

Team Information „CANGURU“

Picture of vehicle:



Name of vehicle:

“CANGURU” (Compact, autonomously navigating ground unmanned robotic unit)



Picture of team leader:

Name of team leader:

Dirk Krogmann

Team Name:

Team “CANGURU”

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Team Description:

The “CANGURU” Team is the entry for both the Diehl BGT Defence (DBD) and the Fraunhofer Institute for Information and Data processing, center for application of system technologies (IITB-AST) cooperation into the ELROB2008. The team is composed of industry employees as well as research institute / faculty employees from IITB-AST under the leadership of Dirk Krogmann (Programme Manager at DBD), Thomas Kopfstedt as DBD substitute (Engineer at DBD) and Dr. Andreas Wenzel (Head of Embedded Systems at IITB-AST) as IITB-AST leader.

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Our vehicle is called the “CANGURU”. The “CANGURU” is based on a hybrid drivetrain for long range operation capabilities as well as silent movement. The vehicle is fully digitalised comprising a CAN-bus system and actuated via a drive-by-wire system. All processing necessary for key performance (non payload processing) takes place on a small, compact board-computer using microcontroller. The vehicle incorporates measurements from GPS/INS and wheel speed odometer sensors for pose estimation also comprising ultrasonic sensors around the whole vehicle. While moving, the environment is perceived through two laser range finders, six vehicle platform cameras and a monocular vision system. A payload suite comprises an infrared camera and a 360° CCD zoom-camera. All sensors acquire environment data at rates between 5 and 100 Hertz. Map and pose information are incorporated at up to 100 Hz, enabling the “CANGURU” to avoid collisions with obstacles in real-time while advancing along the ELROB2008 route.

The development of the “CANGURU” system began in May 2006. At the time the of the initial team application, the vehicle is largely functional and has logged dozens of autonomous miles along a test course at DBD premises.

Sponsors:

None

Selection of scenario:

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

Proof of citizenship:

A copy of team leader passport is attached