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Fast & Accurate LiDAR Feature Extraction

Feature Type Interpreter

Tech Notes:

FTI is flexible and does not require color imagery to proceed with any particular analysis. The software has been designed to make use of as much or as little input data as the user can bring to the table.

FTI can begin a feature analysis with .LAS or GeoTIFFs as source data

Analysis results can be used to update the original .LAS file with the new classifications or shared as an ESRI shape file (points, lines, and areas) or GeoTIFF.

Load and display related raster and shape data to assist with the analysis.

FTI is not a 3D viewer. It's the automated feature extraction tool in your GIS tool belt.

Each layer analysis (buildings, vegetation, etc) also provides a text report on salient feature results. These include building and crown counts, average building and vegetation heights, and coverage area.

The soon-to-be-released FTI Component will enable a myriad of geospatial applications to tap FTI's feature extraction algorithms.

Object Raku's Feature Type Interpreter (FTI) is a light-weight, stand-alone application providing fast & accurate automated feature extraction from LiDAR data. The software makes heavy use of available Graphics Processing Unit (GPU) strength and has been designed with both the novice and experienced geospatial analyst in mind.

Drawing on years of experience optimizing geospatial production workflow, FTI's development team configured the process to lead the operator in a logical and efficient results-focused manner. Those results can be exported to standard GIS formats and allow users across industries to maximize the impact of those results. Industries that should investigate FTI's capabilities include Forestry, Defense, Utilities, Oil & Gas, and all levels of Government.

Whatever your industry, analysts need LiDAR to become *information* rather than merely (point) data. Using FTI to extract individual features from the myriad of points in the cloud is the first step to actionable insight and intelligence from a particular LiDAR collection.

Where does FTI fit in?

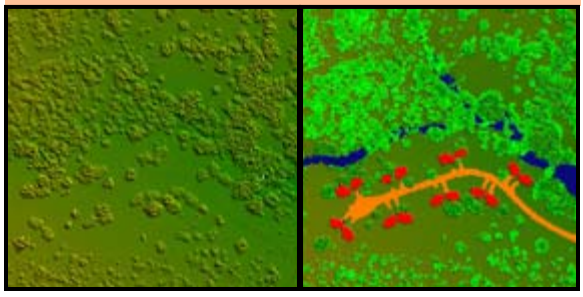
FTI is the LiDAR automated feature extraction complement to GIS workhorses like ArcGIS, ERDAS, and Intergraph. Rapidly analyze the data —in a very economical way—and bring up your results in your tried & true geospatial workstation.

Save yourself time and money by making FTI the *first* application in your production chain to analyze your LiDAR data. Continue on with the newly classified original .LAS file (points classified at each applicable return) or choose ESRI shape files and GeoTIFFs of the analysis results.

At Left: **Feature Type Interpreter (FTI)** provides automated digital terrain model and feature extraction. Automated extraction includes buildings, 3 layers of vegetation, roads, and water courses. In addition to standard export options like shape files & geo-tiffs, FTI will **re-export** .LAS files with each return newly attributed for use in the LiDAR viewer or GIS station of your choice.

Imagery and LiDAR data courtesy Fugro Horizons, Inc.

Below: 1st return source data on the left and the corresponding extracted features on the right.



Test Area approach Saves Time

One key advantage of FTI is it's **Test Area** approach which allows the operator to investigate extraction parameters in multiple areas of the data being examined. Rather than wasting time trying one set of parameters after another on the whole data range, using Test Areas increases the user's odds of having the best possible extraction results in the least possible time.

What does FTI do?

- **Ingests .LAS or GeoTIFF**
  - **Ingests multiple .LAS files**
  - **GeoTIFF of 1st return, last return, intensity, color imagery**
- **Processes:**
  - **Bare Earth & Buildings**
  - **Vegetation (three layers plus crowns)**
  - **Roads and Water courses**
- **Exports:**
  - **Newly classified points to .LAS**
  - **Feature Layers to GeoTIFF and Shape file**
  - **Bare Earth dem as GeoTIFF**

System Requirements:

FTI is configured to run on Windows 7 (32-bit) and will function well with most video cards produced after 2008. 4 GB RAM is recommended and Microsoft DirectX® 9c or higher is required. Installed FTI requires 250 MB of hard drive space.