

**Accessing and Running Encompass**

SOLV3D encompass (Encompass) requires no special software or hardware.

- PC, Mac, iOS, Android device with a web browser and an internet connection is all that is needed.
- Chrome browser is preferable, followed by Firefox, Safari, and Edge.
- All data can be stored in the cloud; either in our AWS Cloud storage or another cloud accessible storage of choice (such as AWS or Azure), or within a client's own webserver storage solution.

**Creating a Project in Encompass**

Establishing a project in Encompass involves uploading and processing of the following:

- LiDAR data – point cloud survey data taken from laser scanning: terrestrial/static, or mobile, or aerial, or a combination.
- Photogrammetry synthesized point cloud data created from oblique photos taken from UAVs.
- Images – panoramic, or aerial, or a combination.
- Points of Interest: asset tags, photos, comments, links to external systems, discussions.
- Feature Layers – DXF, shapefiles, KML/KMZ
- Webservices – WMS/WFS/WMTS/Esri ArcGIS Online Map Layers

At a minimum, either point cloud data and/or geo-referenced photos (preferably both) are required.

**Base Inputs****LiDAR Data**

- LAS/LAZ, E57, ZFS or PTX format with a global projection (<http://spatialreference.org/>). If the data is in a local projection, an indication of the global projection shift for geo-locating via a matrix (transform, rotate, scale) into a known coordinate system or global projection string is required. This is typically achieved by aligning local system coordinates into a known latitude/longitude.
- If static scan, E57, ZFS, PTX or LAS of each scan, again with coordinate system and a CSV file containing XYZ for each scan location.
- In order to save space, LiDAR data can be pre-thinned to 0.025m spacing (1 point every 2.5cm). Encompass will by default decimate the point cloud when streaming, however this can be adjusted depending on the needs of the project.

**Photos (PNG, JPG, TIF, ECW, etc)**

- Mobile scans: panoramic images (equirectangular with 2:1 aspect ratio)
- Static scans: with a dense ZFS/PTX/LAS file, panoramic images can be synthesized out of the static scan. Alternatively, if panoramic images are available from another source, you can incorporate them.
- UAV/Drone data: Oblique/ortho photos along with EXIF or CSV containing XYZ or lat-long/elevation of each image and roll, pitch, yaw of each image. If this metadata is unavailable it may be possible to line these up automatically if there are enough photos and sufficient overlap.

- Images must be accompanied by a CSV/TXT/XLS file detailing location (xyz) and orientation (roll, pitch, yaw) of each image.

### **Bulk Upload Inputs**

#### Feature Layers

- Either SHP/SHX/DBF or single DXF (zipped) - most object types are supported.
- All drawings should contain elevations to allow for proper rendering in 3D mode.
- Files may require uploading assistance by our technical team depending on the complexity of the associated objects.

#### Points of Interest (collection items [comments, discussions, files, photos, URL links], pins)

- CSV file containing:  
item-name1, x, y, z, comment  
item-name2, x, y, z, comment  
...
- Points of interest can be uploaded via the Folders.

### **Interactive Inputs**

#### Points of Interest (tags [comments, discussions, files, photos, URL links], pins)

- By right-clicking with the mouse or touch and hold on a tablet, a pop-up menu allows the user to add a pin for a comment, discussion, uploaded image, or URL link.