



A New Generation of Handheld Laser Scanning for Geotechnical Studies

Presented by Wai-Kin Leung
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Date: 4 September 2019 (Wednesday)
Time: 19:00 – 20:30
Venue: Leighton Room, Craignower Cricket Club, Happy Valley
Fee: Free of Charge

Prior registration is not required. For enquiry, please contact Miss Trudy Kwong at tkwong@bmintelligence.com

Synopsis:

With the advancement in remote sensing techniques and the processing power of computers, techniques like light detection and ranging (LiDAR), interferometric synthetic aperture radar (InSAR) and photogrammetry are now commonly applied to geotechnical studies. Owing to its handy, mobile, speedy and robust nature, handheld laser scanning (HLS) is the solution to many geotechnical studies.

The advantages of HLS can be best demonstrated in emergency landslide inspections in which reliable three dimensional geometric information can be provided to facilitate residual risk management and decision-making. The quick acquisition of site morphological information and post-processing increases the efficiency of volume estimation and profile generation. Traceability of records can also be enhanced. In addition, HLS provides useful data for other geotechnical studies including rock





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mass discontinuity survey, provision of site progress and as-built records for construction works and the generation of three-dimensional models for projects etc. The point cloud data generated can supplement and be coupled with data obtained by other remote sensing techniques. Promising results are obtained under all-weather conditions and in difficult terrain.

This presentation introduces the underlying principles of HLS, the recent advancements in the techniques and the potential applications for geotechnical and engineering geology studies. The statistical analysis of the accuracy levels under different weather and brightness conditions will also be discussed.

About the Speaker:

Mr Wai-kin Leung obtained his BSc in Earth Sciences from the University of Hong Kong and MSc in Remote Sensing in University College London. He is a chartered geologist and has been working for the Government of HKSAR in the areas of planning and terrain evaluation, engineering geology, natural terrain hazard studies and remote sensing research & development. He is currently a Geotechnical Engineer in the Planning Division of the Geotechnical Engineering Office.

