International Civil Aviation Organization

The Twelfth Meeting of the FANS Implementation Team, Bay of Bengal (FIT-BOB/12) and the Second Meeting of the Bay of Bengal Reduced Horizontal Separation Implementation Task Force (BOB-RHS/TF/2)

Bangkok, Thailand, 22− 26 February 2010

Agenda Item 2: Review Outcomes of Related Meetings

SUMMARY OF OUTCOMES OF THE BOB-RHS/TF/1 MEETING

(Presented by the Secretariat)

SUMMARY

The purpose of this working paper is to provide the meeting with a summary of the work accomplished at the BOB-RHS/TF/1, which was held at the ICAO Regional Office in Bangkok on 2 – 6 November 2009.

1. INTRODUCTION

1.1 The first meeting of the Bay of Bengal Reduced Horizontal Separation Task Force held on 2 – 6 November, 2009, set a framework to introduce RNAV 10 (RNP10) 50Nm longitudinal separation, taking advantage of advanced satellite technology which was designed to support RNP 10 operations by aircraft suitably equipped.

1.2 It was also noted that FANS data-link has, or was about to be installed in ACCs throughout the area under consideration which would provide the linkage to the aircraft operating in the area.

2. DISCUSSION

2.1 The meeting was well attended by 30 participants from India, Indonesia, Malaysia, Nepal, Oman, Pakistan, Singapore, Thailand, United States, IATA and BOEING.

2.2 Task Force/1 noted that the EMARSSH ATS route structure in the Bay of Bengal and beyond came into operation on 28 November 2002, however although RNP 10 operations include the capability to also reduce longitudinal separation to 50NM, the Bay of Bengal presently remains essentially a 10 minute MNT longitudinal airspace. This has long been recognized by the BBACG and, acknowledging the increasing FANS data link capability by ACCs in the area, BBACG/19 (January 2008) in conjunction with FIT-BOB set a target date of 2009 for implementation of 50NM longitudinal separations using CPDLC communications. BBACG/19 also observed that the potential exists for a reduction to 50/50 NM with DCPC and to 30/30 NM when full data-link services as well as certification of FANS/1 technology in aircraft flying these routes are available.

2.3 Although The Sultanate of Oman (Oman) was not technically involved, as their airspace joins with the Mumbai FIR over the Arabian Sea, it was agreed that substantial benefit would flow from their presence at the task force meetings. Noting the discussions made in the Report of the BBACG/20, the meeting decided to amend the Terms of Reference of the BOB-RHS/TF to include those portions of the Arabian Sea within the Mumbai FIR to ensure a harmonized approach to implementation of 50NM longitudinal separation in both the Bay of Bengal and the oceanic portion of the Mumbai FIR.

2.4 The meeting was also presented with information on significant changes to the route structure, including the Bay of Bengal, mainly as a result of the implementation of ATFM/BOBCAT procedures. In an effort to reduce delays and enhance the operation of the ATFM/BOBCAT system for westbound flights operating through the Kabul FIR, the meeting noted that several States have collaborated together in adding additional routes or realigning present routes over the past few years. These positive achievements have shown a willingness by air navigation service providers (ANSPs) to move forward in route design where benefits and efficiencies would be achieved for both users and providers of the system.

Proposed implementation of RNP4 PBN

2.5 It should also be noted that, under the Objectives and the Terms of Reference, the Task Force shall adopt a phased implementation programme of work to be accomplished. The first phase is to implement widespread 50NM longitudinal separation using CPDLC communications in the Bay of Bengal and the Mumbai FIR.

2.6 Notwithstanding the present commitment to implement 50NM longitudinal separation,, the meeting was encouraged to analyse the area of the Bay of Bengal and the Mumbai FIR to see where it could also be rewarding to concentrate on RNP 4 PBN for future operations, taking into account the present and pending ADS/CPDLC programmes of States concerned. The meeting also recalled that in the Regional PBN Plan, RNP4 is the preferred solution in the short term (2009-2012).

Implementation of Longitudinal RNAV 10 RNP10 (50NM) in the Bay of Bengal and Mumbai FIR

2.7 The meeting recalled that the ATS route structure across the Bay of Bengal includes a main parallel route structure as well as some important crossing routes. For ease of operation, especially with regard to ACC management, it was agreed that these crossing routes should also be taken into consideration within the designated areas in the planning for 50NM longitudinal separation.

ATS routes linking India/Pakistan with the Middle East via the Arabian Sea

2.8 The meeting noted that many of the ATS routes now present over the Bay of Bengal continue their journey into the Middle East region across the Arabian Sea through to the Muscat FIR and beyond. These routes are under Oman radar coverage within the Muscat FIR, as is most if not all of the Gulf Peninsular. The meeting therefore appreciated the difficulty for Oman in managing eastbound traffic from other Gulf States transiting the Muscat FIR. These flights are radar spaced at the same level entering the Muscat FIR which causes the Muscat ACC to either expand the separation to 80NM or to change aircraft levels or divert the aircraft on another available ATS route prior to entry into Mumbai FIR. When this separation requirement is reduced to 50NM, Muscat ACC would have far less workload to achieve a satisfactory solution at the Muscat/Mumbai FIR crossing point.

Application of Direct Controller-Pilot Communications (DCPC)

2.9 The meeting was reminded that ICAO PANS-ATM (Doc 4444) states that DCPC shall be maintained while applying distance-based separation minima. DCPC shall be by voice or Controller-Pilot Data Link Communications (CPDLC). The communications criteria necessary for CPDLC to satisfy the requirement for DCPC shall be established by an appropriate safety assessment.

Changes that may affect ATFM/BOBCAT operations

2.10 The meeting was advised that proposed changes to the longitudinal separation in the Bay of Bengal would require careful coordination regarding the procedures presently in use during ATFM/BOBCAT operations. This was acknowledged by AEROTHAI, the managers of BOBCAT, who would work closely with the task force to ensure harmonization.

Horizontal Enroute Monitoring Agency for the Bay of Bengal and Mumbai FIR

2.11 India advised that they are prepared to establish an Enroute Monitoring Agency (EMA) in accordance with ICAO provisions. Recognizing the importance of this task, they further advised that work has already commenced on this matter and should be completed in time for the introduction of 50NM longitudinal separation in the mentioned area. Singapore, who has the EMA for the South China sea area, offered assistance to India in the establishment of an EMA service for the Bay of Bengal and Mumbai FIR if required.

2.12 It was noted that, notwithstanding the implementation of lateral separation implementation of 50NM in EMARSSH, safety monitoring has not been continuous. A longitudinal safety assessments followed by continuous monitoring requirements by the India EMA need to be addressed to ensure that ICAO safety requirements are in place prior to proposed implementation of 50NM longitudinal separation in the Bay of Bengal and Mumbai FIR as well as ongoing safety monitoring for lateral separation of 50NM in these areas.

Boeing assistance to States on Bench-testing of ADS/CPDLC equipage

2.13 Boeing advised that they would coordinate with States to arrange "virtual test flights" on selected routes using avionics test benches. The purpose to these tests was to confirm necessary CPDLC and ADS capability along the routes selected for RNP 10 trials. Since these are "virtual flights" non normal operating conditions can be simulated allowing ANSPs to confirm necessary triggers and alerts are working as designed.

2.14 It was also agreed that strong support by airlines flying in this area is also recommended to assist in gathering data during this trial period by logons to satellite communications and passing position data to the relevant ACCs concerned.

User Expectations

2.15 IATA strongly endorsed the objectives of this Task Force and gave a commitment to support the initiative to implement RNAV 10 (RNP 10) operations of 50NM longitudinal separation in the Bay of Bengal and Mumbai FIR. The meeting also noted that the IATA User Expectations had been incorporated in the Regional Performance Objectives (RPOs) adopted by APANPIRG/20.

2.16 IATA proposed the following phases needed to be considered (not necessarily in order):

a) Availability of 50nm longitudinal separations

b) Availability of RNP4 separations

c) Requirement of RNAV 10 (RNP 10) capability; and,

d) Requirement of RNP 4 capability

2.17 IATA requested the meeting to consider the User Requirements as an integral part of planning and implementation, to ensure timely communication takes place with key stakeholders and to establish plans to enable:

a) Consistent application of RNAV 10 (RNP 10) 50/50 separations

b) Planned migration to RNP 4 30/30 separation

c) Planned availability for UPR and DARP where appropriate

Report of the Small Working Group Meeting

2.18 The meeting decided to form a small working group (SWG) to define a project plan for an initial implementation of RNAV (RNP10) 50 NM Longitudinal Separation in the Bay of Bengal and the Mumbai FIR. Part of this plan was to develop a future work schedule including timelines for further task force meetings.

2.19 It was decided that the goal of the project plan was to initiate operations of 50 NM Longitudinal separations along one or more routes in the area under discussion and to complete all preparatory activities to enable initial operations by January 2011.

2.20 After considerable discussion, it was decided that only one ATS route, N571 should be used for initial implementation of DCPC CPDLC and 50NM longitudinal separation. This route traversed the Kuala Lumpur, Chennai and Mumbai FIRs through to Muscat FIR. Not only will it test the CPDLC system in three FIRs but also the transition of aircraft from a radar environment within the Muscat FIR to the RNAV 10 airspace in Mumbai FIR in an easterly direction.

2.21 It was finally agreed that, to capture the airspace of the initial ATS route N571, the project scope would be composed of:

a) **States**: Malaysia (Kuala Lumpur FIR), India (Chennai FIR, Mumbai FIR) and Oman (Muscat FIR);
b) **ATS Routes**:RNAV route: N571;
c) **Altitudes**: all altitudes (initial proposal);
d) **Airlines and aircraft**:all appropriate FANS equipped and approved FANS aircraft; and,
e) **Time of operation**:24 Hours

2.22 To enable a clearer traffic picture to be provided on all aircraft flying over the Bay of Bengal and the Arabian Sea which would be eventually involved in this project, it was agreed that there was a need for consistent and up to date traffic data to be collected by States and analysed. Thailand advised that AEROTHAI are willing to obtain the collected data and carry out the analysis with the results of this analysis made available to the second meeting of the task force.

2.23 It was noted that some of the FIRs involved already provide monthly data on many of the routes through the ATFM/BOBCAT data collection mechanism which could be used in the overall analysis.

2.24 Thailand mentioned that a mechanism may also be found which would reduce the workload of States in this data collection process. In the case of data collection data collection for ATFM/BOBCAT operations by the ATFMU, all airline companies (or in some cases the the departure airport ANSP) are required to add the ATFMU address (VTBBZDZX) to all flight plans and departure messages connected to aircraft operating through the Kabul FIR during the period of ATFM/BOBCAT.

2.25 It is suggested to the meeting that this may also be used for other types of data catch such as the introduction of 50NM longitudinal separation in the Bay of Bengal and Arabian Sea.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note the work of the BOB-RHS/TF/1 meeting;

b) Look at the progress to date on matters raised by the first meeting of the task force;

c) Discuss the methodology of data collection required for this project; and,

d) Comment on the results of traffic data already collected and analysed;

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