



Geograma



Transformation of terrestrial LiDAR for urban inventories

The Customer

Geograma is a Spanish company with 17 years of experience in capturing, processing and managing geographic information. With its expertise and track record, the Geograma team can offer high value-added services in the area of geoinformatics. From field data capture to the development of web tools, the activities of Geograma are focused on improving geographical processes to facilitate decision-making.

Geograma's services include: development of CAD and GIS applications for desktop, web and mobile environments; field data capture with classical topography, photogrammetry, drones and Mobile Mapping systems; GIS strategic consulting; training; inventory preparation; INSPIRE consulting; and supply of cartographic, socioeconomic and traffic data.

www.geograma.com

The Challenge

The use of mobile mapping data involves managing point clouds and panoramic images. Handling panoramic images is very simple, requiring no highly-specialised knowledge or tools, but the same is not true for point cloud data. It is necessary to work in 3 dimensions, which means specialised staff and specific software are needed. In order to make inventories from mobile mapping data (terrestrial lidar), high productivity is required in the manual digitisation of features, and navigating around point clouds in a 3D environment is slow and laborious.

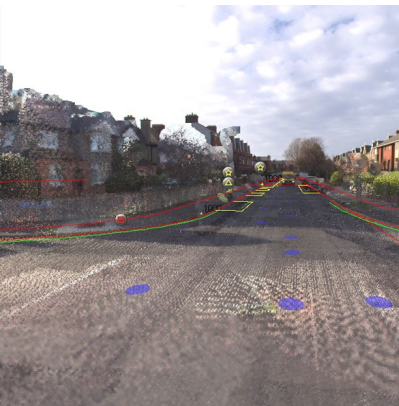
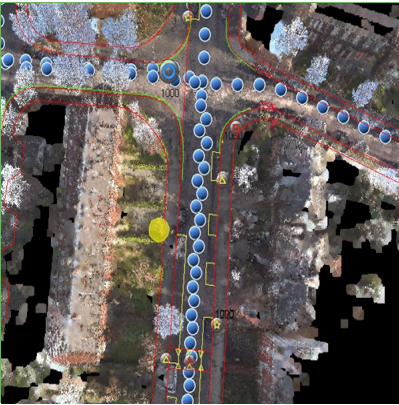
The Solution

To increase productivity of point cloud digitisation, an orthophoto was created from the coloured point clouds. The digitisation of the inventory was therefore a two-dimensional process, which made it simpler and more effective. In order to do this, FME was used to create a georeferenced JPG file with an orthorectified image of the point cloud from the 3D point cloud in .LAS format. This JPG image can be easily integrated into any CAD or GIS system, without requiring specific 3D or point cloud management functionalities.

The solution is based on:

- Mobile mapping
- FME Desktop

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Customer Opinion

„The capacity of FME to define and execute geoprocesses, in this case both with point clouds and with images, helped to viably and effectively improve production. The definition of the process was very simple and fast, and the FME format transformation capability was key to project success.“

Alejandro Guinea de Salas
Managing Director
Geograma

Geograma SL GIS & Mapping Services

Alejandro Guinea de Salas
Castillo de Eskibel 2, bajo
01007 Vitoria-Gasteiz, Spain
+34 945 131372
alejandro.guinea@geograma.com
www.geograma.com

The Benefits

The following advantages are associated with having orthophotos rather than point clouds:

- Possibility to work in 2D, simpler and faster
- More efficient digitisation of polygons
- Possibility of using CAD tools, more straightforward
- Fewer computing needs

Summary

There are many advantages of using mobile mapping data for urban inventories compared to traditional solutions: it makes data capture and digitisation much simpler and the data obtained is far more precise. The main challenge when using this technology is the subsequent processing of this data, given its large volume and specificity. FME Desktop was a huge help in this process, as it simplified the task of designing the transformation into orthophotographs, eased the required computational load and increased process productivity.

In this way, the individual objects of an urban inventory, such as road surfaces, pavements, traffic signs and pedestrian crossings, were easily captured from the panoramic images and point clouds obtained with the mobile mapping methods.

The Technology

With FME Desktop, users can:

- Design data flows quickly and simply
- Transform data clouds into surface models or raster images and combine them with other data sources
- Perform many different calculations and analyses with data clouds
- Process large and complex data without high computational needs
- Create automated and repeatable tasks that can process millions of points in seconds

con terra GmbH

Francisco Girón Gesteira
Martin-Luther-King-Weg 20
48155 Münster, Germany
+49 251 59689 300
f.giron-gesteira@conterra.de, www.conterra.de