

**Input for the Report to the General Assembly at its Fifty-ninth Session for its Review of
the Progress made in the Implementation of the Recommendations of UNISPACE III
Global Navigation Satellite Services**

<p>Action Team No. 10</p>	<p>Chairperson(s): Ken Hodgkins, USA Mario Caporale, Italy</p> <p>Secretariat: India, Malaysia (for compilation of the draft report) Web Board Managed by ITU</p>
<p>Membership</p> <p>Countries: Australia, Austria, Belarus, Brazil, Bulgaria, Canada, Chile, China, Colombia, Czech Republic, France, Germany, Hungary, India, Iran, Iraq, Italy, Japan, Lebanon, Malaysia, Mongolia, Morocco, Pakistan, Philippines, Poland, Portugal, Republic of Korea, Russian Federation, Saudi Arabia, Syria, Turkey, United States of America</p> <p>Organizations: AIAA, BIPM, CGSIC, EC, ESA, ESCAP, Eurisy, Eurocontrol, FIG, IAIN, ICAO, IGS, ITU, IAG</p>	
<p>Brief mission statement: Overall Goal and Focus of Work of the Action Team</p> <p>1) Survey current efforts to achieve a seamless satellite based radio navigation and positioning system. 2) Assess current models of international cooperation and identify those with potential applicability to evolving GNSS systems and services. 3) Propose specific recommendations for the UN, member states of the United Nations, and other international organizations on actions to promote GNSS user interests, increase level of awareness, improve the quality and facilitate utilization of GNSS services, particularly in developing countries.</p>	
<p>Findings</p> <p>(a) GNSS and their augmentations are generally recognized as being useful for a wide range of civil and commercial applications. System providers are working to increase awareness among policy-makers of the benefits of this technology but this task is beyond the resources of any individual operator. A coordination mechanism involving operators of GNSS and their augmentations and appropriate international organizations could easily be established for this purpose.</p> <p>(b) It appears that the general public and governmental/non-governmental experts understand the basic utility of navigation, positioning, and timing services offered by GNSS. While current and future GNSS operators are in a competitive mode, it is fully expected that collaboration will increase in order to better serve the user community. Outreach efforts must move beyond simple awareness among the general public and experts to assisting in the integration of GNSS into the basic infrastructures (government, commercial, scientific) of countries, particularly in the developing world. This necessarily requires the convening of regular regional workshops (similar to those recently organized by OOSA) and the development of “road maps” and the preparation of technical reports for the introduction of GNSS services in developing countries.</p> <p>(c) GNSS signal security and integrity are one of the top priorities for the global user community, regardless of application. There is an urgent need for assistance to national and regional authorities, particularly in developing countries, to establish mechanisms to identify and eliminate sources of interference that could degrade signals from GNSS and their augmentations.</p>	

3. Recommendations for Further Action

(a) GNSS and augmentation providers should establish a GNSS Coordination Board that would include appropriate international organizations for the purposes of: i) optimizing compatibility and interoperability; ii) identifying mechanisms for implementing measures to protect the reliability and integrity of signals at the national, regional and global levels; iii) coordinating modernization activities to meet user needs; iv) development of road maps and preparation of technical reports for the introduction of GNSS services; v) organize regional workshops; and vi) provide training opportunities in GNSS, particularly in developing countries. It would be necessary to have a secretariat for the GCB. One possibility would be to use the model of the Committee on Earth Observations Satellites (CEOS), with secretariat responsibility rotating among the members on an annual basis. The GCB must complement the ICAO activities for promoting GNSS applications in civil aviation.

(b) (i) The UN Office for Outer Space Affairs OOSA, through its Programme on Space Applications, should continue to hold regional workshops for promoting the use of GNSS and their augmentations in developing countries. (ii) The Regional Centres for Space Science and Technology Education affiliated with the United Nations should consider including GNSS programmes in their training activities. (iii) In cooperation with GNSS and augmentation providers, or a GNSS Coordination Board to be established, OOSA should maintain a web site to be developed to include information systems descriptions, recent application developments, training opportunities, sources for assistance in integrating GNSS into national infrastructures, and sources for assistance in protecting signal reliability and integrity at the national and regional levels. The GCB could develop a concept and structure of the web site as well as identify working methods to collect and update the information on a regular basis. Once this has been done, the web site could become part of the OOSA web site, to be maintained by OOSA in cooperation with the GCB.

Implementation already initiated

The implementation of the second recommendation (b)i)above) already started with the series of four regional workshops (Malaysia, Austria, Zambia and Chile) and one international experts meeting on GNSS for sustainable development held in 2001-2002 with co-sponsorship of the UN, United States and the European Space Agency. An additional meeting to review progress on the implementation of recommendations made by the International Meeting of Experts, held in November 2002, was held in December 2003. That meeting focused on the establishment of Terms of Reference for the GCB.

Indication of impediments in the implementation (gaps, difficulties and so forth)

As for the recommendations that require actions by OOSA, one of the major impediments would be limited resources, including staff resources, to carry out additional work particularly within the framework of the UN Programme on Space Applications. The same would hold true for those recommendations requiring additional resources from system providers. Whereas the civil aviation applications of GNSS are well coordinated through the International Civil Aviation Organization (ICAO) the proposed GCB will face an uphill task in promoting the use of GNSS for applications in fields other than civil aviation. This is primarily because some of the non-civil aviation applications for providing accurate position location and navigation services are dependent on telecommunications and other infrastructure available in the country. As yet, there is no international body to oversee and coordinate the specifications of the equipment and services in these areas.

Benefits to be derived from the implementation

Benefits from the implementation of recommendation (a) above would include increased awareness of policy makers of the benefits of GNSS and subsequent increase in the political support that would result in government funding for the integration of GNSS into the national infrastructures. Benefits from the implementation of recommendations listed under (b) above would include the increased training opportunities in GNSS for developing countries, enhanced access by developing countries to information on GNSS and augmentations as well as their applications and available services, enhanced technical advisory services for developing countries to use GNSS in their development activities.

Progress made by the Action Team

Have held seven meetings of the Action Team. The Action Team has: i) compiled comprehensive information on GNSS and augmentations, including policies, system descriptions and associated activities carried out through international cooperation; ii) conducted a global survey on the existing training opportunities in the field of GNSS; and iii) identified GNSS applications unique to regions. On the basis of preliminary findings/recommendations of the Action Team, work is now underway to establish a GNSS Coordination Board.