uAVIONICS

UNMANNED SYSTEMS TECHNOLOGY

Meet uAvionics

uAvionics has been created out of passion for aviation technology. The founders loved complex techncal problems and at the same time were convinced that our future is there, above our heads.

Unmanned systems developed at uAvionics have gathered appreciation around the globe in countries like Australia, Nigeria or United States.

Currently, we want to share our knowledge and experience with organizations that thanks to unmanned technologies can save on operational costs, increase quality of their products or services and create better workplaces.

Our offer

Products	Software	Services	Engineering	Consulting
Unmanned aerial vehicles with up to 20h flight endurance Multirotors for industrial, geodesy and agriculture use	Processing and archivization of data gather by UAVs Flight control software Artificial intelligence allowing to get reports out of large amounts of data	Gathering of data from large areas Specific data collection: - Thermal inspections - Inspection of places hard to reach otherwise **Drone as a Service**	Advanced mechanical parts and metal machining and milling. Composite materials Embedded electronics	Analysis of drone usage financial consequences for organizations Analysis of legal possibilities to use drones in an organization

Products

Our products are designed and assembled in European Union.

Multirotors

Inspector™ and Geomapper

For industrial inspection and terrain mapping

Fixed wing 3rd gen

S-380 Barracuda

3h flight endurance

Fixed wing 4th gen

S-410 Tiguar™

20h+ flight endurance and 1800km range

Emergency parachute

You can find out more about our products at www.uavionics.com.pl

S-410 Tiguar

TIGUAR S-410

Available as an airframe ready for on-board systems integration and as a Ready-For-Mission UAV system.

Tiguar is a fully integrated, state-of-the-art unmanned system that fits under the **U.S. Federal Aviation Administration 55 lbs. regulation** and meets Polish Civil Aviation Authority requirements regarding UAVs. It is a **high endurance, safe and modular system** that can be deployed for **aerial inspection, monitoring and surveillance missions.**

TIGUAR S-410

USER-FRIENDLINESS

Modular design

Tiguar is divided into several main parts: fuselage, landing gear, two wings and two tails. The parts are completely **interchangeable.**

TIGUAR S-410

USER-FRIENDLINESS

Quick assembly

wings joint

tail boom joint

landing gear fixing

The aircraft features first-of-its-kind **quick assembly system.** It is a revolutionary approach to connecting separate aircraft parts in aviation. All of the connections have been **specifically designed** for this airframe. They have been optimized to ensure **safe and very fast assembly.** The entire aircraft can be assembled and secured **in less than 2 minutes.**

TIGUAR S-410

Tiguar is Non-ITAR restricted, allowing customers to easily access its amazing capabilities.

Parachute landing system

Parachute landing system allows recovery in **unprepared sites** but also serves **emergency purposes.** In case any of the flight critical systems fail the **parachute is deployed automatically.**

Inspector

Inspector

Inspector

Applications

We offer to our customers a possibility of constant monitoring or aerial inspection using our unmanned aerial vehicles with long flight endurance. Reliabilty combined with 20h flight time can support goverment, commercial and military organizations.

Regardless of whether your mission is life, borders, property or infrastructure protection, you can always count on uAvionics systems to deliver required data and situational awareness.

Search&Rescue

Challenge: Rescue a stranded man left in a 15 km distance from Mission Control in Kingaroy, Australia. Search area is 2.5 x 1.5 km large.

Solution: Unmanned plane Barracuda has carried out autonomous mission delivering processed images with high probability of finding the man. Main sensor was the RGB camera, without the use of thermovision. The software enabled to precisely pinpoint his location.

Results: Thanks to the data gathered, the Mission Control was able to quickly send help to the guy. If not for UAVs, the result may have been different.

Pipelines inspections

Challenge: The national operator of more than 11000 km of gas pipelines is required to do inspections of the whole network 4 times a year to ensure safety of operations. They look for leakages, controlled area trespassing and damaged pipeline signs.

Solution: Unmanned plane S-380 Barracuda has carried out mission to gather data. Later the data was processed using computer vision and artificial intelligence methods.

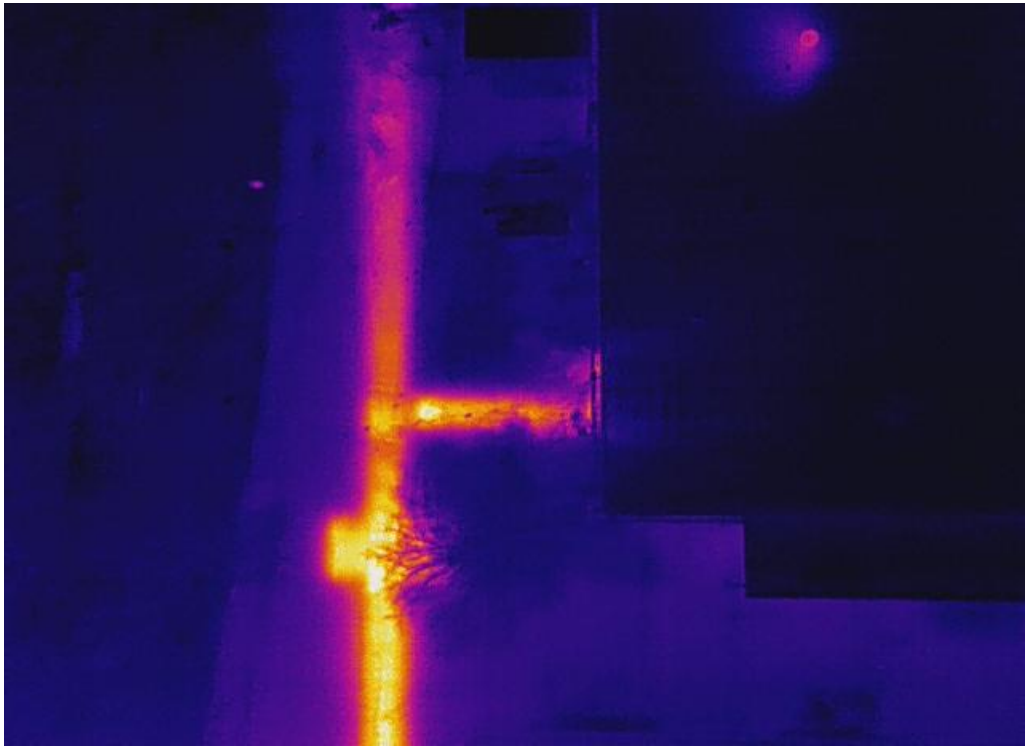
Results: Thanks to the collected data, it was easy to identify the potentially dangerous spots and drastically lower the costs of inspections.

District heating inspections

Challenge: District heating networks cause a lot of problems in the case of failure. There are no methods that allow for precise localization of damages, especially for older technology networks.

Solution: Unmanned Inspector equipped with thermal camera regularly scans the network showing point where possible leakages are. In case of a known pipe failure, the emergency team is sent to quickly localize leakge.

Results: The collected data allows to cheaply look under the ground and precisely locate the failure. It lowers the costs of random digging of sidewalks, roads, etc.



Construction inspections

Challenge: The rooftop of Q22 building in Warsaw is covered with largest roof solar panel installation in Poland. Technical inspection of the installation is very important for investor as well as for continous operation. It is difficult to get rooftop pictures while being there.

Solution: Unmanned Inspector with thermal camera measured the solar panel installations in day and at night.

Results: The collected data allowed to identify the panel heating system deficiencies as well as helped locate Hot-Spots. Thanks to that the investor received fully functional installation.

Road inspections

Challenge: Infrastructure authorities needed to prepare a 5 year plan of road repairs on the 2500 km road network. It was looking for a way of prioritizing its work based on actual and well documented data.

Solution: uAvionics using its unmanned aircraft fleet addressed the challenge by flying at 120 meters altitude and gathering 2 cm/pix accurate data for the whole road network. The data was then run through experts and artificial intelligence aids to identify holes and cracks and assess their severity.

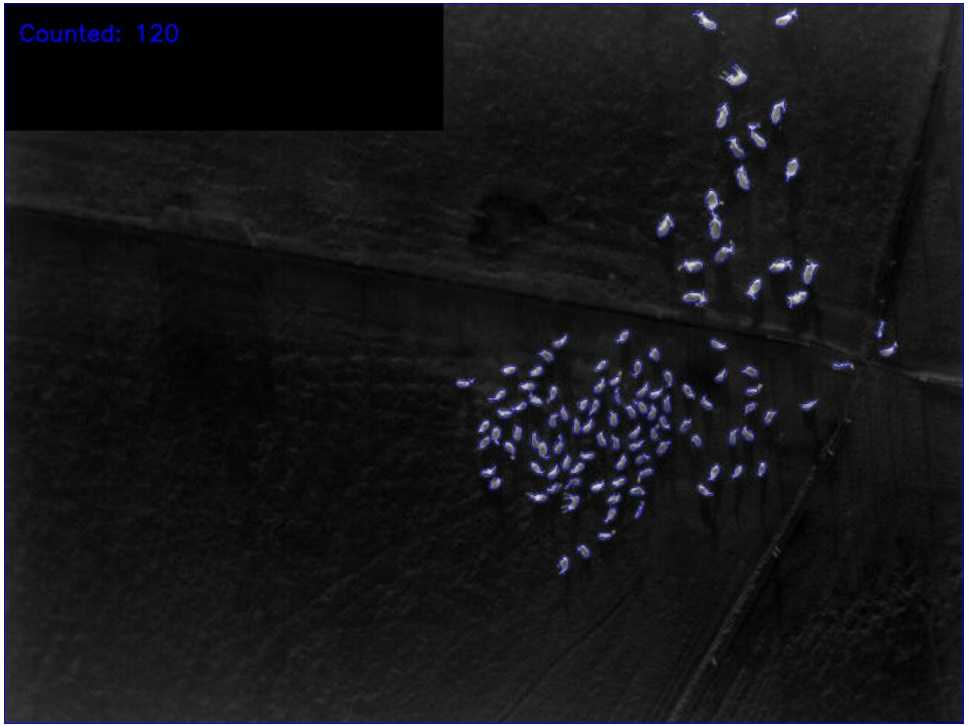
Results: Infrastructure authorities received reports outlining road damages, their severity and precise locations. It was also provided with raw data for their own assessment.

Wildlife counting

Challenge: In the eastern part of Poland there are large populations of wild animals, especially deers. There are also deer-breeders which usually face the problem of counting their animals, specifically if they move and runaway from people.

Solution: S-380 Barracuda plane equipped with thermal camera flies over 1000 ha of terrain collecting data. Then, the software analyses visible objects and counts them.

Results: Fast, reliable and stress-free wildlife counting.



Change detection

Challenge: The junkyard owner rents terrain for his business but decides to grow it without paying more of the monthly rent.

Solution: Unmanned Inspector flying once a month collects aerial data which is processed by our software. The software recognized different objects in the images and compares their positions to the data gathered from earlier flights. It is possible to easily notice the junkyard development as well as how many cars there were or how they were parked compared to now.

Results: Aerial images and software allow for quick assessment of the junkyard area and comparison with earlier state. The whole measurement is non-invasive for terrain users.

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Visit uAvionics website: http://www.uavionics.com.pl