

AUV Dagon

Autonomous Underwater Vehicle

System Description

The AUV Dagon was designed as scientific vehicle for mapping and localization. It combines state-of-the-art sensors and instruments in order to enable top-notch research.

The main design criteria was to provide a reliable experimentation platform for algorithm development. Main sensor system is a high-quality stereo camera system, which is supplemented by a IMU and a pressure sensor. Using visual odometry and SLAM approaches, a map of the sea-floor as well as a reconstruction of the vehicle's path is computed. In order to validate these localization measurements a second dataset is recorded, using current gold-standard methods (LBL, DVL, FOG). By evaluation and comparison of the two measurements their individual characteristics can be estimated.

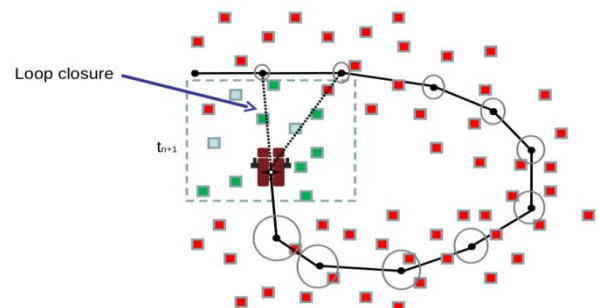
Technical Details

- **Size:** 1.1 m x 0.8 m x 0.4 m
- **Weight:** 80 kg
- **Propulsion:** 5 x Thrusters
- **Maximum velocity (horizontal):** 1 kn
- **Battery life:** approx. 10 hours
- **USBL:** Evologics S2CR 48/78
- **DVL:** RDI Explorer
- **IMU:** KVH 1750 3-Achsis FOG
- **Pressure sensor:** Desertstar DPS
- **Obstacle Avoidance:** Teledyne Micron DST
- **Stereo camera system:** 2 x Prosilica GE1900C, 300 mm base-line
- **Front-Camera:** 1 x Prosilica GC1380HC
- **Illumination:** 2 x 3200 Lumen LEDs
- **Data Processing:** 2 x Intel i7-PCs for image processing and navigation



Application: Algorithm development

Projects: **CUSLAM**
Confined Underwater Simultaneous
Localization and Mapping
(09/2009 - 07/2012)



Contact:

DFKI GmbH & University of Bremen
Robotics Innovation Center

Director: Prof. Dr. Frank Kirchner
Phone: +49 421 – 178 45 4100
E-mail: robotik@dfki.de
Website: www.dfki.de/robotics