

PHOTOMESH

High-performance 3D modeling



Combining photos in a wide range of formats, **PhotoMesh by Skyline Software Systems generates highly-detailed 3D meshes, orthophotos, point clouds, elevation models, and more.** PhotoMesh's breakthrough 2D and 3D mapping technology is based on the highest-performance photogrammetry, computer vision, and computational geometry algorithms.

3D Mapping:

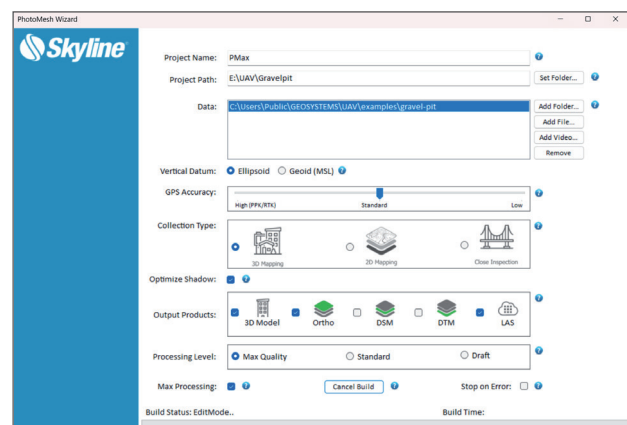
Transform aerial and ground photos and Lidar collections into **city-scale, digital twin models with advanced color balancing and high-quality texturing**, in a range of 3D mesh and point cloud formats. With its survey-grade, geo-referencing accuracy, PhotoMesh can be used for **urban planning, infrastructure and engineering project management, inspection and 3D GIS** applications.

Digital Twin:

PhotoMesh supports **close-range photogrammetry**, producing point cloud and mesh models with **sub-millimeter accuracy**. These models can be leveraged to perform **virtual industrial inspection and asset management** that remove the risk of human error, at a fraction of the time and cost of on-site, traditional inspection methods. PhotoMesh's range of 3D outputs can also be enablers of **customized AI and machine learning analysis tools**.

2D Mapping:

Fully automated, **high quality generation of multispectral true-orthophotos, Digital Surface Models (DSM) and Digital Terrain Models (DTM)**. PhotoMesh 2D mapping outputs can be used in a broad range of industries, including agriculture and urban mapping.

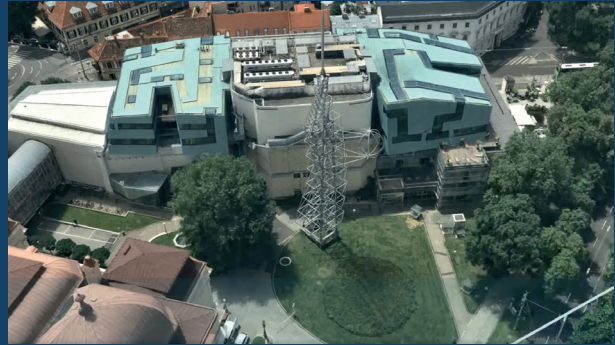


PhotoMesh Wizard



HIGHLIGHTS

- Gaussian splatting
- Wizard-guided operation
- Outstanding orthophoto quality
- Quick orthophotos (Quick DOP)
- Embedded and extendable through the Skyline product suite
- High performance through multi-computer processing



Artifact-free, high-detail rendering using Gaussian splatting

PHOTOMESH DRONE

PhotoMesh Drone is the powerful, **single-computer solution for processing drone data**. PhotoMesh Drone converts drone-captured photos, including multi-spectral bands, video, and LiDAR from a variety of sensors into highly-detailed 2D and 3D outputs. PhotoMesh **excels at the most challenging mapping and close-range reconstruction projects**.

Outputs

Outputs are industry-standard formats, including multi-resolution 3D mesh models (3DML, 3D Tiles, SLPK, DAE, OBJ, ...), rasters (Orthophoto/True Orthophoto, DSM, DTM), and point clouds (LAS/LAZ), ensuring **seamless interoperability** with other 2D and 3D GIS solutions.

Optimized Local Hardware Performance

Designed as a powerful, single-computer solution, PhotoMesh Drone fully utilizes local hardware capabilities to **deliver fast and accurate photogrammetry and 3D modeling** for your projects.





Highest Quality Outputs

PhotoMesh Drone generates the **highest quality 3D and 2D outputs in the industry**. PhotoMesh Drone excels at reconstruction of man-made surfaces including buildings, infrastructure, and roads. It performs **high-quality True Ortho and Rapid Ortho Composite of exceptional quality and accuracy**.



LiDAR Integration

PhotoMesh Drone performs **hybrid photogrammetric processing of images with LiDAR** to create higher quality output than possible with either photogrammetry or LiDAR alone.



Geospatial Visualization

PhotoMesh Drone **can be bundled with TerraExplorer for large-scale visualization** of outputs with 3rd-party geospatial data including GIS, imagery, LiDAR, and DEM.



Powerful Simplicity

PhotoMesh Drone provides powerful tools for analysis and visualization, enabling efficient preview, refinement, and data optimization - all within an **intuitive interface enhanced by step-by-step guided wizards** that simplify complex workflows.



Precise Geo-Positioning

PhotoMesh Drone leverages GPS/RTK/PPK geo-positioning data for aerotriangulation, **enhancing model positioning with manual or automatic control points**. When GPS data is limited, it aligns models to existing projects to ensure precise geo-referencing.



Multispectral Integration

PhotoMesh Drone **integrates multi-spectral information, such as NDVI and GRVI**, to enrich mesh texturing and orthophoto generation, enabling more detailed analysis of surface characteristics for a variety of applications.



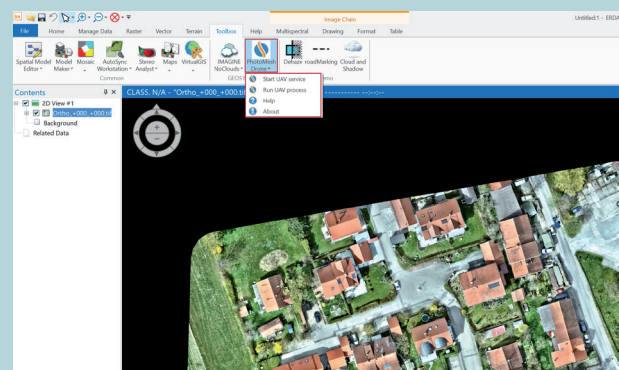
Quality Reports

PhotoMesh Drone **delivers comprehensive Quality Reports** after each build, providing powerful statistical and graphical insights. These reports highlight key metrics, detect potential issues, and visually present data like photo overlap, connection strength, and projection accuracy - helping you **achieve optimal quality builds**.

IMAGINE PhotoMesh Connector

The GEOSYSTEMS IMAGINE PhotoMesh Connector **integrates PhotoMesh into your ERDAS IMAGINE workspace**. It contains the following functionalities:

- Button in ERDAS IMAGINE to launch the PhotoMesh Wizard
- PhotoMesh integrated into IMAGINE as an operator (parameterized execution)



IMAGINE PhotoMesh Connector



High Quality

PhotoMesh generates a full-3D mesh model that faithfully reproduces even small-scale details such as cars, trees, fences, and walls - all with **advanced color balancing and high-quality texturing**.



Scalability

PhotoMesh employs elaborate tiling mechanisms to efficiently **handle projects of any size**, even large projects with hundreds of thousands of photos.



Cloud Ready

PhotoMesh can exploit **computer clusters and cloud computing to run a single project simultaneously on hundreds of fuser machines**. Sharing the workload involved in generating PhotoMesh output vastly accelerates the build process.



Production Automation

Robust REST APIs allow developers to create, monitor, and manage project queues and to **automate PhotoMesh production flows on local machines, remote servers, and the cloud**.



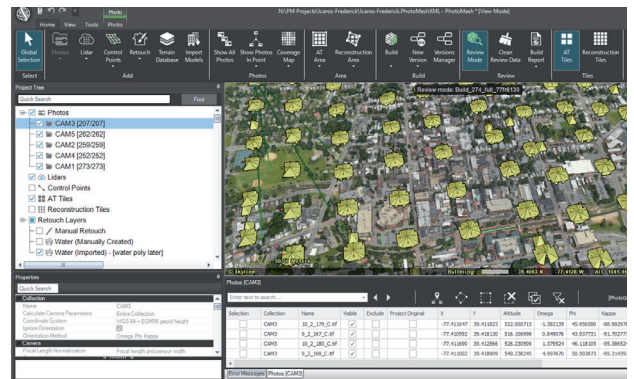
High Performance

PhotoMesh can run its efficient algorithms fluidly on standard GPUs, or exploit multi-core and multi-computer processing to further accelerate database creation. A single project can run simultaneously on hundreds of fuser machines, **processing tens of km2 per day**.



Usability

Intuitive GUI and **powerful, versatile tools** for accurate evaluation and adjustment of your input data and AT, including: a coverage map, photo inter-connection map, Lidar data integration, control points, photo projection on terrain and Lidar and much more.



GEOSYSTEMS is a leading GeoIT specialist, empowering public authorities, private companies, and research organizations to leverage geodata for informed decision-making. With over 35 years of expertise, the company develops downstream services that seamlessly process satellite imagery and integrate it with diverse data sources through highly automated workflows. The resulting insights are delivered via intuitive, interactive web applications. GEOSYSTEMS' products and solutions cater to a wide range of markets, including natural resource protection, green urban planning, infrastructure management, land surveying, climate adaptation, CO2 compensation, smart farming, forestry under climate change, and security. As a partner of Hexagon, the company provides globally recognized COTS software and platforms for remote sensing, photogrammetry, GIS, data management, browser-based applications, and 4D real-time solutions. Representing Skyline Software Systems, Inc. as its partner in Germany, Austria, and Switzerland, GEOSYSTEMS offers cutting-edge technology for 3D photogrammetry with PhotoMesh Drone. GEOSYSTEMS is an OHB subsidiary based in Gilching near Munich. Further information: www.geosystems.de or [LinkedIn](#).

