



Media Release

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FIVE AIR NAVIGATION SERVICE PROVIDERS COLLABORATE IN FIRST-EVER MULTI-REGIONAL PROJECT TO JOINTLY MANAGE CROSS-REGIONAL AIR TRAFFIC

22-month long project showed safety, efficiency and sustainability benefits

The air navigation service providers (ANSPs) of Canada, Japan, Singapore, Thailand and the United States have worked together to successfully conclude a lab demonstration of the world's first-ever multi-regional trajectory-based operations (TBO), a big step forward in making cross-regional air traffic management a reality.

2 Currently, ANSPs provide air navigation services to aircraft separately and independently, only as and when aircraft traverse within the Flight Information Region(s) under their respective responsibility. Under TBO, ANSPs jointly plan and optimise, from departure to landing, an aircraft's entire flight trajectory across regions and countries, taking into account conditions such as weather, aerial activities, airspace closures and traffic. Multi-regional TBO is expected to fundamentally change the way air traffic is managed and yield significant benefits by improving safety and efficiency; minimising delays and disruptions; cutting travel cost and time; and reducing fuel burn and carbon emissions.



3 For TBO to be a reality, ANSPs need to agree to manage and optimise flights jointly and collectively, rather than individually and separately, and develop the technologies (machine) including advanced analytical tools using artificial intelligence and machine learning, skills (human) and protocols (methods) for information exchange, data security, trajectory negotiation and collaborative decision-making.

4 In the first-ever multi-regional TBO project, the Aeronautical Radio of Thailand Ltd. (AEROTHAI), the Civil Aviation Authority of Singapore (CAAS), the Federal Aviation Administration (FAA), the Japan Civil Aviation Bureau (JCAB) and NAV CANADA worked together to develop these capabilities and tested them across different scenarios of routes, traffic and weather conditions. The 22-month project culminated in a successful lab demonstration involving the five ANSPs, which was conducted from 10 to 12 May 2022.

5 The learnings and insights from the lab demonstration will be shared with the International Civil Aviation Organization (ICAO) and the Civil Air Navigation Services Organisation (CANSO) to support the development and realisation of global TBO. As a next step, the five ANSPs will extend the multi-regional TBO project beyond the lab demonstration to test TBO on live flights and develop fast-time simulations to quantify the system-level benefits of TBO.

6 Mr Tinnagorn Choowong, Executive Vice President (Operations) of AEROTHAI, said, “Through this collaborative effort, we are able to observe how the interests and expectations of our ATM stakeholders can be better balanced cross-border by adopting TBO. This demonstration is once again proof of how significant international collaboration, which AEROTHAI has long committed to, is in improving the safety and efficiency of the global ATM network.”

7 Mr Han Kok Juan, Director-General of the CAAS, said, “The conclusion of this multi-regional collaboration involving five major ANSPs is a significant milestone and



an important pathfinder for the transformation of global air traffic management to support growth in air traffic in a safe, efficient and sustainable way. TBO is a game-changing initiative and alongside, sustainable aviation fuel, a major pathway for international aviation to achieve its net zero by 2050 long-term aspirational goal. CAAS looks forward to continuing this important work with our ANSP partners to make TBO a reality.”

8 Mr Paul Fontaine, Acting Assistant Administrator for the FAA NextGen Organization, said, “Through this successful demonstration, we have validated the capability to share, manage and execute trajectory information with our global partners. This is a great example of how extending aviation research to include international partners leads to our shared leadership in improving safety, reducing delays, cutting travel cost and time, and reducing emissions.”

9 Mr Hiroshi Shibutake, Director of Air Navigation Services (ANS) Planning Division, ANS Department, JCAB, said, “Japan is located east of Asia and connects to North America across the Pacific Ocean. JCAB is the keystone of the multi-regional relationship that connects the two significant regions. We recognize that future TBO operations require an interoperable environment and would like to continue this essential collaborative work steadily.”

10 Mr William Estrada, Assistant Vice President, ATM Engineering, NAV CANADA, said, “NAV CANADA collaborates on initiatives with ANSPs across the globe, and like CAAS, we share the vision for delivering more efficient and cost-effective air navigational services. NAV CANADA will continue collaborating with our international partners as we move forward to realize the strategic objective of implementing TBO globally.”





About the Aeronautical Radio of Thailand Ltd. (AEROTHAI)

AEROTHAI, founded in 1948, is a State Enterprise under the Ministry of Transport, providing air navigation services for airline operations in all phases of flight within Thailand's national airspace system. Its mission is to be the national air navigation service provider that not only meets airspace users' safety and efficiency requirements but also fulfills national interests. Building on its expertise, AEROTHAI as well offers air navigation-related services such as aeronautical communication, flight validation, system calibration and maintenance to both national and international markets.

About the Civil Aviation Authority of Singapore (CAAS)

The mission of the Civil Aviation Authority of Singapore (CAAS) is to grow a safe, vibrant air hub and civil aviation system, making a key contribution to Singapore's success. CAAS' roles are to oversee and promote safety in the aviation industry, develop the air hub and aviation industry, provide air navigation services, provide aviation training for human resource development, and contribute to the development of international civil aviation.

About the Federal Aviation Administration (FAA)

The mission of the FAA is to provide the safest, most efficient aerospace system in the world. As a global leader, the FAA works with international organizations to promote aviation safety and efficiency for the worldwide alignment of technologies, policies, regulations, and standards. In collaboration with partners around the world, the FAA's work plays an essential role in resolving current challenges to global aviation and forging the future direction of the industry.

About the Japan Civil Aviation Bureau (JCAB)

JCAB is the civil aviation authority of Japan and a division of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT). Today every activity concerning culture, society, and economy in our life is closely connected with active exchanges with foreign countries. Under these circumstances, civil aviation provides an essential



means of transport, particularly for Japan, a country surrounded by sea, which makes it necessary to promote the smooth exchange of people and goods in order to stimulate the society and economy and to improve international competitiveness.



About the NAV CANADA

NAV CANADA is a private, not-for-profit company, established in 1996, providing air traffic control, airport advisory services, weather briefings and aeronautical information services for more than 18 million square kilometres of Canadian domestic and international airspace. The Company is internationally recognized for its safety record, and technology innovation. Air traffic management systems developed by NAV CANADA are used by air navigation service providers in countries worldwide.

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