



ASSEMBLY — 35TH SESSION

TECHNICAL COMMISSION

Agenda Item 23: Consolidated statement of continuing ICAO policies and practices related to communications, navigation, and surveillance/air traffic management (CNS/ATM) systems

GNSS IMPLEMENTATION STUDIES

(Presented by the Republic of Colombia)

SUMMARY

Work currently conducted in the CAR and SAM Regions with respect to the implementation of GNSS systems has had a strong technical content, leaving aside necessary studies on institutional, economic and financial factors, given the wide range of combinations of technological solutions that are found today and that are coming in the medium term. This paper describes an acute requirement and proposes recommendations to make up for the deficiency.

Action by the Assembly is in paragraph 5.

1. INTRODUCTION

1.1 The policy for the transition to and use of satellite navigation systems has created a strategy for the technical analysis of systems to improve satellite navigation, which has been headed by the industrialized countries, due to their fairly significant state of progress.

1.2 Thus, a WAAS augmentation system already exists in the operational phase and there are systems such as EGNOS and MSAS which will soon be certificated. Similarly, the following are in a fairly advanced phase and are almost a reality for GNSS: the GALILEO project; the modernization of GPS and GLONASS-M; research into GBAS progressed by many States; and the GRAS test bed developed by Australia, the implementation of which is of interest to other States.

1.3 The navigation service aims at complying with ICAO's Standards and Recommended Practices (SARPs) for civil aviation thanks to the global effort and to the major investment in the satellite

navigation service, driven not only by the aeronautical sector, but by the trade in services in all other fields of application of technology.

2. WEAKNESSES OF CERTAIN STATES WITH RESPECT TO THE SUBJECT OF GNSS

2.1 In spite of the reality with respect to the state of technological development of GNSS technologies, several Regions and many States are still unfamiliar with their own Region's institutional, financial and economic aspects and they focus on the arrival of new progress in the medium and long term.

2.2 This may involve the dedication of efforts of some States with lower economic and financial possibilities than other more developed ones, in technological projects that subsequently may not end up being the most appropriate as a result of institutional and financial analyses, and consequently are rejected from the specific solution for the Region.

3. OTHER CONSIDERATIONS

3.1 In parallel with the development of augmentations, the core constellations: GPS, GALILEO and GLONASS are being developed and improved in terms of the availability of more civil frequencies and satellites in orbit. This reality in satellite navigation consequently requires that in any analysis, study, research or development of a plan for the transition to and implementation of systems to improve GNSS in the Regions, the plans corresponding to the core constellations be included and considered as part of the same.

4. CONCLUSIONS

4.1 In order to respond to each of the requirements and facts mentioned and other matters which go beyond the scope of this working paper, it is necessary to establish specific regional studies, involving the definition of plans for implementation of and transition to GNSS systems in Regions that are sufficiently deep, objective and feasible.

4.2 Otherwise, some States and Regions would continue with satellite navigation projects with a high formative content, but without sufficient information or judgement elements required to establish an appropriate regional strategy for the GNSS satellite navigation service.

4.3 The topics remaining to be dealt with in the Regions are complex topics of great depth that require as a minimum the committed participation of States and institutions and work of experts in each of the fields, in which case the definition of a Special Implementation Project could be identified with ICAO in this regard.

4.4 The technological, administrative, operational and institutional options facing the satellite navigation service are countless, and the unity of States with respect to this topic will depend upon the definition at the regional level, and in a decision tree manner, of the soundest possibilities facing the satellite navigation service.

5. **ACTION BY THE ASSEMBLY**

5.1 The Assembly is invited to approve the following recommendation:

- a) That through cooperation projects among States, the Planning and Implementation Regional Groups (PIRGs) promote within their activities for the transition to and the use of GNSS systems, the development of in-depth studies which include financial, economic and institutional aspects, with the participation of experts in each of the fields.
- b) That the Assembly transfer the Special Implementation Project to the corresponding body in order to progress the corresponding feasibility study.

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