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

Agenda Item 2: Review of Global and CAR/SAM CNS/ATM Developments

EXPERIENCE OF THE DGCA OF CHILE IN THE IMPLEMENTATION OF A GBAS SYSTEM

(Presented by Chile)

Summary

This working paper describes the action taken by the DGCA of Chile for the conduction of a study for the implementation of a GBAS system for the Arturo Merino Benítez airport.

1. Background

1.1 The Global Air Navigation Plan states that Global Plan Initiatives (GPIs) are designed to support the planning and implementation of performance objectives. GPI 21, "NAVIGATION SYSTEMS", states that, in order to achieve these objectives, the gradual introduction of performance-based navigation must be supported by an appropriate navigation infrastructure consisting of a suitable combination of global navigation satellite systems (GNSS), autonomous navigation systems (inertial navigation system) and conventional ground navigation aids.

1.2 Performance- and GNSS-based navigation offers a seamless, harmonised, and profitable navigation service from departure to final approach, providing benefits in terms of safety, efficiency, and capacity.

1.3 The Air Navigation Plan of Chile foresees the gradual introduction of GNSS-based technologies to meet navigation requirements for the en-route, terminal area, and even approach phases.

1.4 A significant percentage of the commercial fleet that normally operates at the Arturo Merino Benítez airport has RNAV, RNP and even RNP-AR navigation capabilities.

2. Discussion

2.1. The VISION of the DGCA of Chile is to develop the DGCA into an intelligent public service, capable of anticipating technological change, and pursuing excellence in the provision of services to its users.

2.2. Accordingly, the DGCA identified a strategic solution for the conduction of relevant studies for early implementation of a GBAS system at the Arturo Merino Benítez airport. The solution involved asking the United States Trade and Development Agency, USTDA, for funding through non-reimbursable loans, to finance the cost of goods and services required for Technical Assistance (TA) in order to conduct feasibility studies and training for the project "IMPLEMENTATION OF LOCAL AREA AUGMENTATION SYSTEMS, LAAS, AT AERODROMES OF THE AIRPORT NETWORK OF CHILE".

2.3. The USTDA, upon analysing the proposal of the DGCA of Chile, approved the granting of funds to cover the cost of a contract between the DGCA of Chile and a US company selected by the latter. A bidding process was carried out through the US Government "Federal Business Opportunities" website www.fbo.gov (and published at its request on "dgMarket" (http//licitaciones.dgmarket.com)).

2.4. Following approval by USTDA, the bid was awarded to "ISI", Innovative Solutions International.

2.5. ISI is an advisory and systems engineering firm with experience in communication technologies and systems, and communications, navigation, and surveillance (CNS/ATM) applications. The ISI work team has supported the FAA GBAS System Programme Office for a long time, provides technical support for the implementation of LAAS systems in Memphis, Tennessee, and Newark, in New Jersey, and is part of Honeywell, the manufacturer and main contractor of the first LAAS system of the FAA.

2.6. The DGCA, together with ISI, deemed it necessary to conduct a seminar/workshop to bring together the national and international users/customers of the national aeronautical system, in order to inform them about these technologies, and through work group sessions, to discover their concerns, needs, plans, and development requirements for their effective and efficient integration into this initiative.

2.7. Thus, the seminar entitled "Fourth-generation airspace in Chile" was held in September 2009. Presentations were made by international experts, focusing on satellite-based (GNSS) air navigation technologies, multilateration and surveillance systems based on data link (ADS-C, ADS-B). Subsequently, a forum was carried out to discuss the best transition option and strategy that could be implemented in a cost-effective manner and offering a high level of safety. Representatives of Honeywell, Hughes Aerospace, IATA, ITT, ISI, Regulus Group, LAN, American Airlines, Boeing, Airbus, AOPA, the Civil Aviation Board of Chile, the Ministry of Public Works of While, professional associations and other important members of the aeronautical community participated at this forum.

2.8. The participants were very pleased with the seminar and appreciated the experience of sharing information and participating in the planning of the future airspace of Chile. Many participants accepted the invitation of the DGCA to continue participating, by following up the activities of the study, and joining the working group created to this end and that will convene when ISI submits its report (deliverables) to the DGCA. Those who have volunteered, to date, are: LAN Chile, Aerocardal, Airbus, AOPA, the Association of Air Traffic Controllers, the Airport Bureau, the Aeronautical Federation of Chile, IATA, SKY Airlines, Association of Electronics Engineers, the Association of Airport Managers, Federico Santa María University - Academy of Aeronautical Sciences, Honeywell Regional, and the CNS/ATM Task Force of the DGCA. Other interested parties may join in.

2.9. The implementation of these technologies in cooperation with the ATM community and in keeping with the ATM Operational Concept will contribute to the attainment of a global, interoperable air traffic management system for all users during all flight phases, the meets the agreed safety levels, provides cost-effective operations, is environmentally sustainable, and meets national security requirements.

3. Suggested Action

3.1. The Meeting is invited to review this working paper and take note of the Chilean experience in the search for processes that are consistent with the Global Air Navigation Plan, with a view to the gradual introduction of performance-based navigation, supported by GNSS systems.

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