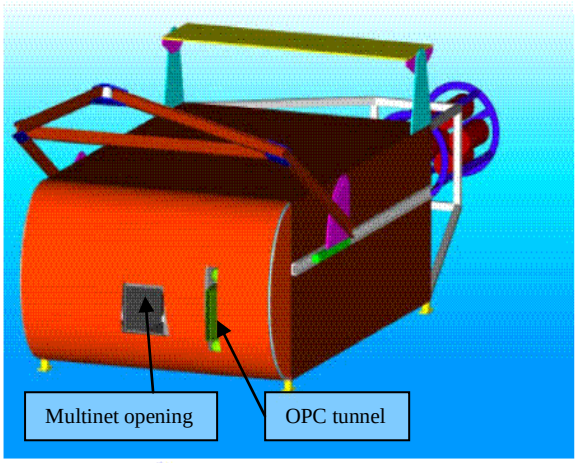
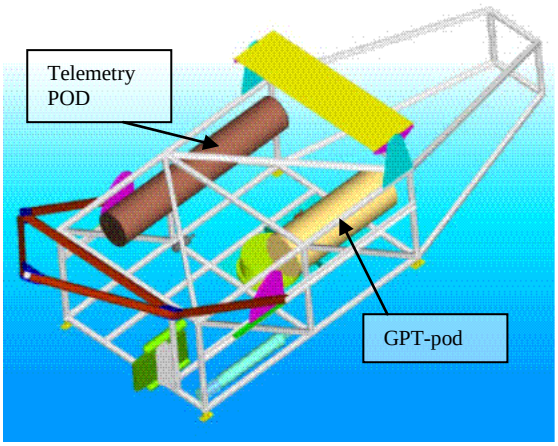
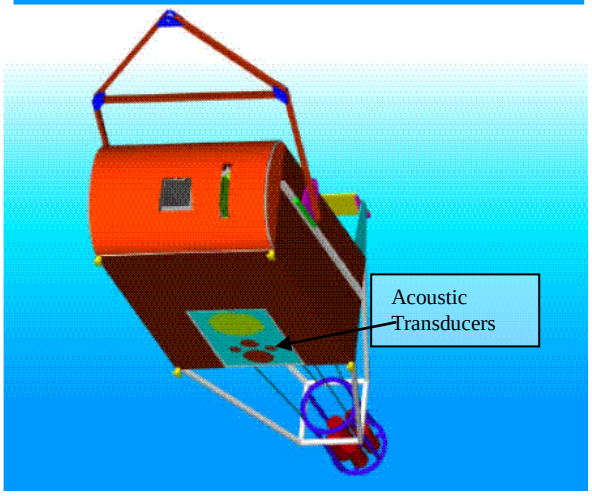
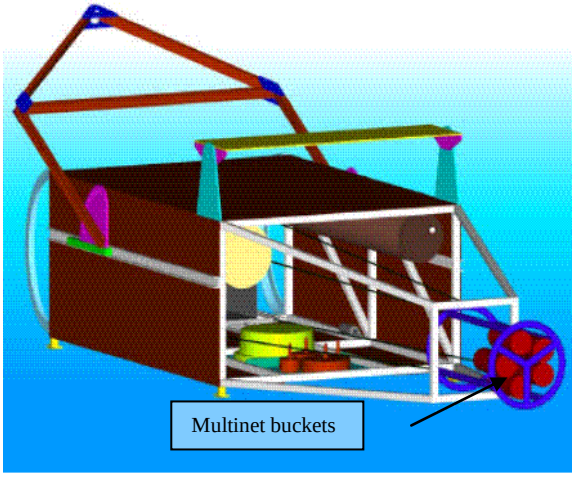
Messor towed vehicle









Messor towed vehicle

The underwater towed system is equipped with both a plankton net sampling system, Optical Plankton Counter, multifrequency echosounder system and other sensors to acquire quantitative information on important environmental variables like conductivity, temperature, depth (CTD) and fluorescence.

Specifications Messor

Length: 395 cm (towing bridle and Multinet buckets not included)
Width: 150 cm
Height: 89 cm (flaps and towing bridle not included)
Weight in air: Approx. 1050 Kg

Depth-rating: Max 3000 m (max 1500 m with trancducers mounted).

Towing speed: 3-8 knots

Towing cable: Single mode Fiber, 4 el. Conductors

Power: 220Vac (tow cable < approx. 1500m)
500Vac (tow cable > approx. 1500m, additional onboard variac and transformer pod needed)

Sensors on Messor

Biological and environmental sensors:

- Conductivity, temperature and depth (CTD) Micro CTD, Applied Microsystem Ltd (AML).
- Chl *a* fluorescence (Seapoint fluorometer).
- Optical Plankton Counter (OPC).
- Multifrequency acoustics (Simrad 38, 70, 120, 200 and 364 (all split) and 710 kHz (single beam) transducers.
- Multinet (Hydrobios GmBh) – A modified 5-net Multinet is included to allow zooplankton sampling in strata of interest and for calibration purposes.
- A General Oceanics flowmeter to monitor flow around the vehicle.
- Another GO flowmeter to monitor flow through the Multinet.

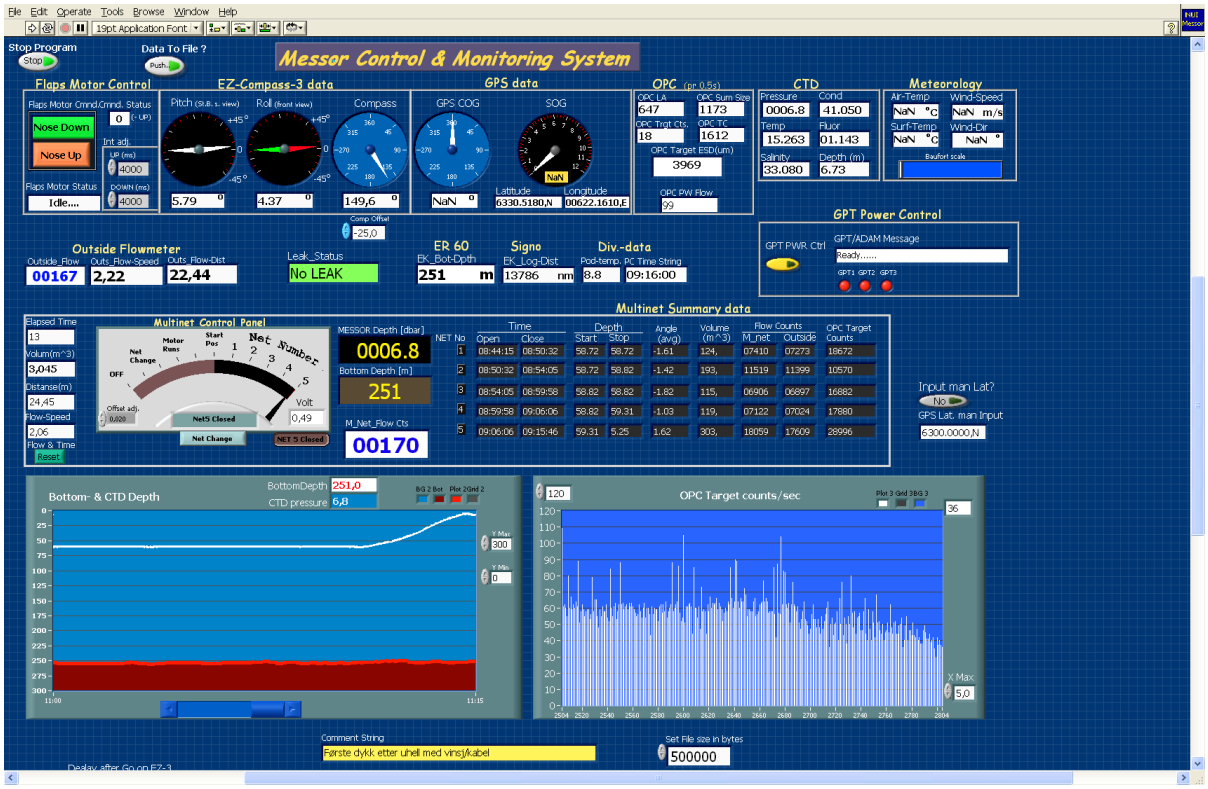
Other sensors:

- Compass, pitch and roll (EZ-Compass-3 from Advanced Orientation Systems Inc.,
- Multinet net release control and feedback (2-way).
- Flaps/depressor motor control (2-way).
- Leak sensors both in Telemetry pod and GPT'pod .
- Optional Laser OPC and/or Video Plankton Recorder (VPR).
- Optional light sensors.

Base electronic system:

- Telemetry pod holds all electronic components for the majority of sensors as well as the electronics responsible for communication and data transfer. This pod also receives power from the ship.
- GPT pod holding all Simrad General Purpose Tranceivers (GPT). Receives power from the Telemetry pod.
- Ethernet connection between GPT pod and Telemtry pod.
- Fibreoptic connection from ship via winch slip-ring to Telemetry pod.

Messor Control an Monitoring System (CMS)



Main display of the Messor Control and Monitoring system

The CMS is responsible for all communication with the underwater electronics. It acquires all sensor data (except echosounder data), allows the control and sensor data and ship data (navigation, weather, bottom depth) to be integrated in a computerized display that is simple to understand and operate. Data are stored to files in a simple logical structure assuring easy and unambigous retreival at a later date.