



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**TWENTY EIGHTH MEETING OF THE ASIA/PACIFIC
AIR NAVIGATION PLANNING AND IMPLEMENTATION
REGIONAL GROUP (APANPIRG/28)**

Bangkok, Thailand, 11 to 14 September 2017

**Agenda Item 3: Performance Framework for Regional Air Navigation Planning and
Implementation**
3.2: ATM
**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. And this paper propose the action that stakeholders regularly conducts–capability study of aircrafts avionics which are response to future ATM operation in the APAC region. This will contribute to a realistic approach that meets the actual situation of each States, and it is possible to create an integrated future plan which is considered as the cooperation between aircrafts and ground system.

Strategic Objectives:

A: **Safety** – *Enhance global civil aviation safety*

B: **Air Navigation Capacity and Efficiency**—*Increase the capacity and improve the efficiency of the global aviation system*

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

It has been established Committee 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.

2.2

Conclusion

- 1) With these our experiences, ICAO needs 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.
- 2) For the consideration of system operational requirement that requires collaboration in the FIR, capability study of aircrafts avionics which are response to future ATM operation in the APAC region is beneficial by sharing the information to the member States. This will contribute to a realistic approach that meets the actual situation of each States, and it is possible to create an integrated future plan which is considered as the cooperation between aircrafts and ground system.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

- a) discuss to set the action for various stakeholders (i.e. States, APAC ANSPs and/or CANSO) to conduct regular studies to determine the gap between aircraft avionics capability and ATM ground system capability, using the high level guidance in the ICAO Seamless ATM Plan and share the information at the SG meetings with the States;
- b) take note of the information contained in this paper; and
- c) discuss any relevant matter as appropriate.

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