Make it fly.
Safe and easy.

germandrones

Germandrones specializes in the development and production of Unmanned Aerial Systems (UAS) and DroneIntelligence software for professional applications. Our team, a blend of quality engineering and research and development, is driven by a passion for innovative technologies. We are committed to designing products that not only prove their worth in real-world scenarios but also empower our customers to transcend current limitations.

Our flagship product, Songbird, merges the efficiency, speed, and range of traditional airplanes with the vertical take-off and landing capabilities of contemporary multi-rotor drones. This fusion not only broadens the spectrum of existing UAS applications but also introduces a completely new array of possibilities.

OUR MISSION

Uncompromised Safety and Flexibility

We tested our products all over the world, including in harsh environments from deserts to snow.

Our projects

2016-18

Romania, Sweden, Germany

Photo inspection of solar fields and other projects

2019

Belgium

BVLOS for railway security. Surveying to secure railway lines, Day and Night flight to prevent cable theft

2020

Rwanda

Lake Kivu Challenge at African Drone Forum

Colombia

flights at 3.000m ASL

2021

Germany

BVLOS operation in an Air traffic-controlled area. Power- and pipeline inspection up to 100km in one flight

2022

Germany

Birdbox - hangar for automated perfomance Software Module to generate an automated Specific Operational Risk Assessment (SORA)

2023

Germany

The first batch of drone delivered to Ukraine and Moldova

2024

Germany

New and Improved Flight Termination system implemented.

Product development stages

Songbird v3 for bigger payloads

Droneintelligence © software

Flight time record 2:04 h

Industrial production Songbird 60, 100 & 150

ISO 9001:2015 certification

Songbird in Berlin via LTE from Cairo (Egypt)

Songbird operation within manned air traffic (airport and traffic controle zone)

LiDAR integration

EASA C certification in process

Expansion of Production facility to cater to large orders

Droneintelligence software modules for mapping and military surveillance

IMSI-catcher Cloud Solution Software

SEED & START-UP PHASE

GROWTH PHASE

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ABOUT SONGBIRD

Advanced aerodynamic design results in flight times of more than two hours and above 100km distance.

The Songbird is the culmination of years of rigorous testing, software development, and optimization. It seamlessly blends the benefits of fixed-wing aircraft and multirotor drones, offering Vertical Take-Off and Landing (VTOL) capabilities through motor transition. This unique feature allows for extended flight distances.

With the capacity to carry payloads of up to 4.4 kg (9.7 lb), the Songbird is equipped for operations involving large batteries, dual cameras, or highly specialized sensors such as LiDAR or other real-time mapping solutions.

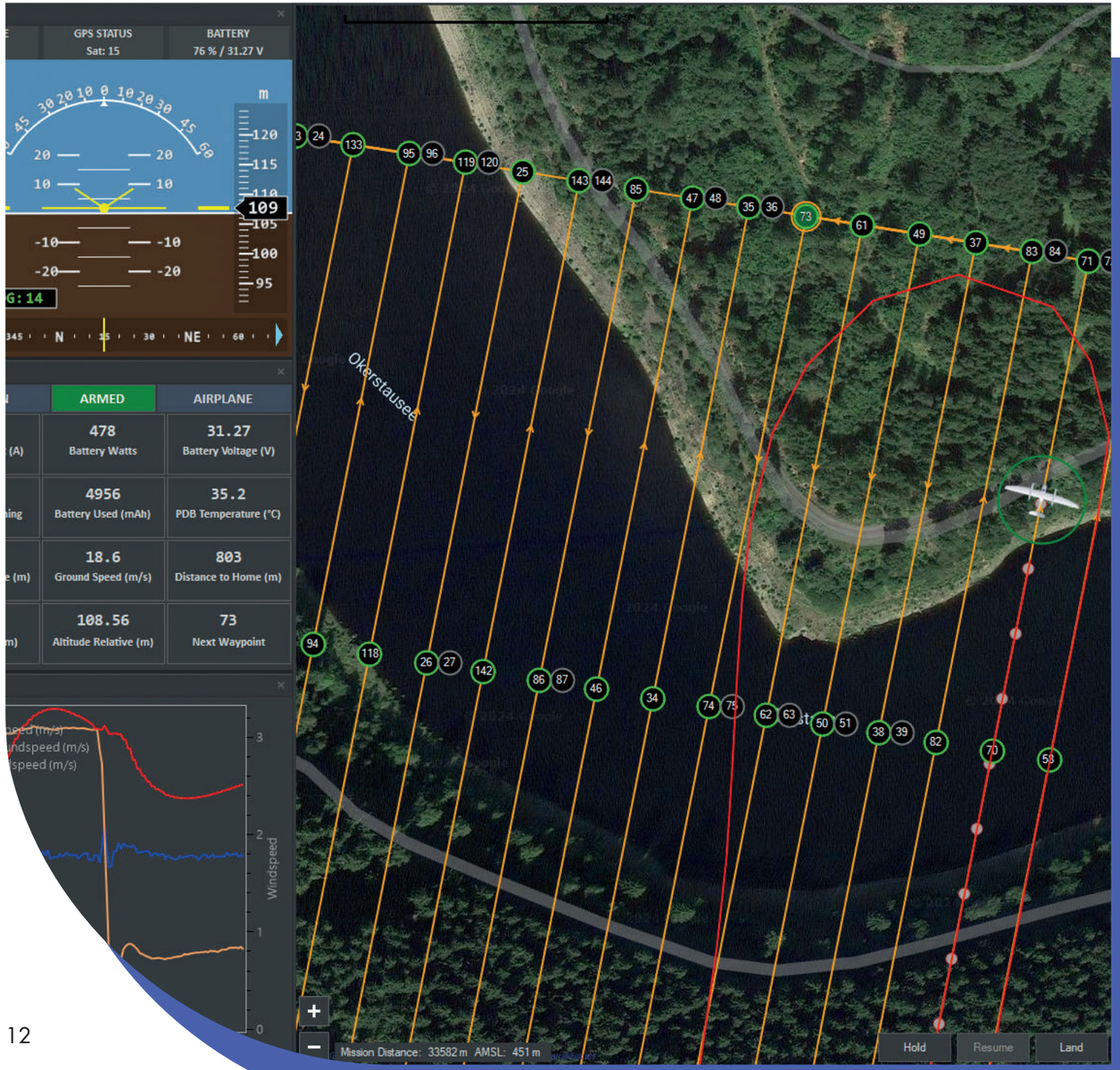
Depending on the payload, the Songbird can cover an area of up to 25 km^2 (10 sq. mi) per flight. It has been rigorously tested in some of the world's most challenging environments, from the dust-laden winds of the scorching African desert to the complex terrain of the humid South American rainforest. The Songbird is truly a testament to our commitment to innovation and quality.

TECHNICAL SPECIFICATIONS

	Songbird 60	Songbird 100	Songbird 150
Wingspan [m]		3,0	
MTOM [kg]	9,5	10,8	14,0
Maximum Payload [kg]	1,0	2,0	4,4
Airframe Material	Fiberglass/Carbon Composite	Fiberglass/Carbon Composite	Fiberglass/Carbon Composite
Cruise speed [m/s]	16-25	16-30	17-32
Maximum Flight time [min]			
- camera only	58	90	150
- max. payload	30	45	45
- typical	45	60	90
Range [km]	< 60	90	110
Altitude [m]			
- service ceiling	2.700	2.000	5.000
- max. take-off	2.200	1.500	4.000

	Songbird 60	Songbird 100	Songbird 150
Wind Tolerance			
- Start/Landing auto [m/s]	6	6	7
- Start/Landing man. [m/s]	8	10	11
- Fixed Wing Mode [m/s]	12	14	15
Rain Tolerance	light rain	light rain	moderate rain
Propulsion	4 tilting electric motors		
Radio Control	433 MHz/2,4 GHz		
Telemetry	868-900 MHz / 433 MHz LTE / 5G		
Safety Actions triggers	Low battery warning, Telemetry lost warning, RC connection lost warning, Geofence Breach		
Safety Actions	Return to launch / Position hold / Land immediately / Land at defined places		
Set Up time	<10min	<10min	<10min
Flight Termination System	Deployed in 0.1 seconds		
Certification	C3*		

*expected in Q3 2024



DRONEINTELLIGENCE © GROUND CONTROL SOFTWARE

Advanced software for smart control.

Our DroneIntelligence software is designed with our clients in mind, offering an effortless yet multifunctional user experience. It encompasses all the essential features for a wide array of applications, ranging from surveillance to professional mapping. The software provides comprehensive in-flight control, including the flexibility for real-time adjustments as needed.

The integration of the SRTM (Shuttle Radar Topography Mission) model empowers users to optimize flight parameters directly within the software. This feature can be utilized for terrain-following mode, identifying the optimal take-off point based on the area's elevation profile, or for collision avoidance. Experience the power of precision with our DroneIntelligence software.

DRONEINTELLIGENCE © GROUND CONTROL SOFTWARE

Variety of features for flight performance.

In response to the growing demand for BVLOS (Beyond Visual Line of Sight) flights, we have integrated and successfully tested the use of ADS-B/FLARM technology. This allows for seamless operation in conjunction with manned air traffic, including operations in controlled airspace at airports, all through our DroneIntelligence software. Our commitment to continuous software development, coupled with our comprehensive hardware and software maintenance concept, enables our clients to leverage an extensive array of safety features, flight mission applications, and payloads.

The incorporation of 4G and 5G technology broadens the scope of the Songbird solution. It eliminates the constraints of radio control, where connection reliability is distance-dependent. Simultaneously, this technology enhances video streaming to the Cloud platform, which can be accessed and analyzed from anywhere in the world. Experience the future of drone technology with Songbird.

Flight and Mission Planning

Live Camera Control

Click-on-POI Navigation

Telemetry and Flight Control

Mapping and Inspection Grids

5G

Supports Data via Cell Phone Network

Ideal for VTOL Systems

Runs on Windows

Supports Data via IP Mesh

RUGGED, WEATHER RESISTANT DRONES

IP-55 Equivalent

SECURITY AND SURVEILLANCE

Eye in the sky.

Equipped with a stabilized video gimbal, the Songbird offers a high-definition live stream, providing a secure means to monitor high-risk areas from a safe distance for extended durations. Whether it's an accident zone requiring regular updates or a restricted area, the live video feed in both optical and thermal spectrums empowers the user to make informed decisions.

The Songbird's long flight time of up to two hours allows for continuous surveillance of large-scale sites such as factories, airports, railways, pipelines, borders, coastlines, or powerlines. Furthermore, it ensures a reliable video transmission connection up to 20 km.

With the integration of 4G and 5G technology, the Songbird offers the flexibility to be operated from any location worldwide, enhancing its utility in global security operations.

Payload options

1. Nextvision Raptor
2. Nextvision Nighthawk2 series
3. Merio Gimbal Temis and Temis XL series etc.

SURVEYING AND MAPPING

Precise solution for large territories.

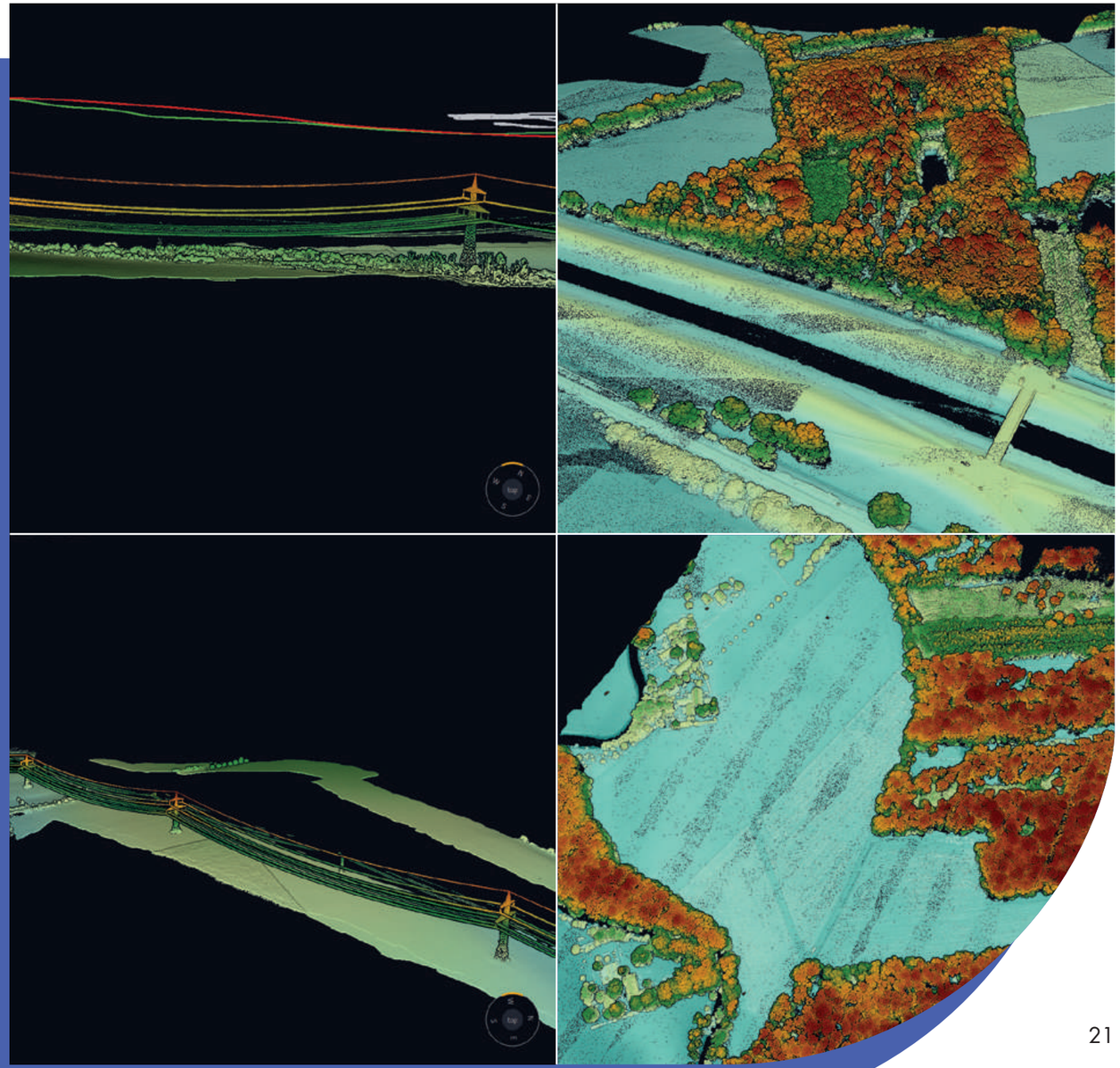
The Songbird, outfitted with high-resolution cameras and high-precision GNSS and IMU, stands as the go-to solution for surveying, mapping, and documentation tasks. The imagery and 3D models it produces meet the stringent demands of industrial standards.

Equipped with optical and multi-spectral cameras, the Songbird plays a pivotal role in boosting crop yields. It aids in assessing plant health, detecting pest infestations, and estimating overall biomass, thereby facilitating the optimization of pesticide usage. The Songbird's ability to survey areas of up to 25 km^2 in a single flight enables the rapid collection of precise data over vast expanses.

The Songbird is designed for ease of operation, requiring only a single operator. It can be conveniently transported in a robust aluminium box, hard-shell suitcase, or backpack, and can be assembled and airborne in less than 10 minutes.

Payload options

1. Yellowscan Mapper+ and Surveyor Ultra series (in combination with external camera module Sony CMOS 60MP possible)
2. PhaseOne iXM-100 and iXM-GS120 including RSM lens 35mm
3. Sony ILX-LR1 (ZEISS and Sony lenses 35mm)
4. Sony RX1R II (ZEISS lens 35mm)
5. MicaSense Altum-PT etc.



LOGISTICS

Access to hard-to-reach territories without limits.

The Songbird, engineered to traverse extensive distances while carrying substantial payloads, is an optimal solution for delivery purposes. This capability led to the initiation of our project, "DRONES4LIFE ©". The project's objective is to expedite the delivery of critical laboratory samples from healthcare facilities and mobile ambulances to analytical laboratories, thereby significantly reducing transit time compared to conventional road transport. This efficiency allows for immediate commencement of treatment upon the patient's arrival at the hospital, as the diagnostic results are readily available.

The payload primarily comprises an external transport container, designed to hold medical samples or similar items. It can be swiftly attached to the fuselage and, upon reaching the destination, is electronically unlocked for the on-site personnel to access the contents.

While our transportation solution primarily focuses on medical goods, our engineering teams possess the capability to adapt the payload for a variety of tasks, provided the weight does not exceed 4.4 kg. This flexibility underscores our commitment to providing versatile and efficient solutions to our clients.

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