

LSGI Distinguished Lecture Series

“GNSS – Let’s Talk About its Vulnerability”

Overview

It was our pleasure to invite Professor Chris Rizos, Emeritus Professor, University of New South Wales, Sydney, to deliver a seminar of the LSGI Distinguished Lecture Series on 24 September 2019.



Biography

Prof. Chris Rizos is an Emeritus Professor at the School of Civil and Environmental Engineering, University of New South Wales (UNSW), Sydney. He graduated with a Surveying degree in 1975, and with a PhD in 1980 in the field of Satellite Geodesy, both from UNSW. Chris joined the staff of UNSW in 1984. Chris is the immediate Past President of the International Association of Geodesy (IAG), and is President-elect of the International Union of Geodesy & Geophysics (IUGG). Chris is a Fellow of the IAG, a Fellow and immediate past president of the Australian Institute of Navigation, and a Fellow of the U.S. Institute of Navigation. Chris has been researching the technology and applications of Global Navigation Satellite Systems (GNSS) and other positioning technologies for over three decades, and is a named author of over 650 journal and conference papers. His special expertise is geodesy, surveying technologies and navigation concepts. However, Chris has broad positioning expertise – ranging from ultra-accurate techniques to dekametre-level navigation – spanning the extremes from Geodesy to basic Navigation.

GNSS – Let’s Talk About its Vulnerability

Is GNSS a victim of its own success? GNSS is nowadays an indispensable technology of our modern society. It is used for all professional navigation, surveying and positioning applications in outdoor environments. GNSS is embedded in many smartphone applications, and it is poised to be used for future automated navigation systems on land, in the air and at sea. Without GNSS we are lost. The demonstrated vulnerability of GNSS is now a major concern, not just for military planners, but also for many liability-, mission-, or safety-critical civilian applications. There is evidence that GNSS is being jammed not only in conflict zones but also in cities, harbours and at airports. How to ensure “trustworthy positioning” using GNSS (and other navigation sensors) is a major engineering and

legal challenge. This presentation discusses this issue, giving recent examples of GNSS jamming and spoofing, and speculates on how to address the challenge of providing trustworthy positioning for critical positioning scenarios.

