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**Agenda Item 2: Global and inter-regional activities**

**2.1 Inter-regional and intra-regional CNS/ATM activities and coordination**

**CNS/ATM ACTIVITIES AT THE GLOBAL, INTER-REGIONAL AND INTRA REGIONAL LEVELS**

(Working Paper presented by the Secretariat)

**Summary**

This paper presents a panoramic view on CNS/ATM activities and coordinations, as well as other related activities, at the global, inter-regional and intra-regional levels.

**References:**

- ICAO Document on the Transition Framework for an Electronic Air Navigation Plan (eANP);
- Project RLA/98/003;
- Forum for the integration and harmonization of the SESAR and NextGen programmes (Montreal, Canada, 8 to 10 September 2008);
- TRASAS/2 Meeting Report;
- NACC/WG Reports;
- Implementation of Regional Project ANS NAM/CAR;
- SAT/14 Meeting Report (Montevideo, Uruguay, 7 to 9 May 2008); and
- Project Document RLA/06/901.

**1. INTRODUCTION**

1.1 This working paper presents a description of the following activities: general overview of the proposal of an electronic Air Navigation Plan (eANP) framework for CAR/SAM ICAO automation activities through Technical Cooperation Project RLA/98/003, ICAO Forum on integration and harmonization of the SESAR (Europe) and NextGen (United States) ATM programmes, the Second TRASAS Meeting summary of the Working Group of NAM/CAR (NACC) Regions, summary of the results of the Interregional Meeting for CNS/ATM Coordination in the South Atlantic (SAT/14), Regional Project for the implementation of ANS NAM/CAR, assistance for the implementation of a regional ATM system (SAM) considering the ATM cooperation concept and the corresponding support on communications, navigation and surveillance--CNS (project RLA/06/901) and follow up of SAR activities in the CAR/SAM Regions.

## 2. GLOBAL ACTIVITIES AND COORDINATION

### 2.1 Overview of Proposed Electronic Air Navigation Plan (eANP) Framework

2.1.1 ICAO is currently working in the elaboration 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.

2.1.2 This 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 machinery).

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

- a) an 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.

2.1.4 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.

2.1.5 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 on different Region, as for example the Spectrum and Frequency Information Resource (SAFIRE), which is operational in the European Region and in evaluation on the Asia Pacific Region. The SAFIRE, together with another tool used for the frequency planning purposes (MANIF Application), was also assessed by the NACC ICAO Office and a further evaluation will be conducted by ICAO for defining the best world-wide tool for this planning.
- b) The five-letter named code (5LNC) Management tool is a Planning tool to ensure unique designators allocation compliant with Annex 11 standards and promoting an efficient global assignment of designator 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 on the EUR/NAT, ASIA/PAC, MID and SAM Regions and on preparation for its implementation in the WACAF, ESAF and NACC Regions.

2.1.6 The eANP activities begun in 2008. Some on the advances can be seen on ICAO GIS website (<https://192.206.28.84/egarp>), in which a revised ANP structure and format, as well as an online training for air navigation planning database/GIS use is available. The new structure, including harmonised ANP tables, will be available to States by 2009.

## 2.2 **Forum on Integration and Harmonization of NextGen and SESAR Programmes**

2.2.1 ICAO held in Montreal, from 8 to 10 September 2008, the Forum on Integration and Harmonization of NextGen (Next Generation) and SESAR (the Single European Sky ATM Research Programme) into the Global ATM Framework.

2.2.2 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 of these regions.

2.2.3 The Forum is intended to begin the process of sharing developments in the NextGen and SESAR systems with the global audience; identifying commonalities 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. Discussions will address greater awareness, participation and a willingness to progress together as a global community within the context of a global ATM system. The opportunity to clarify uncertainties and to chart out the next steps within a global discussion will be the primary objective of the event.

### 3. **INTER-REGIONAL ACTIVITIES AND COORDINATION**

#### 3.1 **CAR/SAM Automation Activities through Technical Cooperation Project RLA/98/003**

3.1.1 ICAO Technical Cooperation Project RLA 98/003 – *Transition to CNS/ATM Systems in the CAR/SAM Regions*, in order to support ICAO States/Territories/International organizations in the integration of automated systems, started the task to elaborate a plan for the interconnection of automated systems of the Air Traffic Management installations in the CAR/SAM Regions with the objective to establish information automated transmission of flight plans and surveillance of flights in transition from one FIR to other adjacent FIR as a way to improve the air traffic management coordination process of flights between affected Air Traffic Control Centres.

3.1.2 In this regard, the Project elaborated a document of interface control Systems (SCID) and a regional interconnection plan, as result of the information collected during the missions to the States that have more automation in their ACC. This information jointly with the interconnection material elaborated by GREPECAS is being considered as reference for the implementation of the automated Systems interconnection.

#### 3.2 **TRASAS/2 Meeting (APAC Office, Bangkok, Thailand, from 18-19 March 2008)**

3.2.1 The Second Meeting of the Trans-Regional Airspace and Supporting ATM Systems Steering Group (TRASAS/2) was attended by 42 participants from 8 States and 3 international organizations APAC, EUR/NAT and NAM Regions. The Group reviewed the main outcomes of the Planning and Implementation Regional Groups (PIRGs) and the NAT SPG Special 2007 meetings.

3.2.2 The Group noted the status of RVSM implementation in the Asia/Pacific Region, the latest version of the Asia and Pacific ATS Route Catalogue, the Summary of the 4<sup>th</sup> Meeting of the Cross-Polar Working Group (CPWG/4), and agreed Data Link Harmonisation Strategy between APAC and EUR/NAT Regions.

3.2.3 Note was taken on deliberations of the 36<sup>th</sup> ICAO Assembly, wherein the States were urged to implement RNAV and RNP air traffic services (ATS) routes and approach procedures in accordance with the ICAO PBN concept laid down in the Performance Based Navigation Manual (Doc 9613). The Meeting highlighted the work being done in the Regions on the implementation of PBN, such as the CAR/SAM PBN Roadmap, as a tool that would enable increased efficiency in the use of airspace.

### 3.3 **Activities of the NAM/CAR (NACC/WG) Regions Working Group**

3.3.1 The NAM/CAR (NACC/WG) working group is a group of experts conformed by States/Territories/International organizations of the CAR/NAM Regions attending different air navigation areas (ATM/AGA/AIM/CNS/AVSEC/FS) with the purpose of harmonizing infrastructure implementation action plans of air navigation services of the NAM and CAR Regions, following requirements of ATM operational concept (Doc 9854) and the initiatives of the Global Air Navigation Plan (Doc 9750).

3.3.2 Agreements have been reached and experience shared in these meetings regarding the systems implementation, as well as achievements in radar data sharing between adjacent ATS units, the proposal for the use of updated flight plan (CPL) as the means to exchange flight plans updates, the identification of status of automation progress achieved in the Control Centres systems, and progress and optimization achieved in communications digital networks at regional level as well as other agreements for the conformation and implementation of ATS routes.

### 3.4 **SAT/14 Meeting**

3.4.1 The Fourteenth Inter-Regional Coordination Meeting on the continued improvement of Air traffic Services over the South Atlantic, was held in Montevideo, Uruguay, from 7 to 9 May 2008, the meeting was attended by 33 participants from 9 States and 5 Organizations, ARINC, ASECNA, IATA, INSA and SITA. The following most important aspects related on ATM and CNS from the Fourteenth SAT/14 Meeting are presented:

#### *Air traffic management (ATM)*

3.4.2 Under this item, the meeting analysed the follow up of the AORRA airspace implementation, the follow-up of the Implementation of UN741 and UN866 as unidirectional routes and the ATS Contingency planning. In reference to AORRA follow up, the meeting proposed that a series of ATS routes, together with their allocated five letter significant point identifications be suspended with effect from an agreed AIRAC date (25 September 2008) The meeting also agreed the extension of AORRA to the north (18 December 2008); from the Arabian Gulf or Central/Eastern Africa in both directions The meeting concluded that the implementation of the two unidirectional routes the UN741 and UN866 has been successful and the ATS service along the EUR-SAM Corridor is more efficient. and counts with benefit as the fuel and CO<sub>2</sub> emissions reductions Finally the meeting under this item approved the inclusion of basic guidelines to define a harmonized ATS contingency plan for the EUR-SAM Corridor in the ATS contingencies plan of EUR/SAM States involved and also agreed in the convenience to include the ATS contingency procedures as Appendix of the respective Letters of Agreements.

#### *Communications, navigation and surveillance (CNS)*

3.4.3 The meeting analysed under this Item the progress in the implementation of ATS/DS circuits through CAFSAT network, the use of the ATS N5 signalling system, the ATS/CPDLC programme, and the consideration of satellite Intelsat IS 801. In reference to ATS/DS circuits implementation, the meeting took note of the arrangements made with Angola and Brazil to implement an ATS/ADS circuit through CAFSAT between Luanda ACC and Atlantico ACC. for May 2009, the ATS/DS links Las Palmas/Nouakchott and Las Palmas/Noahdhibou were implemented by Spain and ASECNA based on the principle of AFISNET/CAFSAT interconnection and the meeting took note the interest from Piarco ACC to link Dakar Oceanic via VSAT interconnection . The meeting considered that ICAO take the necessary steps to include in the appropriate working group the need to study the implementation of ATS Voice Numbering Plans for AFI Region. Likewise, encourage SAT States to participate in the trials for extension of ATS-N5 Voice Switching protocol following the successful

implementation of ATS-N5 (via CAFSAT) between Cape Verde and Las Palmas. The meeting considered that States explore, the concept of ADS Data Sharing for the SAT Area, taking advantage of the potential of existing digital VSAT Networks in the area. Finally the meeting took notes that the Intelsat satellite IS 801 used by CAFSAT network will reach the end of life by October 2008, for this reason it becomes necessary to search for a new satellite to which CAFSAT services may be migrated maintaining the same current characteristics

#### 4. **INTRA-REGIONAL ACTIVITIES AND COORDINATION**

##### 4.1 **Project RLA/06/901 on Implementation of an ATM regional system**

4.1.1 The Ninth meeting of South American Civil Aviation Authorities (RAAC/9), held in Santiago, Chile, from 18 to 20 April 2005, when analysing the results of project RLA/98/003 on Transition to CNS/ATM Systems in the CAR and SAM Regions, and conclusions of the AN/Conf/11, considered necessary the establishment of a new technical cooperation project to guide the SAM States in the implementation of a regional ATM systems considering the global ATM operational concept and corresponding CNS support.

4.1.2 Meeting this requirement, a project document was designed which immediate objectives are directed linked to ICAO strategic objectives and the corresponding measures to attain them. In April 2008 the referred project was initiated through the First Meeting/Workshop of SAM Implementation Groups, which had as objective the initiation of the implementation of several initiatives of the global air navigation plan in a coordinated and homogeneous way within the GREPECAS framework, which cover air navigation issues, such as: the Optimization of the ATS routes network, Performance based navigation, Air traffic flow management, ATC Automation, Communications, navigation and surveillance capacities improvement. The project has made possible the hiring of experts who have supplied orientation guidelines and material related to the above mentioned issues.

4.1.3 The Project will also cover aspects on Aerodromes design and management, Runway operations, Aeronautical information, World geodesic systems -- 1984 (WGS-84), Meteorological systems, Institutional aspects, Quality warranty systems and Operational security management (SMS) Programme and System.

4.1.4 A relevant aspect of the project is training of authorities and technical personnel involve in issues treated by the project, which will permit to acknowledge and to get involved in the new systems, programmes and technological advances, through their participation in meetings, experts groups, seminars and workshops, and other events.

##### 4.2 **ANS NAM/CAR Regional Implementation Project**

4.2.1 Based on the requests of the North America, Central America and Caribbean Meetings, to develop different technical cooperation projects, the NACC Office has formulated a proposal for a regional project to implement Air Navigation Systems (ANS), for the CAR and NAM Regions.

4.2.2 It is foreseen that such project be a tool to concrete efficient and coordinated implementation of modern air navigation systems for international civil aviation, according to the regional performance objectives approved by GREPECAS and action plans for nacional implementation of NAM and CAR States and Territories.

#### 4.3 **SAR activities in the CAR/SAM Regions**

4.3.1 CAR/SAM Regions States, since year 2003 carry out annual meetings to deal with matters related with Search and Rescue services, determining national and regional needs to further establish goals to improve the Regional SAR Systems. One of these activities contemplates follow-up on the application of ICAO Annex 12 - Search and Rescue, of the International Aeronautical and Maritime Manual of Search and Rescue Services (IAMSAR), and of ICAO documentation related with SAR service.

4.3.2 A follow-up is also carried out on the implementation and compliance of Recommendations and Conclusions related with SAR, as formulated by the CAR/SAM/3 RAN Meeting, as well as the revision of links with the SAR Aeronautical and Maritime Service, the assessment of SAR personnel training, drafting of SAR letters of agreement, Search and Rescue National Plans, application and a national and/or regional level of amendments to ICAO documentation, etc. Also, were “Search and Rescue Coordination Plans” were prepared in the CAR and SAM Regions, same which are periodically revised and updated.

4.3.3 As a follow-up of ICAO regulations and attending a growing activity in air traffic, and the utilisation of large capacity aircraft for passengers and their relationship with the responsibility of safeguarding human lives by CAR/SAM Regions States, a draft Quality Assurance programme for Search and Rescue Services (SAR) with assessment guidelines to assist States in implementing this programme, has been drafted.

4.3.4 The Quality Assurance System Document for Search and Rescue Services does not have the purpose to certify SAR system, but to have a quality management tool in accordance to Safety Management Systems (SMS) guidelines. The main objective is to ensure the compliance of the SAR National Plan of States through a quality management system, in order to provide humanitarian assistance in a systematic manner among SAR units that participate in local, national or regional emergencies.

#### 5. **Suggested Action**

5.1 The meeting is invited to:

- a) Take note of the information presented;
- b) Analyse the information on global and inter e intra regional activities presented;  
and
- c) Analyse other aspects that the meeting may deem pertinent.