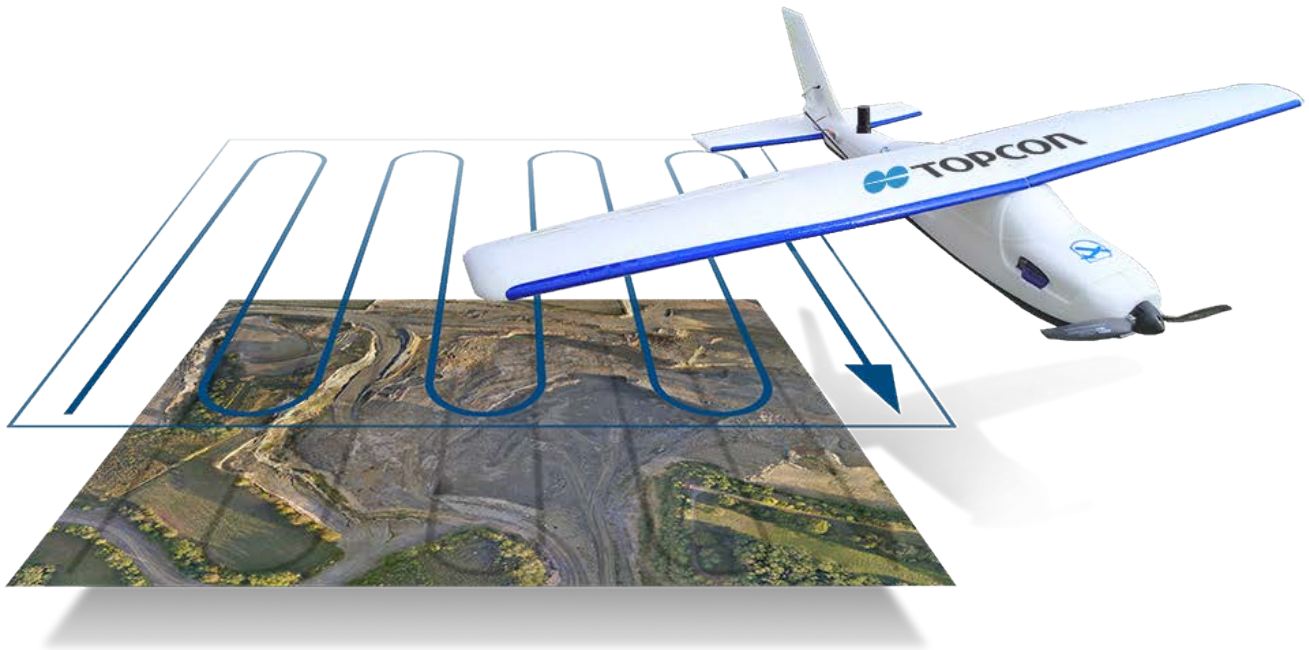


# SIRIUS PRO

Powered by MAVinci



## Aerial Mapping System



- High accuracy aerial mapping using GNSS RTK
- No need to spend time on collecting Ground Control Points
- Get high accuracy in areas that cannot be accessed
- Full post processing and evaluation software

# SIRIUS PRO Aerial Mapping System

## SIRIUS PRO Aerial Mapping System.

### High accuracy without ground control

The Sirius Pro delivers highly accurate aerial mapping results using GNSS-RTK. Achieving 5cm accuracy without Ground Control Points (GCP) means an increase in productivity when compared to other solutions.

In the traditional approach, placing GCPs and measuring them adds a significant amount of extra time and cost to the project; the time dealing with GCPs can be more than 50% of the whole project time. On projects where the ground area access was impossible or extremely limited, providing high accuracy mapping was a serious problem. Without enough GCPs it was hard to match the accuracy requirements set by your customer – rendering projects uneconomical.

Instead of GCPs, Sirius PRO uses GNSS RTK in combination with precision timing technology to determine the exact location for each of the positions at which a photo is taken. This precise positioning technology allows the image locations to be used as the equivalent of GCPs.



### Work in mountainous areas

Flight plan automatically adapts to an elevation model



### Cover areas that require more than one flight

Save up to 30% flight time for large UAS missions: Flight plan splits up automatically and rejoins for post processing



### Simple hand launch

The UAS is directly launched by hand, no catapult etc. is necessary



### Land in areas where automatic landing is impossible

If obstacles or the dimensions of the landing area prevent automatic landing, the operator can easily land autopilot assisted. The UAS is stabilized by the autopilot and manually controlled by simple up/down, left/right commands



### Wind

The UAS is fully operational with wind of up to 50 km/h (approx. 7Bft) with gusts up to 65 km/h (approx. 8Bft)



### Rain

Use the UAS even in rain.



### Temperature

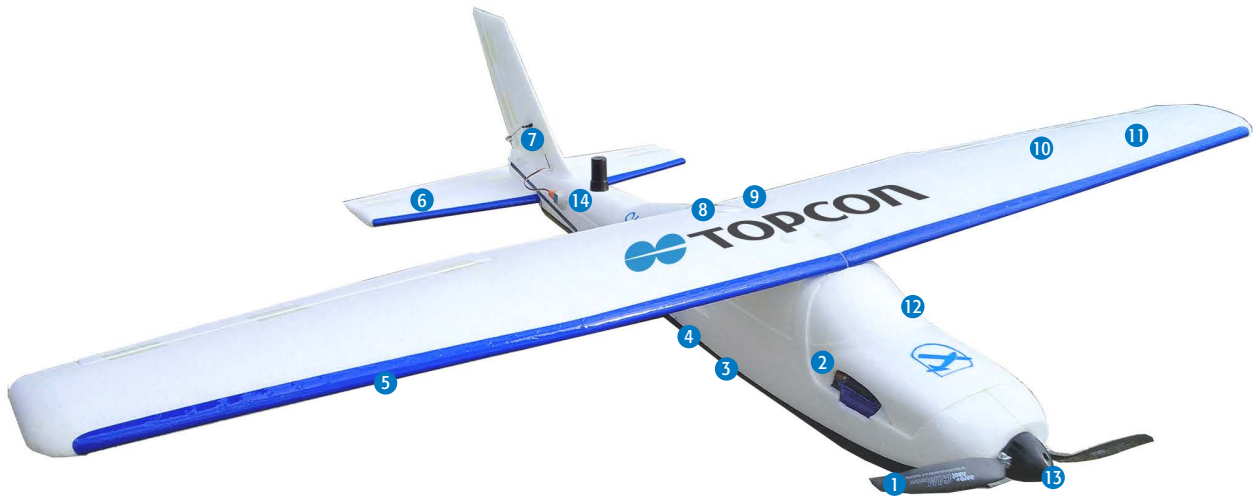
Operate the system in hot or cold outside temperatures from -20°C to +45°C



### Light

High quality camera performs exceptionally well under low light conditions

## PRIMARY FEATURES



- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>1 Folding propeller (protection for landing)</li> <li>2 Single battery powered UAS</li> <li>3 Calibrated camera with large sensor</li> <li>4 MAVinci autopilot</li> <li>5 Flashing lights below the wings</li> <li>6 Detachable tail rudders</li> <li>7 Special long life actuator</li> </ul> | <ul style="list-style-type: none"> <li>8 Adaptive active cooling of autopilot electronics</li> <li>9 Security switch for engine control</li> <li>10 Extremely lightweight foam material</li> <li>11 White color prevents overheating</li> <li>12 Access to camera storage card</li> <li>13 Electric brushless motor</li> <li>14 GNSS Antenna</li> </ul> |
|--|---|

### Auto Pilot and Assisted Flying

The auto pilot enables the Unmanned Aerial System (UAS) to fly autonomously. It steers the UAS during launch, flight and landing.

The assisted mode allows simple left/right, up/down commands supported by the auto pilot. This unique feature allows even unexperienced pilots to safely steer and land the plane manually.

## KIT COMPONENTS

- SIRIUS PRO
- Ground station with remote control
- Camera kit
- Accessories kit
- Transport Box
- Software Suite



## SPECIFICATIONS

Test Data Accuracy	GSD	X/Y	Z
Agricultural Area 1	1.6cm	2.4cm	3.1cm
Stone Pit	2-3cm	4.4cm	0.8cm
Agricultural Area 2	3.5cm	5.1cm	3.2cm
Agricultural Area 3	10cm	7.2cm	8.6cm

### Airframe

Material	Elapor
Wingspan	163cm
Length	120cm
Take Off Weight	2,7 kg (with 550g payload)
Flight time	55 min (with 550g payload and one battery)
Speed over ground	65 km/h

### GNSS Component

Number of Channels	226 Universal Channels
Signals Tracked	GPS L1 C/A, L2C, L2 P(Y), GLONASS L1/L2, Galileo E1
Accuracy RTK (Kinematic)	
Horizontal	10mm + 1.0ppm x baseline
Vertical	5mm + 1.0ppm x baseline

For more specifications information:  
[www.topcon-positioning.eu](http://www.topcon-positioning.eu)

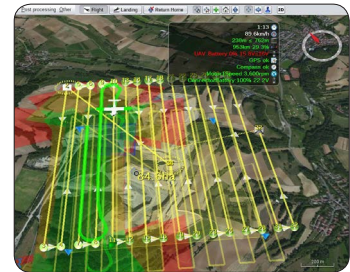
## WORKFLOW

### SIRIUS PRO Project Workflow

The Sirius Pro comes with all software for a complete workflow.

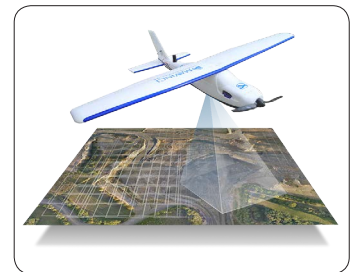
#### Flight Planning

Plan the flight by using the Desktop flight planning software. The flight starts after the flight plan is transferred to the UAS.



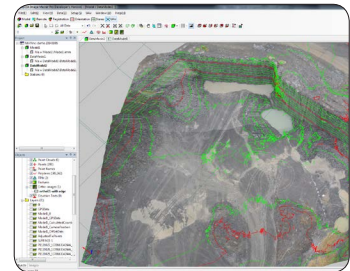
#### Image Acquisition

During the flight the controller software ensures that the UAS autonomously follows the track that was planned before takeoff. The onboard camera captures images automatically and these are stored on the UAS.



#### Post Processing

After the flight single pictures are post processed into orthophotos and DEMs. These can then be easily analysed using ImageMaster software.



Topcon Europe Positioning, B.V. • Essebaan 11  
 • 2908 LJ - Capelle a/d IJssel • The Netherlands  
 (+31) 10 4585077

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