

Speeding up 3D Modelling for Highways Surveying



Skanska, Sweden, is pioneering the use of new software that automatically creates 3D computer models directly from laser scanners. The company has successfully trialled the Pointfuse software that also offers automated extraction of features from laser scanned data. Using a vehicle mounted mobile mapping system Skanska surveyed a stretch of motorway collecting millions of individual measurements detailing bridges, gantries and crash barriers. The Pointfuse software was used to process the large point cloud, recognising and extracting features in a matter of minutes.

Pointfuse is a powerful modelling engine developed by Arithmetica, a hi-tech company. The company also developed the 360 degree SphereVision camera system, used to survey and video map highways. Skanska, the company behind the M1/M6 improvement

scheme, trialled Pointfuse on real world laser scanned highway data.

Mark Lawton, Chief Engineering Surveyor at Skanska said innovation is part of Skanska's DNA and it is always seeking new technologies like Pointfuse to help it deliver projects more effectively and efficiently. In this case, Skanska was looking for automated line work generation and surface drawing to reduce CAD time and ensure an understanding of the point cloud in other packages and digital environments. Through the use of standard file formats, such as DXF, Pointfuse enables this interoperability. Additionally, both laser scanning specialists and non-technical staff can quickly visualise the point cloud data.

Point cloud

Pointfuse is a solution that is developed to give professionals a fast, precise and flexible way of converting the vast point cloud datasets generated by laser scanners such as Lidar into high fidelity vector models. Taking data from laser scanners mounted on vehicles, survey planes, tripods and even people and designed for engineers, architects and construction professionals, Pointfuse uses advanced statistical techniques to create vector models which can then be manipulated using any industry-standard CAD system.

Pointfuse is fully mobile compatible, and can process data from mobile scanners as easily and quickly as from terrestrial or airborne systems – and its results can be output and used on standard handheld mobile devices for use in the field. Pointfuse also offers truly automatic feature extraction. It automatically identifies features such as power-lines, bridges, gantries and crash barriers within the point cloud and extracts them within a matter of minutes.