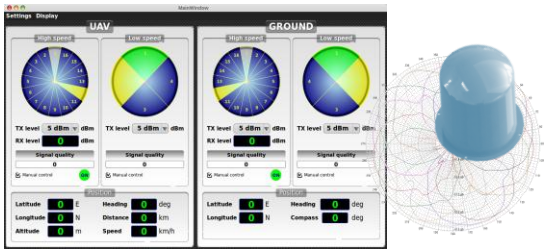
Telecommunications system

Telecommunications terminals implement high-speed (up to 32 Mbit/s Ethernet) and low-speed (up to 32 Kb/s with RS-485 interface) data links.

High-speed communication channel antenna uses an active electronically scanned array (AESA). Antennas have 16 sectors and allow scanning over all azimuth angles range.



About the development organization

Southern Federal University, Rostov-on-Don, Russia – has all the necessary equipment, laboratory facilities, established contacts with leading suppliers and successful team of developers.
The development team has experience in initiative developing of research robotic mini-blimp, a number of research commissioned by the Russian Ministry of Defense, manufacture a prototype of control, navigation and telecommunications system for airship, participates in international projects for the development of control systems airships.
University scientists developed methods for mathematical modeling and design methods of airships control systems. The team has a number of relevant publications in leading scientific journals and patents on the subject of design of control and navigation systems for airships.

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CONTROL, NAVIGATION AND TELECOMMUNICATIONS SYSTEM OF UNMANNED AIRSHIP

Southern Federal University

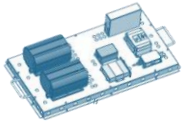
Purpose

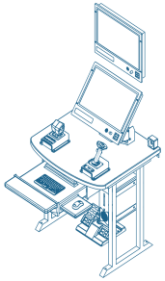
- Automatic (without operator) and remote (with operator) airship flight control along a given path and hovering in a given area within a specified time;
- Remote control of airship takeoff and landing in the line of sight at a distance of 2 km.

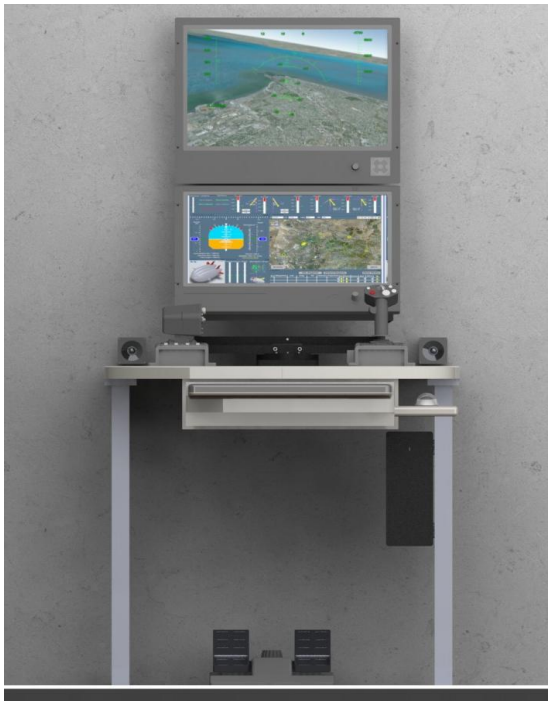
Composition of the system

Control, navigation and telecommunications system consists of ground and airborne units, interconnected with radio link.

Control, navigation and telecommunications system has a modular architecture that makes it easier to set-up, maintenance and repair, as well as allows modifying the system to the requirements of the customer.



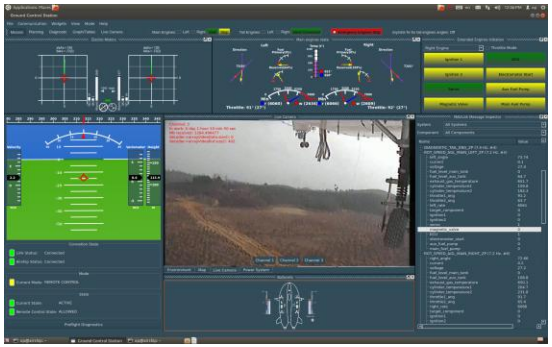


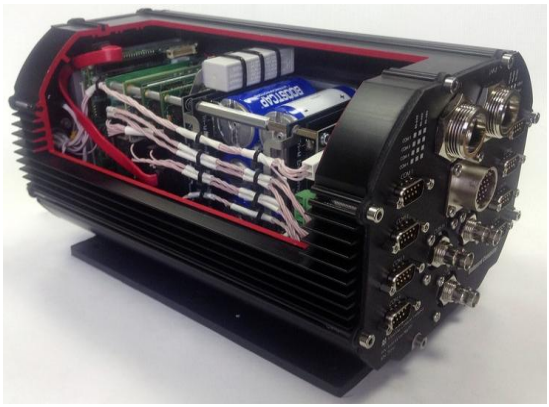


Ground control station

Ground control station implements the functions required for interaction between the operator and the airship onboard control system.

Functionality of ground control station is provided with special software with a graphical user interface.





Onboard part

High-performance compact onboard computer for use in extremely harsh environments is designed for control system.

Navigation system for the airship includes:

- integrated navigation system and
- a radar altimeter.

Environment sensors are:

- wind speed and direction sensor,
- weather sensor, combining the functions of temperature, pressure and humidity of the environment measurements.