Extracting Information from LiDAR Data
Point Clouds to Products
(1 day course)

ENVI is an interactive geospatial software environment designed to help image analysts get the most out of their data. The Feature Extraction (FX) module allows users to extract features from point cloud data, as well as multispectral and hyperspectral imagery. This course focuses on using the ENVI FX module to display and extract information from 3-D point clouds. ENVI FX supports most common LiDAR formats such as LAS, Binary, ASCII, and NITF LiDAR. Using the FX module, you can generate elevation products such as Digital Surface Models (DSMs), Digital Elevation Models (DEMs), and digital elevation contours. ENVI FX automatically extracts 3D features from LiDAR point clouds such as buildings, trees, power lines, and power poles. Products derived from LiDAR data processing are ready for import directly into a GIS.

Prerequisite: A basic understanding of LiDAR data is useful but not necessary. Some experience with remote sensing and/or GIS software is useful but not necessary.

Overview of LiDAR Concepts & Terminology
- Introduction to LiDAR
- LiDAR Terminology
- Using the Computer Based Training (CBT)

Scenario 1 – Oahu, Hawaii
Working with LiDAR Point Clouds
- Working with Public Domain Data
- Basic LiDAR Point Cloud Display
- Visualizing the LiDAR Point Cloud with Color
- Measuring Distances and Angles
- Cross Sections
- Evaluating Coverage and Density
- Generating a DEM and Contours
- Pushing Products to ENVI & ArcGIS

Scenario 2 – Haiti Earthquake
Using LiDAR for Disaster Response
- Setting up a Project
- Setting Preferences
- Evaluating Coverage and Density
- Setting Processing Parameters
- Processing
- Quality Assurance
- Tips for QA
- Building Vector Correction
- Tree Changes
- DEM Corrections
- Point Classification Editing
- Using the 3D viewer for QA
- Navigating and Flying in 3D

Scenario 3 – Boulder, CO
Using LiDAR and Imagery for Fire Mitigation
- Tips for QA
- Building Vector Correction
- Tree Changes
- DEM Corrections
- Power Line Vector Editing
- Power Pole Placement

Scenario 4 – Oregon University,
Working with ENVI LiDAR’s API
- DEM Advanced Parameters
- Generating Contour Lines from a DEM
- Pushing Products to ENVI
- Change Detection in ENVI using 3-D Point Cloud Products
- Overview of the Application Programming Interface (API)
- Some Simple Examples

All rights reserved. ENVI and IDL are registered trademarks of Harris Corporation. All other marks are the property of their respective owners. ©2016 Exelis Visual Information Solutions, Inc., a subsidiary of Harris Corporation.

For additional information or details, contact us at 303-786-9900 and ask for your sales representative.