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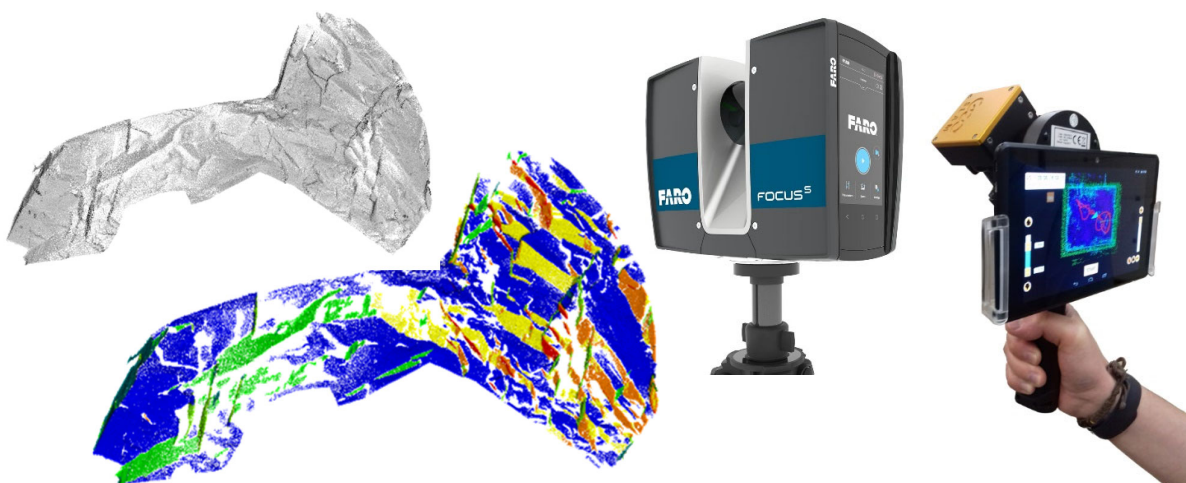
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## Point Cloud Technology Session

### Technical Talk on Digital Mapping of Discontinuities & Product Showcase

*Presented by Dennis Wong and Andy Chan*



- Date:** 27 November 2019 (Wednesday)  
**Time:** 18:30 to 20:30 (The sharing session starts at 19:00)  
**Venue:** Leighton Room, Craigenower Cricket Club, Happy Valley  
**Fee:** Free of Charge

All welcome and registration not required. Any enquiries, please contact Dennis Wong at [dennis-hy.wong@arup.com](mailto:dennis-hy.wong@arup.com) or Trudy Kwong at [tkwong@bmintelligence.com](mailto:tkwong@bmintelligence.com)

#### **Synopsis:**

The implementation of point cloud technology for geological and geotechnical applications is becoming more commonplace due to its precision and accuracy, as well as excellent visualisation and objectification. The emergence of such technology is revolutionising traditional approaches. Surveys can now be conducted more easily and quickly to generate high-resolution and accurate 3D models. In this session, we are delighted to have Dennis Wong and Andy Chan to deliver a presentation on “Digital Mapping of Discontinuities” and showcase some latest 3D laser scanning equipment.



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### *“Digital Mapping of Discontinuities” by Dennis Wong*

The mapping of discontinuities in rock slopes is traditionally undertaken manually along a scanline or within a sampling window. This approach is commonly associated with several issues including the time and labour cost, safety risk and human bias. Recent advancements in laser scanning and drone photogrammetry create the potential for innovative ways to improve project implementation and enable remote collection of highly detailed point cloud rock slope data. Coupled with some point cloud assessment tools, the geometric properties of the discontinuities can now be extracted statistically and objectively. Comparisons with the traditional approach and other data acquisition techniques and software packages will also be made to demonstrate the accuracy, precision, effectiveness and robustness of these state-of-the-art digital surveying and analysis methods.

### *Product Showcase with Case Studies by Andy Chan*

Over the past few years, laser scanning technologies has been developed rapidly. Apart from terrestrial laser scanning, hand-held mobile scanner has become more popular because of mobility and efficiency. The best application is mainly for ~2-3 centimeter precision indoor and outdoor mapping with limited accessibility and/or very limited time availability. It has been found to be extremely useful in forestry, tree survey and topographic survey up to a scale of 1:500 and fast as-built BIM data capturing. Several demonstrations will be included in the presentation.

### **About the Speaker:**

Dennis is a Geologist with Arup who is well trained in rock slope engineering, ground investigation, ground modelling and ground characterisation. He has acquired extensive experience in point cloud data acquisition, processing and analysis when he pursued his Master’s at Leeds. He is one of the pioneers in the team to promote the use of LiDAR- and photogrammetry-derived point cloud data on geotechnical applications, including landslide change detection, quantitative geomorphological mapping, topographic data extraction and semi-automatic rock discontinuity identification.

Mr. Andy Chan is a specialist in 3D laser scanning and has over 10 years’ experience in the 3D laser scanning field. He is now the Project Manager of Sigma Mascot (HK) Limited which is one of the leading dealers of laser scanning equipment in Hong Kong. Andy will introduce the latest technologies of terrestrial and handheld mobile scanning such as FARO Focus S, ZEB-REVO RT and case sharing for various applications.

