International Civil Aviation Organization
Regional Group of Planning and Implementation CAR/SAM (GREPECAS)
First Meeting of the Subgroup of Communications, Navigation and Surveillance/ Air Traffic Management (CNS/ATM/SG/1)
(Lima, Peru, March 15th-19th 2010)

Agenda Item 2: Review of global and CAR/SAM CNS/ATM developments

RESULTS OF THEGNSS ADVANCED SEMINAR / WORKSHOP OF THE RLA/03/902 – SACCSA PROJECT HELD IN COSTA RICA, APRIL 2009

(Note introduced by TCB -ICAO)

SUMMARY

This note presents the results of the GNSS Advanced Seminar/Workshop of the RLA/03/902 – SACCSA Project held in San Jose, Costa Rica, in April 2009 and suggests taking into account work done by the CNS/ATM subgroup regarding the regional GNSS implementing and planning GNSS.

References:

- Report of the RCC/E meeting for the RLA/03/902 Project, San Jose, Costa Rica, from April 20th to 24th, 2009
- Bullletin Nº 1 – Dec. 2009 RLA/03/902 Project

1. Introduction

1.1 The GNSS Advanced Seminar/Workshop held in San Jose, Costa Rica, from April 20th to 24th, 2009, was sponsored by the RLA/03/902 Project and the Directorate General of Civil Aviation of Costa Rica with support of the "Centro Nacional de Alta Tecnología" (CeNAT).*

1.2 Forty-eight participants attended to GNSS Advanced Seminar/Workshop along with speakers from Argentina, Bolivia, Colombia, Costa Rica, Cuba, Ecuador, Spain, Guatemala, Nicaragua, Peru, Dominican Republic, Uruguay, Venezuela, COCESNA, GMV, INDRA ESPACIO, and ICAO.

1.3 The objectives of this Seminar / Workshop were the following:

- Establish a common knowledge platform in order to thoroughly understand concepts, GNSS use and its augmentation system.
- Offer a general view of SARPS and ICAO orientation material about GNSS.

*National Centre for High Technology

- Explain the elements of the satellite-based augmentation system (SBAS), system architecture, and the supporting segment for the certification and operation processing.

- Display GNSS applications for civil aviation and other sectors.
- Offer an up-to-date review of GNSS technology, development, performance, applications and characteristics.
- Have knowledge of the required supporting systems in order to proceed with a validation/certification of the system, from a wide point of view (from the supplier's to different users'.)
- Explain GNSS analysis tools.
- Introduce an outlook on the RLA/03/902 Project and its Phase III.

2. Discussion

2.1 Also, as a result of this presentation, debate and participant proposals during the GNSS Seminar/Advanced Workshop, the main results and final recommendations will be included in the **Appendix** of this document.

2.2 The RLA/03/902 Project introduces to the audience the main results and final recommendations obtained in this event as a contribution to the work done by CNS/ATM subgroup regarding the elaboration of regional orientations for GNSS planning and regional implementation.

3. Suggested action

3.1 The meeting is invited to:

a) take notes of the information provided in this detailed document; and

b) take into account the main results and recommendations provided during this GNSS Advanced Seminar/ Workshop, which are included in the Appendix of this document as a contribution to the CNS/ATM subgroup regarding GNSS regional planning and implementation.

– – – – – – – – – – – –

APPENDIX

INTERNACIONAL CIVIL AVIATION ORGANIZATION

RLA/03/902 – SACCSA PROJECT

GNSS ADVANCED SEMINAR / WORKSHOP

(San Jose, Costa Rica, April 20th – 24th, 2009)

RESULTS AND RECOMMENDATIONS OBTAINED DURING THE GNSS ADVANCED SEMINAR/ WORKSHOP

As a result of discussion and participants' contribution about the subjects presented in the Seminar/GNSS Advanced Workshop, held in San Jose, Costa Rica, from April 20th-24th, 2009, the following results and recommendations were obtained. These are considered to contribute to achieve an efficient performance for the RLA/03/903 – *Transition to GNSS in the CAR/SAM regions / Augmentation Solution for the Caribbean, Central and South America (SACCSA),* and therefore, for a global satellite navigation system (GNSS) within these regions:

1. It is recommended that participating countries, international organizations and users follow up experiences related to GNSS implementation and development in a global scope, and GNSS evolution, so that these can be taken into account to optimize the application and achievement of GNSS benefits in the CAR/SAM regions.

2. It is extremely important to complete GNSS implementation in comply with SARPS, guidance materials and ICAO strategy.

3. Taking into account the variety and extent of GNSS applications, co-operation is encouraged between national organizations dedicated to perform research and make progress on development with support of educational institutions (universities and others); so that scientific and technical support is provided. It will also contribute to spread this knowledge and SACCSA could use/pass it to future users, and apply it on multiple areas in the participating countries.

4. It is recommended that the RLA/03/902 Project along with the participating countries contributions evaluate and update the feasibility study regarding the placement navigation loads in future satellites performing similar tasks of the countries within the CAR/SAM region. In addition, it was specified that was necessary to achieve a converging point in the launch projects related to those satellites, with eventual implementation of SBAS navigation volume, cost analysis along with other important matters. In this respect, it was informed that Venezuela has a satellite in service, and also Argentina and Colombia have tentative plans to implement satellites in five years. In addition, it is estimated that other countries within the same region may have similar plans. This should be taken into account in Phase III of the RLA/03/902 Project, along

with the study of a viable platform with spatial navigation volume, as it is suggested in one of the work tasks of this project.

5. Participating countries and international organizations should take into account that according to worldwide experience related to implementing SBAS systems, the RLA/03/902 Project is considering the benefit of having three Processing and Control Centres for the eventual SBAS system, which would be located in different places within the CAR/SAM Regions.

6. In Phase III of the SACCSA Project, it is recommended –as part of one of the work tasks- to perform a new analysis on the existing communications infrastructure within these regions in order to determine if it could be used in SACCSA. It will be accomplished by supplying up-to-date information based on co-operation of the participating countries within the CAR/SAM region.

7. It is recommended that SACCSA Project consider that the SBAS system is provided with access to complementary direct communications services (which will add up to the current ones), between the remote stations and the Processing and Control Centres, and among them for coordination and maintenance.

8. It is recommended to countries and international organizations, if they haven't done it yet, to acknowledge that the results obtained during Phase II of the RLA/03/902 Project represent a positive indicator of the technical-financial viability for the SBAS system within the CAR/SAM regions, so that participating countries, international organizations and users—through GREPECAS- can have enough documented evidence to take the correct decision.

9. Administrations are encouraged, if they haven't done it yet, to join and participate on Phase III of the RLA/03/902 – SACCSA Project in order to increase international collaboration and obtain a fulfilling final result. In addition, those administrations and users could see progress and obtain benefits when implementing GNSS and its augmentation systems.

10. It's important to acknowledge that RLA/03/902 Project will bring necessary evidence to optimize possibilities of achieving ICAO's global air navigation plan goal which will be implemented to a solid navigation infrastructure based on performance. It must provide a worldwide, precise and reliable navigation/positioning capacity, with no limits and will contribute to add up benefits regarding operational security, efficiency and continuity of operations.

11. In addition, participants acknowledged that the Project does encourage participating countries, international organizations and users towards the publication and exchange of results and experiences, training, and sharing of resources, infrastructure and available knowledge, so that actors can contribute in the decision making process and obtain benefits.

12. The RLA/03/902 Project is aware of some offers presented to contribute to the development of studies by CeNAT (National Centre for High Technology) and the Engineering Faculty of the Universidad Distrital Francisco José de Caldas-Bogotá, in order to finish studies for the Phase III. This effort is being taken into account and is deeply appreciated. Required coordination will be done to include these contributions to the project work tasks.

13. Participants agreed on the importance of continuing collaboration between the RLA/03/902 Project and GREPECAS. The RLA/03/902 project, which is based on results obtained through studies and evidence, must continue to assist GREPECAS in order to obtain correct conclusions about implementing the operational/regional GNSS model.

14. It’s key to take into account that national, regional and global co-operation is crucial for the exchange of knowledge, experiences so that resources can be optimized and goals linked to implementing GNSS can be achieved. This objective can be attained through **integration, coordination and co-operation** of all participating countries and international organizations within these regions along with sectors that require more advanced GNSS services.

15. Participants greeted speakers and congratulated them for the excellent speeches and thanked the SACCSA Project and Costa Rica’s DGAC for sponsoring this event.

16. Participants acknowledged that the Seminar/GNSS Advanced Workshop objectives were fully attained and they have contributed to better understanding the RLA/03/902 Project.

17. Numerous participants thanked the invitation to participate in this event and supported the culmination of Phase III of the RLA/03/902 Project. They acknowledged that it will bring multiple benefits to participating countries and international organizations not only in the aeronautical field. In addition, some of them informed that their corresponding administrations are analyzing the possibility of participating in this project.

-END -