



ASSEMBLY — 35TH SESSION

TECHNICAL COMMISSION

Agenda Item 23: Consolidated statement of continuing ICAO policies and practices related to communications, navigation, and surveillance/air traffic management (CNS/ATM) systems

JOINT AEFMP PLAN EXPERIENCE

(Presented by France on behalf of the Joint AEFMP Plan members²)

SUMMARY

The Joint AEFMP Plan created by Algeria, Spain, France, Morocco and Portugal seeks to harmonize the five Air Navigation Systems of their member States.

The paper briefly presents the history of the Plan and the results obtained over the course of its existence as well as the previous EFP/AEFMP Plans.

REFERENCES

Recommendations 1/13 and 4/1 of the AN-Conf/11 Report.

1. INTRODUCTION

1.1 Regional coordination between neighbouring countries is a crucial element to ensure the smooth implementation of new CNS/ATM systems and manage the continuing development of air navigation systems along the boundaries between ICAO regions.

1.2 Towards that end, the Eleventh Air Navigation Conference issued recommendation 1/13, encouraging the ATM community to study the possibility of developing a mechanism for implementing the interregional interface applications. Recommendation 4/1 underlines the need for ICAO to develop a mechanism for interregional coordination, to be involved in regional activities, and to urge States to establish CNS/ATM coordination committees.

¹ English, French and Spanish versions provided by France.

² Algeria, Spain, France, Morocco, Portugal

1.3 The Joint AEFMP Plan is an excellent example of successful sub-regional and inter-regional coordination among neighbouring countries, working towards the objective of harmonizing various air navigation systems to improve safety and capacity.

2. THE JOINT AEFMP PLAN

2.1 In 1990, the air navigation organisations of Spain, France and Portugal approved the “EFP Plan”. This plan was designed to harmonize the three air navigation systems by sharing data and resources and by taking into account the existing EUROCONTROL programs which aim to harmonize the European Air Navigation Systems.

2.2 In 1996, after six years of collaboration between Spain, France and Portugal, the decision to expand the “EFP Plan” to include Algeria and Morocco was made, resulting in the creation of the “AEFMP Plan”.

2.3 Initially, both plans functioned simultaneously and contributed to the progress and harmonization of the ATM systems. They brought about improved coordination between the airspaces of the five countries. As a result, EUROCONTROL has recognized these plans several times as Regional Models of Implementation.

2.4 In 2001, the Steering Committees of the EFP and AEFMP Plans approved the unification of both plans as the “Joint AEFMP Plan”. The principal reason for this was that the two plans were achieving the EFP plan objectives and were improving the Algeria and Morocco systems. As with the former plans, EUROCONTROL participated as an observer.

2.5 The main objectives of the Joint AEFMP Plan are to:

- a) Harmonize air traffic services provision between the five States, within the framework of EATMP (European Air Traffic Management Program), and harmonize the interfaces between the five States and other regions, while taking into account the needs of increasing traffic, improving flow, and maintaining the necessary levels of safety and efficiency.
- b) Optimise the accessibility and use of the surveillance function by upgrading installations, opening new facilities or sharing Secondary Surveillance Radar (SSR) data.
- c) Optimise the accessibility and use of the radio coverage by upgrading installations, opening new facilities or sharing radio stations for the benefit of neighbouring ACCs.
- d) Improve the voice communications between adjacent ATC units by implementing functions such as networking or standardised signalling.
- e) Make air traffic management (ATM) communications more efficient and expand the exchange of data between computers by applying common specifications and installing new equipment.

- f) Harmonize the development and implementation of the various technical components of air traffic control (ATC) systems by adopting common standards and specifications.
- g) Improve air traffic management (ATM) by implementing new routes and airspace structures, common procedures and adequate systems support.

2.6 In accordance with the philosophy of the EUROCONTROL ECIP (European Convergence and Implementation Plan), the plan has created the Joint AEFMP Plan Regional CIP (RCIP). This document describes the objectives of the plan, and the actions to be accomplished, as well as their current status.

2.7 The Joint AEFMP Plan structure includes a Steering Committee, comprised of Air Navigation Directors (most States represented by their ANSPs) and in charge of giving general instructions and duty guidelines, a working group, which coordinates the actions, and, finally, operational and technical subgroups, composed of operational and technical staff and responsible for executing the actions. A standing task force, reporting to the technical subgroup, coordinates with the Telecoms to ensure the quality of international lines.

2.8 Currently, the Joint AEFMP Plan is fully active and most operational and technical coordination difficulties between the two western Mediterranean shores have been solved through this forum.

3. MAIN ACHIEVEMENTS OF THE JOINT AEFMP PLAN AND EFP/AEFMP PLANS

3.1 The Plan, as stated before, has been in practice either in its current form or in the former EFP/AEFMP Plans for 14 years. Initially, flights across the national boundaries between neighbouring countries were handed off 30 NM apart in most cases. Communications between ACCs were based mostly on point to point lines and collaboration for radio, or radar coverage improvement was practically nonexistent. Since then, thanks to the AEFMP Plan, the situation in the area has changed a great deal, as shown in the following points.

3.2 Increase in capacity of air traffic management.

3.2.1 At the beginning of the EFP plan (in the early 90's), radar separation between aircraft at the national boundaries of the AEFMP area was 30 NM. After more than a decade of coordination, sharing of radar data and improvement of communications, radar separation has been widely reduced to 10 NM between the three European countries, and 20 NM between Morocco and Europe. Silent transfer has also been implemented in different areas.

3.3 Radio communications.

3.3.1 Radio coverage for the different ACCs has been improved by sharing radio sites, allowing a country to install a frequency in another AEFMP country, thereby optimising resources and improving coverage. Currently five radio sites are shared to the benefit of neighbouring States, and two more are currently being implemented.

3.4 Voice communications between ACCs.

3.4.1 In 1991 all the communications in the AEFMP area were point-to-point based mainly on local battery links. Now ATS R2 lines are implemented between each pair of centres except with the Algiers ACC, which is currently undergoing implementation. Local battery lines have been removed in most cases and a plan is in progress to eliminate them completely in a short to medium timeframe.

3.4.2 Finally, coordination has been initiated in the framework of the Plan for the implementation of QSIG signalling.

3.5 Data link between ACCs.

3.5.1 In 1990, in the beginning stage of the EFP, there were no OLDI (OnLine Data Interchange) links between countries in the AEFMP area. Now, OLDI links are widely used between adjacent ACCs of Spain, France, and Portugal, and are currently being implemented between Casablanca and Algiers ACCs, and their adjacent centres in Spain, France, and Portugal.

3.6 Data networks.

3.6.1 The networks of Spain, France and Portugal are currently interconnected to each of the adjacent networks. This allows for a reduction in cost due to the elimination of point-to-point links and for an efficient transmission of data (radar data, flight plans, OLDI...). Morocco and Algeria are planning to establish a common network that would also be connected to the European networks.

3.6.2 The transition from X.25 to IP protocol for those networks is being coordinated through the plan, ensuring that the different timescales will neither result in a loss of reliability or capacity, nor in decreased safety.

3.6.3 A plan to establish a Time Division Multiplexing Data network for the whole area is under examination. It aims to significantly reduce point to point lines and increase capacity at the same time that cost would be reduced, all without compromising safety given that reliability is even higher than that of the current system. Voice communications multiplexing through TDM is also being studied.

3.6.4 Regarding the AFTN network, CIDIN communications have been established, and now the Plan is helping to manage a smooth transition to AMHS, taking into account different transition plans in the various countries.

3.7 Radar sharing.

3.7.1 Sharing of radar data between adjacent ACCs has improved the radar coverage significantly in the area at a low cost, allowing for a more reliable surveillance system while increasing capacity.

**4. THE JOINT AEFMP PLAN,
COORDINATION AND COLLABORATION**

4.1 In addition to the aforementioned technical and operational achievements, the Joint AEFMP Plan has proven to be an excellent example of coordination in sharing information and knowledge. Additionally, relations between the involved neighbouring countries have seen improvement as a result of these measures.

4.2 After 14 years of mutual work - from the Directors down to the operational and technical levels - one of the most important gains (even if not measurable) has been the interchange of information and knowledge, to the benefit of every member, and the excellent personal relationships established by managers, technicians and operational staff, allowing for a better understanding, a faster and more effective coordination, and direct communication at different levels for coordination of points of view or in cases of problems arising.

5. ACTION BY THE ASSEMBLY

5.1 The Assembly is invited to:

- a) take note of the information contained in this paper;
- b) recognize the important contribution that the Joint AEFMP Plan has made to the development of the Air Navigation Systems of its member countries;
- c) promote cooperation between neighbouring countries and regions in order to make feasible the development of a continuous worldwide air navigation system; and
- d) note the readiness of the Joint AEFMP Plan countries to share their findings with all States interested in the establishment of a sub-regional framework of cooperation for the benefit of the entire air navigation system.

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