

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

Agenda Item 1: Introduction and assessment of a global air traffic management (ATM) operational concept

THE DEVELOPMENT OF STANDARDS AND RECOMMENDED PRACTICES (SARPS) FROM THE ATM OPERATIONAL CONCEPT

(Presented by the Secretariat)

SUMMARY

In order to progress toward implementation of a global air traffic management (ATM) system as envisaged in the ATM operational concept, several follow-up activities must take place. These include specification, design and planning of the ATM system as well as development of Standards, procedures and guidance material necessary for implementation. This paper describes the framework for Standards and Recommended Practices (SARPs) development stemming from the ATM operational concept

Action by the Conference is in paragraph 2.

1. INTRODUCTION

1.1 The Standards and Recommended Practices (SARPs) contained in the eighteen Annexes to the *Convention on International Civil Aviation* (Doc 7300) provide globally uniform specifications for physical characteristics, configuration, matériel, performance, personnel or procedures and serve to ensure standardization in civil aviation throughout the world.

1.2 In order to transition from the vision contained in the global ATM operational concept (AN-Conf/11-WP/4 refers) to implementation of a global ATM system based on the concept, a structured, thorough and evolutionary process is needed to ensure that the SARPs necessary to support the implementation of a global ATM system are appropriately developed.

1.3 SARPs development process

1.3.1 As Signatories to the Convention, States have an obligation to comply with SARPs or notify a difference in accordance with Article 38. Given that SARPs are designed to meet specific functional and operating requirements, SARPs development, then, is a critical element when considering implementation of a global ATM system. The ATM development process which begins with the identification of expectations and the development of an operational concept, and progresses through the development of ATM requirements, must include as a critical next step, the development of SARPs necessary to provide the framework for implementation of a global ATM system.

1.3.2 A review of the existing SARPs reveals that the SARPs necessary to support a globally integrated ATM system based on the ATM operational concept falls into the following categories:

- a) new SARPs to support elements of the operational concept that are not currently covered in the Annexes;
- b) SARPs that may need amendment or change as a result of the operational concept; and
- c) SARPs that may be redundant as operational concept elements are introduced.

1.3.3 A special case of items b) and c) above is the identification of SARPs that may have the effect of inhibiting or precluding the implementation of facilities or services in accordance with the operational concept components (concept components are described in detail in the ATM operational concept — AN-Conf/11-WP/4 refers).

1.3.4 The task then, is to build a process which would identify the new SARPs required, the existing SARPs that may need to be amended, and those which may need to be deleted. It should be clearly understood that such a process would be evolutionary and would be based on identified requirements as the ATM system emerges.

1.4 SARPs development framework

1.4.1 The SARPs development framework can be considered as the progression through a series of phases beginning with the identification of an ATM requirement (ATM requirements are described in AN-Conf/11-WP/21).

1.4.2 The framework can be summarized in six phases as follows: SARPs identification; analysis; action; validation; implementation; and review.

Each phase is broken down as follows:

- a) **SARPs identification.** SARPs identification is initiated with the development of an ATM requirement. As part of the planning activities necessary to implement facilities and services that will meet an ATM requirement, the need for relevant SARPs must be identified and the nature and objective of the SARPs described. An ATM requirement may generate many individual SARPs requirements.
- b) **SARPs analysis.** SARPs analysis is the step whereby the available inventory of SARPs is reviewed to identify the Annexes where the required SARPs would reside. This allows for a review to identify those SARPs that are already in existence that may address the specific ATM requirement and to determine the location of any required new SARPs. If the

requirement were met fully by existing SARPs, the development process would terminate at this point.

- c) **SARPs action.** SARPs action uses the baseline established from the analysis and consists of four steps:
- 1) Identifying any existing SARPs that would be inconsistent with or conflict with the implementation measures designed to satisfy the original ATM requirement. If any such SARPs were identified, the specific actions would be to develop proposals for the amendment or deletion of the relevant SARPs;
 - 2) Identifying any current existing SARPs that could be amended to meet the ATM requirements as well as meet the intent behind their original development, if still relevant;
 - 3) Identifying the nature of any new SARPs that are required in the context of the ATM requirement; and
 - 4) A final review to identify any SARPs in the inventory that are or will be made redundant by the application of the three above steps.

The SARPs action is made complete by developing proposals to amend or remove SARPs or for new SARPs.

- d) **SARPs validation.** SARPs validation occurs before the implementation of the proposals generated from SARPs actions. The basic requirement is to determine if the proposals will generate any adverse impact(s) or otherwise be difficult or impossible to implement. Mitigation actions should be identified for those proposals that will be difficult to implement or otherwise generate adverse impacts. These actions will form the basis for modifying the proposal prior to implementation. For those proposals that are not possible to implement or otherwise generate significant adverse impacts, the originating ATM requirement would be reviewed to see if the proposal could be amended while satisfying the ATM requirement or whether the requirement may need to be further developed. If no adverse impacts are identified, the proposal(s) are ready for implementation.
- e) **Implementation.** Implementation follows established ICAO procedures for the amendment of Annexes.
- f) **Review.** Prior to the completion of the implementation phase, the SARPs inventory baseline is reviewed in its proposed new state to ensure that the needs of the originating ATM requirement are met. A given ATM requirement may require a number of SARPs. The completed body of SARPs must be reviewed to determine the total effect with respect to suitability, adequacy, and effectiveness in meeting the ATM requirement.

2. **ACTION BY THE CONFERENCE**

2.1 The Conference is invited to note the SARPs development process described in the paper and take it into account in further discussions.

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