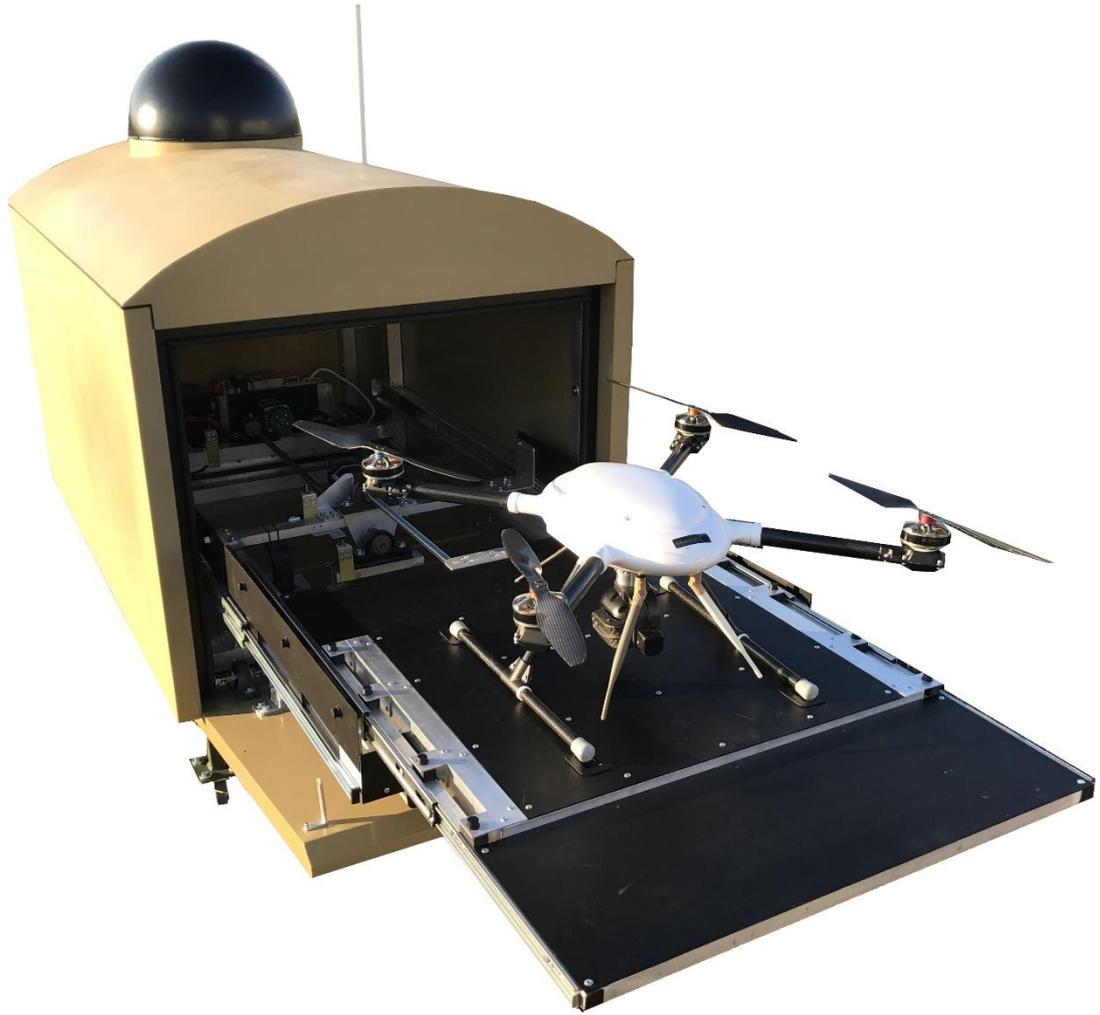


Albatross-P2 UAV-based surrounding territory control system



Albatross-P2 UAV-based surrounding territory control system is designed to provide facility's perimeter security, national borders, large factories as well as infrastructure objects.

Structurally, the system consists of Albatross-P2 UAV with a payload, launching container and UAV Operator AWS

Albatross-P2 is equipped with detachable payload, which is optical-electronic system, based on 2MP IP-camera on gyro-stabilized roll and pitch platform.

The launching container is used for basing, UAV charging as well as transmitting video stream and telemetry between UAV and UAV Operator AWS.

Scope of supply

Item	Qty.
Launching container, pcs.	1
UAV Operator AWS, pcs.	1
Albatross-P2 UAV, pcs.	1

Power supply module, pcs.	2
PN-AB2-VK2-10 camera with gyro- stabilized platform, pcs.	1
PN-AB2-T1 thermal-imager with gyro-stabilizing platform, pcs.	*
Albatross-P2 antenna module with pan-tilt unit, pcs.	1
Antenna mast, pcs.	1
STM-17150 mast, pcs.	*
Mast adapter plate, pcs.	*
Mounting kit, set	1
Spare tools and accessories kit – O, set	**
Packing, set	1
Equipment book, copy	1
Operation manual, copy	1
Direction on mounting, starting, configuration and running-in, copy	1
<p>1 Quantity of components of the system, marked with «*», is specified in supply agreement.</p> <p>2 Spare tools and accessories kit – O marked with «**» are supplied by a separate agreement, agreed with the customer in accordance with Spare tools and accessories kit's supply list.</p>	

Design features

UAV "Albatros-P2" is an unmanned aerial vehicle (quadcopter) with four electric motors. The UAV case is made of composite materials.

The stabilization system is based on an artificial horizon, built on the mathematical apparatus of quaternion transformations, the correction of the artificial horizon is carried out according to the original patented algorithm.

The launching container is made in a thermally insulated case, has a pitched roof. In front of the launch container is equipped with a hatch, when opened, the landing platform is advanced,

with the UAV installed. The rear wall of the launch container is the door of the installation compartment, where all the equipment is located.

The launching container has an autonomous internal temperature control system.

In emergency situations, in the absence of a single-phase 220V AC network (for example, damage to power cables) or an Ethernet network, the starting container allows, due to the built-in batteries and installed antennas, to maintain an operational state during the whole time necessary for take-off, task execution and UAV landing, and also issue corrections for the exact landing of the UAV.

Operation principle

The launching container is always in standby mode, when the perimeter detector is triggered, or on the operator's command, the landing platform is extended. On the retractable platform is a landing grill.

At the moment the platform is extended, the flight assignment is loaded into the UAV; at the time of stopping, the UAV automatically takes off and the assignment is flown. After the UAV takes off, the platform automatically moves and the hatch closes.

When the UAV returns to the starting point, the launching container recognizes the UAV according to telemetry data and automatically opens for its landing. Accurate landing and adjustment is carried out simultaneously by several methods. Data on the condition of the UAV battery and the temperature inside the launching container are constantly transmitted to the operator's workstation.

Control Features:

- flight of a pre-defined flight assignment;
- flight without pre-defined map and flight assignment;
- switching from automatic to manual control with a manipulator and vice versa.

The operator can interrupt the flight according to the pre-defined flight assignment at any time, the UAV will stop and continue automatic flight along the route after inspecting the object that attracted the attention of the operator.

The radio channel of the control and telemetry system is designed taking into account the requirements of noise immunity and protection of the transmitted data. Noise immunity is provided by an abrupt change in the carrier frequency of the transmitted signal, the data is transmitted in a masked form.

The built-in open source software provides multi-level protection against incorrect operator actions, which increases the reliability of operation of the Albatross P2 UAV.

It is possible to broadcast live video from the Albatross P2 UAV to a regional situation center and / or mobile control center.

Field of application

Albatross-P2 UAV-based surrounding territory control system is completely autonomous and can be used both as part of the Synerget VK integrated security system, developed by Stilsoft, or independently, or be integrated into any other system.

Parameter	Value
Effective application height, m	20-300
Flight speed, km/h - m/s; - decelerating flight, up to, m/s	from 0 to 54 from 0 to 15 1
Maximum height of takeoff point above sea level, m	3000
Radius of action, m	4000
Maximum wind speed ensuring effective UAV operation, m/s	10
En-route maximum wind gusts, m/s	14
Maximum vertical speed, m/s - ascending / descending	5/2,5
Maximum flight time at sea level and under standard conditions *, up to, min.	40
Time required for one-person preparation for use, up to, min.	10
Control over secured digital radio channel Frequency, MHz / distance to, km	868 / 6
Video transmission channel, Ghz / range to, km	2,4 – 2,5 / 5
Gyro-stabilization of camera platform	Pitch / Roll
Filming position hold / flight on pre-recorded flight assignment with applying positioning signals	Glonass/ GPS
Auto-launch from launching container	Yes

Parameter	Value
Auto-landing in launching container	Yes
Battery charging in launching container	Yes
Auto-return on voltage reduction of supply battery	Yes
UAV auto-launch on alarm signal from perimeter detector	Yes
Interruption of flight assignment on operator's command with manual UAV control option	Yes
PN-AB2-VK2-10 camera resolution, Mp	2
PN-AB2-VK2-10 focal distance, mm	5 – 50
Operating temperature range, °C**	from -25 to +50
UAV takeoff weight with PN-AB2-VK2-10 target load, up to, kg	3,8
Overall weight of system (without STM-17150 mast), max., kg	500
Weight of STM-17150 mast, max., kg	1100
UAV overall dimensions (without propellers), max., mm - length - width - height in park position	620 620 400
Overall dimensions of launching container, up to, mm - length - width - height	1770 1150 1410
<p>* Standard conditions: normal pressure 760 mm Hg, wind speed up to 3 m/s, temperature from 0 °C and higher.</p> <p>** Subject to preliminary holding the UAV within two hours before the start at a positive temperature.</p>	

