

“Closing the gap” between fixed- & rotary-wing UAV

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The gap has been closed! For precise mapping of small areas up to 100 hectares there has been a lack of a multi-rotor system providing sufficient endurance, adequate sensors and high-quality camera technologies at the same time. With the new autopilot AscTec Trinity the AscTec Falcon 8 becomes a high-performance drone, which caters for all capabilities.

New Generation of UAV sensor technology in conjunction with triple redundancy

Integrated new generation sensors measure flight speed, attitude and position very precise. New generation micro processors' calculation using more decimal digits to minimise rounding-off errors. Newly developed algorithms are able to correct expected errors numerically. A triple redundant inertial measurement unit ensures reliable sensing data processing within milliseconds. Sensor data errors would be identified and compensated. This new generation of inertial UAV sensors and an advanced data fusion concept enables precise positioning, accurate distance control and provides more sensible awareness of external forces like temperature, pressure and wind.

First fully adaptive UAV flight control

Effectively your AscTec Falcon 8 will stay up in the air as long as the laws of physics allow it. Even a few defective motors or propellers would be compensated by an intelligent propulsion system. AscTec Trinity would make the AscTec Falcon 8 adjust and balance slightest and heavy shifts of the center of

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gravity. Exact orientation and precise controllability will be able in any case. Consequently UAV battery switches, UAV payload and camera exchanges or lens changing within missions won't have an impact on the flight performance as well as permanent high flight dynamic. We even successfully tested it's reaction on flips. Horizon and orientation would be perfectly balanced.

Excellent expert UAV payload options

The vertical take-off and landing (VTOL) system AscTec Falcon 8 can be started at close, uneven and turbulent spots, too. Right after switching on you can immediately take-off. Calibration and initialisation are done instantly. The drone identifies a chosen UAV payload automatically providing all relevant paramter on the Mobile Ground Station. With the 36 MP full-frame DSLM camera [Sony Alpha 7R](#) Ascending Technologies offers an excellent camera solution for the AscTec Falcon 8. It is the benchmark in the professional surveying sector. Millimeter accuracy and reliable structure analysis can be established as well.

Convincing cost-efficiency by UAV

More efficiency by more dynamic in any move. Improved sensing, sensor data processing and flight attitude control lead to unmatched flight performance: Quick take-off, quick climbing, quick flights and quick landing will reduce your working time. Inspections of this kind, typically involving hard-to-reach assets, used to mean costly scaffolding, Rope Access Technician (RAT) teams or helicopter support and a delay to inspection operations. Certainly the AscTec Falcon 8 has become a sought-after partner for object and area flights for inspection and survey, due to numerous successful UAV-/drone-based operations. In case of doubt simply ask our established customers from the industry sector like [AAIR](#), [Cyberhawk](#), [HUVR](#), [Orbiton](#), [Resource Group](#) and [Sky-Futures](#).

Up to over 90 percent of cost savings sound convincing to our customers' customers. Enabled by excellent pilots and excellent UAV / drone technology.

Sample calculation 1 – industrial UAV-/drone-based inspection:

- Mission: Structure analysis / Damage detection: Industrial plants incl. 14 separate inspection scopes
- Equipment: AscTec Falcon 8 + Inspection Payload CX410 & Sony Alpha 7
- Production time: Multiple UAV-/drone-based inspection flights within 14 days
- Conventional production: 700 days rope access inspection work, 40 days vessel support, 28 days shutdown
- [View showcase](#)

Unique Micro-UAV flight performance & area output

Just like in the inspection there are major potential savings in the UAV-/drone-based surveying sector. You can fly exactly and exactly reproduce trajectory flights with the AscTec Falcon 8 at 10 m/s in GPS mode. Furthermore the AscTec Falcon 8 will precisely follow automatically optimized paths for tremendous area efficiency. Producing aerial imaging at high speed – without stopping – with accurate photo position control. You can adjust setting with the Mobile Ground Station. And you can do a Quick Survey using our new surveying function for PC-less survey flight. Simply enter your required

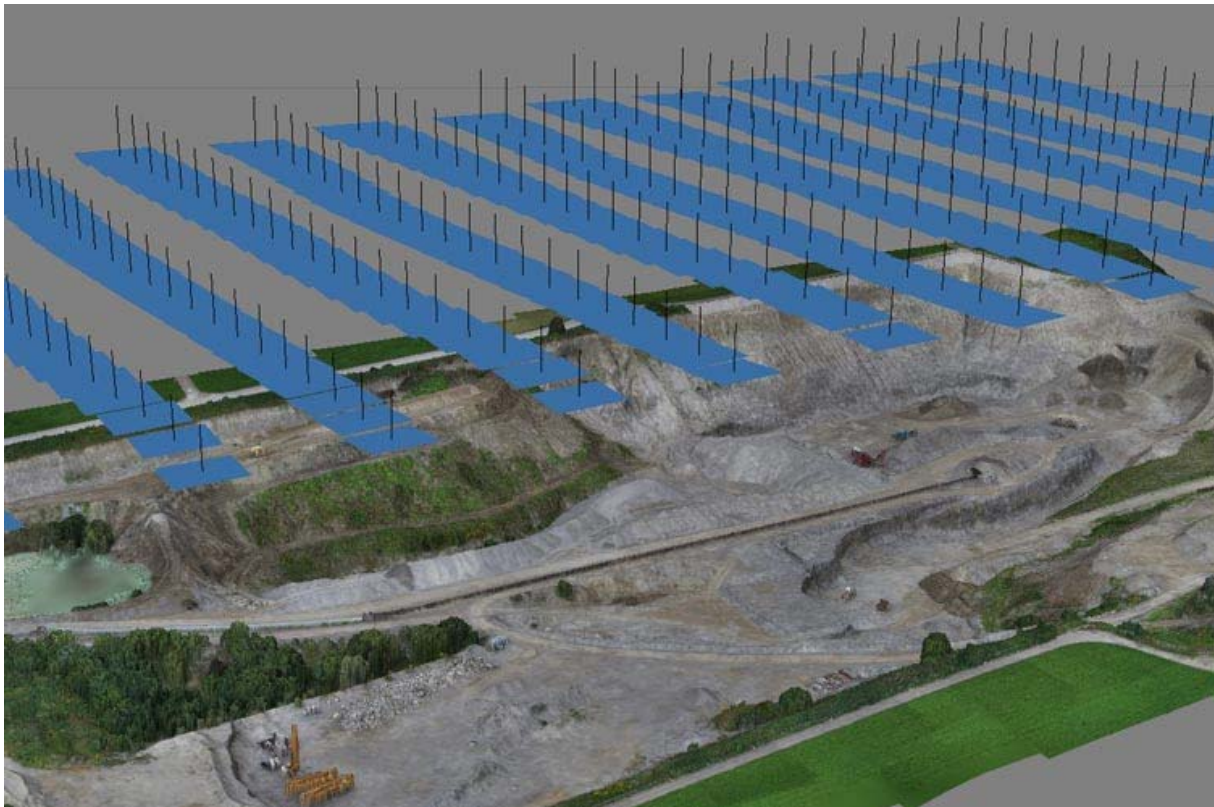
ASCENDING TECHNOLOGIES

Ascending Technologies GmbH
Konrad-Zuse-Bogen 4
82152 Krailling

T +49 (0)89 / 89 55 60 79-0
team@asctec.de /// www.asctec.de

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parameter and you can directly start a survey right at the spot. A real scenario test flight has shown following results: 35 hectares, ground sample distance (GSD) 2 centimeters provided in 12 minutes flight time. And if a more detailed GSD is necessary, you could have set that. The AscTec Falcon 8 would automatically adjust flight velocity, altitude, number of photos and overlaps to achieve the required result. Just to perform maximum efficient and output-orientated. Hence UAV-/drone-based surveying with the AscTec Falcon 8 provides unparalleled rotary-wing UAV efficiency.



Area output + precision due to photo position control and optimised flight path.

For the better UAV use

Since ever our philosophy is to develop UAVs with a perfect size-weight-performance-ratio. The AscTec Falcon 8 is able to carry and usefully work with high-quality cameras highly effective. Only 2.2 kilos maximum take-off weight suffice to carry a payload, for which other UAVs need twice as much. The empty weight of the patented V-form octocopter is under 1 kilo. 8 small-size 8" propellers require only 100 Watt each leading to limited endurance, but more safety. Limited endurance is compensated by advanced features for professional UAV / drone application. So you only need few minutes to get required aerial imaging and geodata in highest quality. Finally less endurance means less effort for perfect results.



Flight / photo matrix from a panorama incl. 44 single shots.

Sample calculation 2 – aerial UAV-/drone-based imaging:

- Mission: 360° / spherical panorama
- Equipment: AscTec Falcon 8 + 1 flight, 1 battery charge, UAV payload Sony Alpha 7
- Production: 1 starting, 1 positioning, 1 click, 1 landing
- Result: 1 spherical pano with 48,192 x 24,096 pixels, 78 HD single pictures, stitching-optimised.
- Production time: 4:38 minutes

Tags: [Cutting Edge UAV Technology](#), [UAV for Inspection of Industrial Assets](#) Category: [Ascending Technologies](#), [AscTec Falcon 8](#), [AscTec Professional Line](#), [AscTec Trinity](#), [UAV for Forestry, Farming & Crop Sciences](#), [UAV for Photography & Aerial Imaging](#), [UAV for Inspection & Monitoring](#), [UAV for Surveying & Mapping](#)