

INCREASE: Safety, Efficiency, Profitability, Accuracy

REDUCE: Environmental disturbance, Project timelines, Overall costs

IMPROVE: Productivity, Revenue opportunities, Decision making

INNOVATE: Multiple applications - 1 flight, Up-to-date information

GAIN: A COMPETITIVE ADVANTAGE



MEASURE, MONITOR, MANAGE

THE POWER OF INFORMATION

X1 AERONAUTICS Inc. has earned a reputation of being one of the top ten most knowledgeable UAV experts in North America. We can now measure, monitor and manage with more precision than ever before. Our innovative UAV technology now provides clients with the ability to make efficient fact-based decisions by utilizing more affordable, detailed and accurate up-to-date information.

UAV LiDAR

50 - 1900 points per square metre
Centimeter precision
Up to 45 minute flight times
Up to 200 hectares in a single flight
Multiple scans easily merged
Position error of 3.8cm
Integrated RTK
Scan rate of 600K shots/second

VEHICLE-MOUNTED LIDAR

X1's convenient vehicle-mounted LiDAR system provides a significant reduction in field time and traffic management costs while increasing safety.

STRUCTURE FROM MOTION

60 - 1100 points per square metre
High relative and absolute accuracy
Up to 100 hectares per hour
Accuracy levels average 2.5cm, project dependent
Multiple scans easily merged

PRODUCTS

DIGITAL SURFACE MODELS
DIGITAL TERRAIN MODELS
ORTHOIMAGERY
POINT CLOUD
CONTOUR LINES
CROSS SECTION

INDUSTRY

MINING
FORESTRY
OIL & GAS
ENGINEERING
TRANSPORTATION
ENVIRONMENTAL
UTILITIES

FOR MORE INFORMATION,
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RECENT PROJECT EXAMPLES

STRUCTURE FROM MOTION TAILINGS SURVEY

Organization: Mining

Acquisition: 85 Hectares

Deliverables: Point Cloud, DTM, Contour Lines, Comparative Elevation Heatmap

Results: Accuracy 3cm

Long range flight systems allow X1's field crew to work safely outside the parameters of dangerous terrain. Ground control used for verified accuracy. Completion of field data acquisition for the 85 hectares is completed in approximately 4 hours. Processed data is delivered to client in 48 - 72 hours.

LiDAR SLOPE ANALYSIS

Organization: Mining

Acquisition: 25 Hectares

Deliverables: Point Cloud and Orthoimagery

Results: 90 ppm² using LiDAR, 44 ppm² using SfM

Ground crews had been unable to gather the detailed information required by the project engineer due to difficult terrain. Orthoimagery will be used to track changes over time and will provide evidenced based support potentially needed in regards to future environmental requirements. X1's quality data easily met project requirements, supported sound decision making and will be utilized to reduce environmental impact and lower future expenditures.

LiDAR WATERSHED ANALYSIS

Organization: Mining

Acquisition: 25 Hectares

Deliverables: Point Cloud

Results: 211 ppm²

Extreme elevation meant the area was inaccessible to ground survey crews and full scale aircraft was unable to affordably meet project requirements and timeline. X1 easily exceeded project requirements and met timeline restrictions. Results that supported sound decision making and increased project efficiency will be utilized to reduce environmental impact and lower future expenditures.

LiDAR REGENERATION SURVEY

Organization: FPInnovations

Acquisition: 42 Hectares.

Deliverables: Point Cloud

Results: 245 ppm²

Research Project investigating the increased accuracy of UAV LiDAR within forestry Industry.

LiDAR GROWTH SURVEY

Organization: Ministry of Forests, Lands and Natural Resource Operations

Deliverables: Point Cloud

Results: area 1 - 1730 ppm², area 2 - 2202 ppm², area 3 - 223 ppm²

X1's rapid data acquisition provided a 90% increase in field work efficiency. X1's UAV LiDAR ultra dense point cloud provided FLNR the ability to identify individual tree heights with centimetre precision. A quick flight over area 3 (entire site) provided valuable information needed for hydrology investigations.

