

Recent developments in Global Navigation Satellite Systems

Mr. Chair and Distinguished delegates,

Indian delegation is happy to note the importance attached to the topics related to global navigation satellite system by this subcommittee, and by the General Assembly. On this occasion, the Indian delegation would like to update this subcommittee on the progress of India's satellite navigation programme since the last session.

Mr. Chair,

India pursues two paths as part of its satellite navigation programme: GAGAN and NavIC. GAGAN (GPS Aided GEO Augmented Navigation) is a satellite based augmentation system (SBAS), while NavIC (Navigation with Indian Constellation) is an independent regional navigation system.

GAGAN has been established by Indian Space Research Organisation (ISRO) in association with the Airports Authority of India (AAI) to provide increased position accuracies required for civil aviation applications. NavIC has been implemented as an independent regional satellite based navigation service. The capabilities of the system have been successfully tested and demonstrated in various sectors. Currently, more than 50 mobile phone models released in India having NavIC capability and this number is rapidly increasing with the introduction of 5G enabled phones.

Mr. Chair,

In 2023, the NavIC space segment was strengthened with the induction of first of NVS series of satellites. NVS-01 satellite was launched in May 2023 and was declared functional for PNT service in July 2023 after detailed in-orbit tests. NVS-01 satellite provides continuity of legacy service in L5 and S bands, and also introduces new civilian interoperable signal in L1 band. Interface control document of L1 band signal has been published on ISRO website for access to all developers and users.

NVS-01 satellite had an indigenously developed rubidium atomic frequency standard (iRAFS), which is functioning as the primary clock. Moreover, indigenous tri-band reference receivers were integrated into the NavIC ground segment.

Mr. Chair,

NavIC-based safety-of-life alert dissemination system has been in operation for fishermen to provide alerts on impending disasters. The same system has now been extended to disseminate alerts for terrestrial disasters like landslides, earthquakes, floods, avalanches, etc. This service has been rolled out to public via mobile application in 2023.

International Electrotechnical Commission (IEC) develops standards for GNSS-based shipborne receiver equipment. IEC has released IEC 61108-6 standard for NavIC based maritime receiver equipments. The national standards body Bureau of Indian Standards (BIS) has released IS 18381:2023 standard for general-purpose drones, which includes NavIC as a part of drone navigation system.

Mr. Chair,

India appreciates the excellent work carried out by the UN Office on Outer Space Affairs (UNOOSA), as the Executive Secretariat for the International Committee on GNSS (ICG) and for the Providers' Forum. These efforts are helping to bring synergy among the global players in satellite navigation. India participated in 17th meeting of the ICG at Madrid in October 2023. India also actively participated in the 27th and 28th meetings of Providers Forum held in June and October 2023 respectively.

In the area of capacity building, India has conducted the Post Graduate Diploma Course in GNSS, under the aegis of CSSTEAP. A few of the participants have extended their study and are pursuing post-graduate course. Recently, an online short course titled "GNSS: Advanced Technologies and Applications" was also successfully conducted. 29 participants attended this course from 09 countries.

Mr. Chair,

In conclusion, the Indian Delegation assures its continued commitment to this sub-committee and to the ICG global forum in addressing the issues of common interest for satellite navigation system providers and also in taking the benefits of GNSS to all countries, especially to the developing countries.

Thank you Mr. Chair and distinguished delegates.