

## E3De.

The interactive software environment  
for extracting 3D information from LiDAR data.



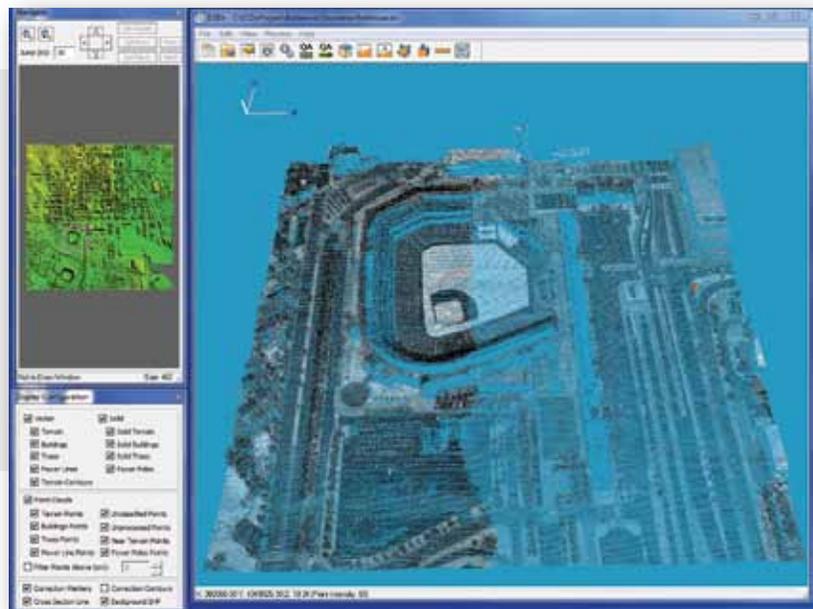
# Photorealistic Visualizations. 3D Feature Extraction. Versatile Geospatial Products.

When using geospatial data to make critical decisions, it is increasingly important to understand an area of interest from all angles. In addition to the information that can be extracted from traditional, two-dimensional geospatial imagery, professionals are now utilizing three-dimensional data, like LiDAR, to add meaningful context to a geospatial analysis workflow.

E3De™ is an interactive geospatial software environment that allows you to create powerful, photorealistic 3D visualizations and easily extract important features and products from LiDAR data. This important information can now conveniently be included in your geospatial analysis projects such as viewshed studies, forest inventories, right-of-way analyses, and urban planning applications. With E3De, you can quickly prepare your data, accurately extract features, fine-tune your results, and export your products for further analysis.

## WHAT IS LIDAR?

LiDAR, Light Detection and Ranging, is a popular data type and a remote sensing data format. It utilizes laser technology to create a point cloud data set that provides accurate elevation information, typically delivered in LAS format. E3De is compatible with the LAS and the ASCII formats and allows you to easily access the accurate 3D information within LiDAR data.



E3De. The software to discover  
the next dimension of your data.



# The Intuitive E3De Analysis Workflow

In the past, understanding the exact height and dimension of manmade and natural objects often required field analysis costing organizations time and resources. The E3De workflow allows you to transform your point cloud data and extract essential information for your geospatial applications without leaving the office. Beginning with data preparation, E3De allows you to quickly and easily identify and extract 3D features, refine your results, and export 3D products that can be fused with traditional 2D imagery for further analysis or inclusion in your GIS.

## PREPARE 3D DATA FOR GEOSPATIAL ANALYSIS

When analyzing 3D data, limited file support and data ingest constraints often cause you to spend more time than necessary preparing your data for analysis. With E3De the most commonly used data formats such as LAS, GeoTIFF, and SHP are supported, so you can rapidly access and ingest your LiDAR data. Additionally, E3De can simultaneously ingest multiple data files, giving you more time to identify features and analyze results.

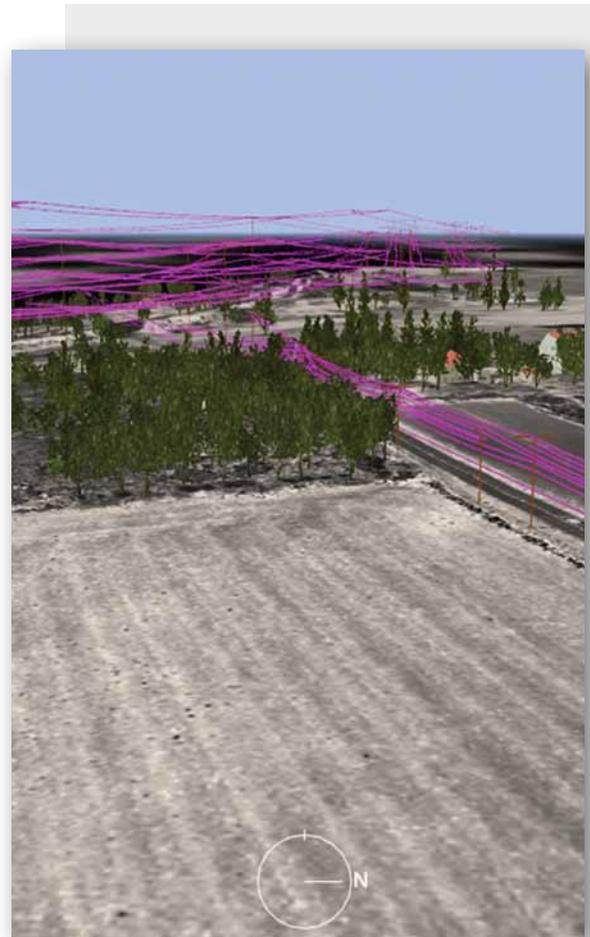
## IDENTIFY AND EXTRACT 3D FEATURES OF INTEREST

Traditional methods of identifying features of interest such as building footprints, trees, power lines, and power poles were complex and time consuming due to the cost and time commitment of sending employees to remote locations to collect elevation and location information. E3De allows you to find features of interest utilizing LiDAR data through either an automated feature identification tool or by manually editing and identifying features as you explore the data in a 3D visualization. Feature identification can be performed on an entire point cloud scene, a user defined subset of a scene, or multiple LAS files simultaneously, providing accurate information in a fraction of the time.

E3De utilizes the detailed elevation information in LiDAR data to enhance your geospatial analysis. By identifying features and creating products, you can:

- Identify building footprints
- Create forest inventories
- Perform viewshed analyses
- Complete right-of-way analyses
- Determine power line and power pole locations

The products you create with E3De feature identification capabilities are useful in a variety of industries, from utilities for determining vegetation encroachment on power lines, to defense and intelligence for viewshed analysis, or even natural resource management to create forest inventories. Regardless of your application, E3De has the functionality you need to make informed decisions.



## FLY THROUGH PHOTOREALISTIC SCENES.

At any point during your analysis, E3De allows you to fly through 3D scenes in a photorealistic environment. View your data from every angle or even make adjustments to individual features.

## REFINE 3D FEATURE EXTRACTION RESULTS

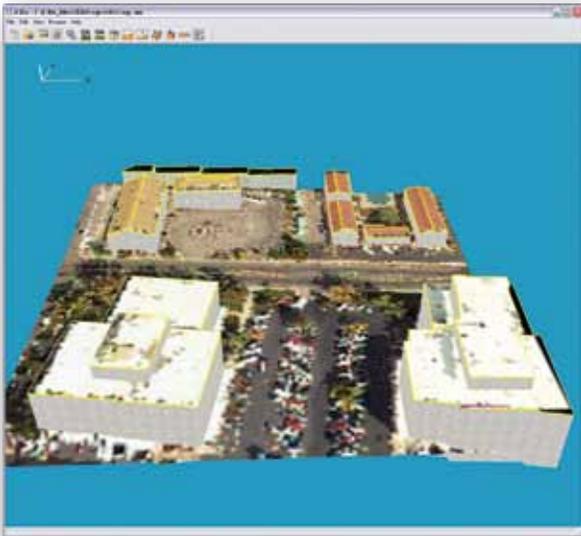
3D feature extraction results often need to be refined to ensure that individual features are accurately identified, or to correct attributes to ensure the visualization is true-to-life. To refine results in E3De, fly through a photorealistic scene looking for specific data points or individual features that need editing. Editing features in E3De is easy; simply click specific data points and modify their identification. Refine DEMs by smoothing, fixing misclassifications, or refine results to include individual features such as: the shape of structures, the number of trees, and the location of power poles and power lines.

## EXPORT PHOTOREALISTIC PRODUCTS AND LAYERS

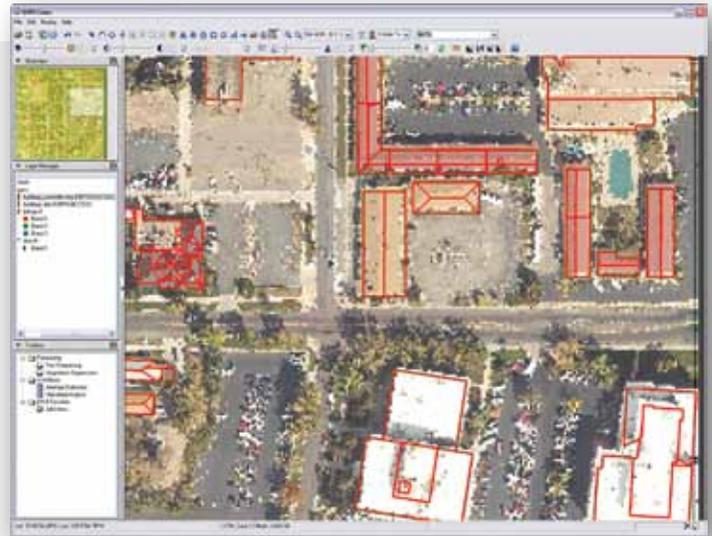
After features are identified in your data scene, exporting those features as products or layers is useful for performing additional geospatial analysis, sharing with colleagues for verification studies, or inclusion in your GIS for mapping applications. E3De can export products and layers in a topographic format, as a standard raster, a .csv file, or in GeoTIFF, LAS, and SHP image formats.

## EASILY EXPORT YOUR RESULTS TO:

- Add additional content to your GIS mapping applications
- Include 3D features as raster or vector layers in your geospatial imagery analysis
- Utilize critical, timely elevation information in a viewshed analysis



In this image, 3D data was analyzed and prepared for export using E3De.



Here you can see the 3D feature identification results from E3De in ENVI, ready for additional geospatial analysis.

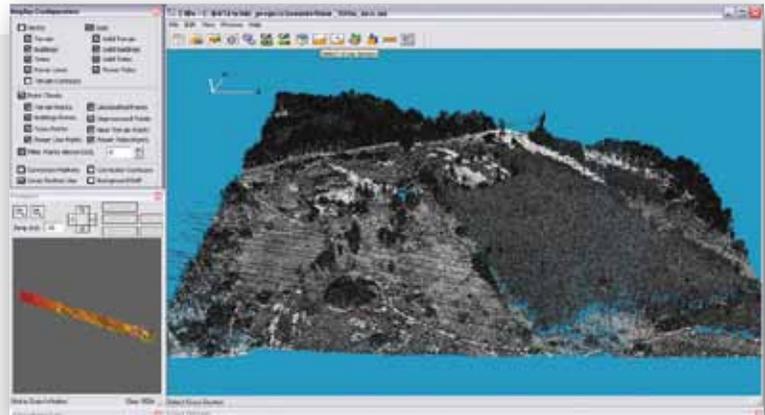
The flexibility of E3De allows you to use exported results in a variety of geospatial tools like ENVI image analysis software or the ArcGIS® platform. ENVI software utilizes scientifically proven algorithms to perform hyperspectral and multispectral image classification, feature extraction, change detection, and variety of other image analysis techniques. To perform additional analysis on your exported 3D products, E3De provides an easy to use direct link to ENVI that automatically opens ENVI and your exported file. When E3De products are used in conjunction with ENVI software, you can add more geospatial information to your analysis than ever before.

# Identify and Extract 3D Features of Interest

With E3De, you have the software tool you need to quickly identify 3D features such as trees, building footprints, power poles and power lines, and create layers and products from LiDAR data. Now you can extract additional meaningful information for your geospatial analysis and mapping applications and have a greater understanding of the world around you, so you can make accurate, informed decisions.

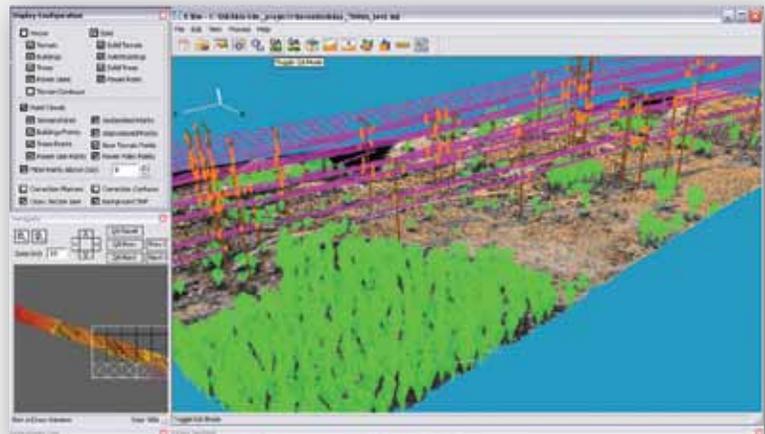
## ACCESS YOUR DATA

E3De makes accessing your LiDAR data easy by allowing simultaneous file ingest and immediate visualization of a point cloud.



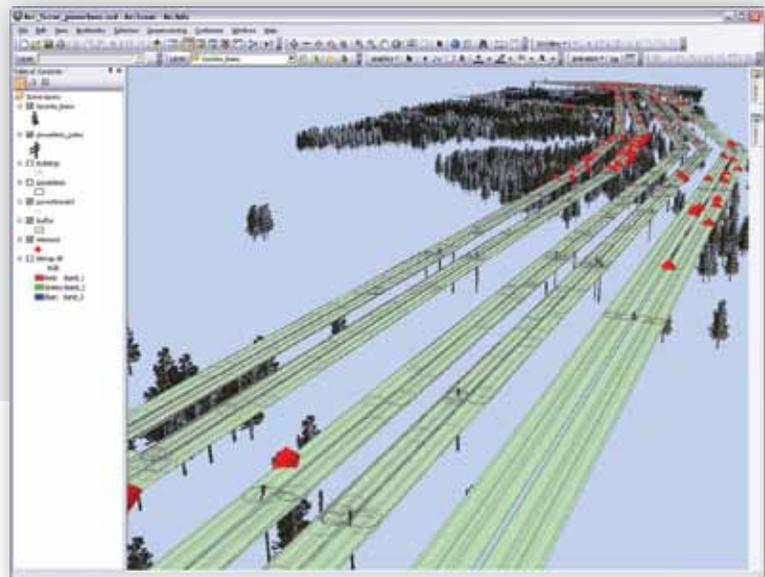
## IDENTIFY FEATURES

E3De uses multi-threading technology that allows you to quickly identify 3D features of interest by using the full processing power of your desktop.



## EXPORT YOUR RESULTS

Using E3De feature identification results for additional geospatial analysis is easy. Export your results as rasters or shapefiles, in topographic formats, and through the direct link to ENVI image analysis software.



E3De

## E3De. Discover the next dimension of your data.

Professionals across industries use LiDAR data to enhance their understanding of the geospatial information they use to make critical decisions. Whether applying LiDAR data to civil planning, natural resource management, geological exploration, or defense and intelligence, E3De allows users to create photorealistic 3D visualizations, extract 3D features, and export products and layers to help them understand the world around them.

[www.exelisvis.com](http://www.exelisvis.com)

**EXELIS**

Visual Information Solutions

All rights reserved. E3De, ENVI and IDL are trademarks of Exelis, Inc. All other marks are the property of their respective owners.  
©2011, Exelis Visual Information Solutions, Inc.