



Agenda Item 2: Review of Air Navigation Matters
2.1 Global Air Navigation and CAR/SAM developments
2.1.1 Global and CAR/SAM Air Navigation Activities

GLOBAL AND CAR/SAM AIR NAVIGATION ACTIVITIES

(Presented by the Secretariat)

SUMMARY

This paper presents a panoramic view on activities within the air navigation environment at the global and CAR/SAM regional levels, such as the performance-based approach and its metrics, eANP framework, CAR/SAM ANP updates, SARPs amendment proposals and the harmonization efforts of the United States NextGen and European SESAR Programmes.

References:

- ICAO Document on the Transition Framework for an Electronic Air Navigation Plan (eANP)
- Forum for the integration and harmonization of the SESAR and NextGen programmes (Montreal, Canada, 8 to 10 September 2008);
- NACC/WG Meeting Reports;
- NACC/DCA/3 Meeting Report
- GREPECAS/15 Meeting Report

***Strategic
Objectives***

This working paper is related to Strategic Objectives A and D.

1. Introduction

1.1 ICAO has made an effort to guide the work carried out by States in the development of a Seamless Global ATM System under the Global Plan Initiatives (GPI's), the performance-based planning and implementation approach and the regional integration and transition process. It has been acknowledged that the planning process will be facilitated by using planning tools, an air navigation planning electronic database, project management techniques and software, and new methodologies for the presentation of reports.

1.2 The purpose of these initiatives is to harmonize the work programmes, improve the process to prepare and present reports, and assist to guarantee the interoperability and transparency among the Regions, as well as to guarantee the development and measurement of the performance objectives.

1.3 Considering the follow-up and accomplishment of these objectives, several activities have been carried out on a global, inter and intraregional level in the CAR Region, which are described as follows.

2. Air Navigation Activities on a global, inter and intraregional level in the CAR Region

Performance Metrics

2.1 When designing, planning, implementing and operating a global air navigation system, it is necessary to focus it towards performance metrics. When following-up on an action plan, avoiding costly data collection and analysis processes, the performance metrics should be focused on proactive results to improve air navigation and obtain environmental benefits as a consequence of the work programmes.

2.2 The implementation should include the performance metrics in one of the following fields: safety, service quality (such as capacity, flight delay and efficiency), productivity and the relation between profitability-efficiency. In this respect, ICAO will be implementing several seminars and workshops on the development of performance frameworks for air navigation systems, which will provide the knowledge to carry out the air navigation performance planning process. This will establish national performance objectives, carry out gap analysis, define operational improvements and determine the relevant projects for implementation. A workshop on this issue was carried out in the ICAO NACC Regional Office from 6 to 10 July 2009.

2.3 Supporting this approach, ICAO has offered States some tools for analysing and facilitating the decision-making process. One of these tools is the Workshop on Business Case Analyses for the Implementation of CNS/ATM Systems leading to a Seamless Global ATM System that will be held from 28 September to 2 October 2009, in Antigua and Barbuda. This event will provide knowledge and practical exercises for the analysis using a business case for the CNS/ATM implementation.

Overview of Proposed Electronic Air Navigation Plan (eANP) Framework

2.4 Within the performance metrics approach, ICAO is currently working on the development of an Electronic Air Navigation Plan (eANP). This eANP will facilitate the coordination and implementation of regional air navigation plans, as well as supporting the Global Air Navigation Plan. It will also contribute to the further development of air navigation planning by providing a framework for the efficient implementation of new air navigation systems and services at the national, regional, inter-regional and global levels. The framework will support, in particular, the work of regional planning and implementation groups that plan, monitor and analyse the implementation status of planned facilities and services for inclusion in the regional air navigation plans, and recommend ways to expedite these plans in accordance with ICAO priorities. The availability of this information online will greatly facilitate updating and access to the latest information for States, ICAO regional office and various other users. The **Appendix** to this paper broadens the scope and objectives of the eANP concept.

2.5 To support the start of operation and use of the eANP, as well as to continue with the planning and implementation activities of services and systems; in accordance with the air navigation performance requirements, the following update has been carried out to the information contained in the CAR/SAM Air Navigation Plan (Doc 8733), Volume II – Facilities and Services Implementation Document (FASID):

FASID Table	Title	Updated in:	Status:
CNS 1A	<i>AFTN Plan</i>	March 2009	Approved
CNS 1Ba	<i>Router Regional Plan</i>	August 2008	Approved
CNS 1Bb	<i>ATN Ground-Ground Applications Plan (CAR)</i>	August 2008	Approved
CNS 1C	<i>ATS Direct Speech Circuits Plan</i>	July 2009	Comments by 18 September 2009
CNS 2A	<i>Aeronautical Mobile Service and AMSS</i>	March 2009	Approved
CNS 3	<i>Navigation Systems</i>	July 2009	Approved
CNS 4A	<i>Surveillance Systems</i>	March 2009	Approved

2.6 In addition, the following MET Tables, contained in the CAR/SAM Air Navigation Plan (Doc 8733), Volume II –FASID, have been updated:

FASID Table	Title
MET 1A	<i>Meteorological Service Required at Aerodromes</i>
MET 1B	<i>Meteorological Watch Offices</i>
MET 2A	<i>OPMET Information Required in ISCS and SADIS</i>
MET 2B	<i>Regional Exchange of Operational Meteorological Information within the CAR/SAM Regions</i>
MET 3A	<i>Tropical Cyclone Advisory Centre</i>
MET 3B	<i>Volcanic Ash Advisory Centre</i>
MET 3C	<i>Selected State Volcano Observatories</i>
MET 5	<i>Requirements for WAFS Forecasts</i>
MET 6	<i>Responsibilities of the Area Forecast Centres</i>
MET 7	<i>Authorized Users of the ISCS/1 Satellite Broadcast and Internet Based WAFS FTP Service in the CAR/SAM Regions</i>

2.7 Another part of the system being updated for global automation and coordination effort is the five letter name codes (5LNC) database. An initial update to the 5LNC database was prepared by ICAO and then forwarded for review and implementation by the States. The new information provided by States was then uploaded into the 5LNC database for the initial implementation of the database by States. State authorized users will coordinate 5LNC requests with ICAO Database Managers to streamline the 5LNC allocation process (WP/27 refers).

2.8 It is important to mention that within the forthcoming GREPECAS CNS/ATM Subgroup Meeting (4th Quarter 2009) it is planned to carry out a presentation for the use and management of 5LNC information in order to have the participants' comments and to complete the implementation of the CAR Region information in the ICARD global database.

2.9 Within the same objective for information update and harmonization, an update of CAR frequency assignment tables (List COM 1, List COM 2 and List COM 3) was completed. This update is available on the ICAO NACC Website under CNS e-Documents.

Forum on Integration and Harmonization of NextGen and SESAR Programmes

2.10 The Forum on Integration and Harmonization of the United States NextGen (Next Generation) and SESAR (the Single European Sky ATM Research Programme) into the Global ATM Framework was held in Montreal, from 8 to 10 September 2008. The main goal of this event was to facilitate greater understanding of the integration and harmonization of NextGen and SESAR, the two major ATM programmes initiated by the United States and Europe, respectively, to meet the specific requirements in their regions.

2.11 The Forum allowed sharing developments in the NextGen and SESAR systems with the global audience; identifying common aspects between the systems as well as differences and highlighting how the harmonization and interoperability efforts which have been made, will benefit ANS providers, users and stakeholders. The opportunity to clarify uncertainties and to detail the next steps within a global discussion was the primary objective of the event.

Inter/Intra-Regional Activities and Coordination

2.12 Following-up on the GREPECAS guidelines pertaining to the CAR Region based on the performance objectives and its framework, the NACC/WG Meetings have prepared several action plans and have urged States/Territories/International Organizations to adopt the relevant follow-up actions to develop national air navigation services (ANS) implementation plans.

2.13 The NACC/WG/2 Meeting proposed a NAM/CAR Regional Air Navigation Implementation Plan, which is based on performance objectives, to be considered by States as guidance for the implementation of their national plans. This proposal was approved by the Third Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/3) (WP/07 refers).

ICAO SARPs Amendment Proposals and Request for State Comments/ Action

2.14 The following list presents the current proposals for amendment and other relevant Air Navigation communications for the Meetings consideration and actions as needed.

ICAO State Letter	Subject	Action required	Date due:
AN 7/1.3.94-09/46	<i>Annex 10 Vol I, Amendment 85 (ILS/SBAS/GLONASS)</i>	Comments	28 September 2009
AN 13/2.5-09/45	<i>Doc 4444 amendments related to application of PBN and GNSS</i>	Comments	30 September 2009
AN 7/1.3.96-09/57	<i>Annex 10, Vol IV, Amendment related to ACAS</i>	Comments	13 October 2009
AN 7/1.3.95 – 09/58	<i>Annex 10, Vol III and IV, Amendment related to SSR, 24-bit addresses, MLAT, ...</i>	Comments	13 October 2009
AN 12/44.6-09/53	<i>English knowledge in radiotelephone communications</i>	Questionnaire to be returned	16 October 2009
AN 7/1.1.44-09/26	<i>Annex 10 Vol I, Amendment 84 (All Nav)</i>	Comments	19 October 2009

ICAO State Letter	Subject	Action required	Date due:
AN 4/1.2.23 – 09/30	<i>Annex 14, Vol. I, Amendment 10 Status of Aerodrome certification, enhanced taxiway centreline marking and mandatory instruction marking, visual aids, advanced visual locking guidance systems, recalculation of extinguishing agents for larger aeroplanes, wildlife hazard reduction and inspection and maintenance of movement areas.</i>	Notify any differences and compliance	19 October 2009
AN 4/1.2.23 – 09/30	<i>Annex 14, Vol. I, Amendment 10 Safety management systems provisions. States shall establish a State safety programme (SSP) to achieve an acceptable level of safety; the acceptable level of safety shall be established by the State; States shall require, as part of their SSP that a certified aerodrome implements a Safety management system (SMS) acceptable to the State; a SMS shall clearly define lines of safety accountability.</i>	Notify any differences and compliance	18 October 2010
AN 4/16.6 – 09/31	<i>Annex 14, Vol. II, Amendment 4 New definitions, new paragraphs in applicability, new terms in the physical characteristics of surface level heliports, elevated heliports, helidecks, and shipboard heliports; as well as new terms in obstacle restriction and removal, and visual aids.</i>	Notify any differences and compliance	19 October 2009
Assembly Resolution 36-23	<i>PBN implementation plan</i>	Application	31 December 2009
E 3/5-09/61	<i>ICAO Position for WRC-2012</i>	Application	January 2012
AN13/2.1-08/50	<i>New ICAO Flight Plan Format</i>	Application	15 November 2012
AN 7/49.1-09/34	<i>AMC user registration</i>	State AMHS provider	continuous

3. Suggested Actions

3.1 The meeting is invited to:

- a) take note of the information presented;
- b) analyse the different activities on-going globally and in the CAR/SAM regions (paragraphs 2.1 to 2.13);
- c) take the appropriate actions for the ICAO requirement listed in paragraph 2.14; and
- d) determine other actions the meeting may deem pertinent.

— — — — —

APPENDIX

SCOPE AND OBJECTIVES OF THE eANP CONCEPT

The eANP has two principal objectives:

- a) at the global level: reconcile the Regional Air Navigation Plan with the ATM operational concept, the new Global ANP provisions and the ICAO planning processes of new activities; and
- b) at the regional level: expedite regional planning and coordination through simplifying and freeing the core of planning from a long and cumbersome formal approval process, (whilst maintaining the planning and coordination process requirements within the ICAO regional mechanism).

To support the above objectives, the following deliverables will be produced:

- a) easy-to-use planning templates that would contain the relevant elements, specifically, homogeneous ATM areas and major international traffic flows, and the agreed Global Air Navigation Plan systems infrastructure necessary to support the implementation of the homogeneous ATM areas and major international traffic flows; and
- b) an integrated Air Navigation Planning environment containing details currently listed in Table ATS 1 and all FASID Tables (AOP, CNS, ATM, MET, SAR, AIS). This will be designed to easily support the coordination, agreement and recording process between States and international organizations, also through a user-friendly interface.

The proposed methodology that will be employed to achieve the above deliverables consists in:

- a) replace the current provisions in the ANP Volume I, concerning establishment of ATS Routes and Table ATS 1, by the relevant elements of the Global ANP and the evolving ATM operational concept, specifically, homogeneous ATM areas and major international traffic flows;
- b) replace the current provisions in the ANP Volume II, comprised of FASID tables (AOP, CNS, ATM, MET, SAR, AIS), by the agreed air navigation system elements necessary to support the implementation of a performance-based infrastructure to support homogeneous ATM areas and major international traffic flows;
- c) move all details currently listed in Table ATS 1 and all FASID Tables to an integrated Air Navigation Planning environment, which will be designed to support the coordination, agreement and recording process between States and international organizations; and
- d) propose the necessary amendments to current ICAO SARPs, e.g. Annex 11 —Air Traffic Services, Appendix 1, be revised to remove the distinction between regional and non-regional networks of ATS routes.

For the achievement of these goals and deliverables, the eANP proposes certain framework elements. Under these framework elements and among the tools proposed are the communication planning and the 5LNC Management Tool:

- a) on the communication planning, ICAO has been considering and evaluating several existing tools used in different Regions, as for example the Spectrum and Frequency Information Resource (SAFIRE), which is operational in the European Region and in evaluation in the Asia Pacific Region. The SAFIRE, together with another tool used for the frequency planning purposes (MANIF Application), was also assessed by the ICAO NACC Regional Office and a further evaluation will be conducted by ICAO for defining the best world-wide tool for this planning; and
- b) The five-letter named code (5LNC) Management tool is a Planning tool to ensure the allocation of unique designators compliant with Annex 11 standards and promoting an efficient global assignment of designators for the different ATS Routes, and permitting unambiguous designation of significant points not linked to the site of a Radio Navigation Aid. Currently, this tool is operational in the EUR/NAT, ASIA/PAC, MID and SAM Regions and in preparation for its implementation in the WACAF, ESAF and NACC Regions.

The eANP activities began in 2008; some of the advances can be seen on the ICAO GIS website (<https://192.206.28.84/eganp>), in which a revised ANP structure and format, as well as an online training for air navigation planning database/GIS use, is available.