

**60th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS**

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AGENDA ITEM 4: AIR NAVIGATION

**UPDATE OF NATIONAL AIR NAVIGATION PLAN
AND GOVERNANCE PLAN FOR THE ORGANIZATION**

(Presented by Japan)

INFORMATION PAPER

SUMMARY

Japan's National Air Navigation Plan (NANP), which serves as the long-term vision for the future air traffic system (CARATS 2040), was issued in late June of this year, with 2040 as the target year.

This paper provides an overview of the new NANP.

In addition, based on technological innovations driven by CARATS activities, Japan has been revising its governance plan for the organization of Japan's ANSP with a view toward 2040. This revised governance plan is also presented in this paper.

UPDATE OF NATIONAL AIR NAVIGATION PLAN AND GOVERNANCE PLAN FOR THE ORGANIZATION

1. INTRODUCTION

1.1 Japan established CARATS (Collaborative Actions for Renovation of Air Traffic Systems), its national air traffic plan, in 2010 with a target year of 2025, and has been taking a wide range of initiatives, including the reorganization of domestic air traffic control airspace, the introduction of data communications, the upgrading of communication, navigation, and surveillance technologies and information systems, as well as operational improvements leveraging these technologies.

1.2 Since the establishment of CARATS, the environment surrounding Japan's air traffic system has undergone significant changes. These include the growth in aviation demand, shifts in air user preferences due to the COVID-19, diversification of airspace usage needs, increasing demand for decarbonization, evolution of digital technologies, the progression of demographic challenges such as declining birthrate and aging population, growing instability of international situation, and the intensification and increased frequency of natural disasters.

1.3 The 8th edition of the ICAO GANP, targeting the year 2050, is currently under revision. In alignment with this, and with careful consideration of trends in Europe, the U.S., and Asian countries, Japan has undertaken a comprehensive review of CARATS, setting 2040 as the new target year, to appropriately respond to the evolving circumstances.

1.4 In 2016, we developed an organizational governance plan* as a long-term plan for the organizational structure, systems, and human resource development to carry out aviation security operations with a view toward the next 10 to 15 years. Based on this plan, we have promoted the implementation of the safety management system (SMS), the strengthening of inter-professional collaboration, and the upgrading of education and training programs.

1.5 In addition, under CARATS, we have promoted initiatives such as the separation of airway airspace into upper and lower airspace and the integration of terminal airspace. Meanwhile, under DIAMOND2040 (Domain Identity of ANSP Management Over the Next Decades 2040), efforts have been made to review and strengthen organizational structures and systems including the consolidation of the Air Traffic Control Department and terminal radar control operations. The JCAB is now being called upon to respond to the demands of a new era, including trajectory-based operations (TBO), emerging air mobility (such as drones, flying vehicles, HAPS, spaceplanes) as well as GX and DX. Accordingly, it is an urgent priority to develop the organizational structure, systems, and human resources needed to support the advancement of air traffic control services.

1.6 In light of these changing circumstances and the feedback obtained through interviews with local stakeholders, we have begun revising the new plan to promote organizational resilience, strengthen human resource development, and create a more attractive workplace.

1.7 Going forward, JCAB will promote the initiatives of both CARATS and the Governance Plan toward 2040.

2. DISCUSSION

2.1 In the updated version of CARATS (CARATS 2040), goals have been set in six areas as shown below, along with establishment of various indicators to analyse and monitor the progress toward achieving each goal.

(1) Safety and Security

Reduce the occurrence of aviation accidents caused by aviation security operations:

- Zero accidents caused by aviation security operations
- 50% reduction in serious incidents

(2) Airspace Utilization

Enhance the efficient use of airspace and expand airspace capacity: Capability to handle approx. 3 million flights per year

(3) Convenience

Improved convenience for operators and airline users

(4) Operational Efficiency and Environment

Achieve further improvements in operational efficiency while contributing to climate change mitigation:

- 6% reduction in fuel consumption and CO₂ emissions through operational improvements

(5) Stability and Reliability

Provide stable ATC services even during disasters and other emergencies, minimizing the impact on flight operations

(6) International

Contribute to the development of international air traffic

2.2 To achieve the goals outlined in 2.2, various measures will be promoted in line with the following six strategic directions.

(1) Enhancement of safety and security measures

- Monitoring and detection of hazardous situations using technologies such as image and voice recognition
- Mutual surveillance between aircraft using ADS-B
- Safety measures that take into account emerging air mobility

(2) Realization of trajectory-based operations (TBO) for optimal aircraft operations

- Transition to time-based operations
- Pre-flight and real-time trajectory adjustment

(3) Realization of sustainable air transport

- Introduction of fuel-efficient flight procedures
- Improvement of flight operations based on decarbonization promotion plans

(4) Effective use of airspace to accommodate diversified air mobility

- Increase airspace capacity through optimization of ATC resource allocation, etc.
- Flexible routing to meet operator needs
- Establishment of operational rules, etc. that account for the characteristics of emerging air mobility

(5) Enhancement of resilience

- Enhancement of CNS resilience
- Early recovery through information sharing following an incident

(6) Strengthening international cooperation and promoting overseas deployment

- International traffic flow management
- Realization of TBO and overseas deployment of air traffic control and CNS systems

2.3 In DIAMOND 2040, the following five strategic directions has been set out to promote initiatives toward strengthening the organization, enhancing human resource development, and creating a more attractive workplace, while taking into account the progress of CARATS initiatives and related developments.

- (1) Ensuring greater safety and security in aviation
 - Enhancing safety
 - Thorough crisis and risk management
- (2) Advancement of air traffic control services
 - Securing operational implementation system
 - Improving operational efficiency and centralization
- (3) Securing and developing human resources^{1*}
 - Securing talented personnel and strengthening the system
 - Human resource development and education
 - Building diverse career paths
- (4) Promoting an attractive workplace environment
 - Work style reform
 - Office modernization
 - Measures addressing the condition and aging of government buildings, etc.
- (5) Ensure compliance

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to note the information contained in this Paper.

— END —

*Japan's efforts for securing human resources are referred to 60/DP/8/03 "EFFORTS TO SECURE AND UTILIZE AVIATION HUMAN RESOURCES IN JAPAN" in Agenda Item 8.