



International Civil Aviation Organization

Tenth Meeting of the APIRG Air Traffic Services, Aeronautical Information Services and Search and Rescue Sub-Group

[Dakar, Senegal 12 – 15 May 2009]

Agenda Item 7: Review of implementation of the Area Control Service

Implementation of the Area Control Service in the AFI Region

(Presented by the International Air Transport Association)

Summary

This working paper reviews the status of implementation of area control service and related requirements in the Region.

References:

1. AFI/7 Report
2. SP AFI 2008 Report
3. APIRG Reports

1. Introduction

1.1. The AFI Air Navigation Plan (ANP) Statement of the Basic Operational Requirements and Planning Criteria in AFI Region requires that area control service be provided for all IFR flights along all ATS routes to be used by international aircraft operations, except where the type and density of traffic do not justify the provision of such service.

1.2. One of the high priority tasks assigned to the ATS/AIS/SAR Sub-group is to review the requirements and monitor the programme of implementation of area control service in the AFI Region, in respect of AFI/7, Recommendation 5/21, which reads as follows:

Recommendation 5/21 – Provision of area control service

a) Area control service should be provided on a 24-hour basis for flights along all ATS routes shown in Table ATS 1. Where it may not be possible to immediately meet this requirement in full, the following guidelines should be applied:

- 1) All ATS route segments within 150 NM of all international airports up to FL 245 should be designated airspaces Classes A to E as appropriate. A progressive stepped lower limit of controlled airspaces may be established at a maximum rate of 200 feet per nautical mile;*
- 2) All ATS routes used by international air transport operations should be designated airspace Class A between FL 245 and FL 460; and*
- 3) The APIRG should identify those routes or route segments where, based upon traffic densities or other operational assessment factors, ATC should be implemented.*

2. Discussion

Assessment by the Sixteenth Meeting of APIRG (APIRG/16, Rubavu, November 2007)

2.1. After noting progress made in the implementation of area control service requirements in the Region, APIRG/16 Meeting (November 2007) requested the States that had not yet done so, to implement air traffic control service no later than 3 July 2008 (Conclusion 16/45 refers).

Assessment by the ICAO Special AFI Regional Air Navigation 2008 (S/RAN AFI/08, Durban, November 2008)

2.2. The Special RAN AFI/08 (November 2008) developed the ATM performance objectives - Elimination of Identified ATM Deficiencies -, of which the deficiencies affecting the provision of provision of ATC service, with the following tasks and time frames:

- 2008 – 2009: Implementation and provision of ATC service along ATS routes UA618, UB525, UB607, UL612, UM220, UM365, UR400 (Khartoum FIR) and UR780 (Mogadishu FIR), in the Table ATS 1 – Basic ANP, Doc 7474 and the provision of ATC service at terminal area of Mogadishu International Airport.
- 2008 – 2009: Elimination and/or removal of special use airspaces (prohibited restricted and danger areas).
- 2008 – 2009: State develop an implementation action plan to eliminate/or reduce these deficiencies.

Assessment of VHF coverage extension

Implementation of VHF radio coverage

2.3. The implementation of controlled airspaces is closely linked to the availability of reliable pilot/controller communications. Therefore, emphasis has been placed on the need to extend VHF radio coverage throughout the AFI Region. AFI/7 Recommendation 5/12 provides that:

- a) VHF radio coverage should be provided to the extent practicable along all ATS routes shown in Table ATS-1. Remote VHF stations should be used, as appropriate, to meet this objective;
- b) As a minimum, VHF radio coverage should be provided:
 - 1) Along all ATS routes serving all international airports up to a minimum distance of 150 NM from the airport(s) concerned and up to FL 245;
 - 2) Between FL 245 and FL 460 along all ATS routes used by international air transport operations; and
- c) Where complete VHF radio coverage cannot be provided within an FIR, bilateral agreements for use of available VHF stations located in adjacent States should be concluded.

ATC requirements for air-ground communications

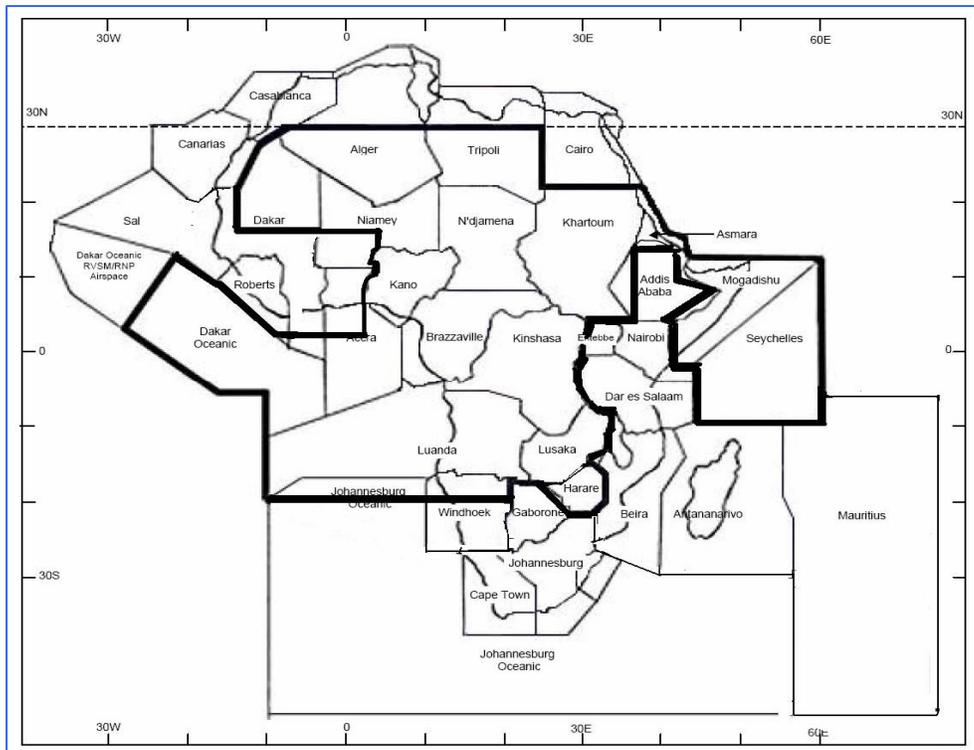
2.4. AFI ANP specifies air-ground communications requirements for area control service as follows:

Air-ground communications	Symbol	Service		Remarks
		Range	Height	
1	2	3	4	5
All current operational levels	ACC-U	The whole control area or flight information region or sector within which a channel is used for area control control service plus 50 NM*.	FL450	*May be achieved by communications from more than one facility
Traffic below FL250	ACC-L	The whole control area or flight information region or sector within which a channel is used for area control control service plus 50 NM*.	FL250	
Traffic under radar surveillance**	ACC/SR	The whole control area or flight information region or sector within which a channel is used for area control control service plus 50 NM; or area of radar coverage, whichever is smaller.		** Assigned when operationally required.

IATA Regional Survey on VHF/HF radio coverage, 3-23 February 2009

2.5. IATA conducted a regional survey on VHF and HF radio coverage in the AFI Region, from 3 to 23 February 2009, with the participation of airline pilots and air navigation service providers (ANSPs). The outcome of VHF/HF survey is summarised in Figure below.

Outcome of IATA Regional VHF/HF Survey in AFI Region



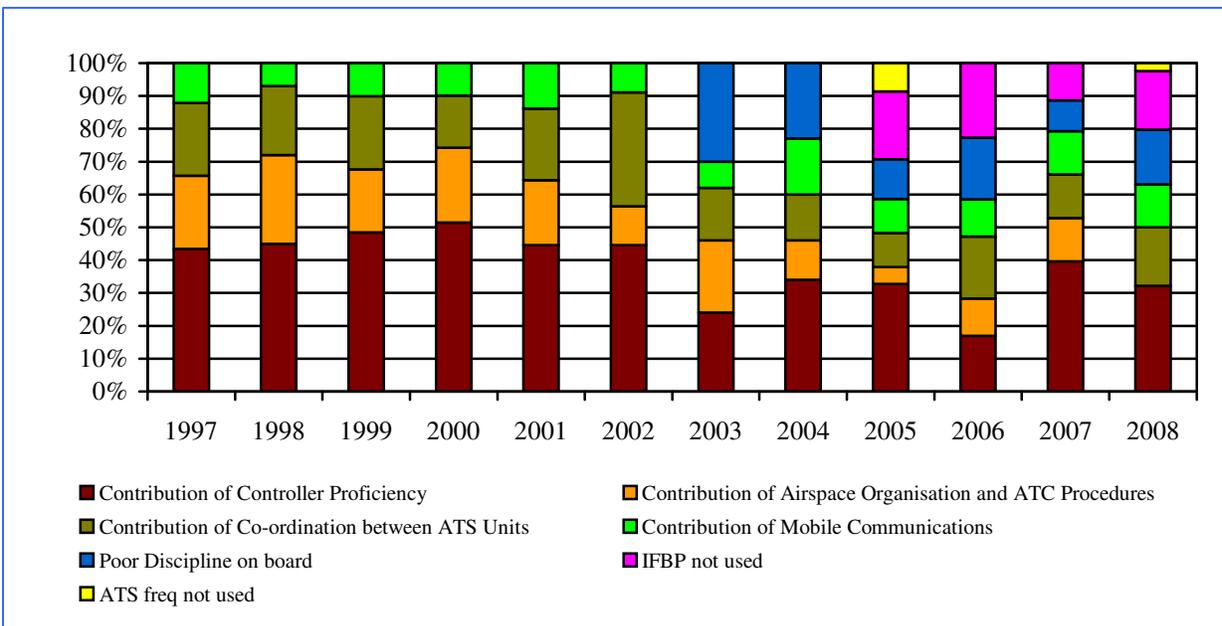
2.6. It shows that a majority of flight information regions (FIRs) between 30 N and 30 S do not meet ATC requirements for air-ground communications.

2.7. A comprehensive report on IATA Regional VHF/HF Survey will be made available to all AFI States and ANSPs through ICAO Regional Offices.

Assessment by the Sixth Meeting of the AFI ATS Incident Analysis Group (AIAG/6, Johannesburg, 30-31 March 2009)

2.8. The AIAG mechanism provides a forum to various aviation organisations and allows them to collectively review reported incidents in the region and formulate data-driven recommendations to prevent similar incidents in the AFI Region. Forty-four (44) participants, representing 27 States, 4 International Organizations and 9 Airline Operators, attended the 6th meeting of AIAG. The Group analyzed 120 ATS incidents recorded in 2008 and identified, among the contributing factors were human factors: ATC proficiency, coordination between ATS units, cockpit procedures, and poor quality of air-ground communications.

Summary of contributing factors



2.9. AIAG/6 also confirmed the relevance of ACAS-II and IATA In-Flight Broadcast Procedure (IFBP) in resolving air traffic conflicts in the AI Region. A comprehensive report on AIAG/6 will be made available to all AFI States and ANSPs through ICAO Regional Offices.

Assessment of Airspace Organization

2.10. While some regions (e.g. EUR) have clear plans to achieve a seamless airspace to be efficiently organised and managed for the benefit of all airspace users, civil or military, there is a tendency within some FIRs to establish very large TMAs with unlimited upper limits or flight information sectors based on territorial considerations only, without paying due regard to the following criteria:

- a) the need for adequate air-ground communications coverage from the location of the flight information centre/area control centre (FIC/ACC);
- b) the need to minimize frequency and secondary surveillance radar (SSR) code changes, position reporting by aircraft, and coordination between FICs/ACCs; and

c) the need to minimize problems relating to climbing and descending traffic at major aerodromes located in the vicinity of FIR boundaries.

2.11. Where non-operationally justified, such a tendency should be discouraged on the ground of the ICAO Global ATM Operational Concept principles.

Assessment of Airspace Class A Implementation

2.12. In accordance with AFI/7, Recommendation 5/21 a), Area control service should be provided on a 24-hour basis for flights along all ATS routes used by international air transport operations, and these ATS routes should be designated airspace Class A between FL 245 and FL 460. However, the following limitations are noted:

Provision of Air Traffic Advisory service (Airspace Class F)

2.13. Air traffic advisory service (Airspace Class F) is not recommended as part of the AFI Air Navigation Plan. However, where air traffic advisory service is implemented on international ATS routes, it should be provided on an interim basis only, when facilities or personnel are not yet fully adequate for permitting the immediate introduction of ATC service. Such service should be converted to ATC service at the earliest time possible. Irrespective of these provisions, a number of ATS routes or airspace portions have been for many years, and continue to be, designated as Class F airspace.

Downgrading of Airspace Classification

2.14. For various reasons, including staff shortage, communications problems, etc., some AFI States from time to time publish temporary downgrading of airspace classification where appropriate controlled airspace classification (e.g. A, B, C, D) has already been implemented in accordance with AFI/7 Recommendation 5/21. Concerned States should remove at the earliest possible time such restrictions affecting or likely to affect the level of services rendered in their airspace.

3. Conclusion

3.1. In view of the above, the Sub-group is invited to request that:

- 1) AFI States concerned:
 - a) Implement the 2008-2009 ATM Performance Objectives – Elimination of ATM deficiencies including but not limited to:
 - i) . Implementation and provision of ATC service along ATS routes UA618, UB525, UB607, UL612, UM220, UM365, UR400 (Khartoum FIR) and UR780 (Mogadishu FIR), in the Table ATS 1 – Basic ANP, Doc 7474 and the provision of ATC service at terminal area of Mogadishu International Airport.
 - ii) Elimination and/or removal of special use airspaces (prohibited restricted and danger areas).
 - iii) Development of implementation action plans to eliminate or reduce these deficiencies.
 - b) Diligently address issues related to human factors, ATC proficiency, communications improvements, upgrading of airspace classification.
- 2) The Tactical Action Group established by ICAO SP RAN AFI/08 address the deficiencies affecting the implementation of area control service.

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