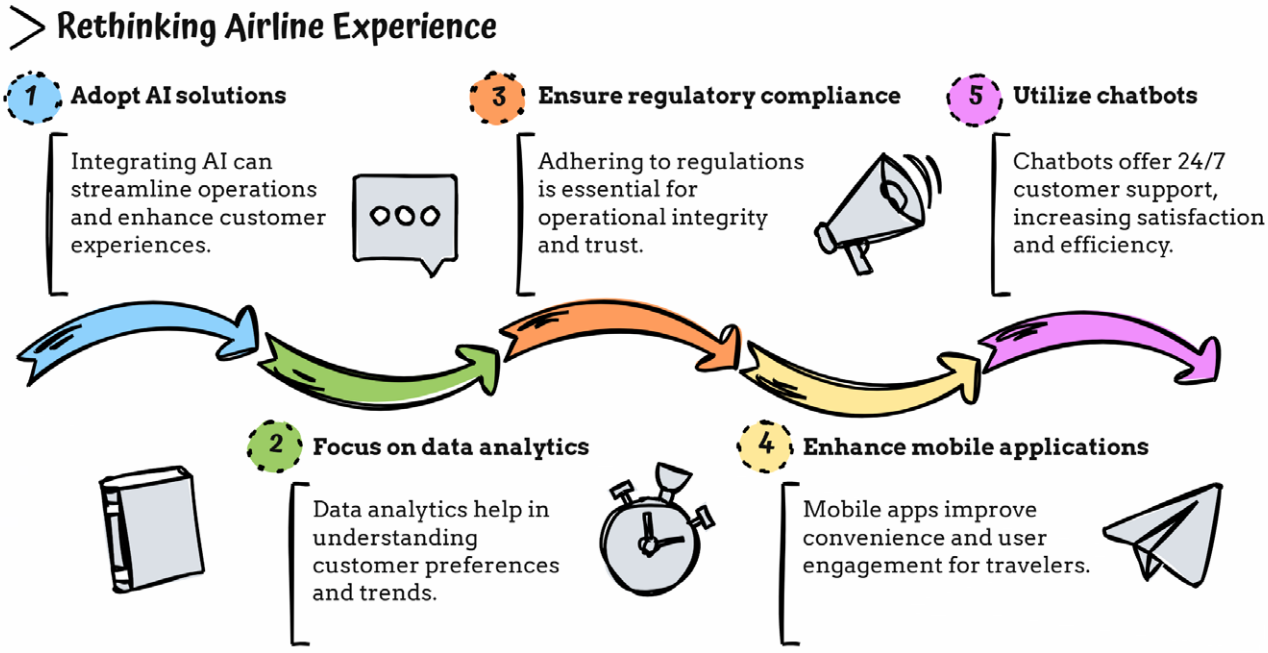
As a result, airlines must pivot from legacy hardware-based entertainment systems to a device-first, cloud-first experience, where:

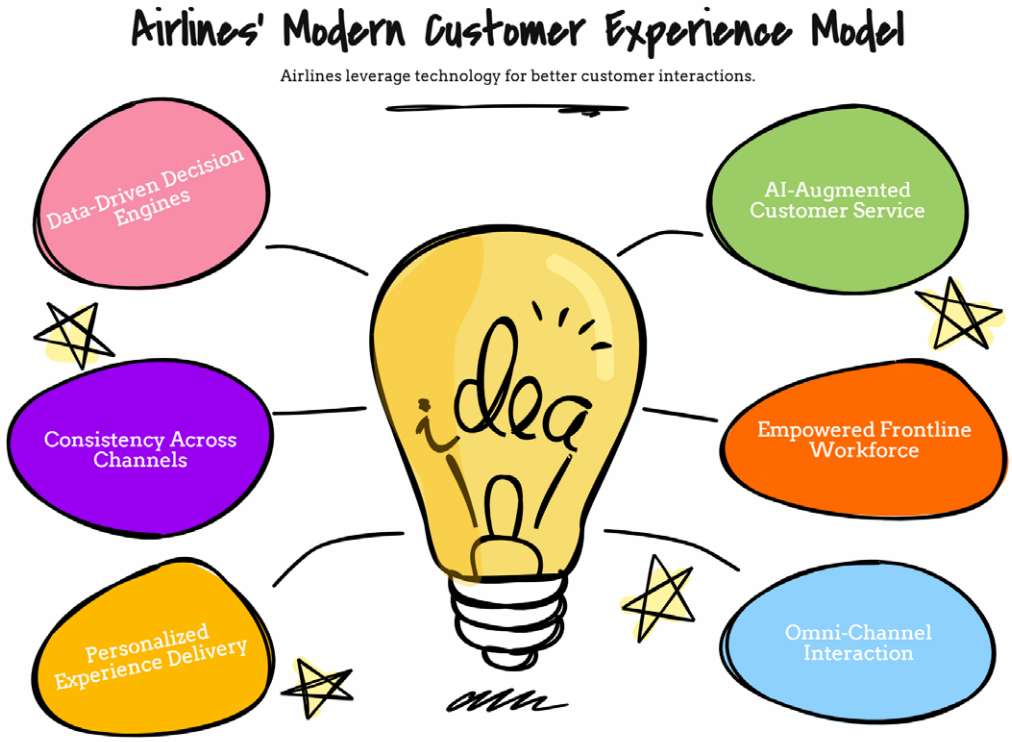
- Connectivity becomes the core value proposition
- Ergonomic seating, power availability, and device support become differentiators
- Service personalisation replaces one-size-fits-all content

This shift opens the door for Indian airlines to leapfrog outdated systems and shape a next-generation inflight experience from day one.

3. The Generational Shift: Customer Experience Now Lives Beyond the Terminal

Globally, a structural transition is underway: airlines, airports, regulators, and mobility innovators are redefining the "airport boundary." The journey no longer begins at check-in or ends at arrivals. Instead, aviation is integrating with urban mobility ecosystems:





Integrated Mobility Models Gaining Momentum

- On-demand electric shuttle networks aligned with flight schedules
- Autonomous airside-to-city transfers for premium customer flows
- Smart mobility hubs integrating rail, road, and e-mobility services
- eVTOL corridors designed for rapid airport access from suburban catchments

These developments redefine loyalty and service. Airlines are no longer competing only in the sky—they are competing in the end-to-end mobility experience.

Why Gulf Carriers Are Poised to Lead

The Gulf's major airlines are uniquely placed to integrate aviation into broader city mobility ecosystems because they combine:

- Capital depth
- Greenfield infrastructure
- National mobility strategies
- Regulatory alignment
- Ambitious urban planning projects

They are designing experiences where the journey begins at home—not the terminal door.

4. A New Customer Experience Operating Model Is Now Essential

To deliver the next era of seamless travel, Indian airlines must adopt an entirely new customer experience operating model (CX-OM)—a structured, data-driven, AI-enabled framework that governs how customer service is designed, executed, monitored, and continuously improved.

What Is a Modern Customer Experience Operating Model?

A CX operating model defines the systems, processes, technology stack, decision logic, and workforce structure that collectively deliver consistent, predictable, personalised experiences across all touchpoints.

A modern operating model for airlines includes:

1. Data-Driven Decision Engines

- Single customer view across booking, loyalty, ground experience, and inflight
- Real-time disruption modelling
- Predictive analytics for delays, baggage processing, and crew allocations

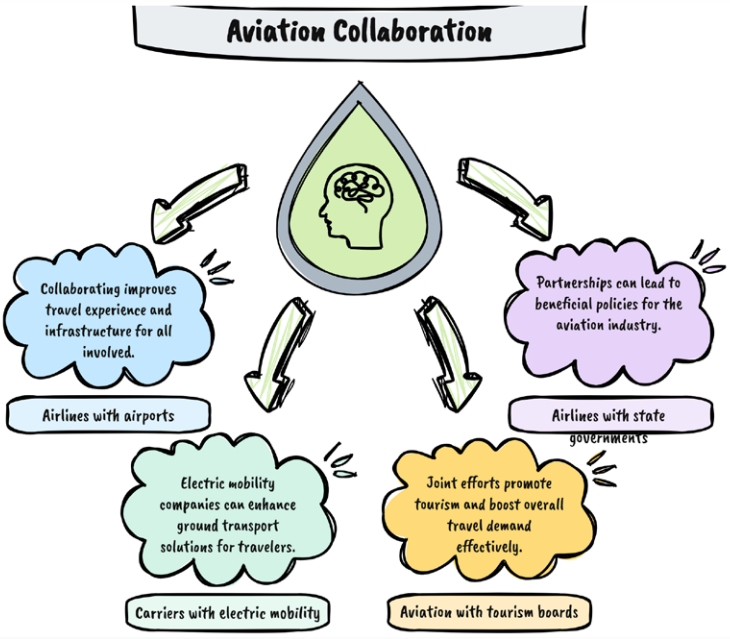
2. AI-Augmented Customer Service

Using generative AI, machine learning, and automation to enable:

- Hyper-personalised itineraries and recommendations
- Automated rebooking and disruption management
- Proactive service recovery through sentiment analysis
- Crew-support tools offering real-time passenger insights

3. Consistency Across Channels

- Unified design language for digital, physical, and onboard experiences



- Shared service standards that reduce variability
- Journey orchestration tools mapping each customer segment's needs

4. Empowered Frontline Workforce

- AI copilots for crew to understand passenger preferences
- Decision rights for frontline staff to solve problems instantly
- Real-time data feeds to enhance accountability and service delivery

This new operating model is how the world's leading airlines are quietly building the next era of competitive advantage—and it's an area where Indian carriers must invest heavily to catch up and ultimately lead.

5. India's Carriers Must Rethink the Entire Travel Lifecycle

To compete globally, Indian airlines must redesign each part of the travel journey as part of a single connected system.

Pre-Flight

- Integrated electric mobility partnerships
- AI-driven route-to-gate guidance
- Dynamic pricing for ancillary comfort add-ons
- Biometrics for identity management

At the Airport

- Autonomous bag-drop and AI queue prediction
- Bio-metric checkin, security, immigration and boarding (Face-Express)

- Smart lounges with flexible working pods
- Partnerships with Indian brands for cultural identity

In the Air

- High-speed connectivity as a core product
- Modular cabin design for comfort
- Crew armed with real-time passenger data

Post-Arrival

- Preferred partnerships for luggage delivery
- Integrated transport to business districts or homes
- Premium arrival lounges and seamless immigration coordination

This is no longer optional—global travellers are already experiencing such seamless journeys in

Atlanta, Dubai, Tokyo, and Seoul.

6. Collaboration: India's Missing Multiplier

A defining strength of India's aviation sector must now be **collaboration, not fragmentation**. For too long, stakeholders have operated in silos—each optimising their own metrics rather than collectively elevating the end-to-end journey. The future of customer experience in India will be shaped not inside individual airline cabins, but across a connected ecosystem where airlines, airports, governments, technology providers, and tourism partners act as co-architects.

True progress requires breaking down traditional boundaries and building joint value:

- **Airlines partnering closely with airports** to create predictable, stress-free, and technology-enabled transit—from kerb to gate to baggage claim—with shared real-time data and proactive disruption management.
- **Airlines collaborating with state governments** to develop route incentives, tourism campaigns, and seamless ground access—ensuring new routes don't just launch, but succeed with sustained demand.
- **Carriers integrating with electric mobility platforms and last-mile transport** operators to enable door-to-door travel experiences that reduce anxiety, improve accessibility, and support India's sustainability goals.
- **Deep partnerships between aviation and tourism boards** to co-create destination storytelling, improve visa and entry processes, and design thematic travel experiences that inspire new customer segments.
- **Inflight product partners working hand-in-hand with destinations** to reflect regional culture, cuisine, art, and hospitality—turning the flight into a preview of the destination, not a generic transit experience.

Why Collaboration Matters for Customer Experience

When these forces work together, they create a **powerful multiplier effect** that transforms the traveller experience and strengthens the industry:

Without Collaboration	With Collaboration
Disconnected touchpoints	Seamless single-journey experience
Operational inefficiencies	Real-time coordinated problem-solving
Price-based competition	Value-based and experience-based differentiation
Weak route profitability	Higher load factors and stronger yields
Generic products	Emotionally resonant and place-based experiences
Brand confusion	Strong unified identity for India as a travel ecosystem

The benefits are tangible:

- Higher customer satisfaction and loyalty
- Improved Net Promoter Score (NPS)
- Reduced stress and unpredictability
- Greater trust in Indian aviation as a global standard
- A stronger national aviation brand that elevates every stakeholder

The Opportunity Ahead

As India moves toward becoming the **world's third-largest aviation market**, the sector has an unprecedented chance to lead the world not only in volume, but in **collaborative innovation and customer experience excellence**. The next step is building **joint operating frameworks**, shared digital platforms, and aligned service standards that prioritise the traveller above organisational boundaries.

The message is clear:

The future of customer experience is not one airline's achievement—it is the power of an ecosystem working in harmony.

Indian aviation will unlock its full potential only when **everyone wins together**.

Conclusion: India Can Set the New Global Benchmark

India stands at a rare intersection of opportunity, technology, and demand. But to compete at the global level, Indian airlines must embrace a new philosophy—one grounded in integrated mobility, digital seamlessness, advanced AI tools, and a robust customer experience operating model.

The next decade of airline competition will not be won by the airline with the largest fleet or the newest aircraft. It will be won by the airline that delivers the most connected, personalised, frictionless customer journey—from home to the gate to the destination.

If India's carriers lead this shift, they won't just catch up—they could reshape the global standards of modern aviation.

****

Sandeep Bahl

US – INDIA AVIATION COOPERATION PROGRAM (ACP)

PUBLIC MEMBERS

Federal Aviation Administration
USTDA U.S. Trade and Development Agency
U.S. Commercial Service United States of America Department of Commerce
Department of State United States of America
U.S. Department of Homeland Security
Transportation Security Administration

CORPORATE MEMBERS

AAR
acron aviation
American Airlines
Atlas Air Worldwide
Boeing
Collins Aerospace An RTX Business
FedEx
Hi-Tech Import Export Corporation
Honeywell
KPMG
leidos
Lockheed Martin
L3Harris
Moog
Pratt & Whitney An RTX Business
smiths detection
Textron
Turner
United Airlines A Star Alliance Member
veoci
walter p moore
The Wicks Group

MODERN AIRSPACE INFRASTRUCTURE

Mission-critical ATM system connectivity

L3Harris has been leading air traffic management (ATM) modernization efforts for decades. In partnership with air navigation service providers around the world, we provide highly secure and reliable connectivity for mission-critical air traffic control systems in some of the world's most complex and busiest airspaces, including India's civilian airspace. We're partnering with the Airports Authority of India to develop a network infrastructure that connects and delivers essential, safety-critical services throughout India.

Scan to learn more.
L3Harris.com

L3HARRIS®
FAST. FORWARD.