

Development of technology for the construction of unmanned off-road vehicles

Тип сотрудничества

technical cooperation

Key words

unmanned, transport, chassis,
robotic, software

State of IPR

Patent

Technology proposed for development will allow upgrading the chassis of a vehicle – a mobile robotic platform off public roads (for example, for agriculture, emergency response, territory exploration, etc.). The technology is assumed to be unified for the chassis of a wide class of vehicles (ATV, UTV, tractors).



Contacts

Head of research

Mikhail Tatur

ScD, Professor

tatur@bsuir.by

Technology transfer

science@bsuir.by

The technology includes the following **subsystems**:

- positioning subsystem;
- navigation subsystem;
- autopilot subsystem;
- mechatronics subsystem;
- external monitoring and management subsystem;
- security subsystem;
- technical service subsystem;
- communication subsystem.

Intended prototype control modes:

1. Mode of direct (immediate) driver control.
2. Remote monitoring and operator control mode via a wireless communication channel.
3. Offline control mode for the specified programs:
 - downloading of source data (digital map of the area, routes, etc.);
 - route and driving program selection;
 - automatic route movement;
 - adequate response to emergency situations.

Configuration of the prototype of an unmanned off-road vehicle:

- Vehicle chassis with internal combustion engine drive. GPS receiver.
- A set of video cameras, ultrasonic sensors, radar sensors, on-board (industrial) computer.
- A set of microcontrollers, sensors and actuators.
- A set of a personal computer/laptop and a remote control.
- A set of communication tools (Wi-Fi).

The software of subsystems and the general software integrating all subsystems into a single system are developed separately.