SOCET GXP® LiDAR capabilities

The GXP ecosystem

2-D Surface Visualization
- Contour Labels
- Customizable elevation colorization
- Post Thinning options
- Posts, mesh, X-Profile, Y-Profile, Quick Contours, Detailed Contours

3-D Cursor
- Surface intersect plane
- Surface Tracking and manual elevation adjustment

3-D Feature Visualization
- Features can be optionally draped on a surface

3-D Mensuration
- Customizable units and reported measurements
- Height
- Markers
- Polylines
- Polygons

3D Multiport™ Options
- 3D Compass
- Apply Templates in 3-D
- Customizable backgrounds

3-D Point Cloud Visualization
- Adjustable Point Size
- Colorization based on Classification, Elevation, Intensity, Return, or RGB
  - Layers may be turned transparent
- Multiple point clouds automatically create a mosaic
- Project imagery onto point clouds
- Shade colorization by intensity or luminance

3-D Surface Visualization
- Imagery can be draped on any surface in 3-D

Aspect Map
- Customizable aspect colorization

Automatic Feature Extraction
- Building footprints
- Building rooftops
- Trees
- Volumetric buildings with complex roof structures

Bare Earth and Surface Elevation Model Generation from Point Clouds
- Grid
- Triangulated Irregular Network (TIN)
- Vertical deviation and small object filters

Elevation Profile
- Interactive link between profile graph and visualized terrain

Elevation Shaving
- Dynamically remove points above a specified ground level based on a flat plane or a reference terrain file

Embed Colorization
- Allows colorization options available for point clouds to be written to the RGB values of the point cloud
  - Classification, Elevation, Imagery, and Return values of the point cloud
- Point clouds can be saved as .las files with the embedded RGB values

Generate Vectors
- Aspect Map, Slope Map, Terrain Shaded Relief, and Line of Sight

GeoPDF®
- 2D GeoPDF for terrain surface products
- 3D GeoPDF generation

Intensity Image Generation
- Customizable Ground Sample Distance (GSD)

Legend
- Dynamic key for 2-D surface visualization and terrain analysis tools

Line of Sight
- 360 degree
- Accounts for volumetric features
- Customizable Observer Height, Distance Perimeter, and Off-Boresight Angle
- Dynamic update on move
- Linked elevation profile graphically shows obstructions
- Multiple Line of Sight graphics may be dropped
- Range Fan
- Visible and hidden areas shown
  - Customizable visibility and colorization
- Visualization in 2-D or 3-D

Native Surface and Elevation Model Support
- GeoTIFF, NITF, etc.

Point Cloud Formats Supported
- .las
  - Full support up to v1.4
- .laz
- ASCII
- Binary point file (.bpf)
- NITF-wrapped .las

Rigorous Sensor Model
- Generic Point Cloud Model (GPM)

Slope Map
- Average or Steepest Slope
- Customizable slope colorization
- Percent or degree units

Terrain Comparison
- Volumetric mensuration

Terrain Shaded Relief
- Customizable elevation colorization
- Customizable Light Source
- Simple Relief Map option

Triangulation
- Triangulate point clouds to imagery
  - Error propagation using GPM sensor model

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