



**ASSEMBLY — 36TH SESSION**

**LEGAL COMMISSION**

**Agenda Item 47: Work Programme of the Organization in the legal field**

**EVOLUTION OF GUIDELINES FOR REGIONAL LEGAL FRAMEWORK  
TO GOVERN THE IMPLEMENTATION OF GNSS (SBAS)**

(Presented by India)

**EXECUTIVE SUMMARY**

This Paper reviews the need for guidelines for a regional legal framework for the implementation of GNSS signals-in-space used for air navigation as mandated by Article 28 of the Chicago Convention, 1944.

In view of the recommendation of the 35th General Assembly to establish a link between the provider or providers of signals and the States having jurisdiction under Article 28 for the implementation of GNSS which will require most States to rely on signals-in-space and their augmentation provided by others, it is suggested that the ICAO should develop guidelines for a regional legal framework for the implementation of GNSS.

The aforesaid is extremely urgent in view of the likely operationalization of GPS and Geo Augmented Air Navigation (GAGAN) by India in 2010.

**Action:** The Assembly is requested to advise the Council to provide appropriate guidelines to the contracting States so that a regional legal framework could be worked out accordingly.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective A. Safety — Enhance global civil aviation safety.
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<i>Financial implications:</i>	To be assessed by ICAO.
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<i>References:</i>	Doc 9848, Doc 9630
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## 1. INTRODUCTION

1.1 Space Based Augmentation Systems (SBAS) have been developed for enhancing the services provided by GPS core constellations to meet air navigation requirements for various phases of flight from en route to precision approach and landing. SBAS is one form of augmentation system being developed as regional systems for large area coverage. While Wide Area Augmentation System (WAAS) of USA is in operation, European Geo-Stationary Navigation Overlay System (EGNOS) of Europe, MTSAT Satellite Augmentation System (MSAS) of Japan and GPS aided GEO Augmented Navigation (GAGAN) of India are the other three emerging SBAS systems. All these augmentation systems are compatible and interoperable. There is a need to develop an appropriate legal framework to govern the implementation of Global Navigation Satellite System (GNSS) and related issues that will benefit the regions. This will require a regional approach within a global framework towards a safe, secure, efficient and financially viable satellite based navigation system.

## 2. GAGAN

2.1 India has constructed GAGAN Satellite interoperable with WAAS, EGNOS and MSAS. The GAGAN signal in space came into effect from 26th January 2007.

2.2 The area of coverage by Indian GEO (GSAT-4) is beyond the Indian FIR. In view of the large foot print of Indian GEO, the FOP configuration and the system design caters for future expansion plans to extend GAGAN operational services over Indian GEO coverage. In view of the successful technological demonstration of the GAGAN system, it is expected that GAGAN will become operational in 2010. In view of the developments of the GAGAN and consequent availability of signal -in-space availability by 2010, there is a need to develop a legal framework urgently.

## 3. PRESENT LEGAL REGIME IN RESPECT TO AERONAUTICAL NAVIGATION SERVICES

3.1 The Airport Authority of India (AAI) is the aeronautical navigation service provider to international civil aviation over Indian FIR. The provision of these services is governed by the Airport Authority of India Act, 1994. The AAI will continue to be the air navigation service provider after operationalization of GAGAN.

## 4. ICAO

4.1 The issue of evolving a legal framework for GNSS in the context of CNS/ATM has been under active consideration of the ICAO since 1991. Finally, the 35th General Assembly passed Assembly Resolution A35-3 *A Practical Way Forward on Legal and Institutional Aspects of Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) Systems*, wherein States were invited to transmit regional initiatives to the Council and directed the Council to register such regional initiatives to consider their value and make them public as soon as possible in accordance to Articles 54; 55; and 83 of the Chicago Convention. The 35th General Assembly did not endorse an International Convention to govern GNSS. However, there is a consensus in ICAO that implementation of GNSS in the context of the framework for air navigation services is compatible with the Chicago Convention, 1944.

**5. NEED FOR ICAO GUIDELINES FOR STRUCTURING  
REGIONAL LEGAL FRAMEWORK FOR THE  
IMPLEMENTATION OF GNSS (SBAS)**

5.1 Currently, only four SBAS systems are being developed which will provide world wide coverage, the other states will be dependent on the service provided by these four systems for the implementation of GNSS. Considering the advantage of GNSS for safe and efficient air navigation, the States are bound to adopt the GNSS operation in future. These States and SBAS providers will, therefore, be required to work in close coordination and on mutual terms of agreement to ensure safe and efficient Air Traffic services in the air space under their jurisdiction.

5.2 In view of the fact that the ICAO 35th General Assembly has emphasized the critical need to establish a link between the provider or providers of signals and the States having jurisdiction under Article 28 of the Chicago Convention, 1944 and also that when GNSS is implemented, most States have to rely on signals-in-space and their augmentation provided by others, it is suggested that the ICAO should develop guidelines for regional legal framework for the implementation of GNSS (SBAS). The Assembly is requested to advise the Council to develop guidelines for assistance of contracting states service providers and the users to work out regional legal framework for the implementation of GNSS.

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