

IAF SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Advanced Satellite Services (4)

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SATELLITE NAVIGATION (GNSS) WORKING GROUP IN NASO

Abstract

Nepal Astronomical Society (NASO) has led an initiative to bring together the related stakeholders to maximize the benefits of Satellite Navigation (GNSS) in Nepal, for airspace modernization and rural health care in particular. The country has a very diverse geographical features ranging from flat plain area to the high Himalayan mountain range. The construction of roadways is still very difficult, costly and time taking. Air transportation is the essential and only means to reach far flung remote areas and its modernization has the potential to contribute to all four areas of development- human, economic, technological and sustainability. Unfortunately, civil aviation in developing countries like Nepal suffers from safety issues incurred by lack of infrastructure, know-how and resources in latest technology. This issue has not always been a high priority in the country with massive debt burden, basic health, poverty, and education concerns to address. As a result, Nepal has failed to efficiently implement the applicable International Civil Aviation Organization (ICAO) standards and is often under the air safety list issued by ICAO and European Commission. There is a huge task for the integrated, seamless and harmonized airspace/air route and Air navigation systems in place in light of the present and future requirement. The satellite based technology like GNSS has given an opportunity to improve the capacity and capability and thereby maximizing the use of airspace to greater flexibility to aircraft operation.

Satellite navigation, in combination with satellite communication and remote sensing, also offers direct operational applications for rural health care as well. The primary utility for GNSS is in collecting spatially referenced data to help understand how people interact with their environment. Integration with spatial analysis allows to explore activity patterns across time to understand the intrinsic interactions among humans, animals and the environment in the emergence and re-emergence of many infectious diseases. The secondary utility includes emergency-caller location, search and rescue operation, disaster management, guidance for the visually and physically impaired and medical drone operations in the remote areas.

As a platform for capability building in the use of satellite navigation, NASO is considering a working group dedicated to the aforementioned topics. This can only be possible through an effective cooperation and networking in regional and global level. There have already been promising initiations for cooperation with ICG, United Nations Office For Outer Space Affairs (UNOOSA), International Civil Aviation Organization (ICAO), Asia-Pacific Advanced Research Network (APAN) and other entities.