2024

YellowScan

PRODUCT CATALOG.

Designed to innovate.

CONTENT.

Discover YellowScan's world through
our 2024 Product Catalog.

01

ABOUT US.

YellowScan is committed to delivering the highest level of performance, reliability and robustness for our solutions.

Our platforms are field tested all over the world in multiple environments (tropical forests, bare soils, mountains, rivers, coast lines, open pit mines).

Who we are *p. 03*

ABOUT YELLOWSCAN

WHO WE ARE.

We design fully-integrated,
easy-to-use LiDAR systems.

YellowScan developments started in 2012 led by Tristan Allouis and Michel Assenbaum, PhD engineers with UAV (Unmanned Aerial Vehicle), LiDAR, and forestry expertise.

YellowScan's main mission is to design, develop and produce drone imaging sensor systems for professionals across the world.

Partial YellowScan team picture - Montpellier

YellowScan's product line is fully-integrated with embedded laser scanner, INS, GNSS receiver, batteries, and onboard computing.

We designed each system to meet highest precision and accuracy needs for 3D mapping.

Worldwide sales, customer training and support are delivered by a global network of representatives covering Europe, North and South America, Asia, Australia, Middle-East and Africa.

40+

YellowScan Global Distribution Network

50+

Employees located in France, Germany, US, Japan & Australia

There is a YellowScan solution for each of your projects.

LiDAR technology has proven its efficiency in providing precise aerial 3D mapping data. UAV mounted LiDAR solutions are being used increasingly in commercial fields such as construction, forestry and mining as well as for research applications and structural inspections of power lines, pipelines, roads or railroads. Technical applications are steadily increasing and diversifying.

Optimize your workflow, expand your business, reduce your worries.

Our aerial approach can cover an area faster and deliver more consistent results than ground mapping techniques can.

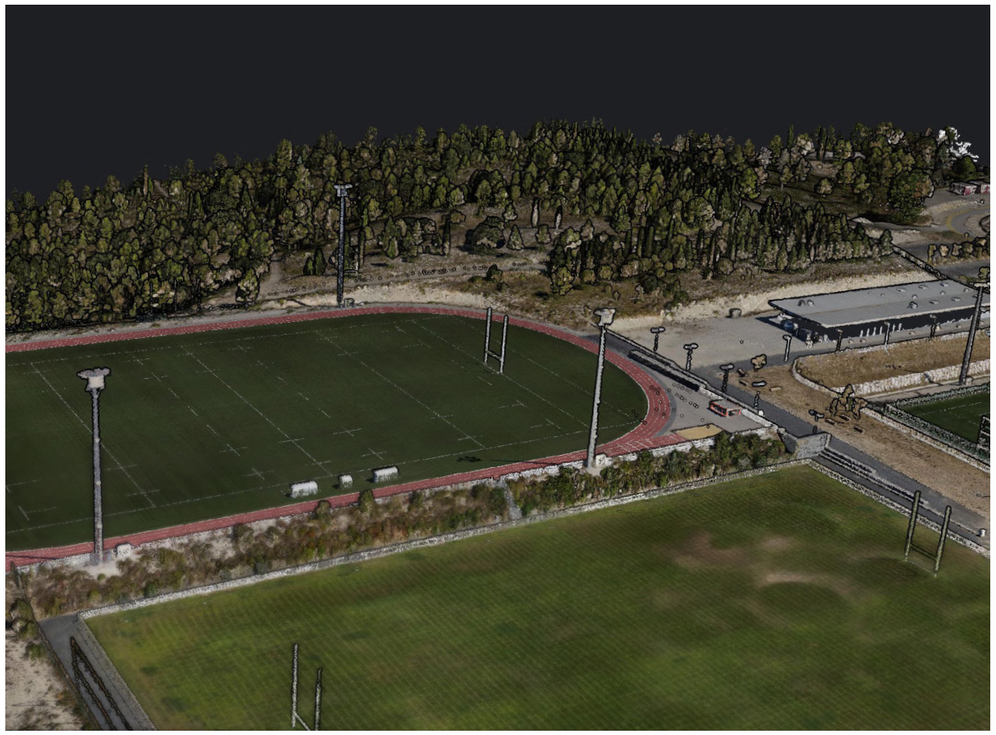
Simply mount your LiDAR solution on a UAV platform of your choice, effortlessly fly a mission and easily extract and process your data.

Designed for those who need accurate data.

With the YellowScan data processing suite you can quickly convert raw data into a georeferenced point cloud.

Our LiDAR systems for drone are ideally suited for:

- Small areas (<10 sq. km or 100 km linear)
- Penetrating vegetation
- Hard-to-access areas
- Data needed in near real-time
- 2 to 10cm accuracy range



We know the importance of every LiDAR user's needs:

Safety, Reliability, Ease of use

Following YellowScan's philosophy « Just press the Yellow Button », our team is committed to delivering the highest quality customer experience.

Benefit from YellowScan's outstanding user experience and take advantage of our customer support from pre-sales to field

02

OUR SOLUTION IN THE FIELD.

Fully-integrated, ultra lightweight and easy to use, these highly automated data collection tools are deployed by customers around the world in fields such as surveying, forestry, environmental research, archaeology, industrial inspection, civil engineering and mining.

© Image courtesy of EverScan

APPLICATION

MINING.

Challenging working conditions and the need for precise elevation data in open pit mines make UAV LiDAR solutions the latest go-to surveying tool around the world.

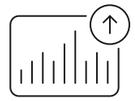
Mining is a very risky and extremely expensive venture. YellowScan's LiDAR solutions can help mitigate these risks and reduce the costs. Mining companies are using LiDAR systems to capture geospatial information of the natural surface, the infrastructure of a mine and also to calculate the production volumes.

UAV LiDAR systems ensure proper planning and decision making.

Apart from collecting 3D data for general topography and resource inventory, mining companies are also using UAV LiDAR solutions to improve operations safety. Less surveying personnel on the ground and more frequent change detection missions keep everyone safer - people and equipment.

Most importantly, human and environmental risks can be reduced by minimizing human intervention.

UAV LiDAR systems ensure proper planning and decision making by providing precise inventory information, accurate pit models and contour maps.



Optimized Operations

Get the data you need to manage your day-to-day stock, reserve and site arrangements and reduce your total cost of operations

Security

Quick and complete acquisition of an entire operations site while eliminating the on-the-ground logistics and dangers

APPLICATION

CIVIL ENGINEERING.

From the initial planning stages to the final project delivery, LiDAR systems are an asset to the construction industry.

YellowScan LiDAR systems offer fast and easy 3D data collection with high accuracy and precision.

Civil engineering firms are using LiDAR systems to conduct feasibility studies, conduct earthwork planning (quantity survey, mass excavation and structural excavation) and to calculate volume of excavated soil or the construction materials to be used.

Professionals in the construction industry are using YellowScan LiDAR solutions to do as-built surveys for creating accurate plans and documentation, to monitor and record conditions at any stage of the construction project.

UAV LiDAR mapping offers a wealth of data and at the same time cuts costs. Whether it is to create a Digital Terrain Model (DTM), Digital Surface Model (DSM) or a Digital Elevation Model (DEM), construction firms and civil engineers are using UAV LiDAR solutions for diverse projects. The resulting point clouds can be used to create BIM models (Building Information Modeling). These contribute to real-time construction quality control and decision making.

Discover how our UAV LiDAR solutions can help you achieve your goals:

Optimized Operations

Get the data you need to manage your day-to-day raw material stock, cut & fill volumes and site arrangements

Modeling and Analysis

A survey using a YellowScan system can generate very detailed 3D data that accurately depict the terrain and construction progress to be incorporated into a CAD/GIS system

APPLICATION

CORRIDOR MAPPING.

Mapping the vegetation around powerlines is a major issue for most energy companies around the world.

The goal is to detect encroaching vegetation around powerlines in order to efficiently organize targeted pruning.

Another expressed need is the mapping of the powerline itself to detect any issues such as line sagging, damage to cables and to structures. Detailed and highly accurate 3D models based on the georeferenced point cloud data allow for semi-automatic data classification and data analytics using advanced GIS software.

This, for example, allows for quick and targeted pruning efforts of encroaching vegetation along powerlines or railroads as well as a fast response to post natural disaster clean up acts.

> *YellowScan UAV LiDARs enable the quick and easy collection of detailed data about the powerline and its environment.*

Daniel Dumas

Technical Director - Enedis, France

Owner of a YellowScan Surveyor

Being able to map small areas of interest using UAV LiDAR can greatly improve the pruning process, therefore reducing mobilization costs for both mapping and pruning.

Optimized Maintenance Operations

Use your UAV LiDAR solution for targeted areas along your corridor or toward frequent maintenance corridor mapping projects.

Quick and easy UAV LiDAR deployment has a great advantage over more extensive manned aircraft LiDAR missions.

Timely Vegetation Pruning

The only technology that gives the true distance to the vegetation in near real-time. Scan fast-growing vegetation sections as frequently as needed

Freedom of Surveying

Quick, light & easy to mobilize - the entire LiDAR system can be carried in a hand luggage sized Pelicase. Take it along, wherever you go!

APPLICATION

FORESTRY.

Whether it is a commercial or governmental activity, forest management requires detailed data to make proper decisions.

Although photogrammetry can be a great tool for tree species identification, it is not accurate for inside-canopy information and does not reveal the terrain under dense vegetation. This limits the accurate assessment of tree heights.

Using UAV LiDAR is the most effective way to gather terrain and inside-canopy data due to the LiDAR's ability to penetrate vegetation. Information gained from UAV LiDAR missions over forested areas range form digital terrain models (DTMs) to tree species identification, height and size measurements or volume of wood per hectare information.

© Image courtesy of 3D Forest

Easier classification of trees, more accurate modeling of the canopy layers and terrain modeling.

Because YellowScan's systems can fly lower and slower than a manned aerial LiDAR, it provides higher point density and more recorded echoes from under vegetation.

Autonomy

Easy-to-use even by non-surveying professionals (no need to rely on third-party experts)

Rugged & Reliable

Compatible with most difficult field conditions (extreme temperatures, humidity, dust…)

Explore a world of possibilities using our LiDAR solutions.

The technical applications are diverse and steadily increasing. Use cases for fields such as environmental, forestry, mining, civil engineering, archeology and corridor mapping are multiplying and we are only scratching the surface of what these solutions can do.

© Image courtesy of MSDI

03

LiDAR HARDWARE.

Our LiDAR for drone product line is lightweight, fully-integrated with embedded batteries.

At YellowScan, we are committed to help leading the LiDAR revolution in remote sensing and 3D aerial mapping.

PRODUCT COMPARISON

OVERVIEW.

All YellowScan packages include hardware, software and services.

Our LiDAR for drone product line is lightweight, fully-integrated with embedded batteries. We designed each system to meet 3D mapping high precision and accuracy needs.

Mapper.

High point density
Advanced precision
Compact

Mapper+.

High point density
Lightweight
Long range

Surveyor Ultra.

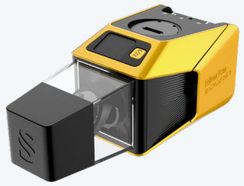
High point density
Maximized range
Fly&Drive ready

Fly & Drive.

Mobile mapping solution
Easy UAV / vehicle switch
Low power consumption

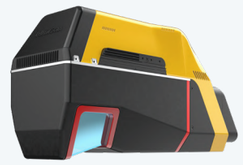
Vx15 & Vx20 Series.

High precision point cloud
Calibrated intensity value
Maximized range



Explorer.

Best range-to-weight ratio
Compact & lightweight
Multi-platform



Voyager.

2 million pts/second
Up to 32 echoes
Multi-platform

Navigator.

Topography & water mapping
Easy to use and process
Safe operational range

> *The number of projects done with our YellowScan system depends on the size of the projects, but we usually achieve 2 to 3 projects per week.*

Andrejs Veliks
CEO – A-Geo, Latvia
Owner of a YellowScan Mapper

PRODUCT RANGE

MAPPER SERIES.

The Mapper series are our most compact YellowScan systems.

Their design allow users to integrate YellowScan's easy-to-use camera module for point cloud colorization.

Mapper.

- High density point cloud
- Advanced precision
- Compact

Mapper+.

- High point density
- Lightweight
- Long range

LiDAR SYSTEM

MAPPER.

The best value for money
UAV LiDAR solution

/ LASER SCANNER
– Livox Horizon

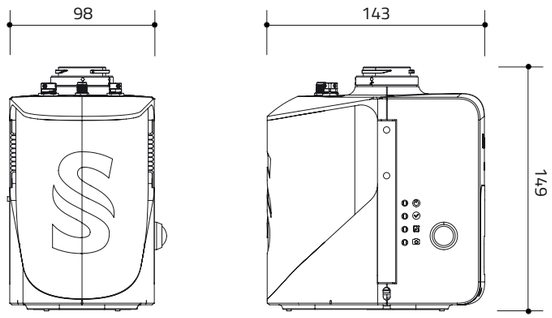
/ IMU GNSS
– Applanix APX-15UAV

The YellowScan Mapper is the next generation of integrated LiDAR solutions. Its low weight, mid-range capability, great point density as well as advanced accuracy and precision, makes the Mapper the best value for money in our portfolio.

/ FLIGHT OPERATION
– Speed: 10 m/s
– Flying height: Up to 70m

/ INTEGRATION
– Multirotor UAV
– Single rotor UAV
– VTOL UAV

/ SIZE & DIMENSIONS



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

Technologies inside:
- Applanix ™
- LIVOX

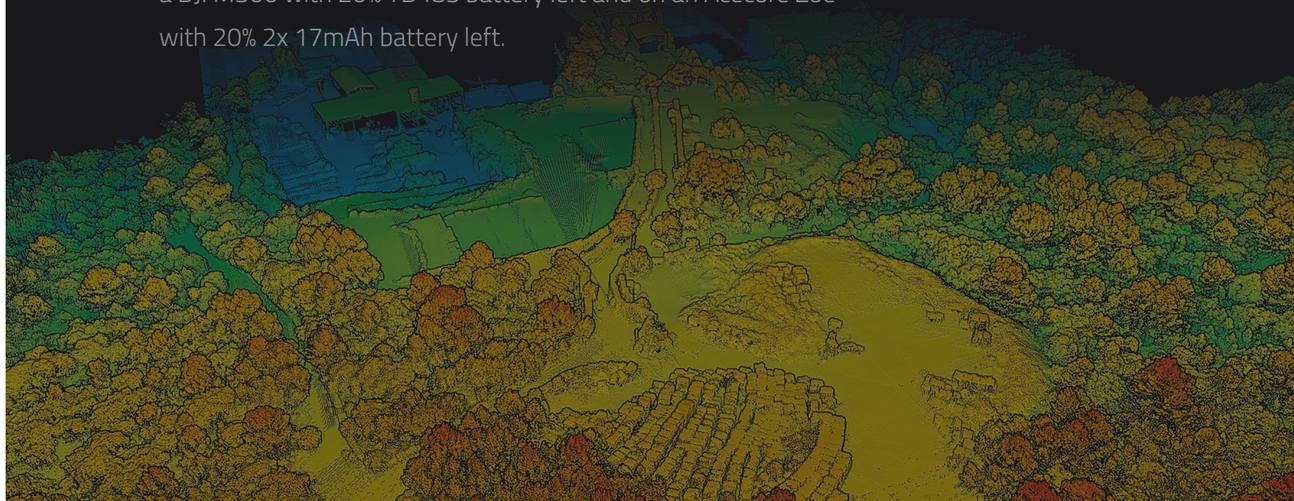
The YellowScan Mapper is the next generation of integrated LiDAR solution.

/ TECHNICAL INFORMATION

Precision	Accuracy	Max. AGL altitude	Weight batt. excl.
4 cm	4 cm	70 m	1.3 kg

Scanner FOV	Flight time *	
81.7°	27 min /	33 min
x 25.1°	ON DJI M300	ON ACECORE ZOE

* Estimated flight time of the YellowScan Mapper mounted on a DJI M300 with 20% TB48S battery left and on an Acecore Zoe with 20% 2x 17mAh battery left.



LiDAR SYSTEM

MAPPER+.

The lightest three echoes, high density and long range LiDAR system.

/ LASER SCANNER

– Livox Avia

/ IMU GNSS

– Applanix APX-15UAV

The YellowScan Mapper+ is the next generation of integrated LiDAR solutions. This particularly lightweight system with long range capabilities, high-end point density, as well as advanced accuracy and precision, make it the perfect UAV LiDAR mapping tool for fixed-wing integration.

/ FLIGHT OPERATION

– Speed: 10 m/s

– Flying height: Up to 100m

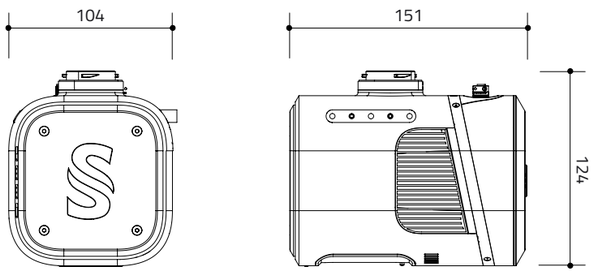
/ INTEGRATION

– Multirotor UAV

– Single rotor UAV

– VTOL UAV

/ SIZE & DIMENSIONS



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

Technologies inside:

- Applanix ™
- LIVOX

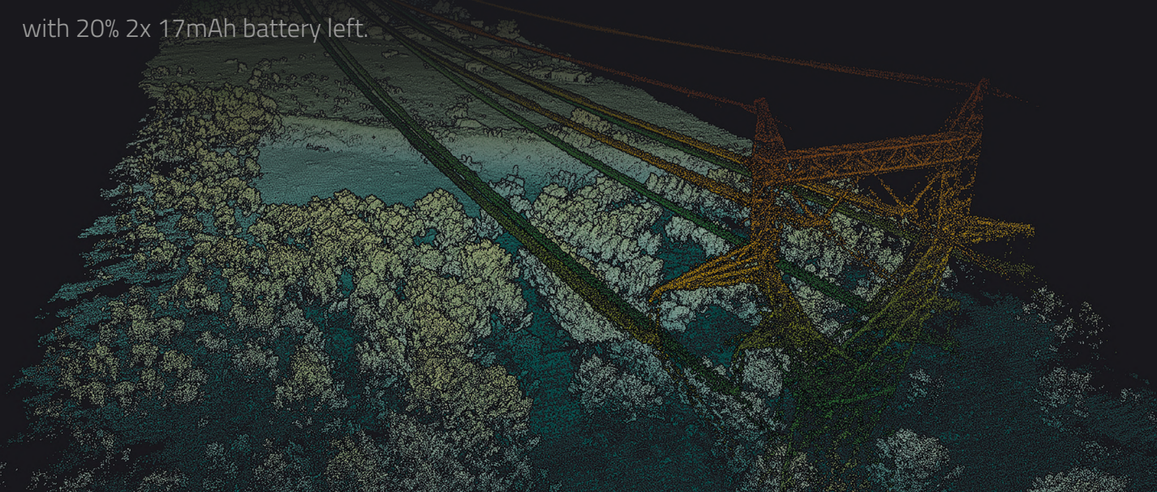
Ideally suited for projects requiring higher flight speed for increased productivity.

/ TECHNICAL INFORMATION

Precision	Accuracy	Max. AGL altitude	Weight batt. excl.
3.5 cm	4 cm	100 m	1.1 kg

Scanner FOV	Flight time *	
70.4°	29 min /	34 min
x 4.5°	ON DJI M300	ON ACECORE ZOE

* Estimated flight time of the YellowScan Mapper+ mounted on a DJI M300 with 20% TB48S battery left and on an Acecore Zoe with 20% 2x 17mAh battery left.




M300-YS1
1ZNDH7T00ALV08


ACECORE


00-YS1
1ZNDH7T00ALV08
YellowScan
MAPPER+

PRODUCT RANGE

SURVEYOR SERIES.

With the 360° field of view of the Hesai XT32M2X laser scanner, the YellowScan Surveyor Ultra answers vertical mapping and mobile mapping needs when combined with Fly & Drive.

Featuring 32 beams with up to 3 echoes, the Surveyor Ultra can tackle any survey, from dense vegetation penetration to mobile mapping while keeping the weight on the light side.

Surveyor Ultra.

- High point density
- Maximized range
- Fly&Drive ready

“Working with the Yellowscan support team allowed us to greatly improve our data acquisition and processing workflows.

Fearghus Foyle
CEO – GeoAerospace, Ireland
Owner of a YellowScan Surveyor Ultra

LiDAR SYSTEM

SURVEYOR ULTRA.

A 3rd generation of Surveyor Ultra, featuring a higher grade IMU and packed with quality-of-life features.

/ LASER SCANNER

– Hesai XT32M2X

/ IMU GNSS

– SBG Systems Quanta Micro

A higher-grade INS integration for more productivity in operation, all in an even lighter package.
We've kept the great 32-beam, 360° laser scanner and combined it with an INS to reach its full potential at higher altitudes and in Fly & Drive with many feedback-based quality-of-life improvements.

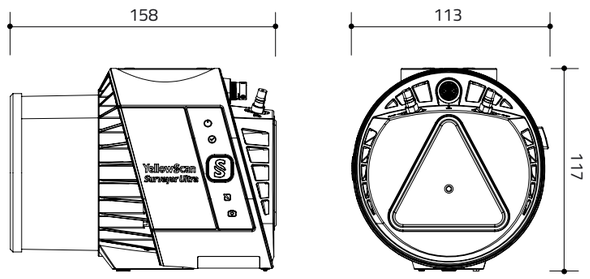
/ FLIGHT OPERATION

– Speed: 10 m/s
– Flying height: Up to 140m

/ INTEGRATION

– Multirotor UAV
– Single rotor UAV
– VTOL UAV
– Fly & Drive

/ SIZE & DIMENSIONS



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

Technologies inside:
- SBG Systems
- Hesai

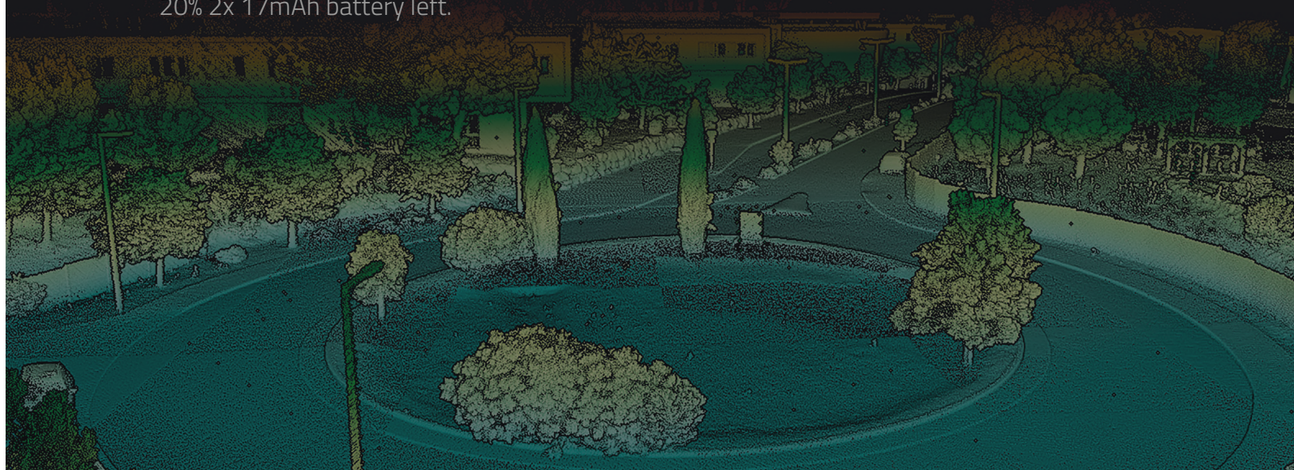
YellowScan Surveyor Ultra answers vertical mapping and mobile mapping needs when combined with Fly&Drive.

/ TECHNICAL INFORMATION

Precision	Accuracy	Max. AGL altitude	Weight batt. excl.
3 cm	2.5 cm	140 m	0.98 kg

Scanner FOV	Flight time *	
360°	31 min	/ 34 min
x 40.3°	ON DJI M350	ON ACECORE ZOE

* Estimated flight time of the YellowScan Surveyor Ultra mounted on a DJI M350 with 20% battery left and on an Acecore Zoe with 20% 2x 17mAh battery left.



“The idea of the Fly & Drive system was born out of the need for a multi-platform LiDAR for geospatial survey scanning from air to ground.

Thibaud Capra
Product Manager - YellowScan, France

PRODUCT RANGE

FLY & DRIVE.

The Fly & Drive system is a platform that enables LiDAR surveys in flight-restricted environments.

This system can rapidly be deployed on road and off-road vehicles to survey where UAVs (multicopter, traditional and VTOL fixed-wing) cannot, expanding the range of applications and increasing your return on investment, thereby decreasing the system’s payback period. Available for the new generation Surveyor Ultra and Explorer.

Fly & Drive.

- Mobile mapping solution
- Easy UAV / vehicle switch
- Low power consumption

MOBILE MAPPING

FLY & DRIVE.

Fly when you can,
Drive when you must

/ INTEGRATION

– Land vehicle
– Off-road vehicle

/ DRIVING SPEED

– Up to 50km/h

/ LIDAR UNIT OPTION

– Surveyor Ultra

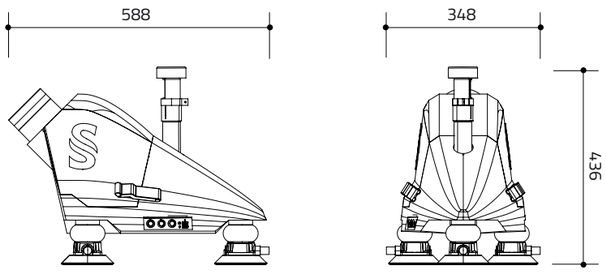
/ PACKAGE CONFIGURATION

– YellowScan LiDAR unit
– Fly & Drive car pod
– UAV mounting bracket

The YellowScan Fly & Drive transforms your UAV LiDAR in a capable mobile mapping solution.

In no time, switch from airborne mapping to mobile and make the most of you're your sensor combining data from the air and from the ground, usable in a wide range of applications.

/ TECHNICAL DRAWING



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

Technologies inside:
- YellowScan Surveyor Ultra
- YellowScan Explorer

The YellowScan Fly & Drive is now compatible with both SBG Systems-based 360° sensors.

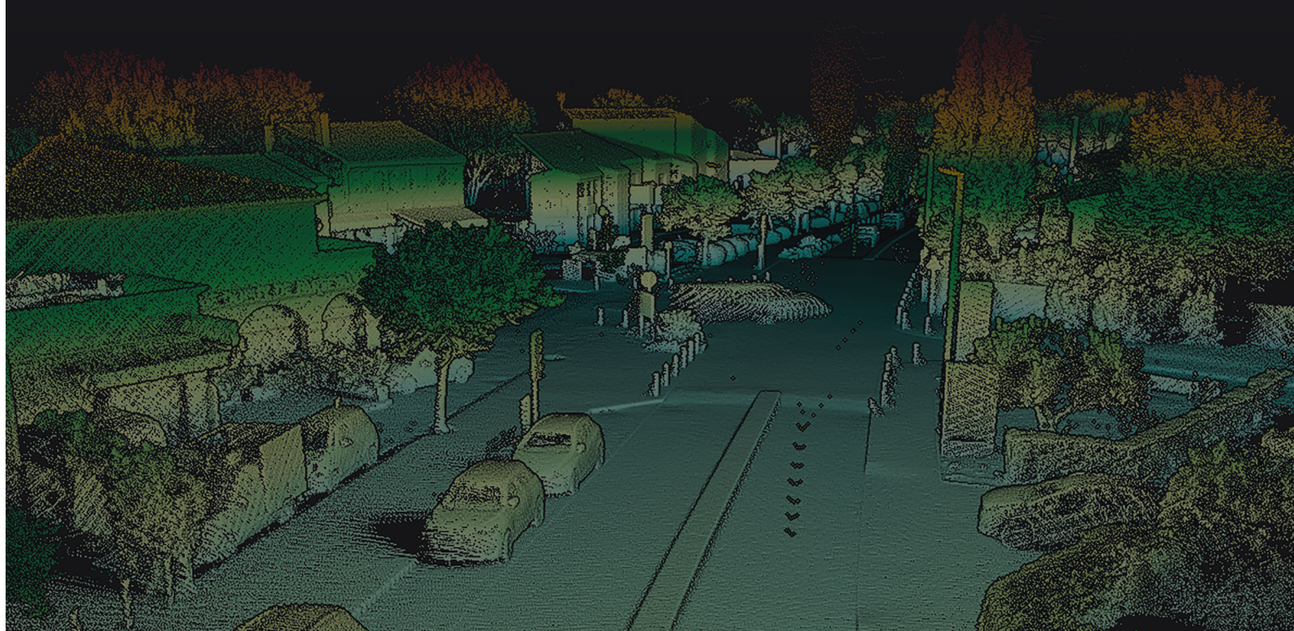
/ KEY FEATURES

Enable mobile (ground) and UAV (airborne) mapping from the same system.

Directly use your system's onboard power or bring in external power for longer acquisitions in a streamlined interface.

360° FOV for all compatible scanners. Miss no detail while gathering your data.

Precision positioning using high end GNSS and IMU coupled system.



“The UAV YellowScan option provides access to projects that typically would be inaccessible with conventional survey equipment.

Jerrad Burns
CAD technician – 2SEC, USA
Owner of a YellowScan Vx-20

PRODUCT RANGE

VX SERIES.

The YellowScan Vx series is our high-end LiDAR product range integrating the miniVUX-UAV laser scanner from RIEGL.

Vx15 series.

- High precision point cloud
- Calibrated intensity value
- Maximized range

Vx20 series.

- Highest accuracy
- High precision point cloud
- Maximized range

LiDAR SYSTEM

VX15 SERIES.

The long range and high precision UAV LiDAR solution

/ INTEGRATION

– Multirotor UAV
– Single rotor UAV

/ IMU GNSS

– Applanix APX-15UAV

/ LASER SCANNER

– Vx15-100:
RIEGL mini-VUX1

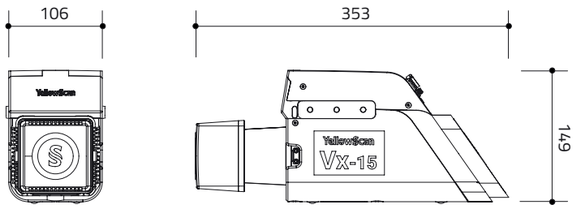
– Vx15-200:
RIEGL mini-VUX2

– Vx15-300:
RIEGL mini-VUX3

YellowScan designed a fully-integrated, easy-to-use LiDAR system that includes the renowned Riegl laser scanner and Applanix UAV IMU APX-15.

YellowScan Vx15 is an excellent solution for your high flight UAV projects with quick data processing needs. It is ideally sized for all types of UAVs.

/ SIZE & DIMENSIONS



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

Technologies inside:
- Applanix ™
- RIEGL ®

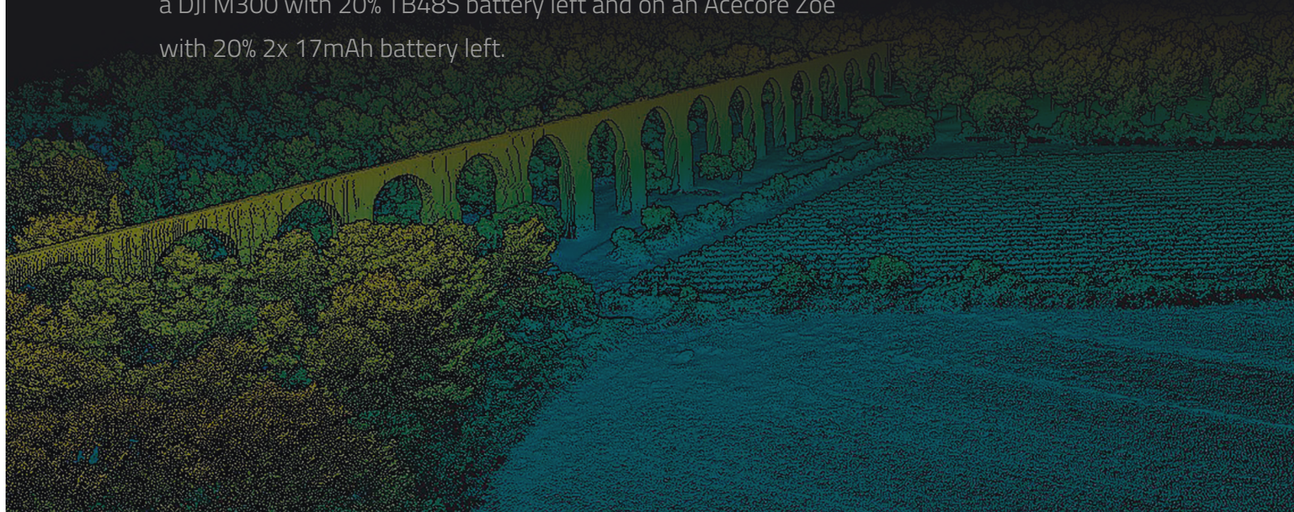
Having a longer range and more accurate system were the prerequisites of the Vx series.

/ TECHNICAL INFORMATION

Precision	**Accuracy**	Max. AGL altitude	**Weight** batt. excl.
1 cm	5 cm	100 m	2.4 kg

Scanner FOV	**Flight time** *	
360°	22 min	/ 26 min
	ON DJI M300	ON ACECORE ZOE

* Estimated flight time of the YellowScan Vx15 series mounted on a DJI M300 with 20% TB48S battery left and on an Acecore Zoe with 20% 2x 17mAh battery left.



LiDAR SYSTEM

VX20 SERIES.

Our most accurate and high precison UAV LiDAR solution

/ INTEGRATION

– Multirotor UAV
– Single rotor UAV

/ IMU GNSS

– Applanix APX-20UAV

/ LASER SCANNER

– Vx20-100:
RIEGL mini-VUX1

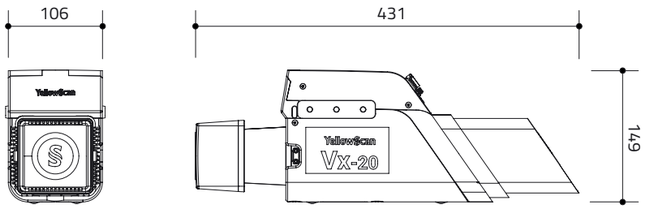
– Vx20-200:
RIEGL mini-VUX2

– Vx20-300:
RIEGL mini-VUX3

YellowScan Vx20 is the most accurate fully-integrated system from YellowScan's product range.

It is an excellent solution for your high flight UAV projects with fast data processing.

/ SIZE & DIMENSIONS



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

Technologies inside:
- Applanix ™
- RIEGL ®

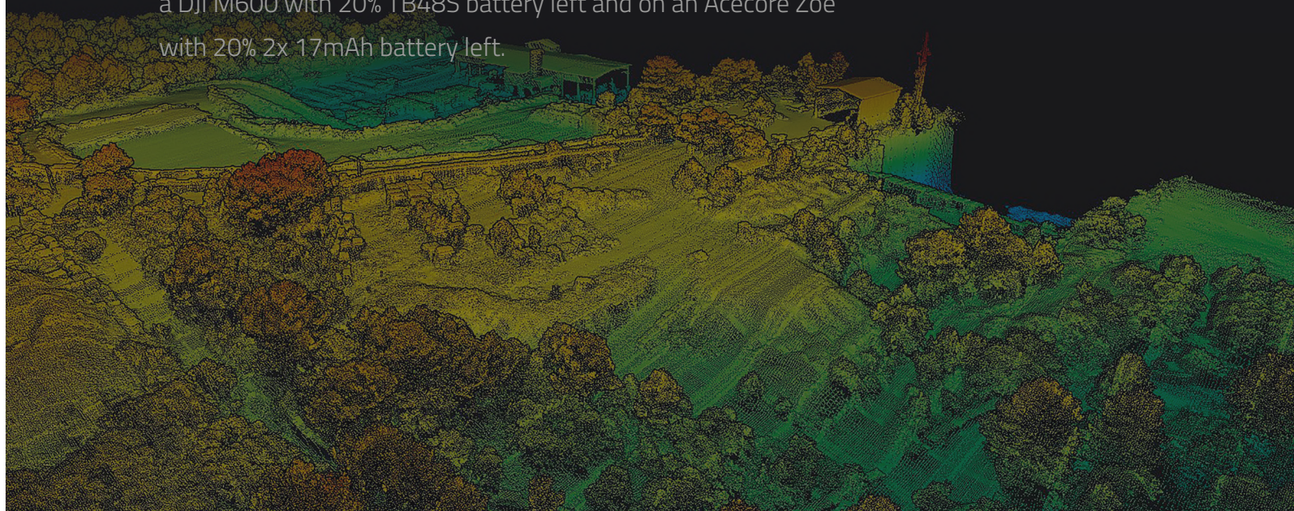
Ideally suited for applications that require detailed and accurate descriptions.

/ TECHNICAL INFORMATION

Precision	Accuracy	Max. AGL altitude	Weight batt. incl.
1 cm	2.5 cm	120 m	2.85 kg

Scanner FOV	Flight time *	
360°	18 min	/ 25 min
	ON DJI M600	ON ACECORE ZOE

* Estimated flight time of the YellowScan Vx20 series mounted on a DJI M600 with 20% TB48S battery left and on an Acecore Zoe with 20% 2x 17mAh battery left.




VX-15


ACECORE


YELLOWSCAN

VX SERIES

SUCCESS STORY.

Discover how the YellowScan Vx15 can help you perform your work better.

/ COMPANY

– MSDI, Indonesia

/ APPLICATION

– Civil Engineering

/ UAV LIDAR SOLUTION

– YellowScan Vx15-100

– Mounted on a DJI M600

/ MISSON PARAMETERS

– Survey size: 1,100ha

– Flight speed: 5m/s

– Flight height: 90m AGL

– Number of flights: 28

Business need

I wanted to offer new top-of-the-range services to my future customers, to extend my range of services and to make my company grow in the industrial field.

The major problem in Indonesia is the dense vegetation, vast terrain, often rugged and inaccessible.

The technical means and equipment I owned did not allow me to provide quality data for my clients. LiDAR therefore quickly became an obvious choice for a new mapping solution at MSDI.

Recently, I was asked by a palm oil company to urgently map their plantations for a new mine to be set up. I had to pick-up where another mapping company had failed to capture all data as their LiDAR was out of order.

YellowScan Solution

For this last-minute project, we used YellowScan Vx15 to provide quality data under vegetation. The LiDAR acquisition enables to generate DTMs, contours, and DSMs to set up a new mine replacing the current palm oil exploitation.

The results allow MSDI to obtain high density point clouds (60 points/m2) with excellent coverage under vegetation. Every flight has been a success thanks to the ease of use and the speed of Vx15 LiDAR deployment.

> *Thanks to YellowScan Vx15, we can now be a major player in UAV LiDAR survey services in Indonesia, provide accurate data correlated with the environmental constraints we face here.*

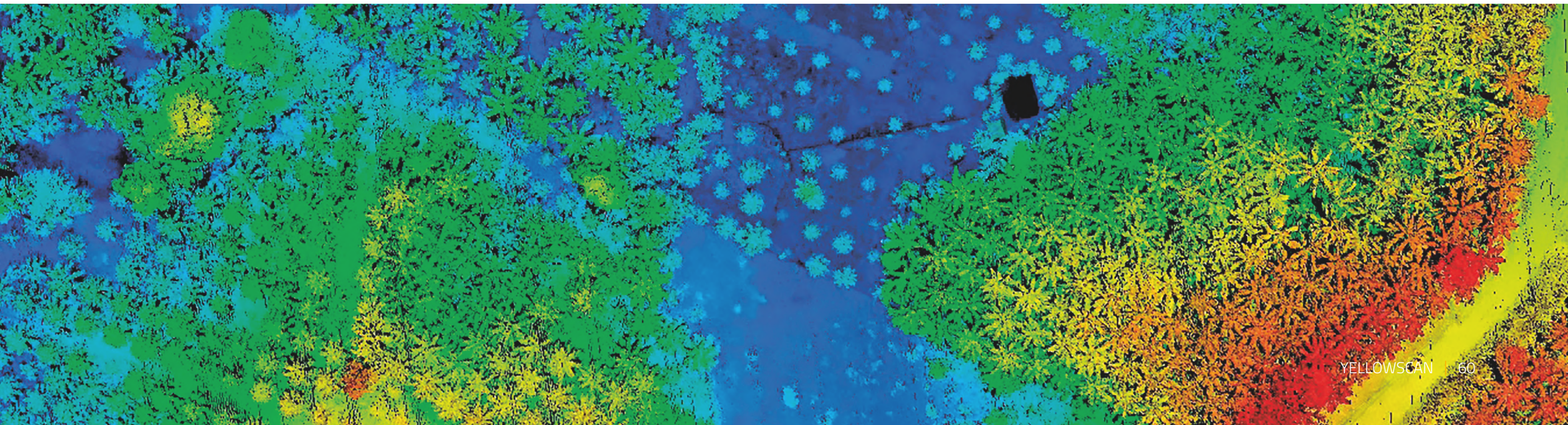
Arnaud Denisot - Director of MSDI
Owner of a YellowScan Vx15

/ BENEFITS

– Easy and fast LiDAR deployment
– Stand-alone solution
– Reliability
– Data accuracy
– Data quantity

/ MORE DETAILS

Want to learn more about this success story? Scan this QR Code:



PRODUCT RANGE

EXPLORER.

The YellowScan Explorer is an integrated long range LiDAR solution, with the capability to shoot laser points from an MAV (Manned Aerial Vehicle) & UAV.

Explorer.

- Best range-to-weight ratio
- Compact & lightweight
- Multi-platform

With its high power to catch points up to 600m and with an even lower weight (1.8 kg without battery) and Fly & Drive compatibility, the Explorer provides you with the most integrable and performant system on the market.

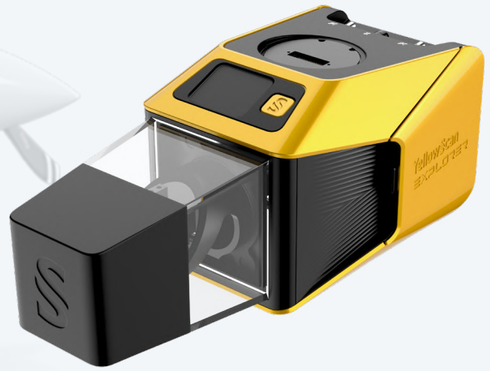
“The YellowScan Explorer was developed to provide an innovative solution for companies requiring high or low flight altitudes for their projects.

Nassim Doukkali
Product Manager – YellowScan, France

LiDAR SYSTEM

EXPLORER.

Long range, multi-platform LiDAR solution. Now even more versatile.



/ IMU GNSS

– SBG Systems Quanta Micro

/ FLIGHT OPERATION

– Speed: 10 m/s

– Flying height: Up to 200m

/ INTEGRATION

– Multirotor UAV

– Single rotor UAV

– VTOL UAV

– Manned aircraft

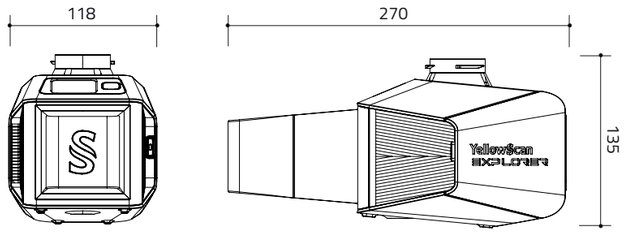
– Fly & Drive NEW

Compatible with
MAV & UAV

The YellowScan Explorer is the first LiDAR that can be mounted on a light manned aircraft, helicopter or car and still be switched to a UAV platform like the DJI M350.

This versality allows the end user to tackle a wider-than-ever range of projects with the proven ease-of-use of YellowScan's LiDAR solutions.

/ SIZE & DIMENSIONS



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

Technologies inside:

- SBG Systems
- YellowScan Explorer laser scanner

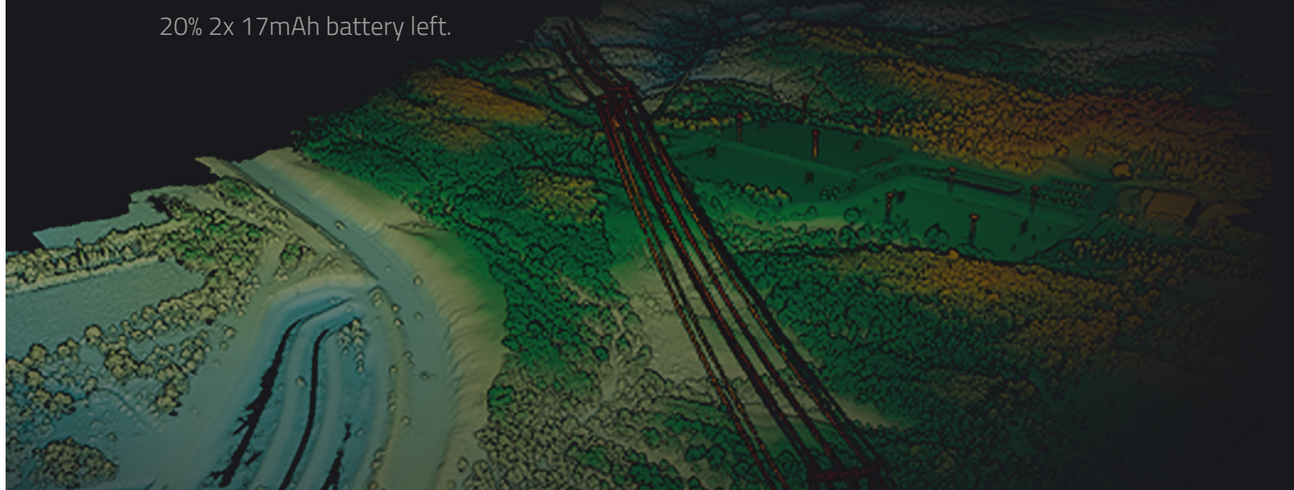
The YellowScan Explorer is the next generation of integrated long range LiDAR solutions.

/ TECHNICAL INFORMATION

Precision	Accuracy	Max. AGL altitude	Weight batt. excl.
2 cm	2 cm	200 m	1.8 kg

Scanner PRF	Scanner FOV	Flight time *	
500 kHz	360°	24 min ON DJI M350	/ 28 min ON ACECORE ZOE

* Estimated flight time of the YellowScan Surveyor Ultra mounted on a DJI M350 with 20% battery left and on an Acecore Zoe with 20% 2x 17mAh battery left.



PRODUCT RANGE

VOYAGER.

The YellowScan Voyager is a powerful solution for both manned and unmanned aircrafts, with the ability to efficiently cover complex and vertical targets.

Voyager.

- 2 million pts/second
- Up to 32 echoes
- Multi-platform

Its detection and processing of up to 32 target echoes per laser pulse will provide you with results of several million measurements per second.

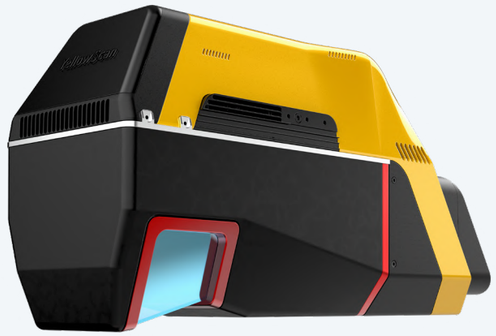
“I am very excited to introduce the YellowScan Voyager with its reality-like results and high density details unmatched until now.

Romain Renouis
Product Manager – YellowScan, France

LiDAR SYSTEM

Voyager.

Precision meets reality



/ IMU GNSS OPTION

– Applanix APX-20 UAV

– Applanix AP+50 AIR

/ FLIGHT OPERATION

– Speed: 30 m/s

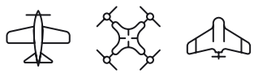
– Flying height: Up to 440m

/ INTEGRATION

– Fixed-wing UAV

– Multirotor UAV

– Manned aircraft

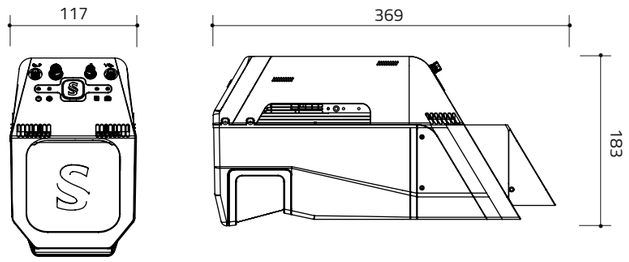


Compatible with
MAV & UAV

The YellowScan Voyager is our highest range LiDAR solution, with a range of up to 440m.

Its laser scanner's wide field of view of 100° and its extremely fast data acquisition rate of up to 2.4 MHz, makes this solution the best option for projects requiring the highest point density.

/ SIZE & DIMENSIONS



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

Technologies inside:
- Applanix ™
- RIEGL ®

The YellowScan Voyager can be mounted on a light manned aircraft or helicopter, and be switched to a UAV platform.

/ TECHNICAL INFORMATION

Precision	Accuracy	Max. AGL altitude	Weight batt. excl.
0.5 cm	1 cm	440 m	3.5 kg

Autonomy	Scanner FOV	Scanner PRF
1 h	100° x 20°	2400 kHz

> *I'm thrilled to see YellowScan Navigator addressing an unmet need in the mapping market and supporting society in tackling environmental challenges.*

Tristan Allouis, PhD
Chief Executive Officer – YellowScan, France

PRODUCT RANGE

NAVIGATOR.

The YellowScan bathymetric LiDAR is an innovative solution for exploring underwater and ground topography with a single-button operation.

Navigator.

- Topography & water mapping
- Easy to use and process
- Safe operational range

Survey shorelines, rivers or ponds with ease, by getting simultaneous land and underwater topography.

LiDAR SYSTEM

Navigator.

Depths to heights:
Operating bathymetric
LiDAR with one button

/ IMU GNSS OPTION

– SBG Systems Quanta Micro

/ FLIGHT OPERATION

– Speed: 5 m/s
– Flying height: Up to 100m

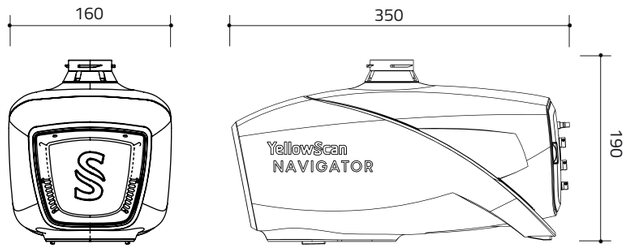
/ INTEGRATION

– Single rotor UAV
– Multirotor UAV

The YellowScan Navigator is an innovative bathymetric LiDAR solution for mapping underwater and ground topography with a single-button operation.

Its compact design allows for operating on various UAV platforms without compromising water penetration.

/ SIZE & DIMENSIONS



ⓘ Dimensions expressed in millimeters

SPECIFICATION.

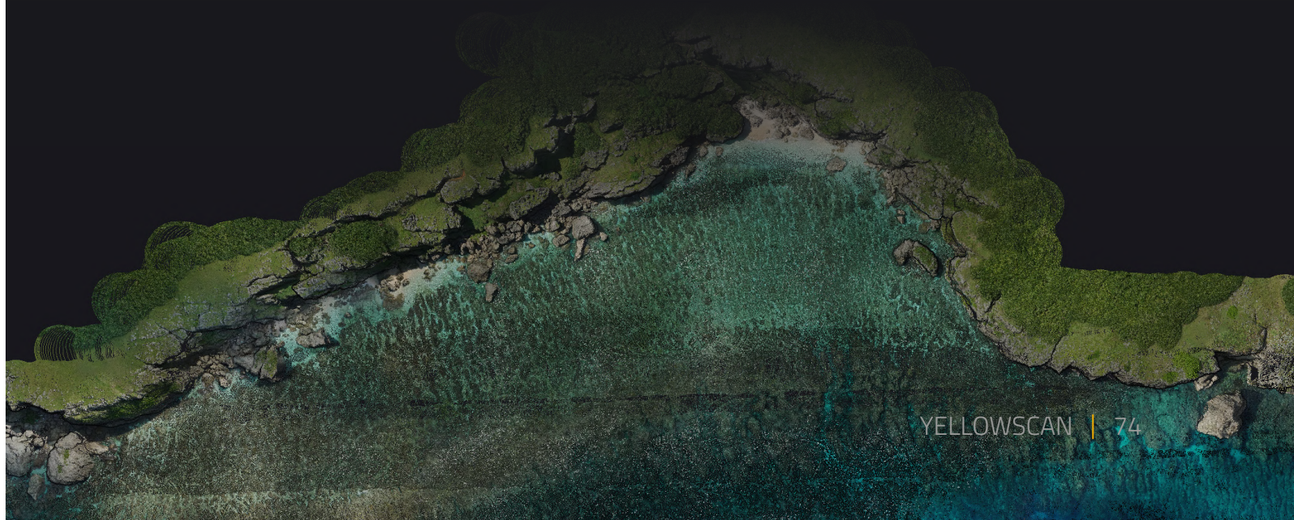
Technologies inside:
- SBG Systems
- YellowScan Navigator laser scanner

This solution features a laser scanner developed in-house by our R&D team over the last few years.

/ TECHNICAL INFORMATION

Precision	Accuracy	Max. AGL altitude	Weight batt. excl.
3 cm	3 cm	100 m	3.7 kg

Autonomy	Max. depth	Scanner PRF
45 min	2 Secchi	>20 kHz



04

LiDAR SOFTWARE.

The YellowScan CloudStation® provides a complete solution to create and visualize point-cloud data.

It allows our clients to extract, process and display data immediately after flight acquisition.

YELLOWSCAN

CLOUDSTATION SOFTWARE.

Fully-integrated software to handle your point-clouds

/ OPERATING ON

– Windows 10

/ DATA PROCESSING

– Process & export in .LAS / .LAZ format

CloudStation is the proprietary software developed by YellowScan to generate and visualize point-clouds.

It comes as a fully-integrated solution to allow for a better and simplified customer experience.

/ TECHNICAL SPECIFICATIONS

– Offline license mode
– Optional extra license seats
– Automatic updates

/ DISPLAY OPTION

– EDL filter
– Measurement tools
– Custom image export
– Cloud color: Elevation, Intensity, Echo...

The YellowScan CloudStation provides a complete software solution to create and manipulate point-cloud data.

It allows to extract, process and display data immediately after flight acquisition.

The auto-generation of strips and the production of LAS files are now done in just a few clicks.

It is a licensed software which provides every customer with a single seat floating license. To allow for remote work in the field, customers have the option to test out the license for up to 30 days. Additionally, the software is provided with support, maintenance and updates at no additional costs.

/ MAIN FEATURES

– User-friendly graphical interface
– Automatic or custom strip selection
– Process and export in .LAS format
– Advanced visualization tools
– Project setttings: Coordinate System, LiDAR profile, angle range...

YELLOWSCAN

CLOUDSTATION BUNDLES.

Designed for a better and simplified customer experience.

/ PRICING OPTION

– Annual license
– Perpetual license with maintenance fees

Our goal is to develop our technologies to better serve our customers. Our R&D team strives to innovate, develop new functionalities and improve the CloudStation on a day-to-day basis.

CLOUDSTATION ESSENTIAL.

Visualize, inspect, and export your data with standard features.

CLOUDSTATION PRO.

Refine and improve your data quality with advanced features and more export options.

COMPARISON.

Process, display & export LiDAR data right after a flight.

DETAILED FEATURES	ESSENTIAL	PRO
Data Management		
Open trajectories for display and quality inspection	✓	✓
Georeference raw YellowScan data	✓	✓
Project catalog for easy retrieval	✓	✓
Visualization / Display		
Smooth 3D point cloud visualization	✓	✓
EDL filter for easy-to-read point cloud display	✓	✓
Camera mode (iso/perspective)	✓	✓
Data Inspection		
Measuring distances in any projection	✓	✓
Slices: two-click data inspection and scrolling through point cloud	✓	✓
Classification		
Simple & fast ground / non-ground classification		✓
Trajectory Refinement		
Strips timestamps management (auto + manual)	✓	✓
POSPac & Qinertia integration: easy SBET generation	✓	✓
Data Processing		
Remove outliers	✓	✓
Colorization from orthophotos	✓	✓
Colorization from images		✓
Robust strip adjustment algorithm		✓
Precise (time-dependent) strip adjustment algorithm		✓
Utilize GCPs during strip adjustment to constrain accuracy		✓
Export		
LAS 1.2 / LAS 1.4 / LAZ 1.2 / LAZ 1.4 / TXT	✓	✓
Trajectory (TXT)	✓	✓
Strip adjustment report (accuracy, precision, mismatch..)		✓
DTM, DSM and hillshade generation		✓

MAIN FEATURES

STRIP ADJUSTMENT.

A point cloud enhancing toolbox for the CloudStation® LiDAR software.

Even with high-end systems, some data refinement is required to improve precision and accuracy; the catch is that strip adjustment software is often complex.

Here, the adjustment of strips or flight lines and the production of LAS files are done in only a few clicks.

/ KEY BENEFITS

– One-click adjustment contributing to facilitate the user experience

– State of the art algorithms used in the offered adjustment methods

– Takes advantage of Ground Control Points (GCPs) for final adjustments

– Seamless adjustment of strips

MAIN FEATURES

POINT CLOUD CLASSIFICATION.

Export classified point clouds from the CloudStation® LiDAR software.

/ KEY BENEFITS

– Export classified LAS

– Generate unidirectional or multidirectional hillshade

– Automatic classification of points as "ground/non-ground":
  – *Select a preset based on the type of project you are handling*
  – *Visualize the result of the classification and select which classification class to visualize (unclassified, ground, other)*

– Export Digital Model from your classified point cloud as GeoTIFF (geolocalized TIFF):
  – *DSM: Digital Surface Model*
  – *DTM: Digital Terrain Model*
  – *DHM: Digital Height Model*

MAIN FEATURES

POINT CLOUD COLORIZATION.

Export colorized point clouds from simultaneous LiDAR + camera acquisition.

/ KEY FEATURES

– Colorize and visualize your strips in just a few clicks

– Export colorized LAS files

– Colorization from external orthophotos available

– Automatic LiDAR - camera calibration refinement:
  – *No manual interaction needed from the user*
  – *Enable optimal image / point cloud alignment for every flight*

– Specifically designed for our camera hardware:
  – *Mapper camera module*
  – *Sony A6000 or A7R systems*

– Two colorization methods available:
  – *Closest image: fast and detailed colorization*
  – *Median color: smooth seamlines for homogeneous colors*

05

LiDAR ADD-ONS.

Our lightweight portable systems are self-contained, easy to use and compact.

Our philosophy is to be as efficient as possible in the field and to transfer this philosophy to the office when generating your data: in other words, we keep it simple and easy to manage.

LiDAR ADD-ONS

LIVESTATION.

Real-time in-flight
LiDAR monitoring station

/ OPERATING ON
– Windows 7 to 10

/ DATA VISUALIZATION
– Live & Mission Replay

The YellowScan LiveStation enables you to monitor in real-time the validity and quality of the data being collected by the YellowScan LiDAR systems. A must for long endurance or critical LiDAR flights.

/ NAVIGATION & STATUS
– IMU & GNSS
– Speed & Altitude
– Elapsed Time
– Radio signal

/ DATA VISUALIZATION
– Point cloud (Top or 3D view)
– Flight trajectory
– Transect: LiDAR position, first and last echoes

YellowScan's LiveStation provides system operators with the immediate and relevant information needed to ensure a smooth acquisition even in difficult working conditions.

It provides a real-time, three-dimensional representation of the point cloud during flight, with ability to zoom, translate or rotate.

Simultaneously, the user interface presents an immediate summary of the system's status. The transect view easily allows the operator to check in real-time whether the LiDAR is able to penetrate a forest's canopy and sample the ground. Missions can later be replayed for analyzing flight conditions and data.

/ MAIN FEATURES
– Live 3D point cloud visualization
– Speed, altitude, IMU & GNSS status
– Fly &Drive compatible
– Remote START/STOP of the data collection
– Trajectory visualization & Mission replay
– Connection to the YellowScan systems using 900 MHz or 2.4 GHz radio-modems

LiDAR ADD-ONS

MOUNTING BRACKETS.

Designed to be easily mounted on a wide range of platforms.

/ SET-UP OPTION

– Stand-alone quick mount
– Single camera option
– Dual camera option

The quick mount was created to support each DJI Matrice 600 or 300 owner. You can add the photogrammetry option, single or dual camera, to get colorized point clouds.

DJI SKYPORT ADAPTER.

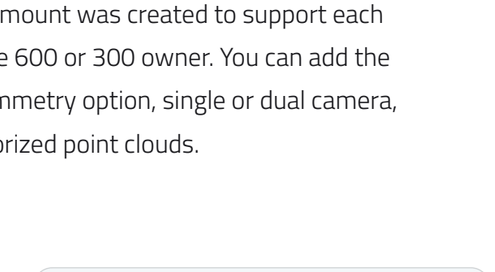
GREMSY ADAPTER.

DJI M300 QUICK MOUNT.

– Robust aluminum structure
– Weight: 400g (0.88lb)

DJI M600 QUICK MOUNT.

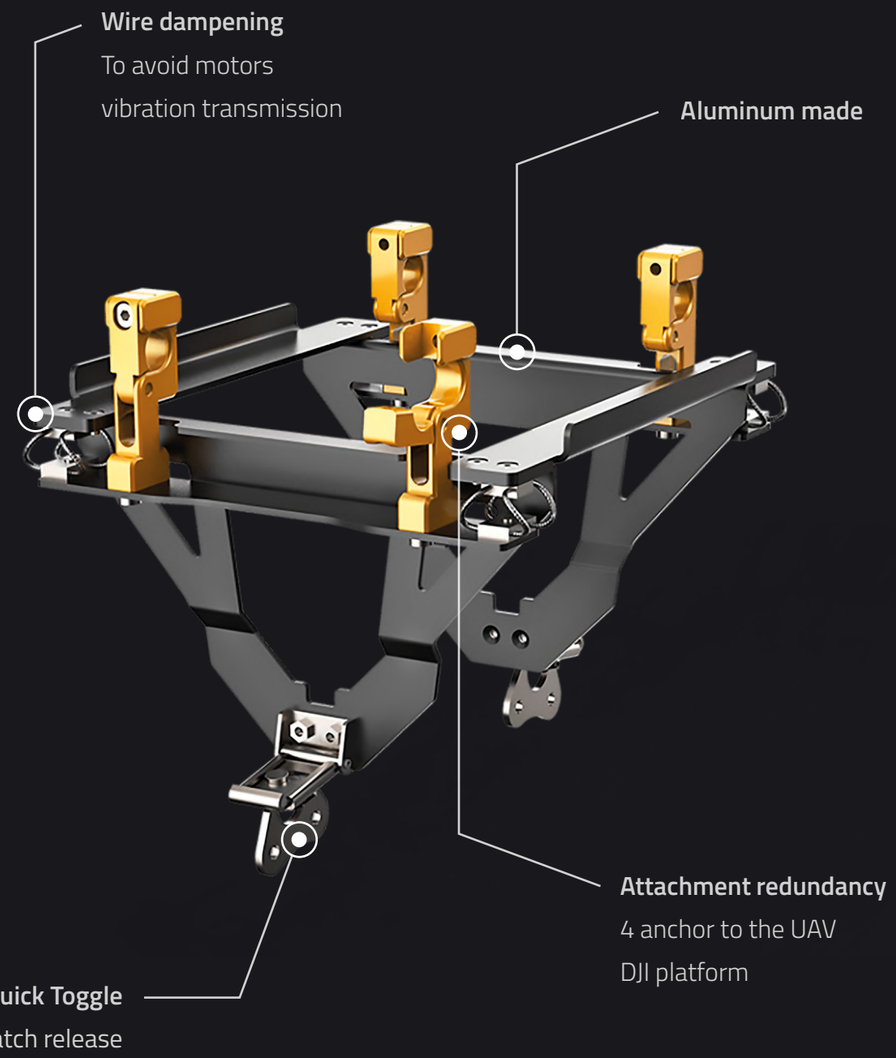
– Robust aluminum structure
– Weight: 392g (0.86lb)



SPECIFICATION.

Technologies inside:

The mounting bracket is the essential part allowing LiDAR system attachment to the UAV.



CAMERA OPTIONS

YELLOWSCAN CAMERAS.

/ PRODUCT RANGE

- 20 MP Single Camera Module
  - Rolling shutter
  - 16 mm Focal Length
- 61 MP Single Camera Module
  - Global shutter
  - 18 mm Focal Length
- 35 MP Dual Camera Module
  - 125° FOV
  - 16 mm Focal Lengths
- 61 MP Sony A7RIV Camera Module
  - Rolling Shutter
  - 18 mm Focal Length

/ KEY FEATURES

- Resolution
- Compact size
- Powered by the LiDAR system
- Synchronization with LiDAR system

CAMERA OPTIONS

SINGLE STAND-ALONE CAMERA.

/ TECHNICAL SPECIFICATIONS

– Aluminum made

– Total weight (camera excl.): 250g (0.55lb)

– Compatible with Sony Alpha 6000, Sony A7RII, Micasense multispectral sensor

/ INCLUDED

– U-shape single camera mount

– Synchronization cable (LiDAR to camera)

– Rugged pelicase

/ CAMERA AND SENSOR OPTIONS

– Sony A6000 (APS-C)

– Sony A7RII (full frame sensor)

– Micasense Altum multiband

– Camera lens: Samyang 12mm f/2.8, Sony 16mm f/2.8, Sony 20mm f/2.8

– Calibration process supplied for Terrasolid users

CAMERA OPTIONS

DUAL CAMERA.

/ TECHNICAL SPECIFICATIONS

– Aluminum made

– Total weight (camera excl.): 364g (0.8lb)

– Compatible with Sony Alpha 6000

/ INCLUDED

– U-shape dual camera mount

– Synchronization cable (LiDAR to camera)

– Rugged pelicase

/ CAMERA AND SENSOR OPTIONS

– Sony A6000 (APS-C)

– Camera lens: Sony 16mm f/2.8

– Calibration process supplied for Terrasolid users

06

ABOUT SERVICES.

With our streamlined customer support, we're with you all the way. No matter what time zone you're in, you can often get support at any time.

Customer support is authentically important to us, from the initial pre-qualification interactions to the tech support.

PLATFORMS

DRONE INTEGRATION.

We have years of experience testing several UAV platforms.

YellowScan is the world's lightest stand-alone surveying solution for drones and other ultra-light aircraft. Here we suggest a list of UAVs to fly safely with your YellowScan LiDAR system.

If your UAV is not mentioned, our support service is dedicated to help you integrating your systems. Below, a non-exhaustive list of UAVs where YellowScan systems have been integrated.

/ COMPATIBLE PLATFORMS

- Multirotor drones
- Fixed-wing drones
- Helicopter drones
- Land vehicles (Fly & Drive)
- Manned aircrafts

AERIAL PLATFORMS

MULTIROTOR DRONES.

A multirotor drone is the most common type you find on the market. Larger multirotor drones can also provide the most flexibility in equipment options, making them more useful in different mission profiles.

/ UAV SELECTION

– Matrice 600/300/210/200 from DJI
– Hawk Moth from MSP
– md4-1000 from Microdrones
– GeoDrone X4L from Video Drone
– MK8 from MikroKopter
– Alta X from Freefly Systems
– H6 from Harris Aerial
– SkyRaider from FLIR
– Zoe from Acecore
– Noa from Acecore
– Tundra from Hexadrone
– DMqD Gen 2 from Clogworks

AERIAL PLATFORMS

HELICOPTER DRONES.

Helicopter drones can be more efficient and productive than multirotor (size is always a factor), but everything depends on the mission profile.

If you need to mount a larger solution for LiDAR mapping, its size and power capability make a single rotor drone one of the best option.

/ UAV SELECTION

– Vapor 55 from AeroVironment

– Vapor 35 from AeroVironment

– ORC2 from Altus Intelligence

– Helipse HE-190E from Helipse

– Procyon 800E from NOVAerial

– Alpha 800 UAV from AUS

– VelosV3 from Velos Rotors

– SDO 50 V2 from SwissDrones

– HT100 from Anavia

AERIAL PLATFORMS

FIXED-WING DRONES.

Fixed-wing drones are used for survey of linear infrastructures (powerlines, rail, road), of large forests or farmland or even river or sea coasts.

They handle smaller payloads than multirotors (as LiDAR is integrated in the head) and bring added value when they offer Vertical Take Off and Landing (VTOL) for space and safety reasons.

/ UAV SELECTION

– Trinity from Quantum Systems

– Songbird from Germandrones

– Boreal from Mistral

– 178 Heavy Lift from Wingcopter

– DT26X from Delair

– CarryAir from Striekair

– Volanti from Carbonix

– 007 from FIXAR

– DT26 from Delair

LiDAR SERVICES

CUSTOMER SUPPORT.

Our team is committed to delivering the highest quality customer experience.

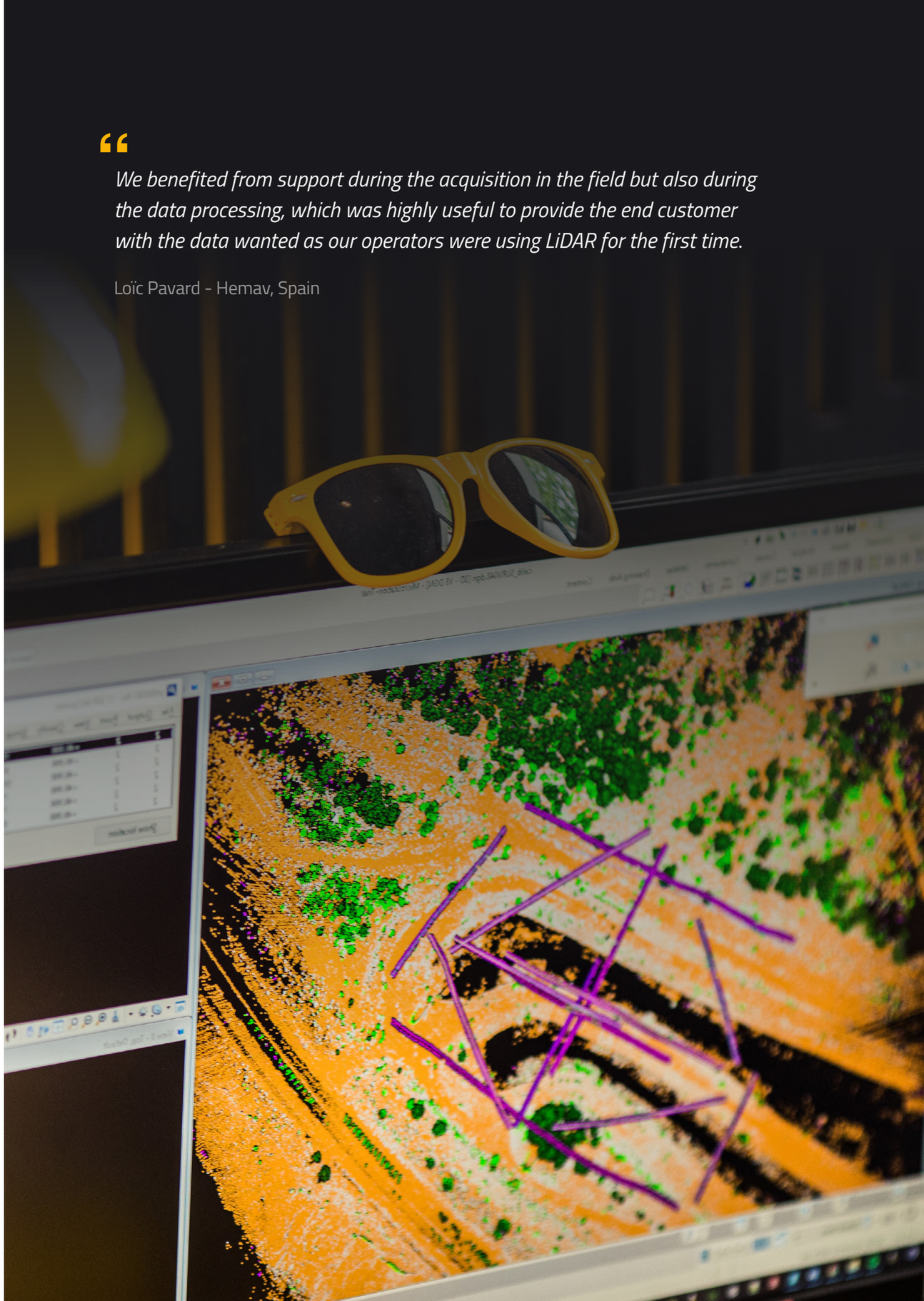
Our support extends further than the simple operation of the system, it encompasses all stages of your project from flight planning to data processing.

We understand your priorities and will promptly get back to you to help you get the job done.

Our support team is composed of reliable specialists with experience in surveying, offshore and onshore exploration, mining and forestry.

The hands-on and years of experience of our support team will directly benefit you in troubleshooting certain situations.

All hands will be on deck to get you back up and running!



“We benefited from support during the acquisition in the field but also during the data processing, which was highly useful to provide the end customer with the data wanted as our operators were using LiDAR for the first time.

Loïc Pavard - Hemav, Spain

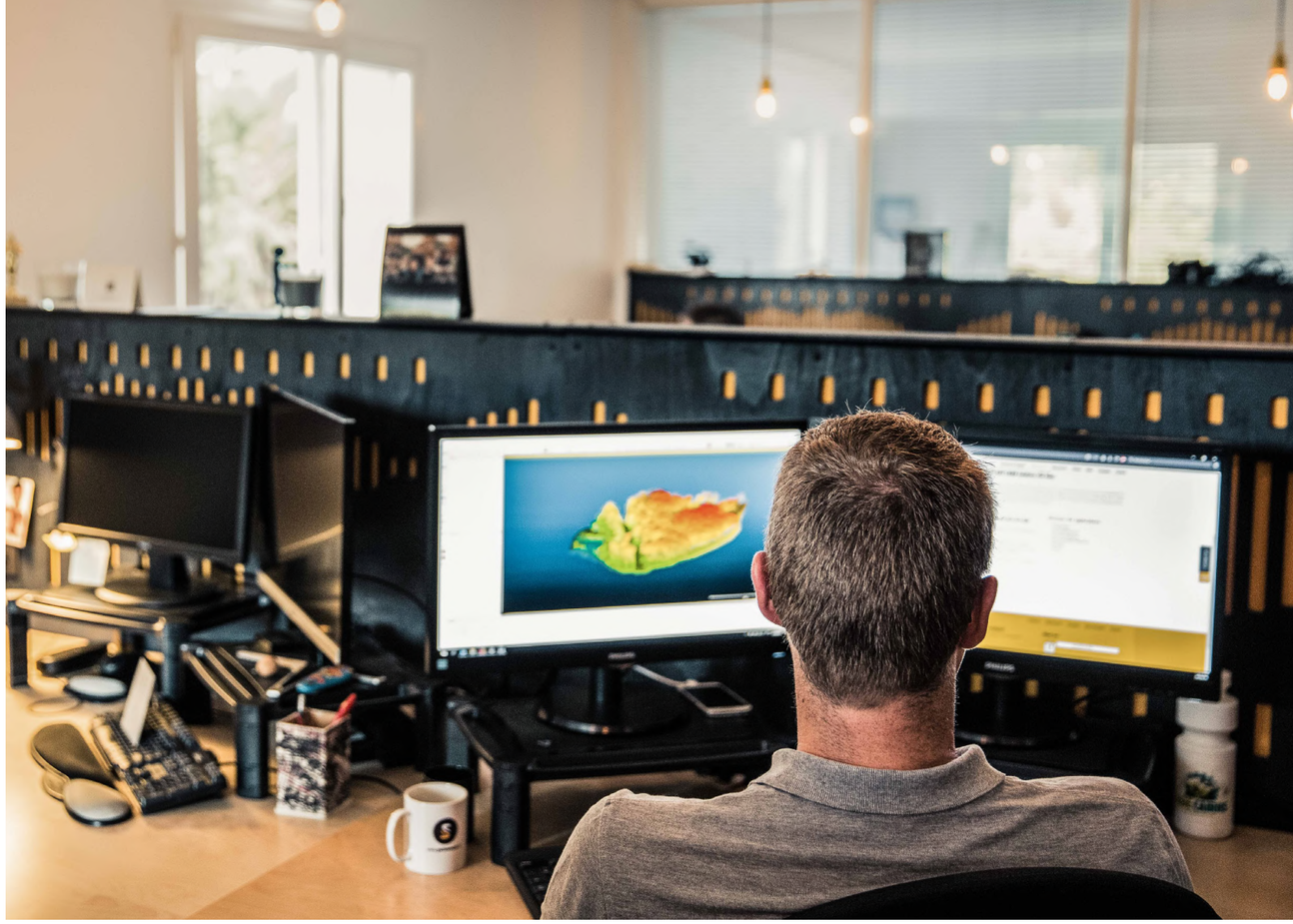
LiDAR SERVICES

YELLOWSCAN SERVICES.

Our team is committed to help you by delivering the highest quality of services.

At YellowScan, we provide a wide range of services such as system calibration, on-site training, remote health check, upgrades and warranty backed by a world-wide customer support.

We understand your priorities and will promptly get back to you to help you get the job done. Below, a non-exhaustive list of our services and support:



Warranty

Warranty and Technical Support extension for your YellowScan LiDAR system.

Remote Assistance

Hours of remote consulting support (training refresh, operations advice).

Battery replacement

Warranty and Technical Support extension for your YellowScan LiDAR system.

Upgrade

Upgrade on customer-owned YellowScan systems from laser scanner, IMU or boxing.

On-Site Training

2-day training (getting started) or 3-day training (advanced) at the customer's premises.

Loan during Repair

Unit loan while your unit is being repaired during 3-year warranty period.

Healthcheck

Remote computation of boresight angles. General check-up of all the components.

Calibration

Calibration certificate for boresight angles, accuracy and precision measurements.

ADDITIONAL RESOURCES

THEY TRUST YELLOWSCAN.

YellowScan is rapidly developing business relationships with established technical firms in the UAS, Remote Sensing and GIS industry.

Located in Montpellier, an attractive city in the South of France, YellowScan's headquarters is right in the heart of the European Union, with good transportation connections in all directions.

Worldwide sales and customer training and support are delivered by a worldwide network of representatives covering Europe, North and South America, Asia, Australia, Middle-East and Africa.

/ TECHNOLOGY PARTNERS & CUSTOMERS

A-GEO
cnrs
USGS science for a changing world
LIVOX
AeroVironment
Terra solid
applanix A TRIMBLE COMPANY
FRONTIER PRECISION
HESAI
fischer CONNECTORS
MSDI
Mirukuru
HEXADRONE
quantum systems
RIEGL
DIELMO3D
US Army Corps of Engineers
University of Kentucky
ACECORE
VELOS ROTORS

ADDITIONAL RESOURCES

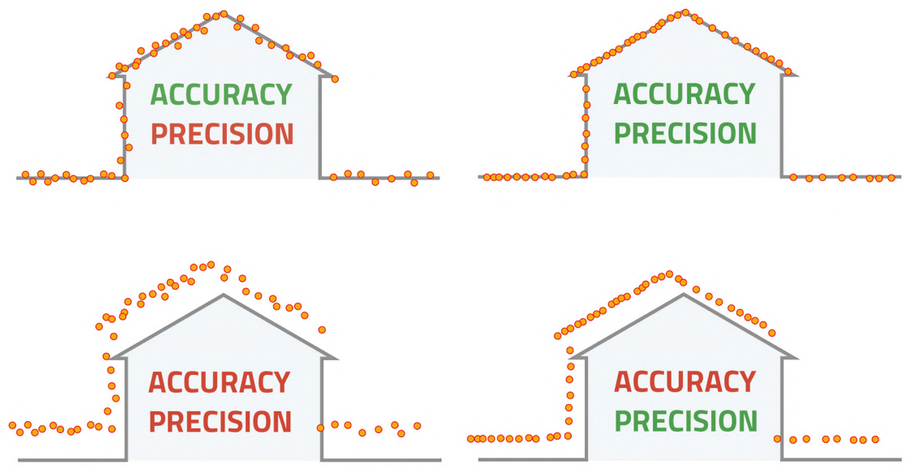
PRECISION VS ACCURACY.

With LiDAR, why do we talk about precision and accuracy, what is the difference?

Accuracy is the geographical precision, so it determines how far the point is offset. An accurate point cloud will be close in average to the actual position of the environment it describes.

Precision is the repeatability of the measure. In LiDAR for UAV you could consider it to be the thickness of the point cloud: A precise system will output a very thin point cloud, with little noise.

/ DIFFERENCE BETWEEN ACCURACY AND PRECISION



Last update: January, 2024

Projet cofinancé par le Fonds Social Européen

Designed to innovate.

www.yellowscan.com | contact@yellowscan.com

FR: +33 411 931 400 | US: +1 (801) 876-1007

JP: +81 3 4360 5588 | APAC: +61 3 7034 9488