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GNSS AND SBAS SYSTEM OF SYSTEMS: CONSIDERATIONS FOR APPLICATIONS IN THE
ARCTIC**Abstract**

YGNSS (Youth for GNSS) is a project team through the Space Generation Advisory Council on GNSS and the International Committee on GNSS. Composed of students and young professionals, Youth for GNSS aims to recognize and promote how Global Navigation Satellite Systems (GNSS) and Satellite Based Augmentation Systems (SBAS) can benefit society. Considering the future and health of our planet and its citizens, YGNSS aims to secure and optimize how GNSS -based applications and technology will benefit society by promoting compatibility and interoperability of GNSS through a system of systems. In addition to development and improvement of technology, applications, education and outreach in regions where GNSS is already established, YGNSS particularly aim to analyze and promote the importance and impact of GNSS technology in areas with less developed infrastructure, such as in developing countries and in the Arctic. In this paper, drivers of change in the Arctic are discussed based on the impact of GNSS as tools for scientific applications, and for strengthening and promotion of interoperability of navigation, positioning and timing systems. Topics such as surveying, mapping, engineering and construction, aviation, maritime and space weather monitoring are discussed, in addition to liability issues on the use of Satellite Based Augmentation Systems for navigation and timing. Due to the high sensitivity and extreme weather conditions in the Arctic region, accidents in the Arctic region could cause great damage and be of great threat to human life. Navigation integrity is therefore of particular importance in this region.