

**54th CONFERENCE OF
DIRECTORS GENERAL OF CIVIL AVIATION
ASIA AND PACIFIC REGIONS**

Ulaanbaatar, Mongolia

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**AGENDA ITEM 3: AVIATION SAFETY AND
AIR NAVIGATION**

**THE NECESSITY OF COLLABORATION AMONG
STAKEHOLDERS AND CLARIFICATION OF RESPECTIVE
ROLES FOR THE CHALLENGE**

(Presented by Japan)

SUMMARY

This paper presents the review of our efforts and challenges in promoting actions with regard to CARATS (Collaborative Actions for Renovation of Air Traffic Systems), the future vision on air navigation system in Japan, in order to promote modernization in line with GANP in the respective regions, various stakeholders such as aviation authorities, ANSPs and aviation industry both in states should recognize the necessity to clarify their respective roles in collaboratively addressing the challenges , encourage to provide and share information of best practices in view of harmonization in the region.

THE NECESSITY OF COLLABORATION AMONG STAKEHOLDERS AND CLARIFICATION OF RESPECTIVE ROLES FOR THE CHALLENGE

1. INTRODUCTION

1.1 CARATS is a long term vision to renovate the air navigation system in Japan for the future with an aim to provide air navigation services to meet the growing volume of air traffic and the user needs in association with NextGen, US and SESAR, EU, on the basis of the global ATM operation concept established by ICAO in 2005 and is making due consideration on harmonization with ICAO GANP.

2. DISCUSSION

2.1 Consideration on CARATS

2.1.1 It has been established Committee for Promoting Renovation of the Air Traffic System for Promoting Renovation of the Air Traffic System composed of all industry-government-academia stakeholders in order to promote CARATS. In March 2017, the Study Group made an overall review of activities of CARATS from the start up to the present date.

- 1) Seven years have passed since the establishment of the roadmap of OI (Operational Improvements)/EN (Enablers) in 2010. Among the total of 142 measures to be made decision, 76 measures have been decided to implement with remaining 66 measures to be evaluated.
- 2) Improvements made so far were mainly measures in relation to navigation such as RNP (Required Navigation Performance) and RAIM (Receiver Autonomous Integrity Monitoring) prediction on the GNSS basis for domestic, and measures to set a flexible airway by introducing UPR (User Preferred Route) and DARP (Dynamic Airborne Reroute Procedure) in the Oceanic. As they directly contribute to the benefits of operators with less relevancy to other measures, it was relatively easy to make a decision to implement them.
- 3) On the other hand, there are measures to make a decision for implementation as follow: (1) Air traffic control and management system to generate trajectories and sort aircraft from departure to arrival relating with on-board capabilities, (2) Utilization of precise weather forecast using sophisticated sensors, (3) Air-ground data link as a communication media for the above and (4) Introduction of SWIM (System Wide Information Management) as a platform of information sharing. They depend heavily on the on-board capabilities and have an extremely close link with each other. Therefore, in order to realize a consolidated function as a whole, it is essential to make a far more sophisticated and complicated judgment than before on various operational and technical requirements such as on-board facilities, global consensus on operational and technical standards.
- 4) In addition, more stakeholders will participate closely as a user or provider in making investment decisions, it is required to clarify who will use and how will be used the system and how much the benefits will be produced.
- 5) In this regard, we have decided to (1) prepare a plan to equip on-board capabilities, (2) address the benefit analysis of the overall air traffic system in terms of achievement of performance goals of CARATS through implementation of measures.

- 6) It is recognized that the regional harmonization should be taken into account when conducting a study in APAC region on the basis of next GANP revision work as in the same case of the seamless ATM, recognition of the current situation and approach towards problem-solving of CARATS is quite similar to the concept of 'Performance based approach' in the revision of the next generation GANP, and accordingly will contribute to modernization of air traffic systems of each the Member States.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

- a) encourage ICAO to take sufficient time to discuss, and make efforts to harmonize the system implementation and ATM operations based on the future GANP revisions that require collaboration between States or PIRGs;
- b) encourage ICAO/PIRG to coordinate issues such as operational requirements and technical specifications defined in each Member States;
- c) encourage ICAO to conduct appropriate coordination among States or PIRGs in consideration of;
 - (1) Interoperability between avionics and air traffic control / management system
 - (2) Evaluation of costs/benefits analysis in the whole region
 - (3) Challenges for realization and finding suitable solutions
 - (4) Operational requirements for ATM that lead to TBO (Trajectory Based Operation)
- d) encourage States to provide and share information of best practices in view of harmonization in the region; and
- e) discuss any relevant matter as appropriate.

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