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THE TECHNOLOGICAL AWARENESS OF GNSS - EDUCATION AND ADOPTION IN SOCIETY

Abstract

The strictest barrier for introducing new technology is accessibility, education and awareness. Space agencies frequently attempt to promote unique technologies such as GNSS internationally, but struggle with engagement and adoption. This results in fewer subject matter experts in educational platforms and discussion tables. One way of resolving this is through initiatives that are developed to promote GNSS usage. These initiatives are often linked to specific GNSS programmes.

For example, Europe is often centre stage for such initiatives. Through organisations such as the European GNSS Agency (GSA), the Galileo constellation is promoted both within Europe and internationally using publications, trade initiatives and educational texts. Funding for programmes such as BELS+, which promotes South-East Asian adoption of GNSS, is one recent initiative [1]. A recent publication by UNOOSA and the GSA illustrates the relevance of GNSS in relation to the sustainable development goals, specifically with a European focus [2].

These initiatives alone however do not address key issues in its adoption. GNSS education programmes are necessary to illustrate the benefits of GNSS and how this technology can be used to solve particular challenges. An article by Coordinates illustrates the prospects and challenges for GNSS education in different regions [3]. A clear distinct trend is the lack of GNSS coursework in universities across Europe, North Africa and Asia. The ESA International Summer School on Global Navigation Satellite Systems and the Summer School on GNSS by the Institute of Positioning, Navigation and Timing of Japan help address this issue, by assisting in the education of students and professionals on GNSS usage.

This paper will present an analysis into Space and GNSS education programmes in various countries and regions. These programs will be compared to the level of GNSS development, with key links being identified. Regions with less GNSS awareness and development will also be studied and challenges will be presented with proposed solutions. New methodologies for course work and communication strategies for various regions will also be proposed. The adoption of GNSS technology will be presented in the context of the UN Sustainable Development goals, where key benefits of its adoption in a particular region will be emphasised.

[1] European GNSS Agency, "BELS+ Project," 2018. [Online]. Available: <http://www.belsproject.eu/>. [Accessed: 28-Feb-2019] [2] "European Global Navigation Satellite System and Copernicus: Supporting the Sustainable Development Goals," United Nations, Vienna, 2018. [3] M. Filic, et al., "GNSS education: prospects and challenges," Coordinates, 2018.