4D Consulting Service Software Development

4DU-Surveyor

Enhance your UAV for survey-grade mapping

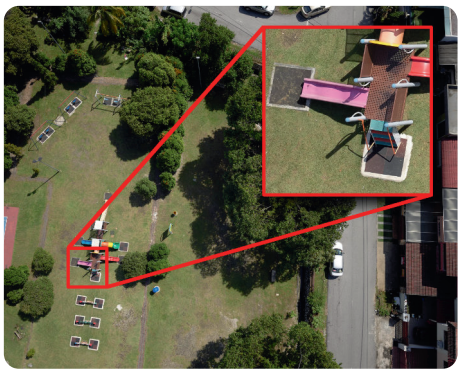
The **4DU-Surveyor** combines the advantages of UAV-based mapping and high-resolution medium format photogrammetry. The system integrates the world leading digital medium format **Phase One iXM-100** camera and the high-performance **Applanix APX-18** dual antenna GNSS/IMU positioning sensor. The 4DU-Surveyor is ready for various applications such as mapping industrial sites and buildings, facilities monitoring, terrain modeling or geological mapping.

Ask for a quote for the **4DU-Surveyor** or for services provided by 4D-IT GmbH.

Measurement principle

Overlapping **image sequences** are used to derive 3D structures. The resulting 3D models have true-color texture and can be used for precise 2D mapping.

For survey-grade georeferencing, a **GNSS/IMU sensor** is integrated. An absolute accuracy of 4 cm may be achieved, using L1/L2/RTK-based post-processing. By means of a dual antenna GNSS receiver, this accuracy is achievable even at very low flight speed.

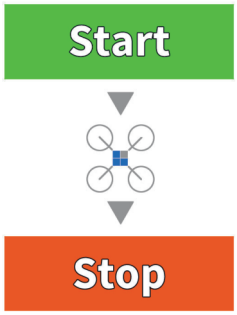


High-Resolution & High-Quality

The Phase One iXM-100 is a **metric medium-format camera**. With a sensor-size of 43.9 x 32.9 mm and backside-illumination technology, **high light sensitivity** and an extended **dynamic range** are achieved. The specially designed RSM lens with 35 mm focal length allows for a 4.5 mm ground sampling distance at 50 m flight-height while still covering 26 x 20 m with a single photo. Four RSM lenses with focal lengths from 35 mm to 150 mm and with optional autofocus are available.

1-Click application

The **4DU-Surveyor** is an autonomous sensor system. It may be mounted at any UAV suitable for payloads of minimum 2.4 kg. The concept is "Start - Fly - Stop". By using the UAV's autopilot to follow a predefined flight-path, 3D mapping is as easy it can be. Colored 3D-point-clouds, 2.5D terrain models, orthophotos and 3D mesh-models are generated using standard software for topographic data processing, analysis and visualization.



further info: www.4d-it.com
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4DU-Surveyor

System specification

Size	34 x 12.5 x 14.1 cm (width x length x height)
Weight	2.4 kg (incl. battery and data storage device)
Mounting	DJI Ronin Mount (customer specific on demand)
	GNSS antennas (top of UAV)
Operation time	up to 60 min autonomously

Sensor system

Camera System	Phase One iXM-100[1]
Resolution	11664 x 8750 Pixel
Lens	RSM 35[2]
Angle of View	63.0 x 49.4°
Measurement distance	20 m to ∞
Direct georeferencing	Applanix APX-18 UAV GNSS/IMU (100 Hz position, roll, pitch, heading output)
Dual antenna	Increased heading quality and reduced initialization time
Positioning accuracy[3]	± 4 cm

[1] alternatively: iXM-50 | [2] alternatively: RSM 80 or RSM 80AF | [3] dependent on GNSS configuration

Add-ons

Training	system integration, mission planning, data processing
Extended maintenance	hard- and software
Multirotor UAV	4DU-CamCopter, DJI Matrice 600 pro
GNSS reference station	L1/L2/RTK GNSS Base / Rover
Data processing software	on request

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