

SurfROVer: An ROV for littoral zone survey work

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SeaView Systems: Chiton custom ROV





SeaView Systems: Titan Custom ROV





SeaView Systems: LDROV Custom ROV





SeaView Systems: SurfROVer....





Why SurfROVer?

- Access to challenging environment of littoral zone
- Workhorse platform for a range of sensors
- Low EM signature for sensitive equipment
- UXO, route surveys, bathymetry studies, other TBD?

 The possibility for semi-autonomous or fully autonomous applications
 SEAVE

Design objectives

- Low and wide with low center of gravity for stability in surf
- Precise GPS (or INS) positioning
- Support for wide range of sensors
 - Onboard comms/data storage
 - Platform structural support
 - Towing capacity
- Ease of deployment
- Extensible/reducible platform adaptable for new applications



Design features

- Battery power reduces EM noise and provides intrinsic ballast feature
- 4-track locomotion for good maneuverability, traction, obstacle surmounting, and tow capacity
- Electric motor driven hydraulic propulsion
- Mast mounted GPS for precise positioning...
- SeaView ROVBus and electronics for "drive by wire" support and good sensor bandwidth
- Transportable using standard auto trailer
- Fiber or RF communications...



SurfROVer Components....

HONDA

GPS mast Cameras



LED light



SurfROVer Components....





SeaView Systems: SurfROVer....



SeaView Systems: SurfROVer....





2 x Battery Pack....





- 40 x 14 x 2 Li ion cells
- Approximately 8kW hours x 2
- Operating time: about 8 hours typical
- Charge time: overnight



SurfROVer and towed array





Sensor towed array configuration





Theory....





In practice: vehicle and sensor pitch/roll/yaw....





Video clips....



In practice: coverage of target area....





Practice....





Practice....





What's next?

- RF alternative to fiber umbilical
 Field testing next week!
- Better electronics isolation/shorter tow bar!
- Inertial Navigation System alternative to GPS
- RF "float" antenna
- Alternative form factor designs
- New applications: bathymetry, storm studies
- Semi-autonomous or fully autonomous applications
- Improved fail-safe capabilities...



Thank you!

Please say hello or contact me to find out more!

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Key Specs....

Feature	Specification
LxWxH	261cm X 203cm X 91cm
Operating Depth	300 msw
Weight (air)	670 kg (1477 lbs) est.
Weight (seawater)	382 kg (841 lbs) est.
Battery Life	8-12 hours
Pull Force	500 kgf
Tracks	4 X Rubber Mattracks
Propulsion	Electric / hydraulic
Ground Pressure	0.52 PSI (sw) / 3.5 kPa
Speed	1.5 m/s wet
Lighting	10K lumen dimmable LED
Sonar	Imagenex 881 scanning
Cameras	3 fixed RGB cameras
Data Interface	3 Video, 100 GB ethernet, 8 X RS232/485 mux chan's
Tether	1000-ft FO umbilical winch



Transport....





Control booth....





Battery management system...





Pier view w/GPS mast...







