

Team Information



Picture of vehicle:

Name of vehicle:

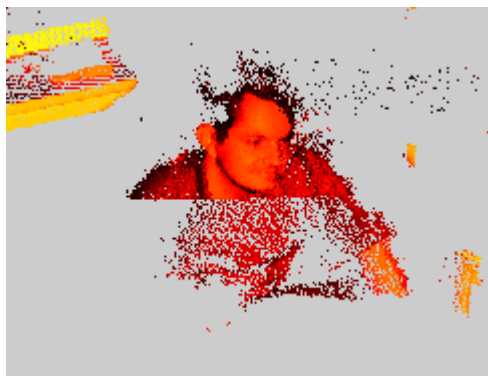
MoDuLiTH



Software development vehicle:

Name of vehicle:

testCarrier



Picture of team leader:

Team Information

Name of team leader: Jonas Nygårds

Team Name: preRunners

Team E-mail: robotics@ikp.liu.se, jonny@ikp.liu.se

Website: http://www.flumes.ikp.liu.se/research/auto_en.xf

Location: Linköping

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Team Description: The preRunners Team is composed around the larger research project preRunners supported by FMV (Swedish Defence Materiel Administration) & Vinnova (Swedish Governmental Agency for Innovation Systems) with additional team members from FOI (Swedish Defence Research Agency) and Lulea University of Technology, Mobile Robotics Sweden and Danaher Motion Särö AB. The project is based on experience in autonomous robots at both Lulå and Linköping university since the 1990:s.

The history of the group can be sampled at the old webpages:
<http://www.sm.luth.se/csee/ra/>
<http://idefix.ikp.liu.se/rames/> (very old “web-timecapsule ” from the late 1990:s)

And the industry partners:
<http://www.mobile-robotics.com/>

The team is largely composed of faculty and students from Linköping University Department of Mechanical Engineering, under the leadership of Jonas Nygårds and Jan-Ove Palmberg (Professor and director of the Fluid and Mechanical Engineering Systems lab) with support from FOI, Luleå University and the industry partners.

Our vehicle is called MoDuLiTH/A. The MoDuLiTH was developed as a rapid product demonstrator in a student project spring 2007 it is a modular electric vehicle configurable in 2+1 1+2 or 2+2 wheel configurations
(<http://www.ikp.liu.se/machine/news/images/ModuLiTH.pdf>)

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The design for making the MoDuLiTH autonomous (MoDuLiTH /A) was prepared in a student project fall 2007 and is currently implemented on the vehicle (however not visible on the pictures).

The goal of this spring rapid product demonstrator project is to develop the control station, adapt MoDuLiTH/A to the rules of ELROB and perform extensive field-test of the system. Based on the success of several previous projects we are confident that the vehicle will be fieldable at the ELROB08 even though it is not finished at the moment. The sensor processing and control laws are developed in parallel in the ordinary preRunners project, on the development vehicle (testCarrier)



Figure 1 testCarrier during “follow Me” experiments

The testCarrier has been operative since spring 2007 giving valuable experience with the control system. Based on the testCarrier results and our experience since the 1990:s at both Lulå and Linköping university, we predict the transfer process to

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the MoDuLiTH/A to be heavily taxing on the rapid product demonstrator student group but well within their reach.

Examples of previous student projects for instance autonomous parking are presented at:

<http://www.ikp.liu.se/evolve/>

Sponsors:

FMV, Vinnova

Selection of scenario:

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

Proof of citizenship: