International Civil Aviation Organization

SP AFI/08-WP/73
31/10/08

WORKING PAPER

SPECIAL AFRICA-INDIAN OCEAN (AFI) REGIONAL AIR NAVIGATION (RAN) MEETING

Durban, South Africa, 24 to 29 November 2008

Agenda Item 6: Development of a set of comprehensive work programmes in the air navigation field, aimed at improving efficiency of the air navigation system (Efficiency Committee)

SUPPORT OF THE FRENCH TO THE ESTABLISHMENT OF AN AFRICA ICAO FLIGHT PROCEDURE OFFICE

(Presented by France)

SUMMARY

As a part of the world-wide air safety plan, the French DGAC is favourable to the idea of a Flight Procedure Office covering the entire African continent, which will provide its know-how to African States (procedure design, procedure validation, training of procedure designers), and organize a link-up between procedure designers in several countries through discussion groups, training courses and the distribution of information for the purpose of generalizing good practices and facilitating exchanges.

Action by the meeting is in paragraph 3.

1. INTRODUCTION

1.1 WP/12 suggests the setting up of an ICAO office in Africa, for the design of flight procedures.

1.2 It is necessary to define an optimized organization for procedure design, to the extent that it meets a dual requirement for quality and efficiency. It should comply with the following objectives:

a) consolidate the workforce and know-how in the field of procedure design;

b) homogenise the quality processes in a sensitive field, directly connected to air traffic control, airspace organisation, environment and relations with users; and

c) rationalise operating costs (training, hardware and software deployment).

1.3 A regional office cannot, however, replace a national entity, which retains the responsibility for collecting the information necessary for establishing procedures (obstacle data, ATC constraints, etc.) and for local coordination actions with the airfields concerned (air traffic control, operators, etc.).

1.4 It should be emphasised that the collection of the necessary design data, which must be both reliable and of sufficiently good quality – and this is one of the major internal difficulties for a State –, will be a major challenge if the data is to be used by a regional office. It will be necessary to overcome confidentiality and availability problems, and this will generate a high cost in the best of cases.

2. FIELDS OF COOPERATION

2.1 French DGAC

2.1.1 French DGAC has a skill set that enables it to act as an advisor on the overall procedure design process (from data collection to implementation and follow-up), and/or to occasionally intervene in existing files or during development in order to make recommendations.

2.1.2 It has access to statutory texts on which the designs are based in terms of design criteria, procedure development methodology and data quality (aeronautical and terrain). All of this is compliant with the ICAO recommendations given in the recently published Quality Manual.

2.1.3 French DGAC plays an active part in ICAO's IFPP work, and its experts have carried out design work for foreign airports and States.

2.1.4 French DGAC can continue to share its experience concerning the organisation of procedure establishment: technical design, integration into the ATC system, safety analysis, consultations of the parties involved, in-flight monitoring, approval, implementation and follow-up.

2.1.5 ENAC (French Civil Aviation University) and SIA (Aeronautical Information Department of the French DGAC's Air Navigation Service Provider DSNA) will also be able to take part in monitoring the skills of the designers, or in the definition of the methods used to publish the procedures (associated maps).

2.2 ENAC

2.2.1 Through ENAC, DGAC has long-standing and recognised experience in the training of procedure designers, both in French and in English.

2.2.2 Ab-initio training modules are offered on an annual basis, and combine classroom studies, practical tutorials and case studies. This training is compliant with the recommendations of the ICAO Quality Manual. It has enabled a network of designers to be set up across different countries in Africa (ASECNA member countries, Algeria, Morocco, Tunisia, Kenya, Sudan, Ethiopia, Angola and Democratic Republic of Congo). These designers can meet up during seminars organised by ENAC, for the purpose of updating their knowledge of regulations.

2.2.3 It is nevertheless undeniable that some degree of uncertainty affects this approach due to the distances between France and African countries. This is why DGAC is favourable the concept of an office covering the entire African continent, which provides this link between designers through seminars, training courses and the distribution of information for the purpose of widely spreading good practices and enable exchanges between designers from several countries.

2.2.4 Moreover, ENAC has, at the end of one of its basic training courses, organised a tutorial over a period of at least eighteen months for ab-initio designers. This type of remote follow-up is based on the assignment, by ENAC and in agreement with the State, of procedure files to be implemented on State airfields. The tutoring system is based on remote follow-up (e-mail, telephone, document transmissions) plus one or two meetings on site to assess the final work carried out.

2.2.5 ENAC has experience in implementing specifically tailored training courses away from home, for a country or a group of countries (Pans-Ops training courses in Morocco, Tunisia, China and Thailand, "PBN procedure design" training courses for COSCAP-NA, SA and SEA).

2.2.6 ENAC is currently considering the implementation, with ICAO, of training courses for trainers, so that the training courses it has developed can be spread more easily in terms of language and cultural approach. This approach answers the need for development and perpetuation of local skills to support initial and recurrent training, on the scale of several countries.

2.2.7 ENAC could play a part in updating and following up the knowledge of regional trainers.

2.2.8 Within the scope of new organisations within States, ENAC is creating a training course designed for people in charge of validating procedure design files.

2.2.9 ENAC has set up a think-tank on the creation of ab-initio and further training media that can be used for distance learning.

2.3 **SIA**

2.3.1 Procedure design requires access to reliable high-quality aeronautical data (navigation and aerodromes) and geographical data (terrain and obstacles). SIA has set up a system and a set of processes for the collection and processing of data with the aim of ensuring optimum quality. SIA will be able to provide its experience and its expertise in aeronautical and geographical data processing for the ICAO Flight Procedures Office in Africa. In particular, it will be possible to provide details of data management methods which rely on the use of Geographical Information Systems and reference databases, taking the African context into account (e.g. the methods of using available geographical data such as certain Digital Terrain Models).

2.4 **Tools**

2.4.1 ENAC has developed expert software for trajectory design assistance. This software has been adopted by several States and Air Navigation Service Providers.

2.4.2 This tool is compliant with the criteria of Doc 8168, and provides a level of assistance for the implementation of these criteria whilst reducing the risk of error, as recommended by ICAO through the use of a dedicated tool. It is based on a Geographical Information System which ensures reliable positioning of the data.

2.4.3 This type of tool is complex and requires appropriate training. The idea of setting up a network should be considered with caution, whatever the tool used.

2.4.4 The use of more rudimentary tools requires less expertise, but yields only partial results and without any equivalent guarantee in terms of data integrity and monitoring, which is not desirable.

3. ACTION BY THE MEETING

3.1 The meeting is kindly asked to:

a) record the information presented above; and

b) take note of the support that France is prepared to give to this project, within the scope of the plan for word-wide aviation safety, through the implementation of

equipment, by creating training courses and by providing consultancy or expert services:

1) for the initial phases of its design; and

2) for its implementation.

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