



INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
TWENTENTH MEETING (APIRG/19)
(Yamoussoukro, Cote d'Ivoire, 30 November - 2 December 2015)

Agenda Item 2.2: Air Traffic Management and Search and Rescue (ATM/SAR)

AIR TRAFFIC MANAGEMENT AND SEARCH AND RESCUE (ATM/SAR)

(Presented by Secretariat)

SUMMARY
<p>This working paper presents the outcome of the Fourteenth Meeting of the Air Traffic Management/Aeronautical Information Management/Search and Rescue (ATM/AIM/SAR SG/14) for endorsement by the APIRG, and proposes action to be taken by the meeting on the draft Conclusions and Decisions, including other regional initiatives. In addition, other issues such as Reduced Vertical Separation Minimum (RVSM), Performance-based navigation (PBN), e-air Navigation Plan (eANP) as well as project identification and development are addressed comprehensively in separate working papers under agenda items 2, 3 and 4 of this meeting.</p> <p>Action by the Meeting is in paragraph 3.</p>
<p>REFERENCE(S):</p> <ul style="list-style-type: none">- APIRG Procedural Handbook- APIRG/19 Report- APIRG/E0 Report- ATM/AIM/SAR SG/14 Report
<p>Related ICAO Strategic Objective(s): A and B</p>

1. INTRODUCTION

1.1 The Fourteenth Meeting of the Air Traffic Management/Aeronautical Information Management/Search and Rescue (ATM/AIM/SAR SG/14) was held at the ICAO WACAF Regional Office in Dakar, Senegal from 11 to 14 May 2015. The meeting, inter alia, addressed issues related to continuing planning and implementation detailed in its terms of reference, matters arising from the Extra-Ordinary Meeting of APIRG (APIRG/EO) Lusaka, Zambia, 10 to 11 July 2014, and issues brought to its attention from the activities of the Regional Offices.

1.2 The meeting, which was attended by 57 participants from seventeen States and six organisations, agreed on 11 Draft Conclusions and Decisions, 10 of which are being presented to APIRG/20 for consideration. One of the Draft Conclusions has since been overtaken by events.

1.3 In its deliberations the ATM/AIM/SAR Sub-Group was cognizant of the impending change to the structure and working methods of the Group based on outcome of the APIRG/EO Meeting, and took necessary action to facilitate the change.

2. DISCUSSION

2.1 The following issues were given particular attention by ATM/AIM/SAR Sub-Group:

Status of implementation of the Sub-group work programme pertaining to ATM and SAR

2.2 The Sub-Group reviewed progress and achievements from its activities and in particular progress made with respect to the APIRG Conclusions and Decisions as consolidated by the Nineteenth Meeting of APIRG in October 2013. Furthermore, the meeting reviewed the status of implementation in respect of the following:

- a) Performance based navigation (PBN)
- b) Air traffic services (ATS) routes identified under the tasks for review of the AFI ATS route network
- c) Safety Management
- d) Reporting and analysis of ATS incidents
- e) Safety in the implementation of RVSM and specific issues of AFI Tactical Action Group (TAG)
- f) Air traffic control (ATC) and regional alignment of Class A airspace
- g) Contingency plans required under Chapter 2 of Annex 11 to the Chicago Convention
- h) Strategic Lateral Offset Procedures
- i) Plan of division between the lower and upper airspace
- j) Application of the 10 minutes longitudinal separation
- k) Civil/Military Cooperation and Coordination
- l) Flexible Use of Airspace
- m) Resolution of missing flight plans
- n) ATS competency study
- o) AFI Secondary Surveillance Radar (SSR) code allocation and assignment plan and methodology

Linkage of Remaining Tasks of the Sub-Group with Aviation System Block Upgrades Modules (B0) and Regional Performance Objectives

2.3 The ATM/AIM/SAR Sub-Group reviewed the ASBUs and Regional Performance Objective adopted by APIRG at its Nineteenth meeting in 2013, as well as tasks identified by the Sub-Group through its various subsidiary bodies, and acknowledged the requirement for the linking of tasks with the ASBUs Block 0 Modules in order to ensure coordinated implementation.

2.4 The Sub-Group also discussed linking of the tasks with Block 1 Modules, noting that Block 1 was only two years away and preparedness was necessary. It was however, agreed that while some States were fairly advanced in implementation and would be in a position to commence with Block 1 by 2018, most States still had much to do with Block 0. In this respect, focus of the Sub-Group should continue to be on Block 0, while preparing to transition to Block 1. The linking of Remaining Tasks of the Sub-Group with Aviation System Block Upgrades Modules (B0) and Regional Performance Objectives is at **Appendix 6A** to this working paper.

Review of the new Air Navigation Plan structure and the development of DRAFT material for endorsement by APIRG

2.5 The Sub-group reviewed the new Air Navigation Plan structure and developed relevant draft material for endorsement by the APIRG to be discussed under **Agenda item 3** of this meeting.

Identification and Development of Projects Based on ASBU and Regional Performance Objectives – Projects to be carried out under the AAO/SG

2.6 The Sub-Group reviewed the work implicated in the ASBU Block 0 Modules and Regional Performance Objectives adopted by APIRG at its Nineteenth meeting in 2013, as well as its remaining tasks, and agreed on the list of Projects related to the mandate of the AAO/SG and IIM/SG to be discussed under Agenda 4 of this meeting.

AFI Key Performance Indicators, Targets and Monitoring

2.7 The Sub-Group discussed a proposal Key Performance Indicators and targets for the AFI Region. It was noted that quantitative status of implementation in the ATM could not be clearly established due to lack of information from States and concerned organizations. Consequently, information was not available for updating the ICAO global and regional dashboards for purposes of performance monitoring. Notwithstanding, the Sub-Group agreed that material developed by the Secretariat may, after obtaining comments from the Sub-Group meeting participants, be presented to APIRG. As such the Sub-Group formulated the following Decision:

DRAFT DECISION 20/XX: AFI KEY PERFORMANCE INDICATORS, TARGETS AND MONITORING

That, the key performance targets at Appendix 6B to this working paper are presented to APIRG for noting. The Secretariat should continue to develop appropriate targets for air navigation services Key Performance Indicators for adoption by APIRG as statistical information becomes available.

Outcome of TAG/6 and TAG/7 Meetings and follow up on issues emanating from the TAG

2.8 The Sub-Group noted that the number of Unsatisfactory Condition Reports (UCR) remained high. Shortcomings were also noted with regard to staffing in air traffic control (ATC), in particular training and proficiency. In addition, it was noted that deficiencies in communication facilities continued to contribute significantly to the number of UCRs. The number of aircraft proximity (AIRPROX) incidents remained a concern; 38 of the 88 UCRs recorded in 2014, which were reviewed by TAG/7 in March 2015 were AIRPROXs.

2.9 Pursuant to a request by the TAG, the WACAF Regional Office carried out a Joint CNS/ATM Assistance Mission on the Provision of Air Navigation Services, to Nigeria (Abuja/Kano/Lagos) from 26 November to 4 December 2014). Objective of the Mission was to assist Nigeria address identified deficiencies in the Air Navigation fields within the Kano FIR and in its adjacent FIRs due to increase in Unsatisfactory Condition Reports (UCRs) which were identified by the AFI Tactical Action Group (TAG) and the ATS Incident Analysis Group (AIAG).

2.10 The preliminary deficiencies which the TAG and AIAG identified include AIRPROXs resulting from recurrent incidents of degraded or failures in air/ground ground/ground communication within Kano ACC resulting in various UCRs including uncoordinated flights and lack of situational awareness between Kano ACC and its neighbouring ACCs of Niamey, N'Djamena and Douala.

2.11 The mission formulated 28 recommendations aimed at addressing outstanding UCRs identified by the TAG and AIAG. In addition a Plan of Action comprising 47 activities from the recommendations was drawn for the Short, Medium and Long Term implementation phases. The ICAO Regional Director, Dakar Office presented the Plan of Action to the Hon. Minister of Aviation in Nigerian, in Abuja and obtained official commitment to take the necessary actions to address causes of the UCRs.

2.12 The ESAF Regional Office carried out a mission to Angola with the objective of assisting the regulator and ATS provider to address ATS related safety issues, in particular traffic coordination failures between Gaborone and Luanda FIRs, and around position ILDIR (18°S, 10°E). The mission and the Angola ATS authorities agreed on specific solutions which the Secretariat coordinated with concerned FIRs (Gaborone, Johannesburg Oceanic, Luanda and Windhoek) and are being implemented. The mission also discussed safety issues in the terminal airspace and proposed solutions.

Airspace modification in the Accra FIR

2.13 The Sub-Group noted safety concerns raised by the TAG/7 meeting with regard to the airspace sectorization within Accra FIR which related to the management of airspace over Benin and Togo, and urged concerned parties to consider alternative solutions to address the airspace management issues. Subsequent to the Sub-Group meeting the ICAO WACAF Regional Office convened a meeting of concerned parties at its offices in Dakar, Senegal from 13 to 15 July 2015 relating the sectorization of the Accra FIR. Outcome of the meeting included addressing the safety aspects that are related to the concern raised at the ATM/AIM/SAR SG/14 meeting. Amongst others, safety assessments concerning the airspace modification were shared and additional safety assessment involving all concerned service providers, Ghana CAA, Nigerian Airspace Management Agency (NAMA) and ASECNA, to which airspaces users would be invited were agreed.

2.14 While the central issues of concern were addressed by the abovementioned July 2015 meeting in Dakar, the Group may wish to urge the States responsible for the provision of ATS in the Accra FIR to continue monitoring the post sectorization safety issues in the Accra FIR, share information through established regional mechanisms such as the TAG, and address the issues.

Air Traffic Services Competencies

2.15 The Sub-Group noted the first meeting of the Air Traffic Services Competencies Study Group (ATSCSG) had been held in Nairobi, Kenya, from 22 to 23 July 2014 and agreed on actions to carry out its work including circulation of surveys to collect information.

Development and promulgation of contingency plans Contingency Plans (CPs)

2.16 The meeting may wish to note that the Secretariat convened a *Workshop on Flight Information Region (FIR) and Regional Contingency Plans Development and Implementation Coordination for Southern AFI FIRs and States therein* (Gaborone, 25 to 27 August 2015). Convening of the Workshop was informed, among others, by results from the ICAO Universal Safety Oversight Audit Programme (USOAP), which indicated a significant shortcoming with respect to Standard 2.30 of Annex 11 to the Chicago Convention, relating to contingency plans (CP). The audit protocol question (PQ) relating to this Standard was satisfactory in less than 24% of AFI States.

2.17 In view of the above, the Workshop was aimed at providing information and guidance, to facilitate coordination of contingency routes (CRs) which is a major hurdle in the development of CPs, as well as to commence development of a regional contingency plan. Of the 12 States invited, 10 participated in the workshop and were able to successfully develop and coordinate their CRs. It is expected that all the 10 States promulgate their CPs by December 2015. A similar event targeting States in the Eastern AFI FIRs is scheduled to be held at the ICAO ESAF Regional Office in Nairobi, Kenya, from 15 to 18 December 2015.

2.18 Due to the importance of this workshop, FIRs that were invited to but not able to participate in the event in Gaborone in August 2015 have been invited again to participate in the Nairobi workshop. It may be noted in this respect that their further inability to participate would have the effect of continuing to disable their adjacent FIRs from completing their CRs, and would in addition further delay development of the regional CP. Accordingly, the Group may wish to urge States invited to the workshop and in Nairobi, as well as to similar implementation workshops that are characterised by inter-State/inter-FIR coordination to ensure participation.

ATS Separation Standards

2.19 It was noted that since the 10 minute longitudinal separation was agreed for regional implementation in 2003, there had been operational requirements, the introduction PBN, increased coverage of communication and surveillance technologies (SSR, Multilateration, CPDLC/ADS-C, ADS-B, etc.) and other developments, which justify reduction of separation minima in specific FIRs in order to improve airspace capacity and efficiency. Accordingly, a need was identified for an APIRG project for the harmonized review and implementation of separation minima.

ATS incidents reporting and investigation

2.20 The Sub-Group noted that the reporting of incidents and deficiencies in the region remained low. Examples were provided of some areas where the World Food Programme (WFP) had reported several incidents including AIRPROXs a year, but where many airlines operating in the same area had not reported any incidents. It was noted that the TAG had agreed to contribute towards reporting by making the reporting ATS incident report form more user friendly for flight crews and making it available in an electronic format. Information was provided that IFALPA was working with operators to improve the reporting of incidents and deficiencies.

2.21 The Sub-Group also noted that the quality of investigation reports, recommendations and States' action thereon reflected lack of training. There was also apparent reluctance to share reports due to concerns on the impact such reports might have on the organization or State concerned. Slow progress in establishing the "Just Culture" continued to be a critical factor negatively affecting the reporting of incidents. It was noted that while the matter was well provide for in *safety management (SSP/SMS)*, many States still had a long way to the establishment and functioning of safety management mechanisms as provided for in Annex 19 to the Chicago Convention. In addition, due to other more urgent challenges, the AFI Plan had established over 60% effective implementation of the safety oversight critical elements (CEs), as a status point from which more focus could be directed at the implementation of safety management (SSP). Accordingly, efforts need to continue to be directed at specific challenges such as the low reporting of ATS incidents and incident investigation training.

2.22 The Sub-Group noted with appreciation that the US Federal Aviation Administration (FAA) had offered (during the AFI TAG/7 meeting, March 2015) to assist the region with training of officials involved in the investigation of ATS incidents in order to strengthen the efforts aimed at learning more from the incidents and finding solutions to reduce the incidents. The Secretariat would be liaising with FAA on the offer.

ATS route network improvement

2.23 The Sub-Group noted that the PRND Working Group had completed the primary task of comprehensively improving the route network. In this respect, APIRG may wish to note that, using PBN as an enabler, the following have been achieved:

- a) The AFI ATS route lengths have been reduced by about 4797 nautical miles. In order to provide early benefits to users, States/ANSPs made the routes available by using domestic ATS designators, pending formal approval of the routes by the ICAO President of Council.
- b) With the current aircraft fleets using the network, the abovementioned track mile reductions represent a reduction of an estimated 144 million metric tons of CO2 emissions.
- c) Significant flight planning flexibility has been provided for long haul flights to make lateral track changes as necessitated by weather (mostly winds), adding to more operational benefits.
- d) Fifty eight (58) iFLEX tracks have been created to provide access to the Atlantic Ocean Random Routing Area, also providing for significant operational benefits.
- e) In certain cases, the PRND has created routes to improve safety. A typical example being the unidirectional routes between Gaborone and Luanda replacing UG853 in this sector.

2.24 Remaining tasks in the ATS route development to be considered in the new APIRG working methodology would be mainly coordination of implementation, maintenance of the route system, and facilitating more flexible navigation concepts in the ASBU B0-FRTO.

2.25 Concern was raised on the safety issues that may have arisen in the improvement of the route network. In some instances the route network improvements could have resulted in significant pressure on air traffic controllers. The Sub-Group agreed that while safety assessments should be carried out accordingly for every airspace/route change as required in various ICAO provisions (Annex 11, Annex 19, Doc 4444, etc.), it was also important for users to make their route requests through the regional route development mechanisms and allow adequate time for requirements such as safety assessments to be carried out, taking into consideration the need for inter-FIR coordination to also be fulfilled.

Missing Flight Plans (FPL)

2.26 The Sub-Group agreed that missing flight plans still required to be effectively resolved, and discussed the matter in detail. The safety aspect related to flight crew and controllers was highlighted. APIRG Conclusion 19/23: *Resolution of the Issue of Missing Flight Plans*, and other recommendations were recalled and it was noted that even though some ANSPs reported encouraging improvements from efforts taken, many of the recommendations were not being effectively implemented by States and ANSPs in the region. In this respect, it was noted that most of the challenges in missing flight plans had to do with operational aspects (e.g. personnel training) as opposed to shortcomings in equipment or infrastructure. The Sub-Group agreed that more effort should be made through a mechanism in the new APIRG structure as well as the Secretariat, to consolidate all conclusions and recommendations formulated over time by various forums, for all applicable stakeholders to implement.

Implementation of ADS-C/CPDLC

2.27 The ATM/AIM/SAR SG/14 noted 13 ANSPs in the region had implemented ADS-C/CPDLC systems and nine were in advanced stages. The Sub-Group also recognized the need for monitoring the performance of these systems to ensure safety, and in this regard recalled APIRG Conclusion 19/30: *Establishment of a Data Link Central Monitoring and Reporting Agency (DL/CMRA)*. The meeting acknowledged user concern on the possible cost implications of the establishing the DL/CMRA, and referred the matter with user proposals to the APIRG CNS Sub-Group.

2.28 The Sub-Group noted that the *Global Operational Data Link Document (GOLD)* had been updated and agreed on the application of the updates, pending completing of a manual under development by ICAO to replace the GOLD. South Africa, which has been the custodian of the GOLD in the AFI region, was requested to appoint/nominate a specific focal point replace the previous focal point

Search and Rescue (SAR)

2.29 The Sub-Group noted that minimal progress had been achieved in the area of SAR. Among others, the establishing of SAR agreements continued to be a challenge. The meeting noted that the format of the agreement could be part of the challenge in respect of the levels at which the agreements were to be signed. While acknowledging the need for high level agreements, the meeting recognized the potential benefit of establishing agreements (for some aspects) at lower level in order to facilitate operational cooperation, in particular coordination of SAR efforts where political issues are not necessarily involved. States were urged to provide updated information on the status of implementation in the area of SAR, as requested. Accordingly, the following Draft Conclusion was formulated.

DRAFT CONCLUSION 20/XX: REPORTING OF IMPLEMENTATION PROGRESS

That, in order to facilitate the clear identification of challenges and to facilitate prioritization of implementation support, States are urged to provide status of implementation in various areas as requested by the Secretariat, and in particular, to respond to surveys to that effect.

(Note: Although this Draft Conclusion was formulated during discussion of SAR matters, it was intended to apply to all areas of air navigation)

Air Navigation Deficiencies

2.30 The Sub-Group noted that the reporting of ATS incidents continued to be a challenge. The Group will recall that, at its 17 Meeting it had agreed under Conclusion 17/100 - *Development of the AFI web-based Air Navigation Deficiency Database*, to expedite development of the AFI Air Navigation Deficiencies Data Base (AANDD). However, at its 18th Meeting in Kampala, Uganda, 27-30 March 2012, the Group was informed on the ICAO Headquarters initiative that had developed a prototype system for the management of air navigation deficiencies at the global level, which had been incorporated in the integrated Safety Trend Analysis and Reporting System (iSTARS).

2.31 The database on the iSTARS platform was intended to centralize collection, and management (including analyses) of data and information on air navigation deficiencies. Accordingly, the Group adopted Conclusion 18/61 - *Single Centralized Air Navigation Deficiencies Database, inter alia*, calling on States and international organizations to test the system and provide feedback to the ESAF and WACAF Regional Offices.

2.32 The Group may wish to note that, not only is the reporting of deficiencies continuing to be low, but functionality of the iSTARS-based system has not been successful. On the other hand, regional systems (European Air Navigation Planning Group (EANPG), CAR/SAM Planning and Implementation Regional Group (GREPECAS) and Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG)), have had better experiences. In this regard, the Group may agree on the resumption of work to bring the AANDD into operation, with the objective of having a system with functionalities that address specific challenges being experienced in the AFI Region, and in this regards to agree on the following Conclusion:

CONCLUSION 20/XX: AFI AIR NAVIGATION DEFICIENCIES DATA BASE (AANDD)

That, in order to facilitate achievement of the objectives of reporting and resolution of deficiencies in the AFI Region, the Secretariat is requested to take necessary action to bring the AANDD into operation

Other implementation activities

2.33 *AFI Seminar on Civil/Military Coordination and Cooperation.* An AFI Seminar on Civil/Military Coordination and Cooperation was convened at the Ecole Africaine de la Météorologie et de l'Aviation Civile (EAMAC) in Niamey, Niger from 26 to 28 May 2015. The Seminar was held pursuant to a recommendation of the 14th Meeting of the AFI Plan, as a continuation of the worldwide civil/military cooperation campaign recommended by the Global Air Traffic Management Forum on Civil/Military Cooperation (Montreal, October 2009).

2.34 The seminar, attended by 105 participants from 25 States and one organization, was opened by Mr. Raymond Benjamin, then ICAO Secretary General. In his opening address Mr Benjamin, *inter alia*, reiterated the importance of close civil/military cooperation and coordination on airspace optimization and effective search and rescue, highlighting global efforts to address such concerns following the MH370 and MH17 incidents in 2014.

2.35 *Airspace safety in South Sudan.* The Group is invited to note that following ICAO ESAF missions to South Sudan, as well as concerns raised by users on the low level of safety in the provision of ATS in South Sudan, the ESAF Regional Office supported by ICAO Headquarters has engaged the authorities in South Sudan with objective of resolving the many institutional and operational challenges being experienced by the State.

2.36 The Group will note that as the airspace over South Sudan is within the Khartoum FIR, other than in terminal areas, ATS in the airspace, as well such supporting services as communication facilities and meteorological information are provided by Sudan. In this regard, one of the multipronged efforts by ICAO to assist South Sudan to meet its obligations under the Chicago Convention is facilitating coordination with between the two States. The meeting may wish to note however, that safety concerns in South Sudan airspace remain critical and progress to resolve them slow. Accordingly, the meeting may wish to agree on the following Conclusion:

CONCLUSION 20/XX: RESOLUTION OF SAFETY ISSUES IN THE AIRSPACE OVER SOUTH SUDAN

That,

- a) the authorities in South Sudan are urged to take necessary measures as matter of urgency, to effectively address safety issues identified by users and ICAO;**
- b) ICAO is requested to continue its engagement the authorities in South Sudan at high level in order to make the assistance being provided more effective; and**
- c) South Sudan’s partner States and organizations supporting the State in the fields of civil aviation be urged to work more closely with ICAO in order to coordinate their collective efforts to enhance their effectiveness.**

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- (a) Note the information provided in this working paper; and
- (b) Endorse the above Draft Conclusions and Draft Decisions of the ATM/AIM/SAR SG/14.
