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**International Civil Aviation Organization
South American Regional Office**

**FIRST WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP (SAM/IG/1)
REGIONAL PROJECT RLA/06/901**

Lima, Perú, April 21-25, 2008

Agenda Item 3: Assessment of operation requirements to determine the implementation of improvement of communications and surveillance capabilities for en-route and terminal area operations

**INTRODUCTION TO THE ACTIVITIES RELATED TO IMPLEMENTATION OF
IMPROVEMENT IN COMMUNICATIONS AND SURVEILLANCE CAPABILITIES IN
PROJECT RLA/06/901**

(Presented by the Secretariat)

Summary

This working paper provides information about activities of implementation considered in project RLA/06/901, related to improvement in communications and surveillance capacities for en-route and terminal area operations.

References:

- Document 9750 – Global Air Navigation Plan (Third Edition 2007)
- Project RLA/06/901

1 Background

1.1 The Global Air Navigation Plan (Doc 9750) provides guidelines about the improvements that are necessary to implement in the ATM for a uniform transition to ATM system planned in the *Global Air Traffic Management Operational Concept* (Doc 9854). The guidelines are addressed to achieve ATM benefits at the short- and medium-term, based on the ATM's current infrastructure and on the capacity of available and foreseen aircrafts.

1.2 The planning to achieve ATM benefits development in the short- and medium-term will be centred in the performance objectives with the support of a group of initiatives of the World Plan.

1.3 With the purpose to achieving ATM benefits in the short- and medium-term in SAM Region, RLA/06/901 Project has been elaborated in order that the States and Territories of the Region be able to have a strategy which will allow the coordinated implementation of communications and surveillance improvement for en-route and air terminal operations. This improvement in communications and surveillance systems are based –mainly- in the performance indicators related with the implementation of data link, communication infrastructure and situational awareness (surveillance).

1.4 The objective of performance indicators mentioned above are directed basically to the implementation of communications and surveillance systems based in data links.

2 Discussion

2.1 GREPECAS through activities reviewed in the CNS Committee of CNS/ATM Subgroup, plans the implementation of, among others, new systems in communications and surveillance areas, based in the Global Air Navigation Plan. Some of the most urgent priorities are the implementation plans for short and medium term for the improvement in the communications network that will hold the ATN applications, such as AMHS and AIDC, interconnection among interregional networks (MEVAII REDDIG), ATN ground applications, as well as the AMHS system and AIDC, VDL systems and surveillance systems (ADS B, Multilateration, etc.)

2.2 RLA/06/901 Project considers in section 1.3 activities related with improvement in communications and surveillance capabilities for en-route operations and terminal area operations.. The implementation of these improvements are aligned with the GREPECAS plans. **Appendix A** to this working paper shows the activities mentioned for the communications and surveillance capacity improvement for en-route and terminal area operations.

2.3 The main activities considered to implement the improvement in communications and surveillance capacity are, in the first place, to obtain and complete the information related to current communications and surveillance systems in SAM Region, the analysis of current ATS operational environment stages and others programmed, in order to determine the operations requirement for the improvement of communications and surveillance systems in a short and medium term, the cost-benefit analysis for the implementation of several implementation solutions of communications and surveillance systems, development of an implementation strategy, development of an action plan for the implementation of the strategy and a follow-up process of the strategy implementation.

2.4 As soon as completed the activities planned in RLA/06/901 Project, it is foreseen that the States and Territory of SAM Region when implementing the strategy for the improvement in the capacity of communications and surveillance, will have an operational environment based in data links, which will allow essential improvements in the capacity, surveillance and availability of the air navigation services.

3 Suggested Action

3.1 The meeting is invited to:

- a) Take notes of information provided in this working paper; and
- b) analyze the activities related to communications and surveillance improvement for en-route and terminal area operations, present in section 2 and Appendix “A” of this working paper.

APPENDIX A

Immediate Objective No. 1 Project RLA/06/901
Development and implementation of initiatives for Global Air Navigation Plan, which leads to a air traffic management based in earth systems to other based in aircraft performance.

IMPLEMENTATION OF COMMUNICATION AND SURVEILLANCE CAPACITY IMPROVEMENT (CNS) FOR EN-ROUTE AND TERMINAL AREA OPERATIONS

<p>1.3 Implementation of improvement of capacities of communications and surveillance (CNS) for en-route and terminal area operations (GPIs 6,7, 9, 17, 18 and 22</p>	<p>1.3.1 Obtain and complete the information taking note about the present situation in the states and organizations participating with respect to:</p> <ul style="list-style-type: none"> a) Facilities and CNS equipment; b) Planning and existing CNS regional documentation; c) Aeronautical messages management system (AMHS); d) Digital link for a very high frequency (VDL) and high frequency (HFDL); e) Data communication among air traffic services installations (AIDC); f) Automatic Dependant Surveillance by contract (ADS/C); g) Automatic Dependant Surveillance by broadcasting (ADS/B); h) Multilateration, etc. i) Communication protocols used. <p>Initial Date: week 22 Estimated duration: 2 weeks</p>	<p>CNS, ATM, OR</p>
	<p>1.3.2 Analyze the current and planned ATS operational scenarios, in order to determine the operational requirements for communication and surveillance systems improvement in a short and medium term, as well as other operational requirements necessary for future possibilities of the ATM, using, among others, the following tools:</p> <ul style="list-style-type: none"> a) Aeronautical messages management system (AMHS); b) Digital link for a very high frequency (VDL) and high frequency (HFDL); c) Data communication among air traffic services installations (AIDC); d) Automatic Dependant Surveillance by contract (ADS/C); e) Automatic Dependant Surveillance by 	<p>CNS, ATM, OR</p>

	<p>broadcasting (ADS/B); f) Multilateration, etc.</p> <p>Initial Date: week 24 Estimated duration: 2 weeks</p>	
	<p>1.3.3 Prepare a cost-benefit analysis about the available options of communications and surveillance systems , comparing the present structure against the improvement to be achieved in case the new systems are applied, considering also the choice of two or more technologies that atendan the same operational requirement (for example: multilateration or ADS/B.</p> <p>Initial Date: to be determined Estimated duration:</p>	CBA, CNS, ATM, OR
	<p>1.3.4 Prepare a regional plan for implementation of interphase protocols addressing (IP) for ATN application.</p> <p>Initial Date: week 28 Estimated duration: 1 week</p>	CNS, ATM, OR
	<p>1.3.5 Identify the requirements for GNSS implementation in a medium and long term with the purpose to support in all air phases, considering:</p> <ul style="list-style-type: none"> a) Results of ensayos made for RLA/00/009 projects and RLA/03/902; b) Progress status of GNSS technology; c) Coordination events and training programs when needed. <p>Initial Date: week 29 Estimated duration: 1 week</p>	CNS, OR
	<p>1.3.6 Prepare a strategy for the implementation of communications, navigation and surveillance improvement in CAR/SAM regions, considering the information obtained about previous activities.</p> <p>Initial Date: week 30 Estimated duration: 2 weeks</p>	CNS, ATM, OR
	<p>1.3.7 Develop an action plan model based in the information processed under previous activities, which should be used by the States and organizations participating in order to improve CNS capacities for en-route and terminal area operations, including commodities, schedule for coordination actions, and training, if necessary.</p> <p>Initial Date: week 32 Estimated duration: 1 week</p>	CNS, ATM, OR

	<p>1.3.8 Prepare a working note which should uphold the strategy presentation and action plan for the implementation of CNS improvement capacity for en-route and terminal area operations related to the process of consideration and approval.</p> <p>Initial Date: week 33 Estimated duration: 1 week</p>	CNS, ATM, OR
	<p>1.3.9 To subject the working note, presenting the strategy and plan to be considered by GREPECAS related organisms, through official channels.</p> <p>Initial Date: to be determined Estimated duration:</p>	OR
	<p>1.3.10 To make adjustments or amendments in the strategy or in the plan, if necessary, as a result of the comments generated, and update the proposal and working note for GREPECAS' consideration and approval .</p> <p>Initial Date: to be determined Estimated duration:</p>	CNS, ATM, OR
	<p>1.3.11 Process, publish and distribute the strategy and plan, making the amendments made by GREPECAS in the approving process.</p> <p>Initial Date: to be determined Estimated duration:</p>	OR
	<p>1.3.12 Monitor the implementation of facilities and CNS capacity improvement for en-route and terminal area operations in CAR/SAM regions, including coordination events and training programs when needed.</p> <p>Initial Date: to be determined Estimated duration:</p>	CNS, OR
	<p>1.3.13 Prepare a final report about action taken, including related recommendations.</p> <p>Initial Date: to be determined Estimated duration:</p>	CNS, ATM