

Team Information

Picture of vehicle:



Name of vehicle: RAVON (Robust Autonomous Vehicle for Off-road Navigation)

Picture of team leader:



Name of team leader: Prof. Dr. Karsten Berns

Team Name: RAVON

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Location: Robotics Research Lab

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Team Description: The RAVON Team is part of the Robotics Research Lab at the University of Kaiserslautern. The work group was founded in April 2003. Today, 15 research assistants work under the leadership of Prof. Dr. Karsten Berns.

Team Information

The outdoor platform developed in the lab is called RAVON (Robust Autonomous Vehicle for Offroad Navigation – see <http://agrosy.informatik.uni-kl.de/en/robots/ravon/>) and is based on the RobuCar TT platform by robosoft (<http://www.robosoft.fr/>). The vehicle's battery-driven 4WD utilises four independent motors. The front and rear axes can be controlled independently by linear motors to allow for advanced steering manoeuvres. As visual sensor systems, three 2D Sick (<http://www.sick.de/de/de.html>) laser scanners and two custom-built stereo camera heads have been mounted. For localisation purposes an inertial measurement unit, a magnetic field sensor, and a GPS receiver have been integrated with the vehicle's odometry. Equipped with three industrial PCs, the robot is able to move fully autonomously.

The robot's behaviour-based control system is implemented based on the open source C++ control software framework MCA2 (Modular Controller Architecture 2 – see <http://rrlib.informatik.uni-kl.de/>) which is being developed at the FZI in Karlsruhe (Forschungszentrum Informatik – <http://www.fzi.de/>) and in our working group.

The development of RAVON was started in the year 2004. Currently the vehicle realizes several behaviours guiding it through rough terrain on different test courses.

Sponsors:

DSM Computer

<http://www.dsm-computer.de>

Hankook Tire

<http://www.hankooktire-eu.com/>

Ingenieurbetrieb Kunze – Hochfrequenztechnik

http://www.ikhf.de/index_en.html

Johannes Hübner Giessen

<http://www.huebner-giessen.com/>

John Deere

<http://www.deere.com/>

Mayser Polymer Electric

<http://www.mayser.com/>

MiniTec

<http://www.minitec.de/>

SICK AG

<http://www.sick.com/home/en.html>

Selection of scenario:

Team Information

1. Reconnaissance and surveillance _X_
2. Camp security _X_
3. Transport _X_
4. Mule _X_
5. EOD _X_

Proof of citizenship: