

ELEVENTH AIR NAVIGATION CONFERENCE

Montreal, 22 September to 3 October 2003

Agenda Item 6: Aeronautical navigation issues

THE NEED FOR RELIABLE FREE GNSS SERVICE

(Presented by the United States and the 20 Member States of the Common Market for Eastern and Southern Africa (COMESA))

SUMMARY

The introduction of global positioning system (GPS) service has led to its integration within the technical infrastructure of many of the developed States. The anticipated implementation of new global satellite navigation system (GNSS) constellations and augmentation systems in the near future will greatly enhance this facility. This paper considers the needs of developing States for a variety of GNSS services and the responsibility of GNSS provider States to consider the needs of developing States by providing service free of direct user charges.

Action by the conference is in paragraph 5.

1. INTRODUCTION

1.1 At the ICAO Tenth Air Navigation Conference and the 29th ICAO Assembly, the United States offered to make global positioning system (GPS) service available for the foreseeable future on a continuous, worldwide basis free of direct user fees. The Russian Federation made a similar offer on behalf of GLOBAL NAVigation Satellite System (GLONASS). During the next few years, several satellite-based augmentation system (SBAS) will join the United States wide area augmentation system (WAAS) in providing an important augmentation service for GPS capabilities and within the decade the Galileo constellation is expected to provide worldwide global navigation satellite system (GNSS) service.

1.2 It is important that the providers of satellite navigation services take into account the needs of developing States, which could derive great benefit from these services but cannot afford to pay for them.

2. **DISCUSSION**

2.1 The capabilities of existing and planned GNSS component systems provide a range of air navigation capabilities from en-route navigation to instrument approaches with vertical guidance. There are a number of States that have very limited air navigation infrastructure for which GNSS offers the prospect of major improvement in navigation services. There are States which have no means of providing instrument approaches with vertical guidance or that have great difficulty in maintaining such equipment. For regions having regular occurrences of instrument flight rule (IFR) conditions, this can severely limit the utilization of air transportation, which will have a negative effect on economic development. Furthermore, there are many applications of GNSS outside of aviation that could have a beneficial effect on the economies of developing States. Applications of GNSS to surveying, mining, agriculture and other transportation modes can all have significant positive economic impact, particularly for developing countries.

2.2 GNSS should be considered a global utility from which many useful applications can be derived. In many cases, States with developing economies will have a great need for these applications and the provision of GNSS should be made to facilitate their access to these services.

3. **THE COMESA STATES: A CASE IN POINT**

3.1 The obstacles in implementing many of the communications, navigation, and surveillance/air traffic management (CNS/ATM) technologies are varied; ranging from political and financial, to technical and institutional ones. The Common Market for Eastern and Southern Africa (COMESA) has been working very hard to overcome these impediments, but the pace has been slow. Many of the benefits of these technologies have therefore been delayed or foregone. Enhancements in safety, increased airspace capacity, efficiency in aviation operations, and reductions in aircraft and passenger delays are being held hostage to these benefits and have become the price being paid for delayed implementation.

3.2 Implementation of GNSS procedures offers the fastest and most economical way for airspace users to realize the benefits of CNS/ATM technologies. COMESA's main objective with GNSS procedural implementation was to achieve internationally accepted GNSS procedures at airports that would significantly improve the effective use of airspace while providing operational and economical benefits to aircraft operators.

3.3 More than 300 GNSS procedures have been developed for various African States and will be published for operational use during this year. Implementation of these GNSS procedures will further provide reliable instrument arrivals, approaches and departure at 38 international airports. GNSS procedures should also significantly reduce the potential for controlled flight into terrain (CFIT) at these airports. Safety was also greatly advanced by WGS-84 surveys and publication of current airport data and obstacles. The FAA has successfully provided flight verification for all the GNSS procedures developed at the above-mentioned airports.

4. **CONCLUSION**

4.1 The United States, among others, will continue to provide GPS and its augmentations free of direct charges for the foreseeable future. This is very important for improving the safety and efficiency of States that have limited air navigation infrastructure. In addition, such States may also be in need of the many applications that can be derived from GNSS. Therefore, States should provide GNSS service free of direct user charges.

5. **ACTION BY THE CONFERENCE**

5.1 The conference is invited to adopt the following recommendation:

Recommendation 6/xx — The need for reliable free GNSS service

That ICAO recommend that GNSS services be provided free of direct user charges.

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