

To help you get the most out of the modules, you should become familiar with the following terms:

3D Model – A three-dimensional digital object.

Photogrammetry -- The process of photographically capturing a real-world 3D object for producing digital replica 3D reconstructions, measurement data, and two-dimensional orthophotos.

Point Cloud – Point clouds are data points in 3D space that represent the contours of a surface. In photogrammetry, point clouds are generated early in the photogrammetric software process, and appear as clouds of data points in 3D space.

Mesh – Produced from the point cloud, the mesh is usually made up of polygons, and gives the 3D point cloud object a solid surface, but without any color information.

Texture -- The texture is the photographic color layer that is draped on top of the 3D mesh. Texture data is pulled from the photographs captured during the photogrammetric process.

Orthophoto – A two-dimensional photograph, or map, of the photogrammetrically produced 3D model that is captured inside photogrammetry software by a virtual camera. Orthophotos are often made from aerial images captured by drones for surveying applications. The photogrammetric process allows for the creation of orthophotos, which are orthorectified and therefore geometrically corrected so that the scale of the photograph, and what the photograph shows, is dimensionally uniform across the surface of the image. All maps, including Google Earth and Google Maps imagery, are orthorectified, and include a representational scale measuring device for measuring distances (in meters, kilometers, miles, etc.).

LiDAR -- Short for Light Detection and Ranging, LiDAR hardware technology uses laser light emanating from a machine to measure ranges by measuring the time it takes for a laser beam to leave the LiDAR hardware transmitter, bounce off an object, and return to the LiDAR hardware receiver. LiDAR hardware produces point clouds, with each point representing a laser beam collision with an object after it left the LiDAR transmitter, bounced off an object, and returned to the LiDAR receiver. LiDAR-based point clouds often look like photogrammetry point clouds and can also produce a mesh.

UAS – Unmanned Aerial System, commonly known as a drone

UAV – Unmanned Aerial Vehicle, commonly known as a drone.

Virtual Reality – A three-dimensional immersive visual media delivery technology experienced through motion tracking goggles worn over the eyes. Virtual reality experiences usually visually cutoff the user from their immediate surroundings.

Augmented Reality – A three-dimensional immersive visual media delivery technology that overlays content on top or amidst the user's immediate surroundings.