

Modern Methods of Processing and Extracting Data from Point Cloud

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SUMMARY

In modern age laser scanning technology has become the most powerful and effective method of collecting large amount of data in relatively short time. Laser scanning is a technology which uses laser beams to measure and capture environments in 3D with speed and accuracy. A laser scanner works by pulsing out a beam of light which is rotated 270 degrees vertically and 360 degrees horizontally. Any surface that the light touches is reflected back and recorded as a data point, which is assigned a color and surface reflectivity. To be useful, the millions or even billions of 3D points generated by laser sensor need to be stored, organised, combined, georeferenced, measured, analysed and distributed within organisations or outward. Laser scanning method follows development in areas of computer hardware, software capabilities, sensor technology and memory capabilities. Laser scanning technology provides data of great detail, and hence requires software and hardware components capable for processing these large amount of data. This method is still improving, as well as procedures for its processing and extracting necessary data. This paper presents the most contemporary methods of working with point cloud, i.e. its processing and deriving data of interest. In this paper will be presented procedures of point cloud matching, classification of point cloud, extraction of structural entities and creation of BIM (Building Information Model) from point cloud. In addition, this method has great potential for further development and obtaining even more diverse data as final product. In this way, laser scanning technology will find its way at implementing in different areas of science and application. This is one of the most important trends in further improvement of this technology.