Unmanned Long-Range Helicopters

Aerial Surveillance for Border Security & Public Safety

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Agenda

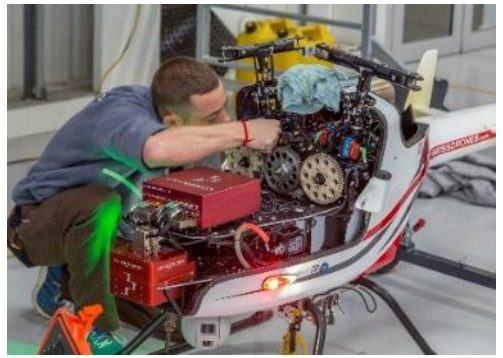
- SwissDrones at a glance
- SDO 50 unmanned helicopter platform
- Sensor solutions for surveillance
- Sensor solutions for maritime surveillance & SAR

SwissDrones at a glance

- Founded in 2013
- Dedicated to Swiss Aerospace Quality
- Customer base across 12 countries
- Manufacturer of unmanned helicopters for long-range operations

SDO 50 Unmanned helicopter platform



- Multi-purpose unmanned helicopter system for operation **beyond visual line of sight (BVLOS)**
- Up to **20 kg useful payload** capacity; operational **range of 40+ km**
- **Autonomous flight** patterns, including take-off & landing capability
- Precisely programmable flight path executed by **autopilot**
- Typical **payloads** include high-resolution optical cameras, IR, multispectral, LIDAR, radiation sensors

Value Proposition

Effective & environmentally friendly replacement of manned aircraft for operations under difficult or dangerous conditions

90%+ CO_2 REDUCTION VS. USE OF MANNED AIRCRAFT

70%+ OPERATIONAL COST SAVINGS VS. USE OF MANNED AIRCRAFT

SUPERIOR PAYLOAD UP TO 43 KG

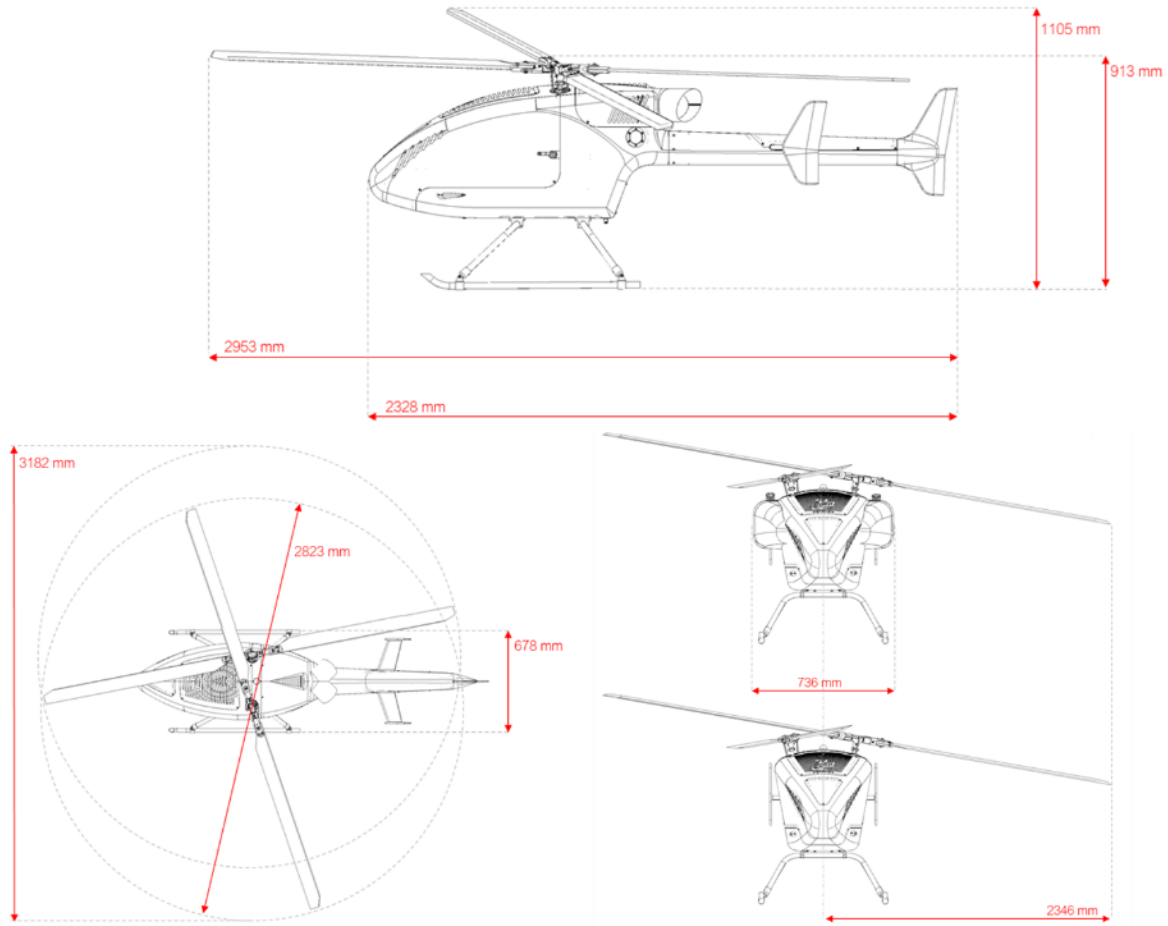
ENDURANCE >3H, RANGE OF 40+ KM

VERSATILE OPERATIONS (VAN OR PICK-UP, 2 CREW, SET-UP IN 15 MINUTES)

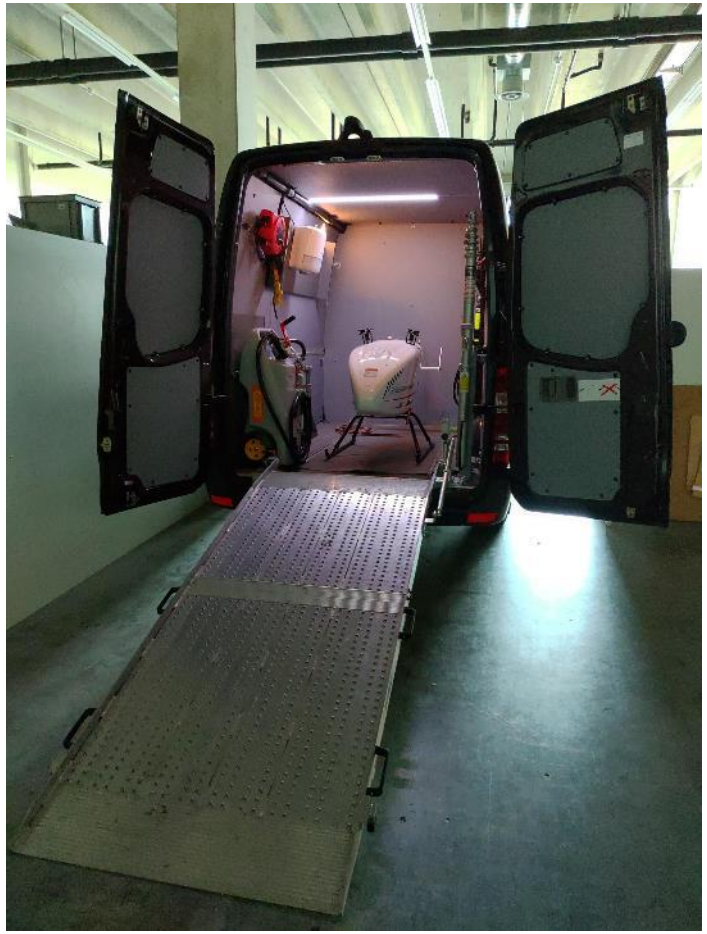
FLEXIBLE INTEGRATION OF SENSORS & CAMERA SYSTEMS

SDO 50 Technical data

Rotary system	Flettner double rotor system (4 blades)
Rotor diameter	2 x 2,82 m
Engine	High performance turbine
Fuel	JET A1 (optional Diesel)
Fuel consumption	approx. 15l / hour
Dimension l/w/h	2,32 m x 0,7 m x 0,92 m
Empty weight	45 kg
Max payload	**42 kg**
MTOW	87 kg
Max fuel capacity	Main tank 13 l (auxiliary tanks up to 17l)
Max flight time	**3.1 hours**
Max service ceiling	up to 3000 m AMSL
Max indicative air speed	39 kn (20 m/s)
Operational range	**40+ km** (depending on data link)



Mobile Deployment



Operational setup in the field

Key applications

Use cases

Aerial Surveillance

Natural disaster support
Wildfires and hot spots detection, floods, hurricanes, etc.

Police Surveillance
«Eye in the sky»

Border Patrol
Detection of illegal immigration, terrorist intrusion, smuggling, etc. (land and maritime)

Search & Rescue

Finding & locating missing people
Including locating mobile phones

Operation over land and water
Including automated AI search payload

Dropping life-saving equipment
Self inflatable jacket, blanket, etc.

Inspection

Powerlines
Defect identification, vegetation encroachment analysis, 3D modelling/digital twin

Pipelines (O&G)
Leak detection, oil spills, illegal tapping, change detection

Railways
RGB, LiDAR, Multispectral cameras, vegetation monitoring

Civil protection
Nuclear power plants, radiation sources survey/inspection

Aerial surveillance

REQUIREMENTS

- ☑ Live streaming
- ☑ Target tracking
- ☑ Laser range finder
- ☑ High zoom options
- ☑ Infrared sensor
- ☑ Phone catching
- ☑ Bad weather circumstances

Aerial surveillance

Flexible integration of best-in-class camera systems & sensors

Integration

Aerial surveillance

Example of optical/IR gimbal video output

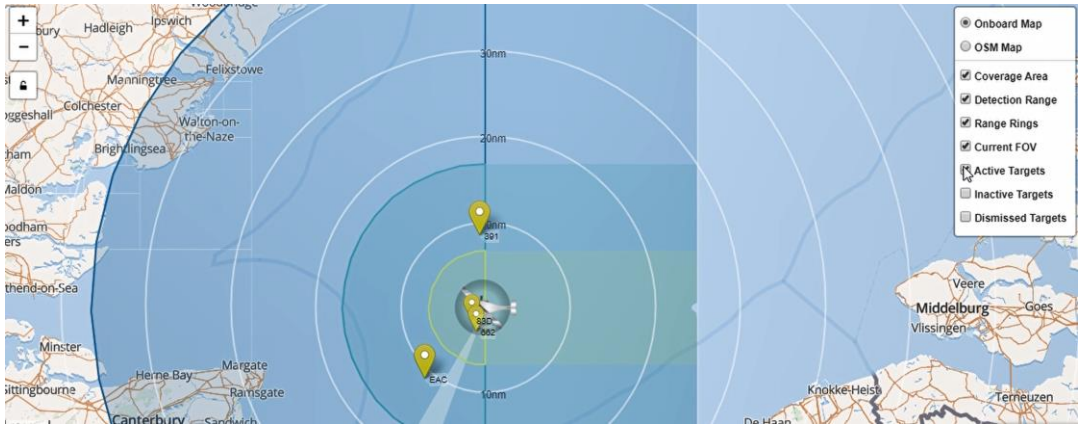
Aerial surveillance - Maritime

Flexible integration of best-in-class camera systems & sensors

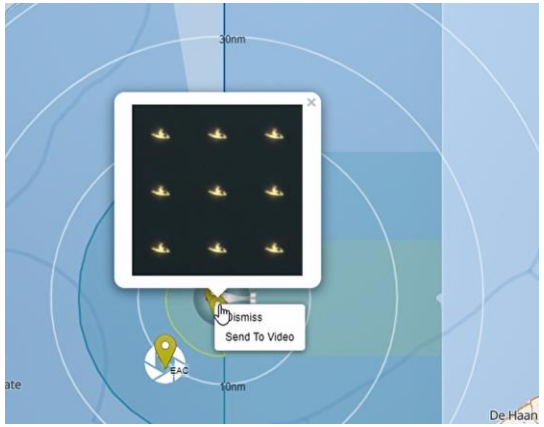
Integration

Aerial surveillance - Maritime

User interface

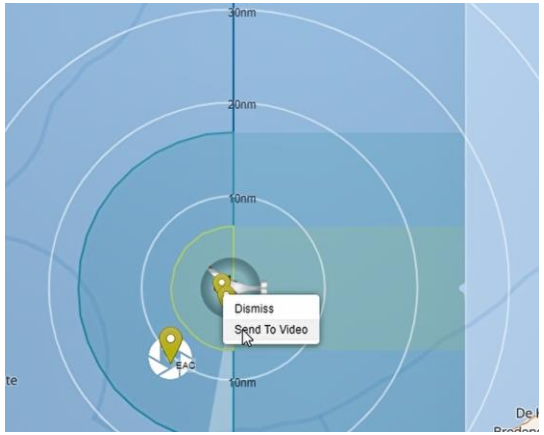


Continuous scanning 180° area in front of the aircraft



Target selection according to requirements (boat, vessel, person, etc.)

- Dismiss if not an interesting target
- Send to video → The gimbal will automatically zoom in on the target



Enabling unmanned aerial intelligence.

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