



AVIATION PIONEERS

Our goal is to develop electric aircraft delivery systems and accelerate the growth of sustainable mobility.





INDUSTRIAL APPLICATIONS OF DRONES

How to apply fixed wing VTOL drone
for large area monitoring

Weight with battery	12,5 kg
Wingspan	2 m
Fuselage length	1 m
Maximum payload (e.g. a hyperspectral camera)	4 kg
Maximum range with 2 kg payload	40 km
Cruise speed	~90 km/h
Maximum speed	160 km/h
Lifecycle CO2-emissions during fixed wing flight	<5 g/km



Lentola's 5th generation prototype.



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A fixed wing VTOL aircraft

has a triple range compared to a conventional multicopter. A long range is useful when surveying large areas.

You can map over 100 ha in one hour's flight. The costs of a single 5 km road construction survey could be:

VTOL aircraft	300€
Multicopter drone	3X working hours & costs
Laser scanner	10X working hours & more costs
Helicopter	even more





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Who has the most to gain from this technology?

Companies building and managing large infrastructure such as roads, railways, bridges, dams, water reservoirs, airports, industrial complexes, oil and gas operations, and power complexes have considerable potential to use drone data to optimize their operations.

These solutions are already offered by several companies around the world. These companies also use highly different aircraft (multicopter, fixed-wing, fixed wing vtol etc.)





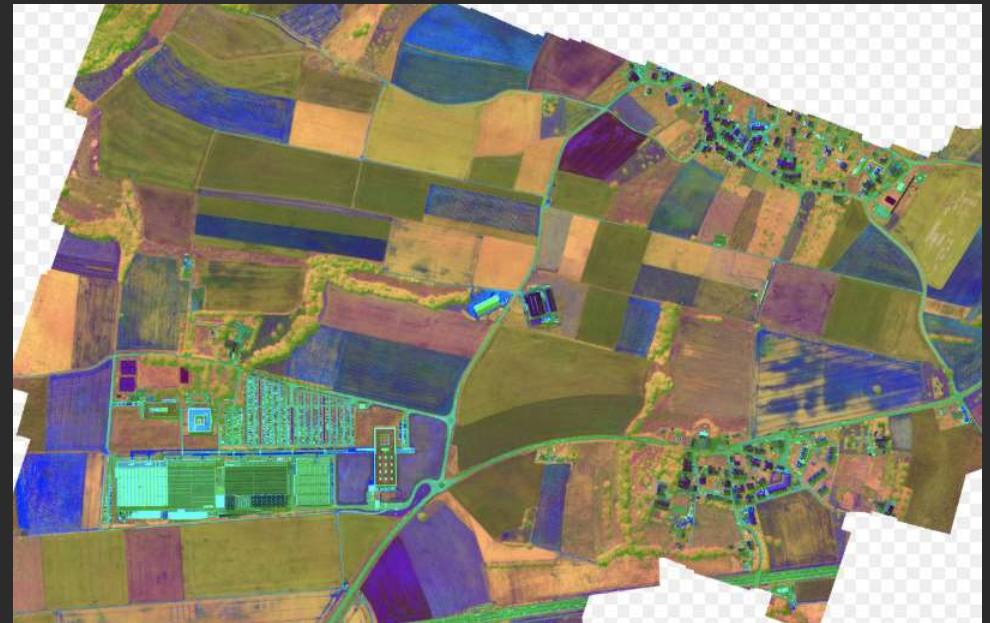
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How is the drone data used?

A drone is used in the construction industry for surveying and inspection purposes. Drones are equipped with downward-facing sensors, such as RGB, multispectral, thermal or LIDAR and they can capture a great deal of aerial data in a short time.

Photogrammetry software combines images to generate geo-referenced 2D maps, elevations and 3D models. These maps can be used to extract information such as precise distances, surface and volumetric measurements.





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Ground sample distance (GSD)

is the distance between pixel centers measured on the ground. It is affected by several variables:

- Altitude of the image capture
- Size of camera sensor
- Camera resolution
- Focal length of the camera lens
- Aperture

A large vtol-aircraft can carry heavier payloads. With a high quality camera you are able to map 50 km long road in a couple of days with a ground sample distance of <1 cm/px.





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The drones are here

Drone transportation begins in just few years. How have you prepared for this in your company?

New infrastructure and buildings should be built with drones in mind. Smaller delivery drones will be used in Finland in just few years time and human transportation could start in about ten years.

We know the world of drones and we can help you with planning of drone related infrastructure.

Find more at Lentola.com.





KIITOS - TACK

TAK - MERCI - GRACIAS - GRAZIE - DANKE