

# CSurvey

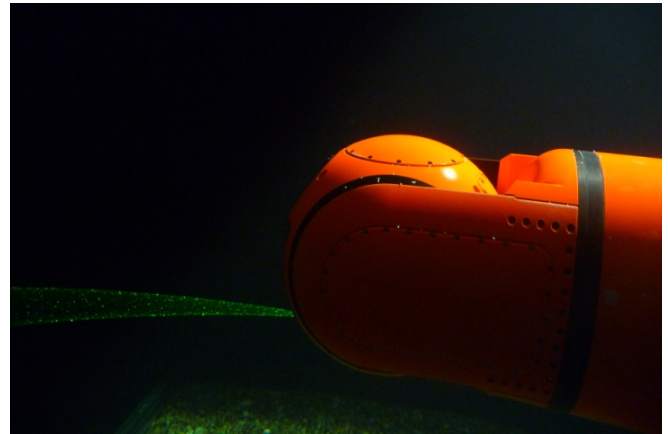
## A semi-automatic inspection unit for underwater structures

### System Description

CSurvey is a semi-automatic inspection unit for underwater structures and ship hulls. For the inspection task multimodal sensor data are classified by machine learning methods. The sensor data are generated by a camera system, a laser projection unit and a multi-beam echo sounder. CSurvey is a flexible system which can be mounted on different host systems and can be adapted to several operation scenarios. It is intended to be the basis for many applications and products in the area of underwater inspection. Furthermore, it can be used in diverse areas such as production, logistics or security.

### Technical Details

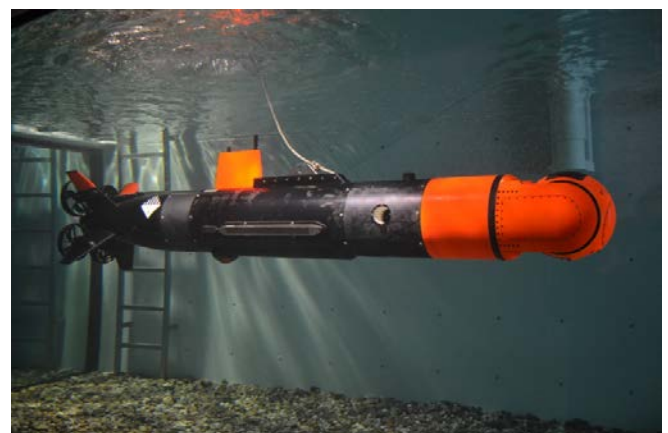
- **Length:** 650 mm
- **Diameter:** 300 mm
- **Weight:** 37 kg
- **Motors:** Two brush-type DC motors for panning and tilting of the sensor head
- **Power supply:** 24 V DC by the carrier vehicle
- Gigabit Ethernet
- **Sensors:**
  - TriTech Gemini imaging sonar for environment sensing at greater distances and in very murky waters
  - Prosilica GigE camera
  - Laser line projector (532 nm DPSS laser with 150 mW optical output) for distance measurements and object scanning with the camera system
- Two integrated computer systems (low voltage Core 2 duo CPU): One for control and sensor processing, plus one to allow experiments with demanding computing time
- Design optimised for minimal flow resistance



(Photo: ATLAS Elektronik)

**Application:** Underwater robotics

**Projects:** **CSurvey**  
A semi-autonomous inspection unit for underwater structures and ship hulls - subproject of CView compound-project (05/2009 - 04/2012)



(Photo: ATLAS Elektronik)