

Terrestrial Laser and Drone Scanning Provide the Perfect Combination

Lidar and Drone Data Provide More Accurate Complete Scene Capture

Why Merge Terrestrial Laser Scanning With UAV Scans?

- Terrestrial laser scanning provides accurate capture of complex spaces, such as the interior of factories, hospitals, construction processes, and other commercial infrastructure facilities requiring such specialized equipment.
- Reconstruction of 3D twin models and appearance from unmanned aerial vehicle (UAV)-based photogrammetry enables operators to rapidly capture exterior structures and their surrounding environment.
- Merging these technologies together is extremely beneficial, it helps users quickly and accurately capture their entire facility—including impractical areas such as rooftops, cliffs, waterways elevated structures—and provide outdoor context to be merged with indoor scans for complete site mapping.

Quick Capture of Hard to Reach Spaces

Without UAV Scan



With UAV Scan

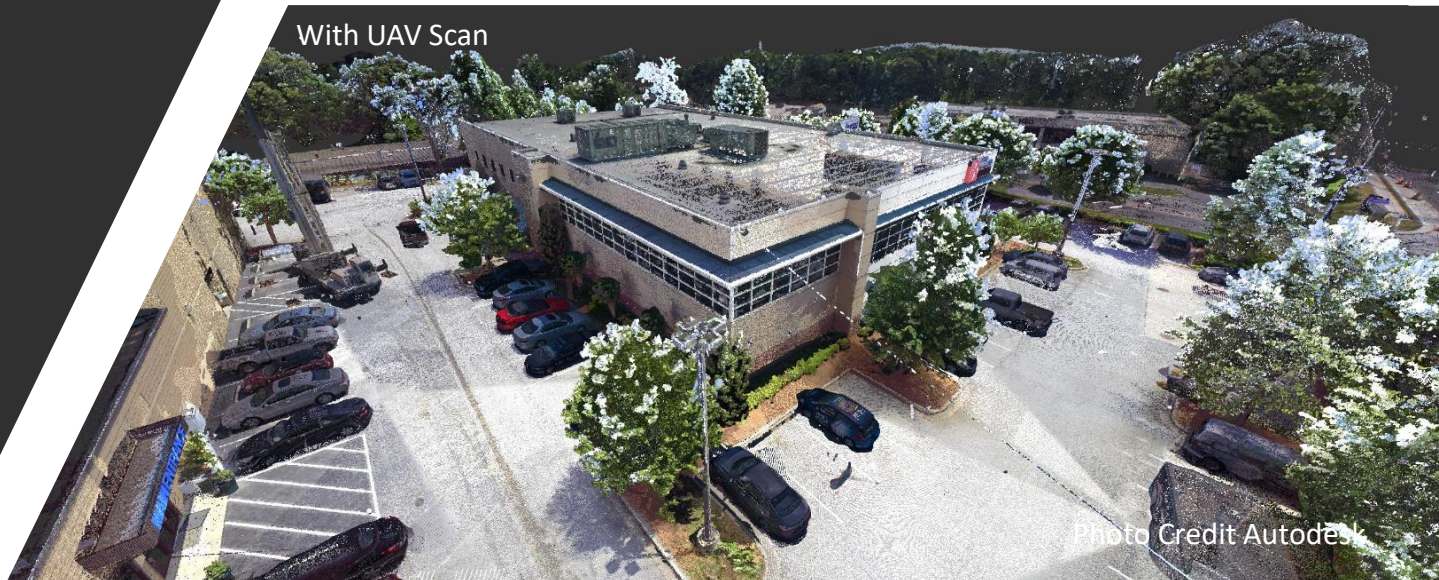


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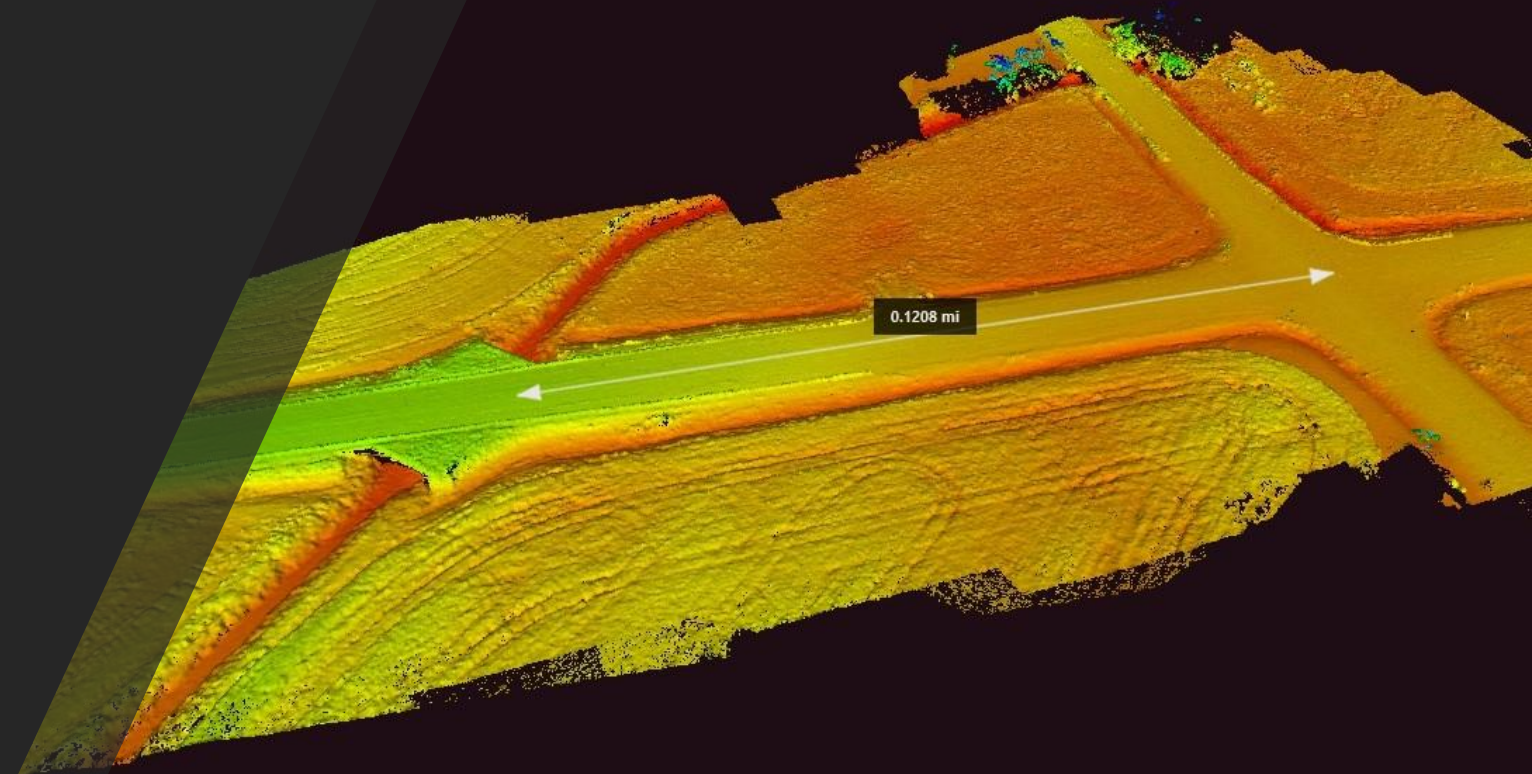
When Can Drones and Laser Scanners be Used Together?

- Accident, Crime and Fire Scene Documentation and reconstruction
- When taking measurements from point clouds and orthophotos
- When using a laser scanner is unsafe or the area is inaccessible
- When roadways or sites cannot be closed for traditional scanning
- When Documenting Large scenes and projects
- When an accident occurs on a waterway
- For the creation of scaled 2D and 3D images, animations and video
- Collecting data from busy roadways or highways



Advantages of Combining Dual Technologies

- Achieve greater levels of accuracy at final output
- Reach areas that would normally be inaccessible to traditional ground-based laser scanning.
- Reduce the number of people and resources needed for a project.
- Millions of measurable geo-tagged points are produced into twin 3D models and Point Clouds
- Faster data capture and processing time equals less time on scene
- Ease of Accessing inaccessible areas, just fly a drone
- Safer working environments for client's and personnel

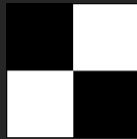


What can you expect from incorporating a drone scan with Laser Scanning?

- Topographical Surveys with \approx accuracy as traditional equipment in a fraction of the time.
- Each image is geo-tagged with a specific set of coordinates.
- Reduction in cost for performing a site survey and workload of people in the field.
- Generation of 3D models with measurable geo-data/ dense point clouds.
- Ability to reach areas that many not be accessible by traditional survey instruments
- Generation of high-resolution ortho and cadastral maps and models.
- Photogrammetry files can be measured on later and transferred to CAD.

How does a drone survey work?

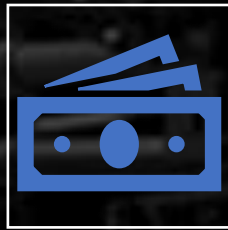
- Ground control points are placed throughout the area in conjunction with survey data.
- The target area is flown with a drone using a double grid pattern.
- Photos are captured and uploaded to specialized photogrammetry software.
- Project is completed resulting in high-resolution Ortho maps, 3D models/Point Clouds and GIS data.



Time Savings with a UAV Addition



An area that would normally take days or weeks to survey only using traditional methods can now be flown and mapped in minutes to hours depending on the project size.



Less time surveying at a project site translates to cost savings for our clients and helps to speed the entire construction timeline. Adding a UAV scan in many projects may be the only scan needed, thus saving time and cost.



Using drone scans for urban development planning

- Drone surveys help urban planners get huge amounts of real-time data in a shorter period than with a total station.
- Acquire real-time existing social and environmental conditions of each site to evaluate the impact of variants.
- DEM's can be overlaid onto their environments giving planners an experimental perspective.
- Gain above ground topographic information accurately in a fraction of the time, and substantially reduce associated field cost.



A close-up, low-angle shot of a drone's camera and sensor assembly. The camera is mounted on a gimbal and is the central focus of the image. The drone's body is dark grey or black, and the background is blurred, showing a bright light source at the bottom right.

Applications for Combining Drone and Laser Scanning

- Urban Planning and Land Management – digital surface and terrain models
- Construction – as-built aerial surveys reduce the need to physically access job sites on foot
- Engineering – from measuring cut and fill volumes, to inspecting crucial infrastructure drones offer faster more accurate solutions
- BIM – data can be used to generate highly detailed and accurate 3D models and point cloud scans to compare as-built
- Energy and Infrastructure –inspect linear assets such as pipelines, powerlines, rail routes waterways, wind and solar.
- Accident Reconstruction and modeling.

Take The Next Step and Speak With Us



For Questions or Service Please Reach Out to Us

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