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EXECUTIVE COMMITTEE

Agenda Item 15: Technical Cooperation - Policy and activities on technical cooperation

**REGIONAL TECHNICAL COOPERATION PROJECTS
IN THE SOUTH AMERICAN REGION**

(Presented by Peru with the support of Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Panama, Paraguay, Suriname, Uruguay and Venezuela)

EXECUTIVE SUMMARY

This working paper provides information regarding the technical cooperation projects that the ICAO South American (SAM) Regional Office supports in the Region.

It also outlines the achievements in the Region, such as the implementation of services, technologies, and preparation of standardized Latin American Aviation Regulations (LARs), with the intention of increasing safety in SAM States and Effective Implementation (EI) scores related to the Universal Safety Oversight Audit Programme (USOAP).

Action: The Assembly is invited to inform States of the advantages of working towards common goals through ICAO Technical Cooperation Regional Projects.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objectives: Safety, Air Navigation Capacity and Efficiency and Environmental Protection.
<i>Financial implications:</i>	Resources for the activities described in this paper depend on funding available to the Regional projects to be implemented.
<i>References:</i>	Doc 7300, <i>Convention on International Civil Aviation</i> Assembly Resolution A38-2, <i>ICAO global planning for safety and air navigation</i> RAAC/5, 9 and 13, <i>Meeting of Civil Aviation Authorities of the SAM Region</i>

¹ English and Spanish versions provided by Peru.

1. INTRODUCTION

1.1 Since 1948, the ICAO South American Regional Office in Lima, Peru, has provided support to South American States, as well as Panama, in all matters related to international civil aviation.

1.2 ICAO Assembly Resolution A38-2 has recognized that the best way to further enhance safety, capacity and efficiency of civil aviation worldwide is through collaborative partnerships between States. As a result, Member States were convened to devise sustainable solutions in order to fully exercise their responsibilities of monitoring safety and air navigation. These objectives can be achieved by sharing internal and/or external resources, such as through regional and sub-regional organizations, and the expertise of other States, through coordination of all stakeholders under the leadership of ICAO.

1.3 South American States together with the ICAO SAM Office, have adopted a working method through the implementation of technical cooperation regional projects aimed at the adequate implementation of Regional Air Navigation Plans (ANPs). Presently, the SAM Office manages the following regional projects:

- a) Project RLA/99/901 - Regional Safety Oversight Cooperation (SRVSOP);
- b) Project RLA/03/901- Management of the South American Digital Network (REDDIG) and Administration of the Satellite Segment; and
- c) Project RLA/06/901- Assistance in the implementation of an Air Traffic Management (ATM) regional system according to the ATM operational concept and the corresponding technological support for communications, navigation, and surveillance (CNS).

1.4 Project RLA/99/901- SRVSOP began operations on 1 November 2001 under the framework of a Memorandum of Understanding (MOU) signed between ICAO and the Latin American Civil Aviation Commission (LACAC), an agreement for the implementation of the Regional Safety Oversight Cooperation System (SRVSOP) and related Regulations, and a Trust Fund Agreement signed by participant States to support the system's operational requirements, which comprised the ICAO Technical Cooperation Project Document RLA/99/901 for an initial duration of five years, renewable on equal terms.

1.5 Project RLA/03/901 is in charge of the administration of the South American Digital Network (REDDIG). REDDIG is a communications platform that interconnects all SAM States' voice and data communications, through which air traffic message handling systems (AMHS), radar data exchange and interconnection of control centers via the air traffic services interfacility data communications (AIDC) systems have been implemented. This network has been recently modernized and currently provides services through a satellite network supported by a terrestrial network based on Internet Protocol (IP) and planned for all CNS/ATM applications scheduled in the Region.

1.6 Regional Project RLA/06/901 has as its main objective to provide assistance to the civil aviation authorities of participating States and organizations, in the development Global Air Navigation Plan (GANP) initiatives that contribute to the implementation of a regional air traffic management (ATM) system, taking into account the global ATM operational concept and the corresponding CNS technology support, including the necessary elements: aerodromes and ground aids (AGA), aeronautical information services (AIS), and aeronautical meteorological services (MET), the sharing of experiences, and the training of personnel on relevant issues.

2. ANALYSIS

RLA/99/901 – SRVSOP

2.1 The Fifth Meeting of Civil Aviation Authorities of the SAM Region (RAAC/5) held in Cuzco, Peru, in 1996, requested ICAO to evaluate the feasibility of creating a multinational or regional organization for safety that was agile, dynamic and provided with the appropriate mandate and supranational authority, under direct coordination of ICAO through its Regional Office, to assist States in their responsibilities with regard to the implementation of ICAO Standards and Recommended Practices (SARPs).

2.2 As a result of this initiative, on 1 October 1998, a Memorandum of Understanding (MoU) between LACAC and ICAO was signed in Montreal, Canada, to establish the Regional Safety Oversight Cooperation System (SRVSOP).

2.3 Under this framework, the Regional Technical Cooperation Project RLA/99/901 is used to manage SRVSOP funds and activities.

2.4 The SRVSOP aims to optimize levels of civil aviation safety in the region by providing States with advice and assistance to overcome difficulties in complying with safety oversight responsibilities, as well as to contribute, in close coordination with ICAO, to the harmonization and updating of civil aviation safety regulations and-procedures among their participant States.

2.5 In order that SAM States increase their effective implementation (EI) scores obtained in the latest USOAP audit, the SRVSOP sends experts provided by States to advise on the best way to meet the requirements for each orientation of the Protocol's questions. These efforts have resulted significant improvement in EI scores in States where this assistances has been offered.

2.6 To date the SRVSOP has developed 31 LARs corresponding to ICAO Annexes 1, 2, 6, 7, 8, 14, 16, 18 and 19, as well as more than 65 supporting documents. It has also carried out 147 training activities, approximately 80 meetings, as well as activities of assistance to the States which include multinational certification of maintenance organizations, as well as training and medical centers.

2.7 In 2015, the implementation of the Latin America Regulations Air Navigation Services (LARs ANS) Project began. The objective is to develop regulations for ICAO Annexes 3, 4, 10, 11, 12 and 15. To date, model regulations for Annexes 10 and 11 have been drafted and an ANS Inspector Manual has been prepared. Additionally, the first training course for governmental ANS inspectors was delivered. The courses, which were attended by 23 participants from Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru and Venezuela, encompassed aspects of Annexes 10 and 11.

2.8 The objective of the development of the LARs is to support States in the harmonization of their national regulations with ICAO Annexes and documents and provide a valuable tool for States to carry out their safety oversight responsibilities. Additionally, the LAR ANS Project was created taking into consideration USOAP aspects not contained in the various Annexes. Therefore, the LAR ANS Project also intends to support States in increasing their USOAP EI.

RLA/03/901 – REDDIG

2.9 In 2003, the South American Digital Network (REDDIG) was implemented through the Technical Cooperation Regional Project RLA/98/019 with a view to meeting the aeronautical fixed service (AFS) requirements in the medium term, and to support those pertaining to the aeronautical

mobile service (AMS). The REDDIG is based on sharing of satellite segment users and network resources to establish a system of management and control of the network which currently has 17 nodes. For the network's administration and maintenance, Project RLA/03/901 - Management of the REDDIG and Administration of the Satellite Segment (REDDIG) was established.

2.10 In order to upgrade the REDDIG equipment, SAM Regional civil aviation authorities agreed to begin the bidding process through the ICAO Technical Cooperation Bureau (TCB). The implementation of REDDIG II began in February 2015.

2.11 REDDIG II is a mixed satellite and ground network based entirely on Internet Protocol (IP) technology with a ground network which serves as a backup increasing the network availability. REDDIG II is capable of supporting current services and the new services contemplated in the Performance Based Implementation Plan (PBIP) for the SAM Region. The new services will be part of the requirements foreseen for the corresponding modules of ASBU (Aviation System Block Upgrades) blocks 0 and 1, mainly related to the global interoperability of systems and data through globally interoperable system-wide information management (Performance Improvement Area 2 - PIA 2).

2.12 REDDIG II, as a communications platform has, to date, allowed the interconnection of AMHS and AIDC systems, and the sharing of radar data between different States of the SAM Region.

2.13 Management of REDDIG has been assigned to the Regional Project RLA/03/901 monitored by ICAO SAM Regional Office. REDDIG has two network control centres (NCC) for its management; the principal centre is situated in Manaus, Brazil, and the secondary site is located in Buenos Aires, Argentina. Administration and maintenance of the network is also managed by an administrator located at the NCC Manaus who coordinates all operational technical aspects with the technical contacts of each node of REDDIG States.

RLA/06/901 ATM Regional

2.14 During the Ninth Meeting of Civil Aviation Authorities of the SAM Region (RAAC/9) held in Santiago, Chile from 18-20 April 2005, Conclusion RAAC/9-8 requested ICAO to prepare a Technical Cooperation Project Document to guide SAM States in the implementation of the ATM regional system taking into account the Global ATM operational concept and the corresponding CNS support.

2.15 Project RLA/06/901 was created with the purpose of providing assistance to the civil aviation authorities of participating States, in the development of Global Air Navigation Plan (GANP) initiatives that will contribute to the implementation of a regional air traffic management system (ATM), taking into account the global ATM operational concept and the corresponding CNS technology support, including the necessary elements: aerodromes and ground aids (AGA), aeronautical information services (AIS), and aeronautical meteorological services (MET), the sharing of experiences and the training of personnel on relevant subjects.

2.16 This project has supported activities required by the SAM implementation group (SAM/IG), which includes the structuring of the airspace of the Region, performance-based navigation (PBN) implementation, automation support and support in the implementation of quality systems for aeronautical information management (AIM) and MET, among others.

2.17 Since 2007, 41 training activities and 34 meetings have been carried out, with a total of 320 fellowships being awarded and 2,400 participants, plus several assistance missions. Through Project

RLA/06/901, it has been possible to implement web-based availability prediction service (receiver autonomous integrity monitoring – RAIM) in support of the PBN-based air navigation operations.

2.18 The implementation in the upper airspace area navigation (RNAV) routes has been 65% percent complete, surpassing the goal of 60 per cent established in the Declaration of Bogota signed by all the States of the Region during the RAAC/13 Meeting of the Civil Aviation Authorities. The processes of complete redesign with implementation of PBN in the main South American terminal control areas (TMA) are being carried out through PBN workshops under the auspices of the Regional Project RLA/06/901. The status of implementation of standard instrument departures and arrival (SID/STAR) regional PBN has reached 70 per cent, exceeding the goal of 60 per cent, as stated in the Declaration of Bogota.

2.19 All of these PBN procedures have led to the reduction of CO₂ that was reached during 2015 (23.351 tons of CO₂). For 2016 more annual savings of CO₂ can be expected if States continue accomplishing their implementation plans foreseen for this year. The great majority of States have used the ICAO Fuel Saving Estimation Tool (IFSET) tool. Other States have calculated these savings collaboratively with operators.

2.20 Guidance material for the implementation of the CNS systems has been developed, as well as support in the implementation of automated systems such as the AIDC for the realization of tests and training. Several training events (courses, seminars and workshops) required for the implementation of CNS systems improvements have been carried out. These documents and courses generated by regional projects have helped States succeed in the CNS implementation.

2.21 The project also supports the drafting of the Performance Based Implementation Plan (PBIP) for the SAM Region as well as the activities in aeronautical information management (AIM), meteorology and aerodromes.

3. CONCLUSION

3.1 These projects contribute to the increase of SAM States' effective implementation with respect to USOAP Protocol Questions. Currently, the EI of the SAM Region has seen an increase to 71.75 per cent. This proves a breakthrough in safety at the regional level, with a significant percentage of compliance with USOAP Protocol Questions-

3.2 The projects presented in this working paper have allowed States to jointly implement services and systems for the benefit of the entire SAM Region by supporting the achievement of common objectives. To achieve these objectives, the development of regulations, manuals, guidance material and advisory circulars, and the delivery of courses and workshops to experts from different SAM States, have played a major role.

4. RECOMENDATION

On the basis of the positive experience described in this working paper, the Assembly is invited to encourage Member States to work collaboratively, with a regional perspective, in the implementation of technical assistance, new services and new systems, through technical cooperation projects aimed at achieving common objectives that support the enhancement of operational safety in all civil aviation disciplines.