Limited Liability Company
Research and Production enterprise

«IDS Technologies»

8 (347) 226-0-227

idstech.org

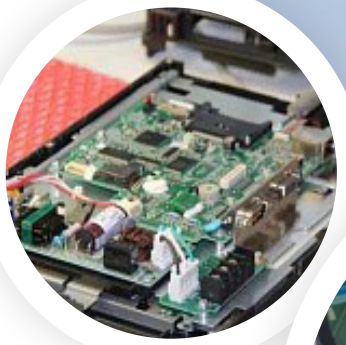
About Us

RPE IDS Technologies LLC is a Russian company engaged in the development and production of modern unmanned aerial systems (UAS), as well as software for the processing of air monitoring data and their visualization. We specialize in the production of commercial unmanned aerial vehicles (UAVs) of aircraft type.

Production of unmanned systems, design bureau, microelectronics and software development departments are located in Blagoveshchensk, Republic of Bashkortostan.

The unique advantages of our UAVs are autonomy, efficiency and record-breaking flight durations. Technical characteristics and capabilities of manufactured equipment allow us to compete with most analogues of both domestic and foreign manufacturers.

Own production allows, in addition to the line of developed payloads, to integrate new solutions or devices in accordance with customer requirements.



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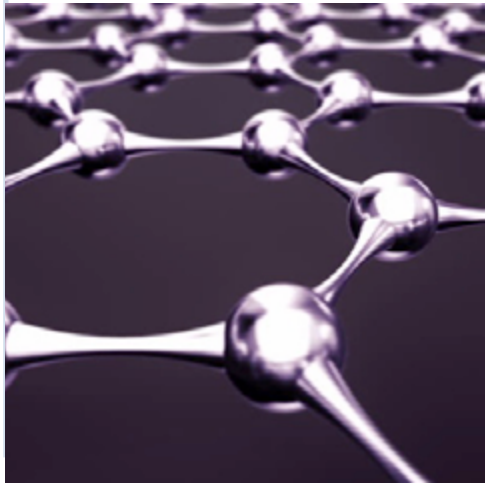
Our expertise

Unmanned aerial systems

Development and production of unmanned aerial vehicles. Integration of the UAV payload for individual customer tasks.

Composite materials

Development and manufacture of products from composite materials.



Microelectronics

Design and manufacture of electronic circuit boards for individual orders.

Software

Development of client, mobile, server, web-applications and applications using computer vision based on neural networks.

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Unmanned Aerial System IDS-5.

Description

Intended use

Unmanned Aerial System IDS-5 is designed for air monitoring and aerial photography of extended linear and areal objects of national economy and transport infrastructure using various types of payloads.

Design

The unmanned aerial system features a modular design: cantilever monoplane with universal center body, to which upswept wings with fins at beams are attached (beam scheme), with rear engine location. Payloads are mounted in quick-release nose module.

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Unmanned Aerial System IDS-5.

Description

Configuration

IDS-5 unmanned aerial system includes 2 unmanned aerial vehicles, a set of payloads, a ground control station with pre-installed IDS Planner software, a set of SPTA.

Transportation

UAV air frame, antenna complex and payloads are packed in transporting cases. It is possible to transport UAS in a “minibus”-type car.

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Unmanned Aerial System IDS-5.
Performance characteristics

Parameter	Value
Flight length, h	Up to 20
Payload weight, kg	≤ 8
Maximum take-off weight, kg	30
Flight speed range, km/h	60–130
Cruising speed, km/h	90
Maximum flight height, m	3000
Cruising speed, km/h	90
Dimensional specifications, mm	
length	2450
wingspan	4200
Operation temperature range	-40°C ... +50°C

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Unmanned Aerial System IDS-5.
Performance characteristics

Parameter	Value
Power plant	RIC engine
Fuel	Petrol AI-92 + engine oil (1:30...50);
Allowable wind speed, m/s	15
Take-off/landing	Running in manual or automatic modes
Runway size, m	100...100
Runway type	Asphalt, concrete, ground, grass
Control channel coverage, km	Up to 100
Video transmission channel coverage, km	Up to 70

Unmanned Aerial System IDS-5.
Payloads

Payload is mounted at a three-axis gyro-stabilized platform:
2 mechanical axes + 1 image stabilization axis (optical, dampers).

- Full-HD video camera
- Thermal imaging camera
- Photo camera*
- Multispectral camera
- Gas detection camera
- Lidar system for airborne laser scanning

* Available with GNSS module. The use of GNSS in conjunction with a high-resolution camera (at least 20 MP) allows you to get orthophotos at a scale of at least 1:500. An additional advantage of using the GNSS module is the reduced processing time of materials received from the board of a UAV.

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Unmanned Aerial System IDS-5.
Productivity software

PSW preinstalled in the GCS for the UAV remote control and the construction of flight tasks operates in the following modes:

- Flight assignment planning and editing mode
- Flight mode (UAV control)
- Flight analysis mode
- Flight report generation mode

A multi-platform application running on Linux, Macos, Windows includes the following modules:

- Missions' management
- Plans management
- UAV flight control
- UAV, GCS and other equipment settings

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Unmanned Aerial System IDS-5.
Productivity software

In addition, the flight analysis mode and the settings module are available to the operator of the GCS.

Server application “Flight Planning, Execution and Analysis System” (FPEAS) includes the following modules:

Users accounting	Equipment accounting	Payloads accounting	UAVs accounting	GCS accounting	Missions
Plans	Assignments	Reports	Analysis	Schedules	

Personalized network access to the user account.

Cloud storage of video, photos and other materials: personalized network access via ftps, https, webdav protocols.

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Unmanned Aerial System IDS-5.
Productivity software

Application for analysis of materials using computer vision:

Artificial intelligence-based cloud and desktop application distinguishing

- people,
- automobiles,
- auto trucks,
- special-purpose equipment,
- roads,
- rivers,
- ice jams,
- smoke,
- fire
- openings in forests,
- landfill sites,
- other

Calculating:

- forest openings;
- trees;
- distances.

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Unmanned Aerial System IDS-5.

Advantages

- The system offers high efficiency, great autonomy and mobility. Flight duration is up to 20 hours. It obtains the ability to cover a large area from one take-off site without additional dismantlement and deployment of the complex, to conduct flights to remote sites in hard-to-reach places in the absence of transport infrastructure.
- The UAV is equipped with an internal combustion engine. ICE runs on a mixture of AI-92 gasoline with engine oil. Acoustic stealth is achieved by installing an exhaust gas noise reduction system (dumper).
- There is no need for a long time charging of high-capacity common batteries, which significantly reduces flight preparation time.
- There is no dependence of flight duration on low ambient temperature. A wide operating range of air temperature (-40°C...+50°C) allows to use the UAVs in harsh operating conditions.
- Fully autonomous control system (including stages of take-off, landing and different flight modes) allows to conduct flights any time of the day in various operating conditions.
- Payloads are mounted at a 3-axis gyro-stabilized platform (of own making) in a quick-release nose module with a bayonet (patented) connection.
- Complex self-diagnosis system and our own UAV control software with a wide selection of fine-tuning.

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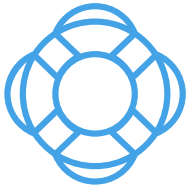
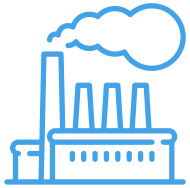
Unmanned Aerial System IDS-5.

Fields of application

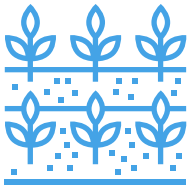


Security, search and rescue

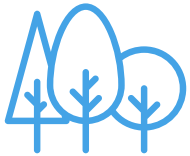
Natural and man-made emergencies management



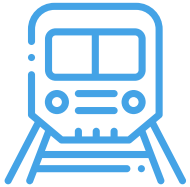
Manufacturing industry, fuel and energy complex



Agricultural sector



Forest management, environmental studies and natural resources management



Road and track facilities

Construction, mapping and geodesy

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Unmanned Aerial System IDS-5.
Maintenance and technical support

Along with IDS-5 unmanned aerial system our company provides training, maintenance, warranty and unlimited technical support. Staff training. IDS-5 UAS external crew consists of 2 specialists: an external UAV pilot and an operator of ground UAV control facilities. The training of external crew specialists is carried out on the basis of LLC RPE “IDS Technologies” in accordance with a program consisting of theoretical, simulator and practical training in specialties UAV external pilot and an operator of ground UAV control facilities with a duration of up to 3 months depending on the qualification of trainees.

Maintenance

The maintenance schedule adopted by the manufacturer stipulates maintenance of TO-1 every 20 hours of flight (or 10 take-offs and landings, whichever is earlier) and TO-2 after 200 hours of flight (or 100 take-offs and landings, whichever is earlier) with service life extension.

TO-1 is carried out at site by the customer’s specialists who have undergone training at the manufacturer training center.

TO-2 is carried out by qualified manufacturer specialists in situ or by means of IDS-5 UAS delivery to the manufacturer.

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Unmanned Aerial System IDS-5.
Warranty conditions

- IDS-5 UAS warranty operating life is 1 year or 200 flight hours, whichever is earlier.
- The seller guarantees that the unmanned aerial system meets the technical specifications.
- The seller guarantees that the components included in the IDS-5 UAS will not have any material defects in the quality, materials or construction.
- The warranty depends on the correct operation and maintenance of IDS-5 UAS in accordance with the Operating Manual and instructions provided by the Seller.

Dates and terms of delivery

Dates of delivery are agreed upon by the Parties.

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Development and manufacture of products from composite materials

On average, carbon fiber parts are 4-5 times lighter than the same steel and aluminum parts with the same strength.

For some electronic units, only fiberglass is allowed: radio frequency equipment, GPS compasses, magnetic compasses, etc., as carbon fiber is not transparent to radio waves and causes interference.

Our staff of designers and technologists has extensive experience in the development and manufacture of moulds and products from composite materials.

The following technologies are applied:

- Vacuum forming.
- Vacuum infusion.
- RTM.

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Design and manufacture of electronic circuit boards

The staff of industrial electronics engineers and PCB installation engineers has extensive experience in the design, assembly, and configuration of various types of electronic circuit boards.

Designing boards consists of the following steps:

1. statement of the problem, determination of input and output parameters;
2. selection of hardware components, layout of the board;
3. design and manufacture of breadboard;
4. commissioning the breadboard;
5. design and manufacture of a serial board.

When designing, commissioning and adjusting boards, the following tools are used:

- software - Altium Designer software package;
- equipment: oscilloscopes, spectrum analyzers;
- debug boards
- tools - soldering equipment, drying cabinets, multimeters;
- laboratory power supplies;
- drying cabinet;
- diagnostic equipment - thermal imagers, oscilloscopes.

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Design and manufacture of electronic circuit boards

Our company is engaged in the design and manufacture of electronic boards of the following types: power, analog, digital and radio frequency.

Power

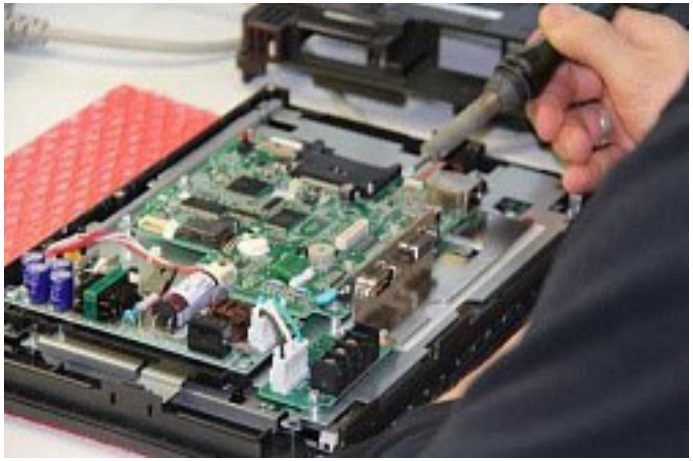
static power supply units, linear power supply units, BLDC controllers

Analog-digital

conversion of analog signals to digital, switching digital and analog signals, processing of analog and digital signals.

Digital

transformation of power equipment control interfaces, control of executive mechanisms, recording of sensor readings, management and control of technological processes.



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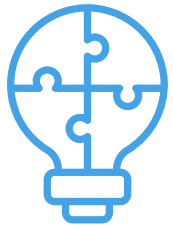
Software development

Our company has a staff of qualified software development engineers who can solve the following tasks:

Development of Web application for all platforms (Windows, Linux, Mac OS)

Development of desktop applications for all platforms (Windows, Linux, Mac OS)

Development of mobile applications for iOS and Android



Development of computer vision neural networks (CNN, R-CNN, Fast R-CNN, Mark R-CNN)

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We are looking forward to cooperate with you

Our specialists are always ready to meet you.

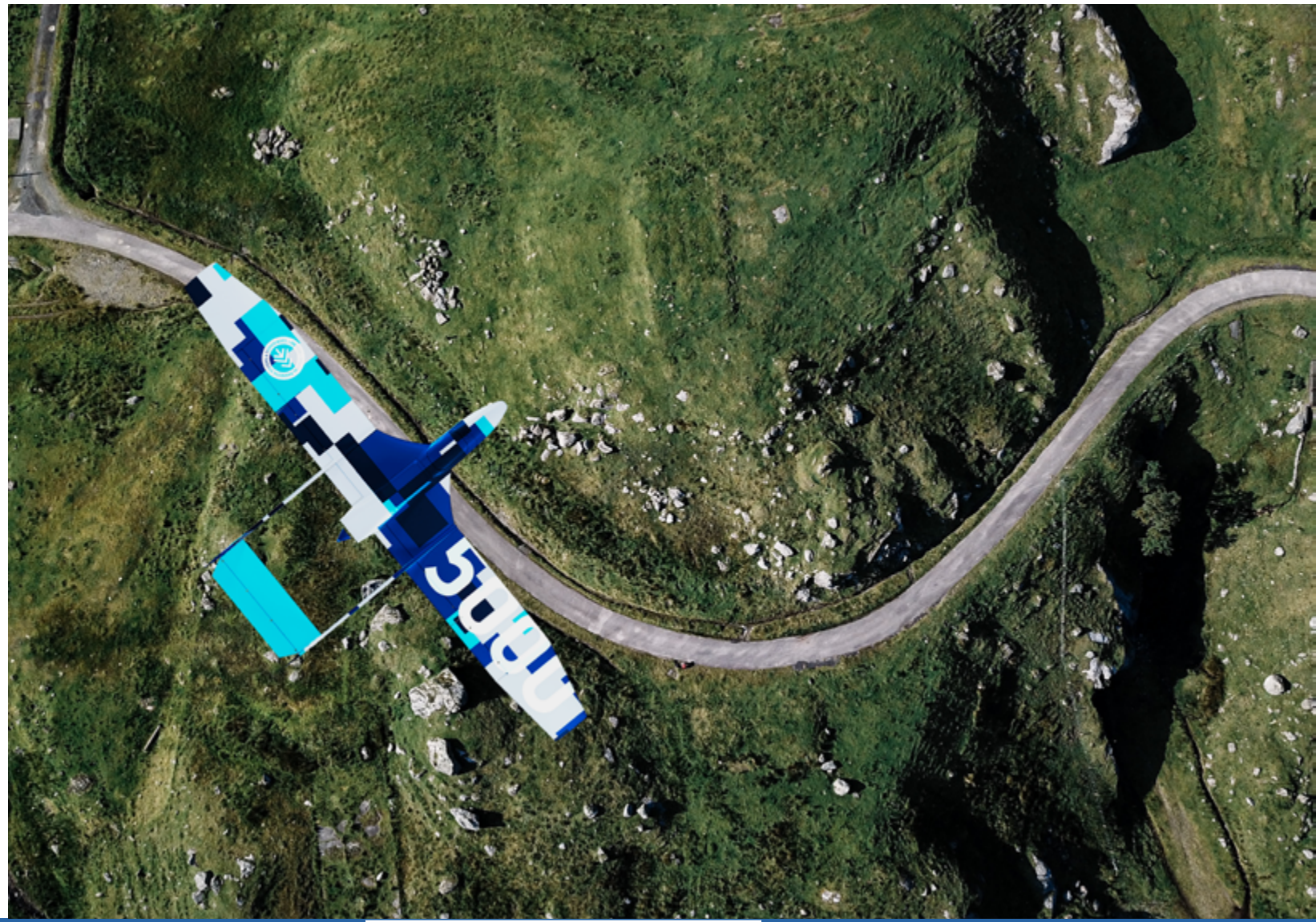
Seeing once is better than hearing twice!

We invite you to visit our production.

You will meet our specialists.

We will demonstrate our technologies.

Welcome!



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