MANAGING STREET-SIDE TREES IN SOUTH KOREA

THIS PROJECT IS TO CONSTRUCT A SYSTEM FOR STREET TREE MAINTENANCE THAT WILL SYSTEMATICALLY PERFORM TASKS RELATED TO STREET TREE GROWTH, REPELLING INSECT ATTACKS, STATISTICS FOR URBAN PLANNING AND MORE. INITIATED IN JUNE 2018 BY THE LOCAL GOVERNMENT OF HAMAN CITY IN KYUNGNAM PROVINCE, SOUTH KOREA, COMPLETION IS DUE BY NOVEMBER 2018.

A Street Trees Maintenance Database

In 2006, the South Korean government launched a measure to promote 'The planting and maintenance of street trees'. Each local government has since been participating in the street trees planting project. However, the project was not properly organized, so a the consortium in which C2L Equipment is participating is now trying to optimize it – starting with the case of Haman city. This local government-sized project is planned to expand nationwide.

Operations

A basic element in this 'Street Trees Maintenance' project, C2L Equipment builds a location-based street tree database. We are using our own Mobile Mapping System (MMS), Nebula_LP, for field surveys. This MMS consists of a panoramic camera (Ladybug 5+, FLIR), LiDAR (HDL-32, Velodyne) and INS (POS LV210, Applanix).

The local government has decided to use MMS for collecting street tree data because MMS is the most efficient tool for street tree data acquisition. It actually took only two weeks with 2 persons to collect all the MMS data in Haman city. The site is a 200 km long local road in Haman city. There are about 20,000 street trees along the road.

From the 3D Mapping content acquired using MMS, we extracted all relevant data for each tree: species, height, breast height etc. The panoramic image is used to distinguish the species of trees and this image data will be converged with point cloud data to finetune other inventory elements.

This new data will be converged with the existing, old-version maintenance files and documents to produce an up-to-date Street Trees Maintenance database. This post-processing work requires three persons for three months. The data survey by MMS was designed in advance using 3DM Content Manager and all the measurement data was extracted using Orbit 3DM Feature Extraction.

Conclusion

The meaning of this project is very important since this is an exemplary case to build a multiple geospatial information database in local government by using MMS and its postprocessing Software, Orbit, very precisely in a short period of time. Success in providing good results , the needs and demand for MMS and Orbit S/W in the geospatial information database market will increase dramatically. We are confident that quite a large number of local governments will follow the same technique as setup in this project.

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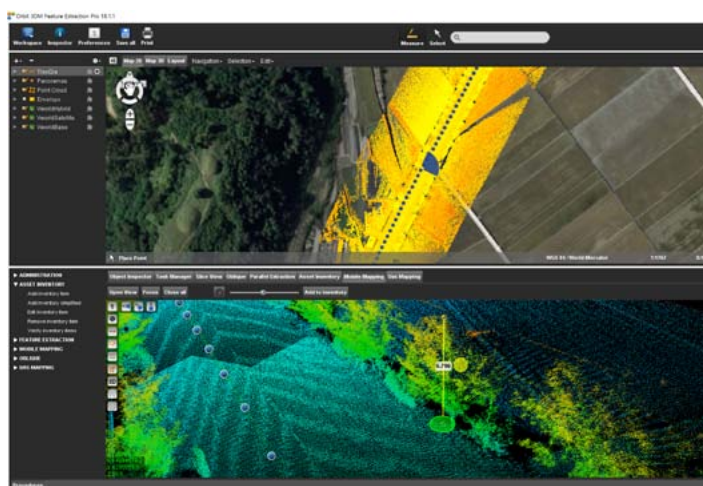
Measurements of Tree attributes in Orbit 3DM Feature Extraction Pro
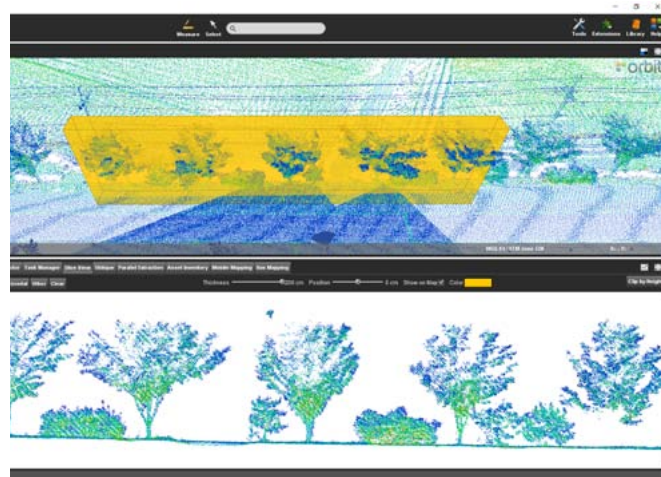
Using the Point Cloud Slice tool to separate trees from the surroundings in Orbit 3DM Feature Extraction Pro