STRATIGN

STRATEGIC DEFENCE TECHNOLOGY

UNMANNED SYSTEMS

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ABOUT STRATIGN

Stratign is an innovative defense technology solutions provider company, specializing in **System Engineering, System Integration & Design, Software Engineering and Consulting & Maintenance.** We design and develop specialized cutting-edge equipment to cater to the diverse requirements of defense and government intelligence agencies, national security agencies and law enforcement government agencies. We are uniquely positioned to offer the best-in-breed, innovative mission-critical products, systems and customized & re-engineering solutions for defence communications, encryptions and COMINT/SIGINT/ELINT requirements. Rigorous R&D and continuous innovations in the field of defence technology has established Stratign as a leading organization in this domain. All our solutions comply with the defense industry standards and can be tailored as per the requirements of our esteemed clients.

STN-UVH10
Rotary Wing

STN-UAV
Fixed Wing

STN-UVH10 ROTARY WING

STN-UVH10 SPECIFICATIONS

The STN-UVH10 UAV is a high-speed compact helicopter with increased load capacity powered by the gasoline engine.
Takeoff, en-route flight and landing of the drone are automatic. After uploading the flight mission the operator permits the takeoff, subsequent flight procedures are performed automatically.
The diagnostics, flight mission planning and remote control can be performed through the wireless network connection.

The complex consist of:

- STN-UVH10 Drone
- Portable Ground Control Station
- Automatic Tracking Antenna
- System Software
- Flight Control Software
- Ground Station Software
- Virtual Flight Simulator

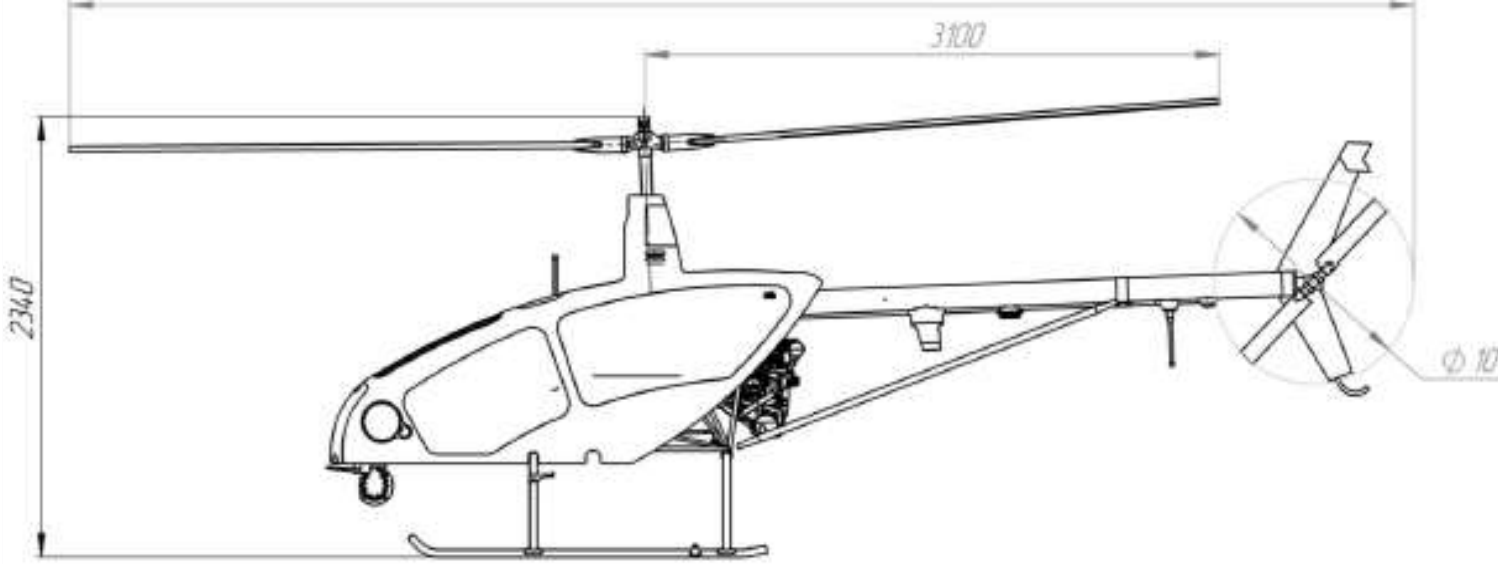
The system is provided with:

- Service
- Training
- Documentation

MAIN FUNCTIONS

Some of the currently tested applications for the SAR-sensors include:

- Up to 98% precise in target description and decomposition
- Intelligence and reconnaissance
- Surveillance and observation
- Target acquisition and designation
- Subsurface explosive hazards detection
- Border protection
- Counter drug trafficking, contraband, and other prohibited activities
- Search & rescue operations
- Flight operations in degraded visual environments
- Wildland fire monitoring
- Disaster and emergency response



SPECIFICATIONS

PARAMETER	VALUE
Maximum crusing speed	160 km/hr
VNE	209 km/hr
Length	7050 mm
Main rotor diameter	6280 mm
Height	2350 mm
Wheelbase	1500 mm
Engine type	Rotax 914 UL
Engine capacity	115HP
Fuel Tank	180 liter/135 kg
Horizontal flight fuel comsumption/hr	25 liter/18.6 kg
Maximum Payload (including fuel)	160 kg
Maximum takeoff weight	500 kg
Empty weight	340 kg
Max. wind speed during takeoff or landing	14 m/s
Rate of Climb	5 m/s
Max. Range (cruising speed 120 km/h)	840 km
Max. Operating Altitude	5000 m
Hovering IGE (ISA)	3500 m
Hovering OGE (ISA)	2500 m
Flight time (max.) Payload - 20 kg	7 h
Flight time (max.) Payload - 120 kg	2 h
Onboard power supply	12V/24V
Altimeter	Radio
Transponder with ADS-B	S
TBI (inspections, maintenance)	100 h
Overhaul	1200 h

STN-UAV FIXED WING

APPLICATION:

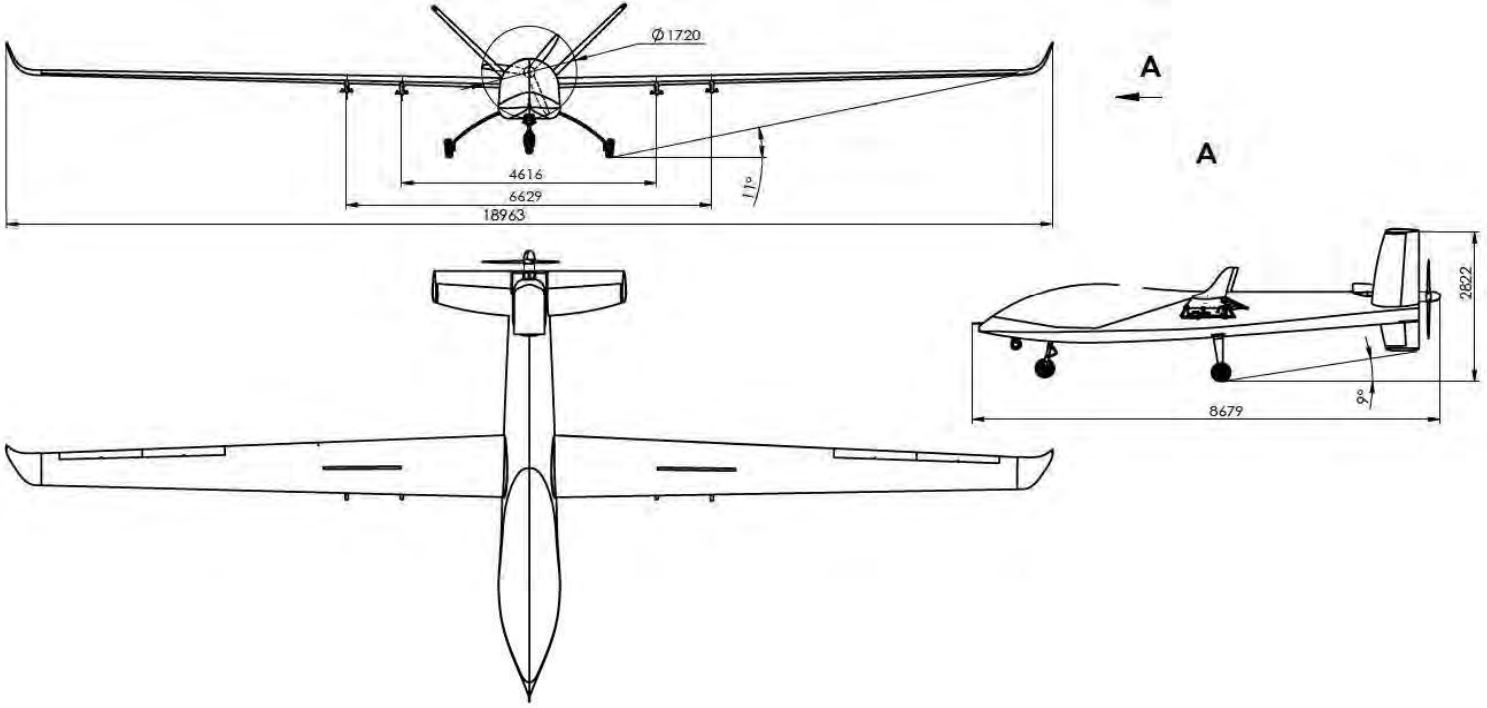
The STN-UAV drone is used for:

- IRS - Intelligence, surveillance and reconnaissance
- Video surveillance and monitoring
- Target drone dropping (up to 140 kg) [308 lb]
- Payload delivery and autonomous transporting
- Radio link range extension and retransmission signals intelligence(SIGINT)
- Target pointing and designation
- Strike drone functions, air-to-ground and air-to-air modes
- Mapping and intelligence
- R&D flying laboratory. (meteorology, hydrology etc.)
- Thermal surveillance and monitoring
- M/SAR surveillance and monitoring
- Law enforcement & border control
- SAR surveillance and monitoring
- LIDAR surveillance and monitoring

OPERATIONS:

The drone STN-UAV is to be exploited under the following conditions:

- Temperature range: -40...+50C
- Basing: Airdrome (prepared runway)
- Runway length, not less than: 1100m (touchdown accuracy-250 m)
- Runway width, not less than: 25m (touchdown accuracy-10 m)
- Takeoff and landing on runway: Fully automatic
- Ground landing means: Not required



STN-UVH10 SPECIFICATIONS

Maximum speed	220 km/h
Cruising true speed	160 km/h
Max. climbing speed	5 m/s
Max. climbing speed full load	2.5 m/s
Range distance	4020 km (30 min fuel reserve)
Endurance	28 hours
Max. Endurance with 300 kg payload	21 hours (30 min fuel reserve)
Max. Endurance with 370 kg payload	18 hours (30 min fuel reserve)
Operational ceiling	6000 m
Absolute ceiling	7500 m
Max. load factor permitted (x 1.8)	+4 g -2 g
Wingspan	18.7 m
Length	8.7 m
Height	2.8 m
Wheel track	3.19 m
Wheelbase	2.9 m
Wing area	15.6 m^2
Aspect ratio	22.5
Square retractable flap	2.6 m^2
Propeller diameter	1.752 m
Empty weight	920 kg
Maximum take-off weight	1350 kg
Fuel tanks capacity	350 L (270 kg)
Max payload	300 kg (more payload acceptable with lower endurance)
Payload with full fuel tank	160 kg
Parachute	Ballistic

FLIGHT CONTROL OVERVIEW:

The flight controls keep the airplane at the necessary attitude during flight. They have movable surfaces on the wing and the empennage. These are the following types of flight control systems are used:

- Aileron
- Elevator
- Rudder
- Flap
- Spoiler

The autopilot automatically operates the flight controls in accordance to the desired attitude. All primary flight controls are actuated by an individual servomechanism, which is mechanically linked to the control surfaces via a pull-push rod. Every push-pull rod has a provision for the small length adjustment on the ground.

LANDING GEAR:

TRICYCLE LANDING GEAR:

The landing gear provides support for the vehicle static and ground maneuvering conditions. The landing gear also reacts to vehicle load forces that are generated during vehicle movement. The S1-V300-JPE03 has a tricycle landing gear arrangement with NLG shock strut liquid/gas type and MLG is a flat spring type.

- Steering front landing gear with gas absorber
- Main chassis flat spring
- Hydraulic brakes
- The nose wheel steering system allows autonomous taxing

WHEELS AND BREAKS:

The main landing gear's wheels and brakes use hydraulic pressure to slow or stop the airplane during landing and taxi. Each wheel brake is located on a main landing gear axle. The brake assembly consists of a single disc and a single piston brake caliper. The pressure supplied to both the brakes assemblies is from a single brake master cylinder. The master cylinder is actuated automatically by the autopilot command or manually by the operator input.

THE NOSE LANDING GEAR:

The steerable nose wheel mounted on an air-oil shock strut comprises the nose gear. The shock strut is secured to fuselage structure. Nose wheel steering is accomplished by a single push-pull rod from the steering servomechanism. A hydraulic fluid-filled shimmy dampener is installed to minimize nose wheel shimmy.

THE MAIN LANDING GEAR:

The MLG consists of a single composite flat spring and two-wheel assemblies. A flat spring is a primary structural member of an MLG. MLG is attached to fuselage longitudinal structural members by means of threaded fasteners.

MOBILE GROUND CONTROL UNIT MRAP-GCU

The mobile command and transport module of the unmanned aerial complex STN-UAV is designed to provide:

- Space for allocation of the communication and control equipment
- Two workplaces for the unmanned aerial system operator and the payload operator
- Directional antenna for telemetry and control communications (100 km*)
- Directional antenna for video and data communications (28 km*)
- Equipment for technical support of unmanned aerial system (transport module)
- For longer transmission ranges refer to the relevant clauses of this proposal

Technical characteristics:

Based on protected military vehicle of the MRAP class:

- Temperature range -40°C...+55°C
- Inside temperature 22°±2°C
- Dimensions: length 4050 mm, width 2434 mm, height 2585 mm
- Generator: 15 kW
- Autonomous operating time: 48 h
- Automated work stations: 2+1

MRAP TECHNICAL OVERVIEW

Carrier Dimensions	
Length	6700 mm
Width	2590 mm
Roof Height	2750 mm
Wheelbase	3900 mm
Ground Clearance	388 mm
Approach Angle	40°
Departure Angle	40°
Mass	
Tare	11500 kg
Payload	3000 kg
GVM	14500 kg
Performance	
Max Speed	110 km/h
Turning Circle (Kerb to Kerb)	17.7 m
Gradeability	60%
Step Climbing	500 mm
Trench Crossing	950 mm
Protection	
Ballistic Protection	STANAG 4569 Level 3
Land Mine Protection	STANAG 4569 Level 4a & 4b
IED	50kg TNT at 5m distance, 1m above ground level

SELF PROTECTION

TURRET MG -12.7
Main weapons: machine gun caliber 12.7 x108 mm

TURRET MG 12.7EU
Main weapons: Machine gun caliber 12.7x99 mm NATO

PORTABLE GROUND CONTROL STATION (PGCS)

LAPTOP:

- Command module for Autopilot AP systems based on ultra-rugged GETAC X500 computer
- Equipment for portable, emergency communication and control
- Unmanned aerial system operator and payload operator HMI
- Industrial joystick for payload control
- Preinstalled and set-up software package

Technical characteristics (of laptop):

- Temperature range: -20°C...+55°C
- Dimensions: length 410 mm, width 290 mm, height 65 mm
- Weight: 5.2 kg (weight varies by configuration and manufacturing process)
- Built from: Magnesium alloy
- Battery: Li-Ion smart battery (8700mAh)
- Extra batteries package module is available optionally
- IP Rating: IP65
- Certified standards: MIL-STD 810G, MIL-STD 461F
- 15.6 inch full HD display
- 3.0 GHz Intel Core i7 dual core processor

HIGH GAIN DIRECTIONAL TRACKING ANTENNA:

Technical characteristics (antenna and command line modem):

- Maximum weight: 8.6 kg
- Mast height: 5 m
- Integrated compass and GPS
- Fully automatic tracking
- Antenna for telemetry
- Video antennas installation ready
- Command module (telemetry modem)
- Storage compartment

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