INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY SIXTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/26)

Bangkok, Thailand, 7 – 10 September 2015

Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.6: Other Air Navigation Matters

REVIEW OF BOBASIO/5 MEETING

(Presented by India)

SUMMARY

This paper presents a brief review of the Fifth Bay Of Bengal, Arabian Sea and Indian Ocean Region (BOBASIO/05) held at New Delhi, India from 31st August, 2015 to 2nd September, 2015

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*

E***: Environmental Protection** — minimize the adverse environment effects of civil aviation activities.*

1. INTRODUCTION

1.1 The first ATS Coordination meeting of the ANSPs within Bay of Bengal, Arabian Sea and Indian Ocean Region (BOBASIO/1) was held in New Delhi from 5th to 6th May, 2011. The BOBASIO/2, BOBASIO/3 and BOBASIO/4 Meetings were held in India at Chennai, Hyderabad and Kolkata in the years 2012, 2013 and 2014 respectively. The Fifth meeting of Bay Of Bengal, Arabian Sea and Indian Ocean Region (BOBASIO/05) held at New Delhi, India from 31st August, 2015 to 2nd September, 2015.

1.2 The meeting was attended ANSPs from APAC and SEAF Regions. There were 66 participants including 19 international delegates from Nepal, Thailand, Singapore, Maldives, Somalia, Seychelles, IATA and MAAR. Thirteen (13) Working Papers (WPs) and Seven (7) Information Papers (IPs) were presented to the meeting.

2. DISCUSSION

2.1 **Outcome of related Meetings in the region and action items for BOBASIO States**:

2.1.1 ANSPs neighboring BOBASIO Regions fall under three ICAO Regions-APAC, MID and ESAF. Many times decisions taken and identified action items in one region are not known to other regions which might lead to mismatch of the priorities of different regions. Therefore, meeting

decided to include one of the agenda item as "Outcome of related Meetings in the region and action items for BOBASIO States" so that BOBASIO ANSPs could decide priorities of their actions for seamless ATM across the BOBASIO Regions.

2.1.2 A paper was presented by Secretary, ASIOACG, highlighting the outcomes of the ASIOACG/9 and INSPIRE/5 meetings. It was mentioned that the efforts of ASIOACG and BOBASIO are supplementary to each other and may bring about a synergy to the efforts of improving ANSP coordination and collaboration and improving the efficiency and safety of traffic flows in the ASIO Region.

2.1.3 The paper mentioned the timelines adopted by the ASIOACG/9 for implementation of following reduced horizontal separation in ASIO region,

i. RNP10 Airspace and separations (50-50): 2015
ii. RNP 4 Airspace and separations (30-30): 2016
iii. RNP 2 Airspace and separations (20-20): 2020

2.1.4 It was also informed that RNP 10 separations are now applicable between Muscat and Mumbai FIR and all Indian FIRs as well. 50 Nm longitudinal separation will soon be implemented across Karachi/Mumbai and Seychelles/Mumbai FIRs. Once Male/Mumbai FIR implements 50 NM longitudinal separation most of the traffic flows in ASIO region will be covered.

2.1.5 The plan about enhancement to ASIO UPR zone was also discussed.

2.2 **Collaborative airspace design and management**

2.2.1 The Working Paper presented by India, highlighted the details of enhancement of airspace capacity through Collaborative airspace design and management. It was informed that India established an Enroute Monitoring Agency (EMA) in 2011 to meet the ICAO requirements for implementing 50NM longitudinal separation. The paper also highlighted following measures taken by Airports Authority of India for capacity enhancement and route optimization:

a) In 2011 Reduced Longitudinal Separation of 50 NM was introduced on 18 RNP 10 routes for suitably equipped aircraft.

b) In 2011 India introduced RNAV-5 city pair routes in high density route segments within the continental airspace. As on date 16 RNAV 5 ATS routes have been established.

c) In 2012 40NM Radar based longitudinal spacing above FL290 between Aircraft was implemented on routes between Delhi/Chennai and Delhi/Varanasi.

d) In 2013 User Preferred Route (UPR) Geographic Zone in Chennai and Mumbai FIR was established under the aegis and directions of INSPIRE initiatives.

e) In 2014, Reduced Longitudinal Separation of 30 NM was introduced on 4 ATS ROUTES N571, P574, M300 and P570 between suitably equipped aircraft.

f) Since November 2014 Six Conditional Routes have been established under Flexible Use of Airspace.

2.2.2 It was informed that India and Muscat are in agreement for implementing 50NM longitudinal separation on 6 RNP10 routes in the near term and discussions in the AHACG/3 and BIMT/2 meeting has resulted in Iran, Pakistan, India, Myanmar and Thailand agreeing for application of 50NM longitudinal separation minima between RNP 10 approved aircraft from a common date.

2.2.3 The paper proposed to establish new ATS routes in Kolkata-Dhaka FIR, Northern Bay of Bengal and over Arabian Sea for capacity enhancement and route optimization in line with the ICAO recommendation for States to work cooperatively either through bilateral or multilateral agreements to ensure regional and sub-regional harmonization of en-route PBN implementation.

2.2.4 India's proposal for creation of new RNP 10 parallel routes to G450 in Arabian Sea was agreed by Seychelles, Somalia and IATA.

2.3 **Implementation of 50NM RHS**

2.3.1 The working paper presented by India, proposed uniform application of 50NM Reduced Horizontal Separation minima between RNP 10 approved aircraft which either LOGON to CPDLC or are having two way VHF communication i.e. direct controller pilot communication (DCPC) on RNP 10 routes of BOBASIO Region with effect from AIRAC cycle 12 November, 2015 to enhance airspace capacity and multiply manifold the benefits to the airspace users.

2.3.2 India has already signed LOA with Malaysia, Indonesia, Sri Lanka and Muscat for implementing 50NM longitudinal separation minima. India and Pakistan have already implemented 50NM longitudinal separation on three RNP10 routes viz. N895, P628 and L509 for which LoAs are signed. The BIMT/1 meeting held at Bangkok in 2014 and attended by Malaysia and Indonesia agreed to prioritize the reduction of longitudinal separation minima on L301 and L507 routes and discussions in the AHACG/3 and BIMT/2 meeting has resulted in Iran, Pakistan, India, Myanmar and Thailand agreeing for application of 50NM longitudinal separation minima between RNP 10 approved aircraft from a common date.

2.3.3 The paper proposed AIRAC cycle date 12 November, 2015 to implement 50NM longitudinal separation minima between RNP 10 approved aircraft with availability of direct controller pilot communication (DCPC) i.e VHF and/or CPDLC on RNP 10 routes of BOBASIO Region.

2.3.4 Thailand informed the meeting of their readiness to implement 50 NM RHS as proposed by the paper. Since, Malaysia, Indonesia, Sri Lanka, Muscat and Pakistan were not present in the meeting, therefore, meeting agreed to coordinate with these member States and the AIRAC cycle date 12 November 2015 was adopted for implementation of 50 NM RHS in the BOBASIO region.

2.4 ADS-B data sharing-Maldives

2.4.1 The paper presented by Maldives reviewed the present ADS-B implementation activities in the Maldives and its readiness to share the ADS-B data with other States. Maldives proposed to share the ADS-B data with India and Sri Lanka to improve efficiency and harmonization of airspace and seamless operations.

2.5 AIDC Implementation

2.5.1 Maldives presented status of AIDC implementation in Maldives for facilitating improved reliability in coordinating with their adjacent ATS units ensuing improvement in safety and enable greater route flexibility for Maldives' airspace users. Maldives installed a new update for AIDC application and started communication trials between Male and Chennai in August 2015.During these communication trials Maldives came across some issues which they conveyed to the system supplier Selex and are awaiting for their response.

2.5.2 CAAS, Singapore, presented the progress of AIDC implementation in Singapore with adjacent FIRs. Singapore has taken a phased approach to implement AIDC with the ultimate aim to

have all-round AIDC with all the adjacent ATS units surrounding the Singapore FIR. While the initial planned version of AIDC for LORADS III was version 3.0, Singapore elected to install the earlier AIDC version to ease the introduction of AIDC as it was envisaged that only some basic messages will be introduced at the start of AIDC operations and also to minimize compatibility issues with neighboring FIRs. Singapore informed the implementation issues in AIDC implementation such as Message timeout errors due to the re-routing of messages caused by the failure of the direct AFTN link; Rejected EST message due to invalid DEP message, Rejected EST message due to missing or multiple flight plans and Cyclic Redundancy Check (CRC) errors due to ATMS generating extra spaces in messages. The issues that were attributed to AFTN network and flight-planning have been resolved through tuning and adjusting parameters and engagement with operators. Software corrections have also been made to ensure correct handling of AIDC messages. The meeting was informed that the upgrade process of upgrade to AIDC version 3.0 is in progress and expected to be ready by December 2016.

2.5.3 India highlighted the present status of AIDC implementation in India & with adjacent ATSU units in the sub Region. The major issues involved in the implementation of AIDC were highlighted. India initiated AIDC operational trials after commissioning of automation systems at major ATS units in India. Trials within India and with adjacent ATS units have mostly been successful. AIDC has been operationalized between some of the ATSUs and plans are underway to operationalize AIDC between other major ATSUs in a phased manner. India is currently using APAC AIDC ICD version 3 in the automation systems installed at all the ATS units. Extensive trials have been carried out between dissimilar automations systems at major ATS units and the results have been quite encouraging. It was informed to the meeting that interoperability and operational issues encountered between dissimilar ATS Automation Systems in India have been resolved to some extent. Some of the pending technical issues may require support from the vendors. Similarly, operational issues during trials between Ahmedabad-Karachi, Delhi-Lahore/Karachi, Chennai-Male are being addressed and further trials are being carried out.

2.6 Search and Rescue Operations

2.6.1 Singapore presented the overview of the Singapore Search and Rescue operations in Singapore. The paper presented the SAR organization chart and Responsibilities of SAR working groups and Rescue Coordination centres (RCCs). Singapore informed that draft SAR agreement template that was presented at APSAR/TF/2 in January 2014, for consideration by the member States.

2.6.2 India highlighted the need for establishment of Letter of Agreement/Arrangement on Operational matters between Search and Rescue Service Providers of neighbouring States. It was informed to the meeting that in the fourth and concluding meeting of the Asia/Pacific Regional Search and Rescue Task Force meeting held in July 2015, it was discussed that a SAR agreement can be in the form of 'Letter of Agreement' (LOA) or a Memorandum of Understanding or other acceptable term indicating a lower form of arrangement for operational matters between SAR service providers (such as RCCs and/or RSCs) or a more formal agreement for arrangements between governments concerned. In line with the discussions at APSARTF/4 meeting and draft Asia Pacific Search and Rescue Plan, a draft Letter of Agreement on the Coordination/Co-operation between RCCs/RSCs was submitted to the meeting for consideration of other ANSPs**.**

2.7 **Upper Airspace UPR Zone Over Bay of Bengal – Arabian Sea – Indian Continental & Oceanic Airspace.**

2.7.1 The paper presented by IATA proposed a strategic approach for airspace management in the Bay of Bengal-Arabian Sea- Indian Continental and Oceanic (BOBASICO) airspace based on optimum utilization of improved ground and airborne capabilities to enhance flight efficiencies,

moving from Fixed ATS route network to UPR tracks for FL 380-390-400-410. The concept involves 9 States: India, Oman, Pakistan, Sri Lanka, Bangladesh, Thailand, Myanmar, Malaysia, and Indonesia, with airspace span of 2000+NM (almost same as that of North Atlantic). The conceptual basis for the BOBASICO strategy was to move, as far as practicable, from fixed ATS route network to flexible/ dynamic routings – UPRs, for higher flight levels. The proposed Strategy was to combine the ATM advancements, airborne equipage, aircraft capabilities and performance, to progress from fixed ATS Route structure to Dynamic UPRs as Global Plan Initiative (GPI-7) States that routes need not be fixed to pre-determined waypoints, except where required for control purposes. The paper suggested that this approach will allow establishing traffic flows, meeting the dynamic weather and upper winds- Optimully utilising aircraft capabilities as well as equipage – to begin with Higher Flight Levels. The meeting agreed for structured program for BOBASIO Geographical Area for Upper airspace UPR development.

2.8 ATM Contingency Plan- Level 1 and Level 2

2.8.1 India presented the status of ATM Contingency Plan of Indian FIRs that aimed at advance preparedness and instantaneous response to a contingency arising due to disruption of Air Traffic Services with an objective of providing safe and orderly passage to the over flying traffic through Indian FIR . India requested to adopt the Contingency Routes structure for the Geographical region as proposed by the SWG comprising of India, Myanmar, Thailand Srilanka, Pakistan and Bangladesh during the RACP/TF4 meeting and also to consider the Letter of Agreement template for the ATM Contingency Plan Level 2,

2.9 SBAS implementation in the region and possibilities of entering into MOU with the concerned states of BOBASIO region:

2.9.1 GAGAN-Equitoral IONO advantage

2.9.1.1 India proposed the potential applications of Indian SBAS – GAGAN in the BOBASIO region. The meeting was informed that the Indian SBAS- GAGAN (GPS Aided GEO Augmented Navigation) has been certified by DGCA India for RNP0.1 and Precision Approach with Vertical guidance (APV1) services on 21st April 2015. Since the ionosphere is the biggest error source in GPS and it is more dynamic and unpredictable over equatorial and low latitude region, the region specific ionospheric threat model was developed by India. All the countries of BOBASIO lie in the anomalous ionospheric region as magnetic equator crosses the southern India and Srilanka. The region lying in the ±20° of magnetic equator possesses ionospheric anomaly. GAGAN, employing the region specific Iono model, is broadcasting the ionospheric corrections over 102 grid points through Geostationary satellites. These grid points cover almost all the BOBASIO member States.

2.9.1.2 The data from the GAGAN reference stations and ionospheric monitoring stations have shown enormous potential in host of applications other than aviation use. The ionospheric corrections broadcast from GAGAN can be used to interpret the large scale variations of ionosphere over Indian Sub-continent facilitating the space weather research. The ripples in ionosphere created by Nepal Earthquake on 25 April 2015 were captured by Ionospheric monitoring stations over Indian region which shows the potential application in tsunami warning systems based on GPS measurements. The initial study on estimating atmospheric water vapour content using GPS measurements shows promising results and can be used for weather/rain forecast by assimilating the data in numerical weather forecast models. GAGAN can be used potentially in any GPS applications

with better accuracy and reliability – location based services, transport/vehicle tracking systems, marine navigation etc.

2.9.1.3 The knowledge and expertise gained in development of GAGAN project may be useful for member States of BOBASIO as they lie in the same ionospheric region. The States were invited for collaborative development of applications based on Indian SBAS-GAGAN. It was informed to the meeting that India was keen to expand the coverage of GAGAN services for harmonization of air space management in the neighboring States.

2.9.2 GAGAN for everyone

2.9.2.1 India, proposes for assisting States in their venture for adapting SBAS using GAGAN through the Memorandum of Understanding (MOU) with concerned States in a time bound work plans. GAGAN has been certified for approach and landing operations (APV 1) on 21st April 2015. India has become the third country in the world to have such capabilities. GAGAN is the first system in the world to have been implemented in the equatorial Ionospheric region. GAGAN was already certified for RNP0.1 enroute services on 30th December 2013. GAGAN Signal-in-space is available on 24x7 basis through two satellites GSAT-8 (PRN-127) and GSAT-10(PRN-128).

2.9.2.2 India proposed the States to consider the implementation of GAGAN within States of the Asia Pacific Region where both footprint and service volume can be made available for mutual benefit. India also had requested to indicate the willingness of the States to use GAGAN signal-in-space within their area through appropriate study and ensuring installation of basic required ground systems for operations, monitoring and management. Thailand, in a recent communication has indicated the willingness to consider implementation of GAGAN services.

2.9.2.3 India is in the process of development of LPV procedures for select airports, for which the initial GNSS based Aeronautical Survey is completed and the procedures for some of them are ready. These procedures will be available for ground validation by the end of December, 2015.

2.9.2.4 The advantages that can be derived by neighboring States like Bangladesh, Myanmar, Nepal, Indonesia, Sri Lanka, wherein GAGAN service volume is contiguous with Indian service volume, with the inclusion of a few reference stations using GAGAN GEOS and the capabilities of monitoring signal-in-space, GNSS augmented services can be extended. The benefit of such a system extends beyond aviation. The benefit of additional reference stations will in turn increase availability and continuity within the APV service volume.

2.9.2.5 The experience gained during the implementation of GAGAN by Airports Authority of India can be fully shared with all the States in the areas of assistance in development and operational requirement, Ionospheric data analysis, Feasibility studies, Training Program, System installed support activities, Certification support activities, Procedure design /development and training. Activities may require the States to consider establishment of ground reference stations with service monitoring capability connected to the master control centre in India by redundant communication network either through OFC or satellite links to ensure 99.999% availability requirements

2.10 BOBASMA safety report

2.10.1 BOBASMA presented the Horizontal Safety Monitoring Report for the BOBASIO airspace for the period 1st January 2014 to 30th June 2015. The report included a summary of the Safety Assessment conducted by BOBASMA to support the continued safe use of reduced longitudinal separation. It was informed that The Safety Assessments were submitted to the Regional

Airspace Safety Monitoring Advisory Group during its annual meeting in May of 2014 & 2015**.** It was also informed by BOBASMA that the very low level of reporting of safety occurrences particularly those related to deviations in the horizontal plane was a cause of concern. ANSPs need to place greater emphasis on reporting of horizontal deviations since all future capacity increases is based on reducing both the lateral spacing between routes and the longitudinal separation between aircraft. Controllers in the region need to be made aware of the safety risks resulting from an aircraft's horizontal deviation in an RNP/RNAV environment. The Chairman of the meeting called upon the member States of BOBASMA to submit the requisite data which will enable BOBASMA to conduct the horizontal safety monitoring services for the BOBASIO airspace successfully. Maldives informed the meeting that they would coordinate with BOBASMA and submit the data as required.

2.11 Safety Concerns in BOBASIO

2.11.1 The Monitoring Agency for Asia Region (MAAR) presented Working Paper on "Safety Concerns in Bay of Bengal Arabian Sea and Indian Ocean Region. The Paper provided the preliminary results of the airspace safety oversight for the RVSM operation in BOBASIO region highlighting the unprecedented risk level in the region. Typically, comprehensive annual safety reports were prepared at the beginning of each year. However, due to many high risk occurrences in the BOB airspace during the first six months of 2015, the MAAR prepared the report to inform concerning States so that appropriate actions could be taken as early as possible. Meeting was informed by MAAR that the 6-month-cumulative total risk was 26.94 x 10-9 which exceeded the specified annual TLS value of 5.0×10^{-9} by more than five times.

2.11.2 The MAAR identified first hot spot area, which consisted of the transfer-of-control points along Chennai and Kuala Lumpur FIRs and the transfer-of-control points along Kolkata and Yangon FIRs. This area has been and still continues to be the major hot spot area in the region. India intimated that many of the States submitted coordination failures data to MAAR without verifying the correctness of information. It was suggested by India that the States reporting occurrences of coordination failures should send other concerned State within reasonable time so that such reports could be verified.

2.11.3 MAAR identified second hot spot area, which consisted of the transfer-of-control points on the western boundary of Mumbai FIR. The majority of risk was due to ATC-to-ATC coordination errors at ORLID, LOTAV and KITAL. Most LHDs occurred because aircraft entering Mumbai FIR from the west were not transferred to Mumbai OCC. Since this area was oceanic airspace where no surveillance was available, Mumbai OCC was not aware of these aircraft until aircraft establish contact with Mumbai OCC when they were about to enter continental areas. This resulted in LHDs with long duration**.**

2.11.4 MAAR proposed actions and procedure to be considered and, if possible, adopted by BOBASIO States in order to establish a more robust platform to address these safety concerns. The proposal is for:

a) BOBASIO to take on the task of acting as the scrutiny group to address the hot spots in the BOBASIO region, which could be conducted in a form of side meetings to the main meeting;

b) BOBASIO to add an agenda concerning airspace safety in the region; and

c) BOBASIO States to establish a procedure for supervisors or controllers on duty of transferring and accepting ATS units to discuss and investigate, in a timely manner, the occurrences relating to the breakdown in coordination, and then report the LHD to the corresponding RMAs.

In view of above recommendations by MAAR, following decision were taken by the Meeting:

a) BOBASIO to add an agenda concerning airspace safety in the region

b) BOBASIO to take on the role of the scrutiny group for the Bay of Bengal, Arabian Sea, and Indian Ocean Region.

c) A small working group consisting of BOBASMA, AAI, MAAR, and States directly involved with the identified hot spots was formed to analyze the occurrences and propose remedial actions to BOBASIO.

d) BOBASIO States to establish a procedure for supervisors or controllers on duty of transferring and accepting ATS units to discuss and investigate, in a timely manner, the occurrences relating to the breakdown in coordination, and then report the LHD to the corresponding RMAs.

2.12 ADS-B for Height Keeping Performance Monitoring

2.12.1 The Paper presented by MAAR on the potential utilization of India ADS-B data for height-keeping performance monitoring, as required by the ICAO Annex 6 minimum requirements for long term monitoring. The Monitoring Agency for Asia Region (MAAR) also proposed steps towards the ADS-B data sharing for AAI and other States with ADS-B capability. In response to MAAR's offer to validate Indian ADS-B data for ASE calculation, India informed MAAR that at this time India was only considering the use of ADS-B for provision of Air Traffic Services and when it is proposed to use ADS-B data for vertical height monitoring then the offer of MAAR might be considered. MAAR also encouraged other States to share their ADS-B data with the MAAR for height-keeping performance monitoring.

2.13 Requirement of RMA for BOBASIO airspace:

2.13.1 The Bay Of Bengal Arabian Sea Indian Ocean Safety Monitoring Agency (BOBASMA) presented Working Paper on the need for a Regional Monitoring Agency for conducting post RVSM implementation system performance monitoring to ensure continued safe use of RVSM within the Bay of Bengal Arabian Sea Indian Ocean (BOBASIO) airspace. The increased growth of air traffic within the BOBASIO airspace and the projected future growth require that, the safety monitoring competencies of member States of BOBASIO are optimized to achieve the safety objectives. BOBASMA, being En-route Monitoring Agency (EMA) capability, conducts the safety monitoring for the introduction and continued safe use of reduced horizontal separation in the BOBASIO airspace and presents the annual safety report to RASMAG.

2.13.2 BOBASMA had been supporting the efforts of MAAR since 2011-12 by sensitizing the controllers and senior ATC officers on the need to report safety occurrences, as could be seen from the increased instances of LHD reporting in the region in the recent past. This was only resulted in conducting a more realistic Safety assessment leading to the identification of safety issues that were so far hidden.

2.13.3 BOBASMA is willing to undertake the additional responsibility of providing RMA services for the member States of BOBASMA. BOBASMA is ready to participate in training programs under the guidance of any of the established RMAs to acquire the additional technical competence if any, required to carry out the functions of an RMA.

2.13.4 MAAR while endorsing the Safety Monitoring capabilities of BOBASMA informed the meeting of their willingness to continue providing the RMA services for the BOBASIO airspace. However the meeting took note of the vast airspace of the BOBASIO region and the efforts

undertaken by BOBASMA to identify for the first time the vertical safety risks which had so far remained hidden. Considering the positive role that BOBASMA could play in having a specific and sustained focus on the safety risk within the BOBASIO airspace, the meeting decided that RASMAG, considering the Safety Monitoring capabilities of the BOBASMA, may recommend for providing RMA services to the member States of BOBASIO, in addition to the existing EMA services.

2.14 BOBASIO Contingency Team

2.14.1 The contingencies may arise in the form of natural disasters or conflicts and wars that render a particular airspace as dangerous to fly. There may be case when the contingency routes promulgated are not considered safe by operators and the flights reroute through adjacent FIRs. The recent example of certain situation in SANA FIR that required re-routings of flights in the air through Mumbai, Mogadishu, Seychelles and Mauritius FIR is a case in point. The contingency was managed through proactive efforts of controllers and subsequent strategic support in the form of contingency route T101 developed by India in Mumbai FIR with the support of Oman, Somalia and Seychelles.

2.14.2 Airports Authority of India in its information paper regarding re-routing of traffic between Mid- East and Africa through Mumbai FIR in the month of May 2015 to ICAO APAC ATM SG had proposed the formation of such a contingency team at global level. In discussions that ensued the presentation of IP it was suggested by the ATM SG meeting that informal groups like BOBASIO can also consider formation of such contingency teams. Consequent to this suggestion, India proposed formation of BOBASIO Contingency Team which may monitor the region so that a developing contingency can be detected at an early stage, alert ANSPs that may be affected by contingency situation, coordinate with all affected ANSPs and release advisories for effective management of contingency situation.

2.14.3 Composition of BOBASIO Contingency Team was discussed and agreed to.

2.15 Removal of FLAS in Arabian Sea:

2.15.1 In view of improved FANS 1A equipage of aircraft and better communication between India and Seychelles, it was decided to remove FLAS for aircraft operating in Arabian Sea airspace and transiting through Mumbai and Seychelles airspace. A Letter of Agreement for coordination procedures between Mumbai Oceanic Control Centre and Seychelles Area Control Centre was signed between India and Seychelles. This was a result of a collaborative approach of BOBASIO for safe, efficient and environment friendly aircraft operations in this Region.

2.15.2 India and Somalia took following decisions for removal of FLAS between Mumbai and Mogadishu

a) Mumbai to study the traffic analysis and will intimate Mogadishu on alternate level for FLAS.

b) Meanwhile it was agreed ADS/CPDLC capable aircraft may be allocated preferred Flight Levels provided they log on VABF under coordination between Mumbai and Mogadishu and acceptance of Mumbai on case to case basis.

c) Coordination failure between Mogadishu and Mumbai to be communicated by email between GM-ATM Mumbai and CATCO ST ICAO FISS Somalia Project and recorded for case study to remove FLAS.

d) Within one month of implementation of new RNP 10 parallel routes to G450 in Arabian Sea, a post implementation review to be conducted and FLAS for ADS/CPDLC aircraft should be removed.

e) Mogadishu will accept aircraft on all West Bound Levels.

2.16 Action Items of BOBASIO/5:

2.16.1 A list of Action Items to BOBASIO/5 is enclosed as Annexure A to this paper.

3 ACTION BY THE MEETING

3.1 The Meeting is invited to note the discussion and outcomes of 5th Meeting of BOBASIO.

— — — — — — —

APPENDIX A

ACTION ITEMS OF BOBASIO/5

Action Item ID	Description	Responsible State/ Organisation	Timeline	Remarks
5/1	Establish new ATS routes in Kolkata-Dhaka FIR, Northern Bay of Bengal and over Arabian Sea for capacity enhancement and route optimization	India, Bangladesh, Myanmar, Thailand and Indonesia	BOBASIO/6	Route proposals to be reviewed and discussed in BIMT meeting again with Myanmar and Bangladesh.
5/2	Consider to develop structured program for BOBASIO Geographical Area for Upper airspace UPR development	All BOBASIO States	BOBASIO/6	
5/3	Consider the proposal for inclusion of the segment between ELKEL and Male of G465 in Male FIR as Contingency Route with FLAS as FL280 (WB) and FL270 (EB) to harmonize the ATM Contingency Plan of India, Maldives and Sri Lanka	Maldives	31st October 2015	
5/4	Consider the Letter of Agreement template for the ATM Contingency Plan Level 2.	All BOBASIO States	31st October 2015	
5/5	Collect and provide the required data to BOBASMA	All Concerned States and FIRs	Ongoing	
5/6	Establish a procedure for supervisors or controllers on duty of transferring and accepting ATS units to discuss and investigate, in a timely manner, the occurrences relating to the breakdown in coordination, and then report the LHD to the corresponding RMAs	BOBASIO States	31st December 2015	
5/7	Consider to share ADS-B data with the MAAR for height keeping performance monitoring	Willing BOBASIO States	Ongoing	
5/8	Establish POC for coordinating the preliminary activities for the feasibility and efficacy of BOBASIO Contingency Team.	India/IATA	31st December 2015	
5/9	Review the draft Letter of Agreement for the coordination/co-operation on operational matters of SAR services with India	All Concerned States	31st December 2015	
5/10	BOBASMA to present a working paper conveying a decision of BOBASIO 5 to RASMAG for providing RMA services to the	BOBASMA	RASMAG/21	

	member States of BOBASMA in addition to the EMA services.			
5/11	MAAR to constitute a mechanism for timely coordination of LHD occurrences between concerned ATS units.	MAAR	31st October 2015	
5/12	Establish a small working group consisting of BOBASMA, AAI, MAAR, and States directly involved with the identified hot spots to analyze the occurrences and propose remedial actions to BOBASIO	India	31st October 2015	

— END —