NV5 GEOSPATIAL

UNMANNED SYSTEMS

ACQUIRE
ANALYZE
ANSWER

NV5G EDGE

Our Unmanned Systems group is up to the task for all specialty acquisition and processing from a diverse grouping of unmanned systems in the air, on the ground, and at sea.

WHY UNMANNED?

Unmanned systems can provide significant advantages for many projects. They are easy to move from site-to-site. We operate them with little to no interruption of traffic or construction. They are safe, efficient ,and cost effective. And finally, they can provide the ultimate in accuracy and resolution.

We collect lidar from our high-end RIEGL sensors, multispectral imagery from our Sony camera systems, and infrared data from our specialized Flir sensors.

Aerial Platforms

We own a diverse suite of unmanned aerial vehicles (UAVs) that we deploy for our projects. This includes fixed and rotary wing systems that have maximum gross takeoff weights (MGTW) up to 55 pounds. Our BFD Systems SE-8 is a flagship platform with an incredible power to weight ratio, which means we can fly more payload with more batteries than ever before, providing considerably more endurance for each mission flown. Greater cost efficiencies accrue from longer missions.

The endurance of our missions varies considerably based on the platform and payload as shown in the table at right. Today's high-end lidar sensors are quite heavy and are the most restricted in time aloft.

Platform	Sensor	Min (minutes)	Max (minutes)
Rotary	Lidar	14	30
Rotary	Imagery	25	60
Fixed Wing	Imagery	25	30

For more information or to schedule a meeting contact nv5g-sales@nv5.com

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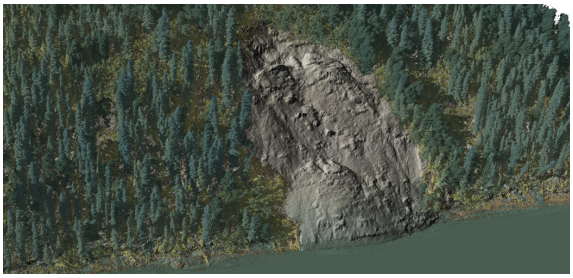
UNMANNED SYSTEMS APPLICATIONS

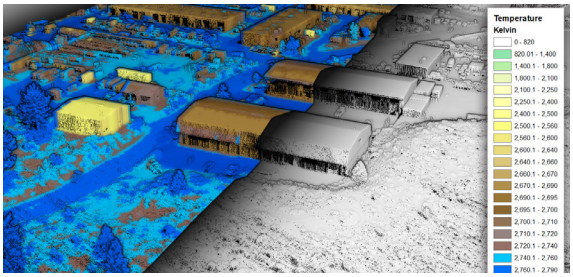


GEOPHYSICAL RISK ASSESSMENT

UAS lidar data can be collected at return densities of 200-500 pulses/m2 and at multiple look-angles, allowing for detection and characterization of hazards such as landslides and micro-faults under dense canopy or in areas that are unsafe for traditional surveys. Through repeat collections, hazardous areas can be monitored and evaluated over time.

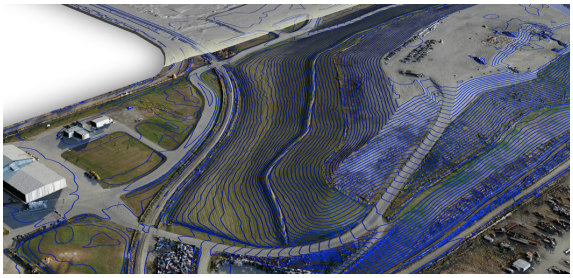
INFRASTRUCTURE MAPPING & INSPECTION

Accurate, high-resolution LiDAR and imagery from a UAS are used to inform engineering design, establish as-built conditions, and provide data for future monitoring. Subsequent data collections combined with change detection analyses can monitor structural integrity, small-scale damage, or signs of degradation.



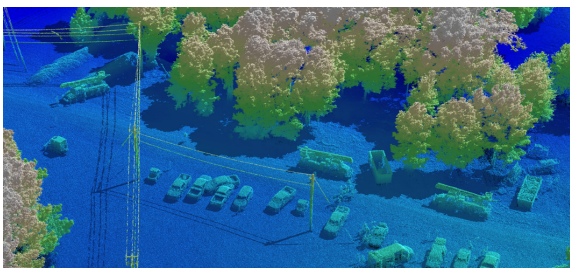
THERMAL ANOMOLY DETECTION

UAS platforms equipped with thermal infrared (TIR) sensors are used for a variety of applications where a feature of interest has a different radiant temperature than its immediate surroundings. NV5 Geospatial has used TIR imagery to identify leaks from underground pipes, map discharge into rivers, detect geo-thermal activity, and analyze energy heat loss from industrial facilities.



CHANGE DETECTION

High-resolution, multi-temporal UAS data, combined with NV5 Geospatial's advanced analytics, allows for precise detection and calculation of change. Our development and deployment of autonomous robot platforms to monitor and inspect utility structures has proved invaluable for remote damage assessments.



EMERGENCY MANAGEMENT

UAS-based remote sensing can give real-time imagery and advanced geospatial analytics to emergency managers, reducing the human and environmental costs of natural or man-made disasters. Our rapid mobilization of remote sensing data collections have supported search and recovery efforts, emergency site access, and route detouring.

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