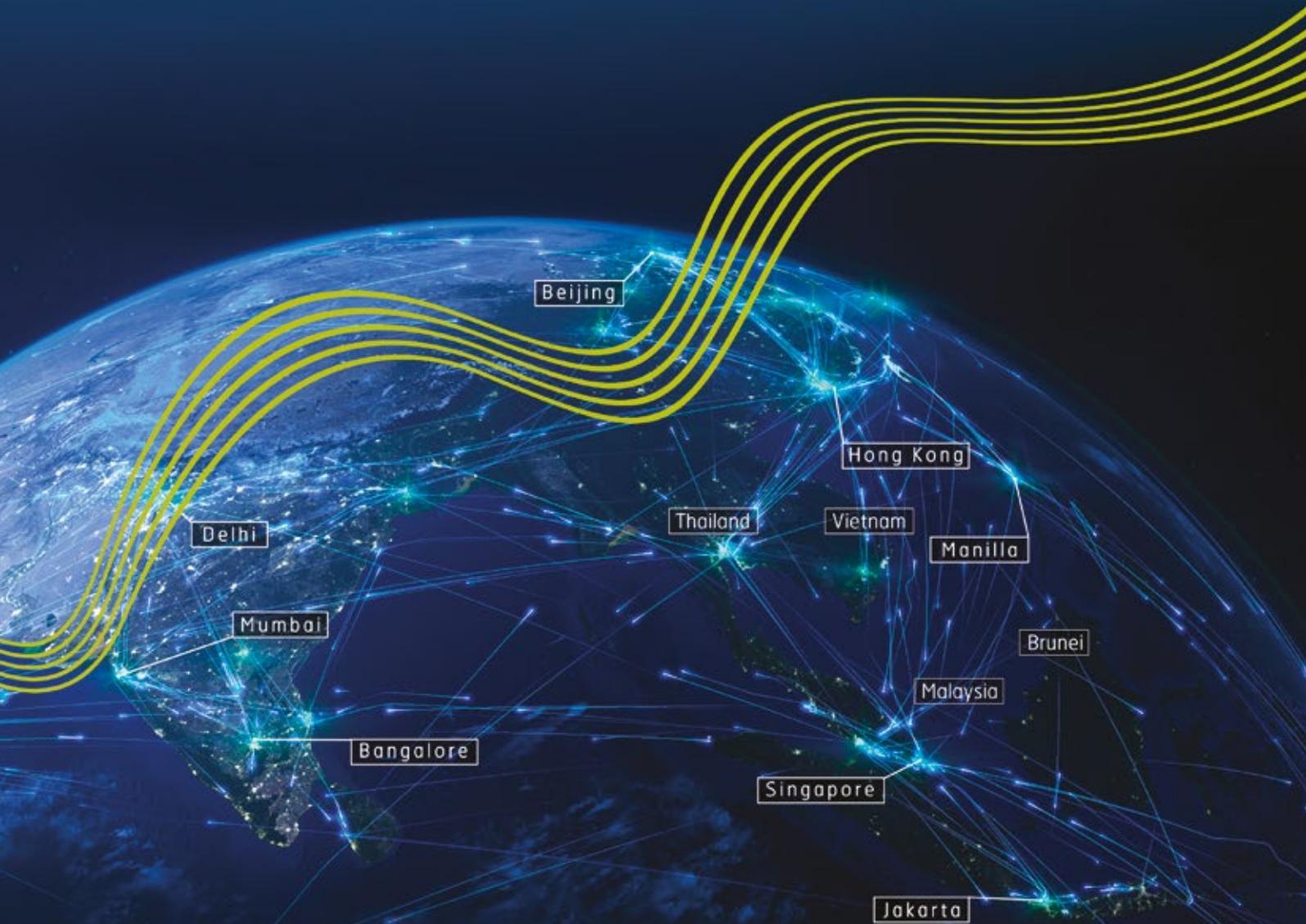


NATS

Growth

Helping Asian aviation grow



“

NATS brings to Asia a proven track record and a suite of solutions that sets the standard in air traffic management support.

From Singapore and Hong Kong to Thailand, the Philippines and Indonesia, NATS is working with airports and aviation authorities across Asia Pacific to maximise performance and deliver value.

”

Niall Greenwood,
Managing Director NATS Asia Pacific

A world class reputation backed by a proven track record

NATS has a long successful history of managing UK airspace safely and efficiently. During this time NATS has developed solutions that are adaptable and scalable, helping customers across the globe overcome their most critical challenges to deliver capacity and efficiency.

NATS has delivered solutions for many of the busiest hub airports around the world, to enhance performance, capacity, resilience, punctuality and passenger experience, whilst maximising the use of existing airfield infrastructure and assets.

In Asia Pacific, NATS has collaborated with governments, militaries, airport operators and airlines in Singapore, Japan, Hong Kong, Australia, Indonesia, India, Brunei and the Philippines to optimise airport and airspace performance.

Airport performance is a key area for which NATS can provide services to maximising the use of data and create capacity, specifically the solutions of Airport Capacity Enhancement (ACE) and Aeronautical Information Management (AIM).

NATS (ACE) is a solution that comprises a suite of products and services to benchmark an Airport's current operation, performance and capacity and create a roadmap for the future to deliver improvements. The solution is underpinned by industry-leading analytics and fasttime simulation modelling, supported by operational insights by air traffic controllers and other subject matter experts.

Aeronautical Information Management (AIM) is the digital aviation data environment that moves away from the paper based Aeronautical Information Service (AIS), and makes available the quality assured digital products needed to meet the needs of the modern ATM environment. NATS has undertaken the complex task of transitioning to AIM from AIS and plays a prominent role in the development of the International Standards for Aeronautical Data Quality.

Our delivery of the AIM service in the United Kingdom, the procurement of complex systems, combined with the capabilities of our AIM experts ensures that NATS is well placed to supply services to regulators and service providers facing the challenges of the transition from AIS to AIM. We can support your AIS to AIM project and help you to:

- › Develop your AIM Regulatory Framework;
- › Design your ICAO AIS to AIM Roadmap;
- › Develop your AIM Transition Plan;
- › Enhance your Safety and Quality Management Systems;
- › Migrate data to new systems;
- › Conduct training needs analysis, develop a competency matrix and training plans;
- › Integrate Civil and Military AIS



Case studies



30+

Over 30 countries worldwide have used the expertise of NATS

Working with CAAS in Singapore

NATS continues to further develop its relationship with CAAS by the delivery of four work packages for the authority that include:

- › **Air Traffic Management Operations** – practical assistance to equip controllers with the necessary skills for high intensity operations on two runways, as well as preparing for air traffic control on three runways.
- › **Air Traffic Control Training** – helping to enhance training practices as well as up-skilling controllers.
- › **Safety Management** – use of NATS safety expertise for risk management and safety assurance enhancements.
- › **Analytics/Research** – sharing data analysis tools and techniques through in country support to enable CAAS to benchmark performance and measure the effectiveness of their operation.

Hong Kong airport expansion

Hong Kong International Airport (HKIA), at Chek Lap Kok, is an airport with a congested and geographically demanding environment due to the local topography and its proximity to the national borders of China, and Macau.

We are proud to have worked on a number of projects in Hong Kong, providing services for the airport, including airspace capacity maximisation, engineering design and delivery and ATC training. We are now supporting the Airport Authority's plans to expand HKIA by adding a third runway on reclaimed land.

By working closely with the Civil Aviation Department and the Airport Authority, NATS has been able to address the challenges of rapid regional aviation growth, by providing a framework that has supported the safe increase in capacity of 150% since HKIA's opening in 1998, with plans to increase from the current peak hourly capacity of 68 movements per hour through to 102 when a third runway opens in 2024.



Helping to create the busiest single runway airport in the World



Enhancing capacity at Mumbai

Mumbai International Airport Ltd (MIAL), the Operator at Chhatrapati Shivaji International Airport (CSIA), was anticipating strong air traffic growth demand at a time when the airport operation was perceived to be reaching capacity with

- > 28.1m passengers
- > 239,000 movements
- > 38 movement peak hourly capacity
- > ~700 movements per day
- > 59% punctuality

To avoid potentially limiting the future growth aspirations, not only for the airport, but also for the airlines and the wider Maharashtra economy, MIAL enlisted NATS to provide an independent performance and capacity review to benchmark the airfield capacity and to determine the changes necessary to enhance the airport operation

NATS delivered a combined on the ground and data driven assessment of the airport's capacity, and used advanced simulation techniques to quantify the benefits of performance enhancement recommendations. NATS also delivered a change roadmap to the MIAL management team, and then supported them with the implementation of the roadmap to help achieve the defined levels of additional capacity. This included close collaboration with the airlines and AAI to focus efforts on maximising the efficiency of the main runway.

CSIA is now the busiest single runway operation in the world (by total number of movements over a 24 hour daily operation) with

- > 36.6m passengers
- > 269,456 movements
- > 50+ movement peak hourly capacity
- > daily record of 851 movements in May 2015
- > 74% punctuality



Our footprint in Asia Pacific



1 India

We helped Mumbai and Delhi International Airports to analyse options that would reduce congestion, enhance productivity and increase operational efficiency.

2 Hong Kong

We advised Hong Kong's Civil Aviation Department on redesigning the region's congested airspace and have trained their air traffic controllers. We are also supporting the expansion plans at Hong Kong International Airport at Chek Lap Kok through engineering, airspace and taxiway design for the planned third runway.

3 Japan

We are collaborating with the Japan Air Navigation Service (JANS) to formulate detailed operational plans to manage the expected influx of air traffic in Japan's airspace before, during and immediately after the 2020 Tokyo Olympic Games.

We have assisted the Mitsubishi Research Institute (MRI) with analysing and modelling air capacity at Narita Airport, and are exploring future opportunities for air traffic management.

4 Singapore

We work with the Civil Aviation Authority of Singapore (CAAS) to strengthen its regional hub status through improvements to ground and airspace performance. We also support Changi Airport in its ongoing expansion plans.

5 Australia

We analysed the operational performance at and benchmarked air capacity across Brisbane, Perth and Sydney Airports.

6 Brunei Darussalam

We trained Brunei's air traffic controllers, ATC supervisors, ab-initio pilots and meteorological observers.

7 Indonesia

We are working with Angkasa Pura II and the Indonesian ANSP, AirNav, to create a foundation of work to optimize Jakarta's Soekarno-Hatta Airport and its ATM operations to achieve the strategic goal of and Increased Runway Capacity of 86 movements per hour.

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8 Philippines

We are working with the Philippines government's Department of transport, the Manila International Airport Authority and the Philippines ANSP, CAAP, to improve the runway capacity of Ninoy Aquino International Airport through improvements to ground movements, airspace and operational performance.

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