

# GLOBAL PROVIDERS FORUM LAUNCHED

## Collaboration in GNSS Services

Positioning and navigation by satellites has now become part of everyday life for many citizens all over the globe, and a plethora of (commercial) services rely on the continuous well functioning of these systems. Many more promising applications are in the air and will shape the future landscape.<P>

To ensure reliable services the adagio among system providers should be co-ordination and collaboration rather than ignoring one another's existence. Six nations and federations are now involved in the operational provision or development of Global Navigation Satellite services. In our October Pinpoint the development was discussed of China's Compass/Beidou Navigation Satellite System (CNSS). The United States has in place its Global Positioning System (GPS) and Wide-area Augmentation System (WAAS), and the Russian Federation its Global Navigation Satellite System (GLONASS) and Wide-area System of Differential Corrections and Monitoring (SDCM). The European Union (EU) is working hard to put its Galileo satellites into orbit and already has the European Geostationary Navigation Overlay Service (EGNOS) on the ground. India and Japan are working on putting navigation satellites into orbit and establishing GNSS augmentation services.

The Indian system will consist of seven satellites operating regionally up to 2,000km around its boundaries and providing an accuracy of better than 20m and a GNSS augmentation system. Japan is working on the Quasi-Zenith Satellite System (QZSS), which also operates regionally and will ultimately consist of three satellites. Since the accuracy of its standalone mode is limited, this is actually regarded as an augmentation service for other GNSS systems. All these initiatives facilitate the creation of promising applications in land surveying, land management, sustainable development and many others.

One agrees that the benefits would be greater were they performed in a co-ordinated and co-operative way. Co-ordination and collaboration has recently been put on the cards with the setting up of the International Committee on Global Navigation Satellite Systems (ICG). ICG is an informal body meeting on a voluntary basis and aiming at encouraging universal access to global and regional navigation satellite systems and integrating these services into national infrastructures, particularly in developing countries. The ICG also strives to improve compatibility and interoperability among current and future GNSS systems.

To realise the latter ICG proposed at its first meeting in Vienna in November 2006 the putting in place of a Providers Forum. This held its first meeting on 4th September 2007 in Bangalore, where delegates from the US, Russia, China, the EU, India and Japan agreed that the forum should be not a policy-making body but provide a means of discussing key technical and operational issues requiring focused input from system providers. These issues include compatibility and interoperability, protection of the GNSS spectrum and eliminating conflict over orbital debris/orbit. The forum revealed the commitment of all providers of current and future systems to their deployment and/or modernisation plans. All systems will broadcast radio frequencies internationally allocated for radio-navigation satellite services (RNSS) in Lband (960-1,300MHz and 1,559-1,610MHz). Two systems will also broadcast in S-band (2,491.005 ± 8.25MHz), while the 5,000-5,030MHz band may be used in the future by one or more systems. The protection of the RNSS spectrum is vital to GNSS services, and this should be assured through domestic and international regulation. The broadcast of open services will be provided free of charge, while many systems also broadcast services to meet the needs of authorised users in support of government functions.

The forum also agreed the desirability for transparency in the provision of open services and that the setting up of free commercial competition in receiver and applications markets required co-operation on GNSS infrastructure consisting of space and ground control/monitoring segments. To enable manufacturers to design and develop GNSS receivers on a non-discriminatory basis open publication and dissemination of signal and system characteristics by system providers was essential.

Providers should also strive to monitor the performance of their open signals and provide users with timely updates on critical performance characteristics such as accuracy of timing and positioning and service availability. Steps should be taken to detect and mitigate interference with GNSS anywhere in the world, whilst the physical separation of operational satellite constellations and end-of-life disposal orbits should also be examined. The United Nations Office for Outer Space Affairs in its capacity as ICG secretariat will continue to act as the focal point for Providers Forum meeting preparations. Chairmanship of the Providers Forum will rotate among members on an annual basis.