

VIRTUAL CONTROL BUOY (VCB)

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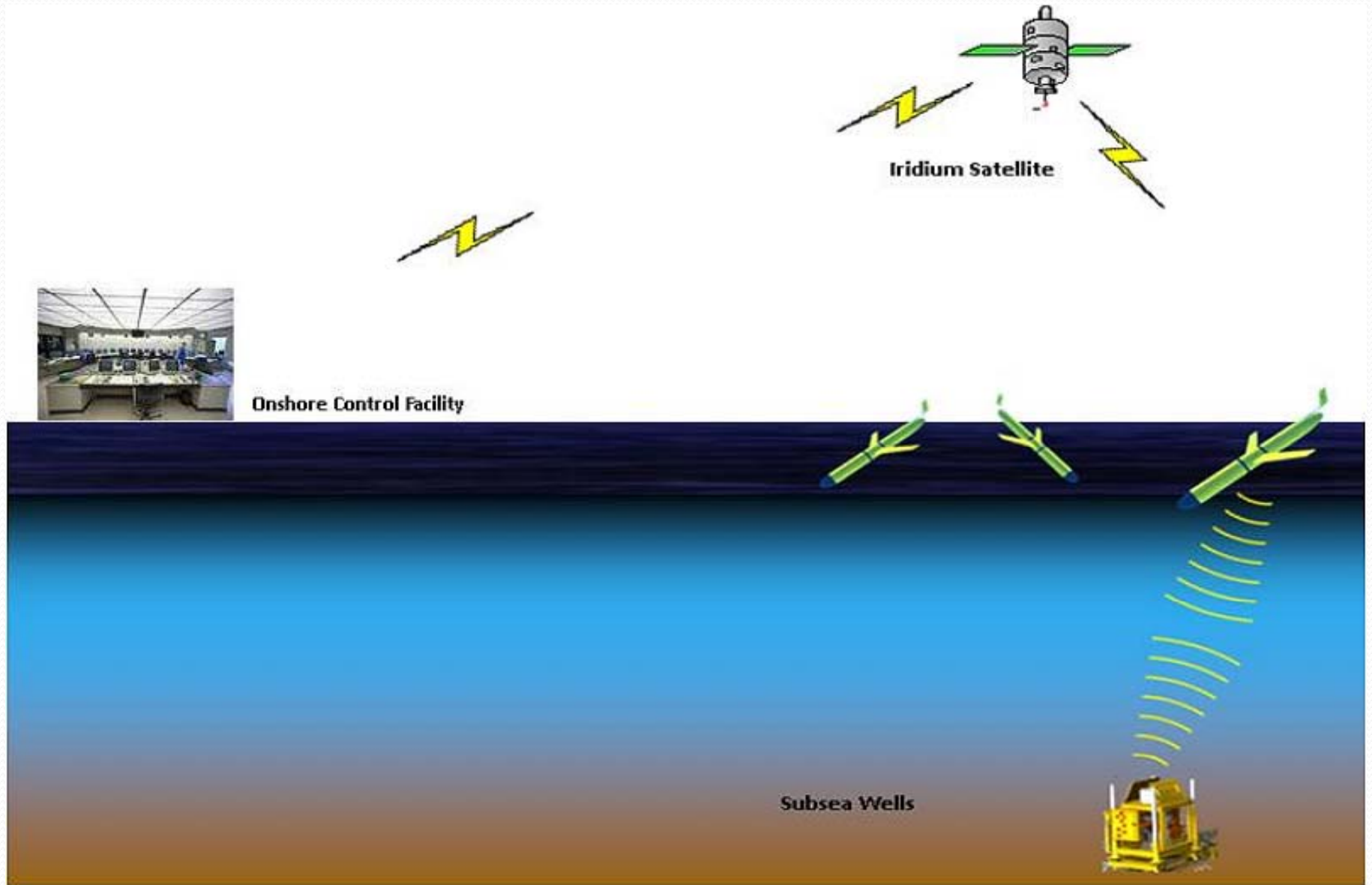
: Roshun Paurobally (UWA)

OBJECTIVES

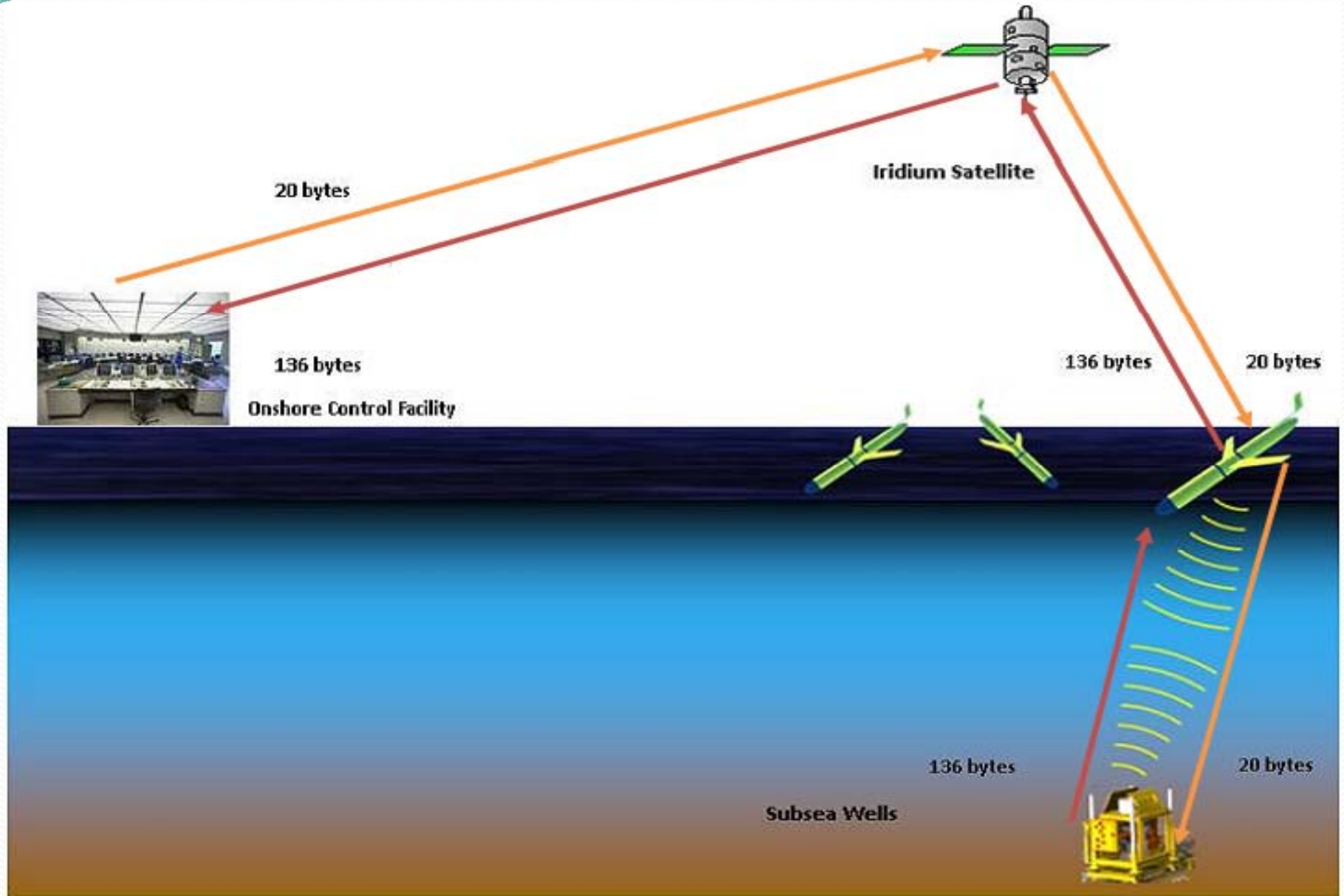
To investigate the power budget for the VCB.

To find the best instruments and communication devices for the VCB.

Control and Monitoring of Subsea Wells using VCB



Data Requirements for transmission



Iridium modem to communicate with onshore facility



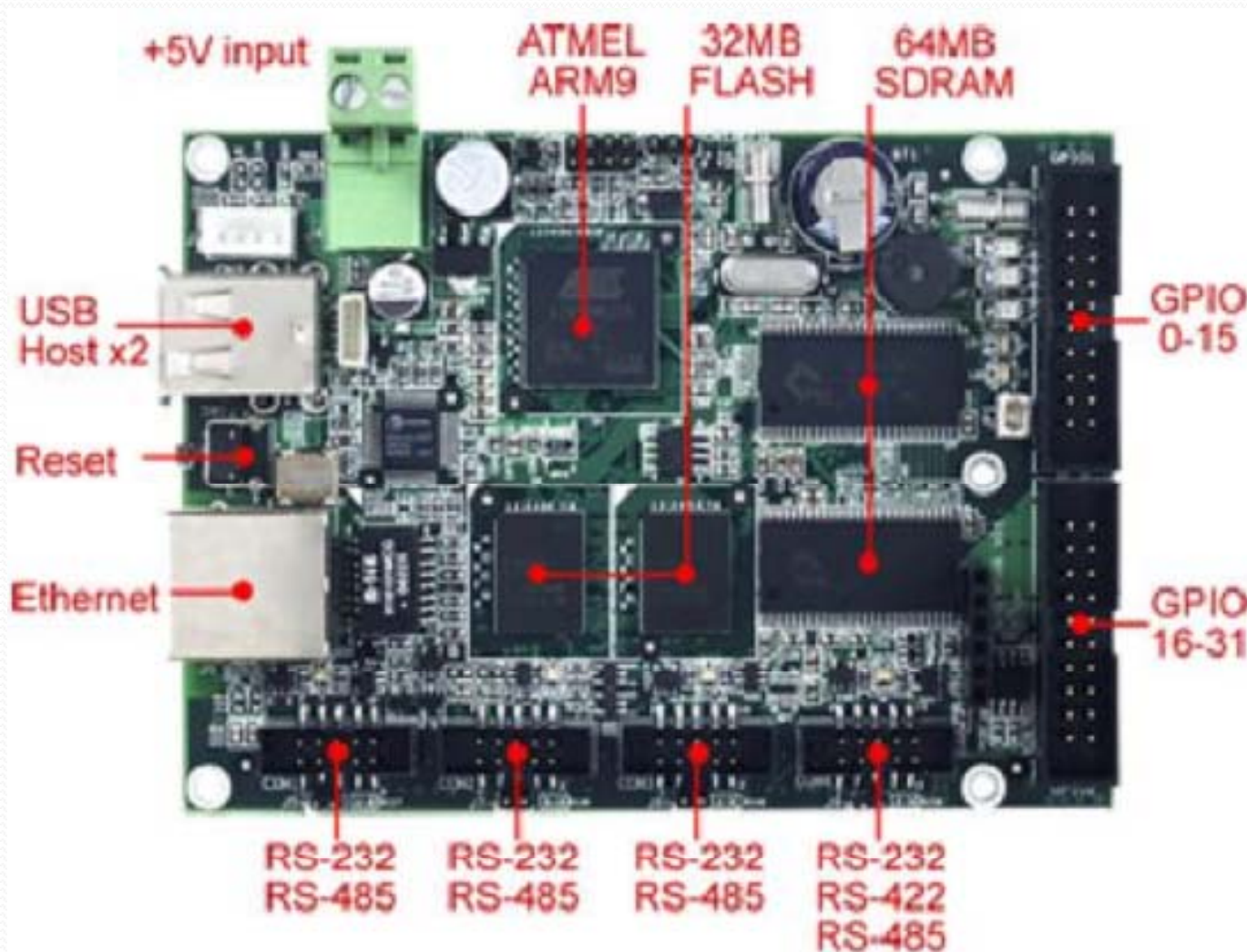
Acoustic modem for underwater communication



GPS receiver card to navigate the VCB



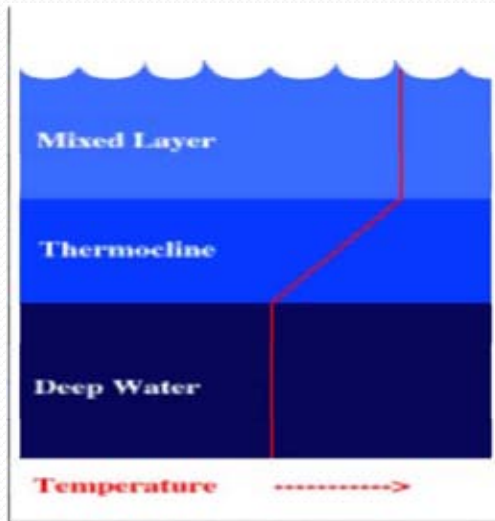
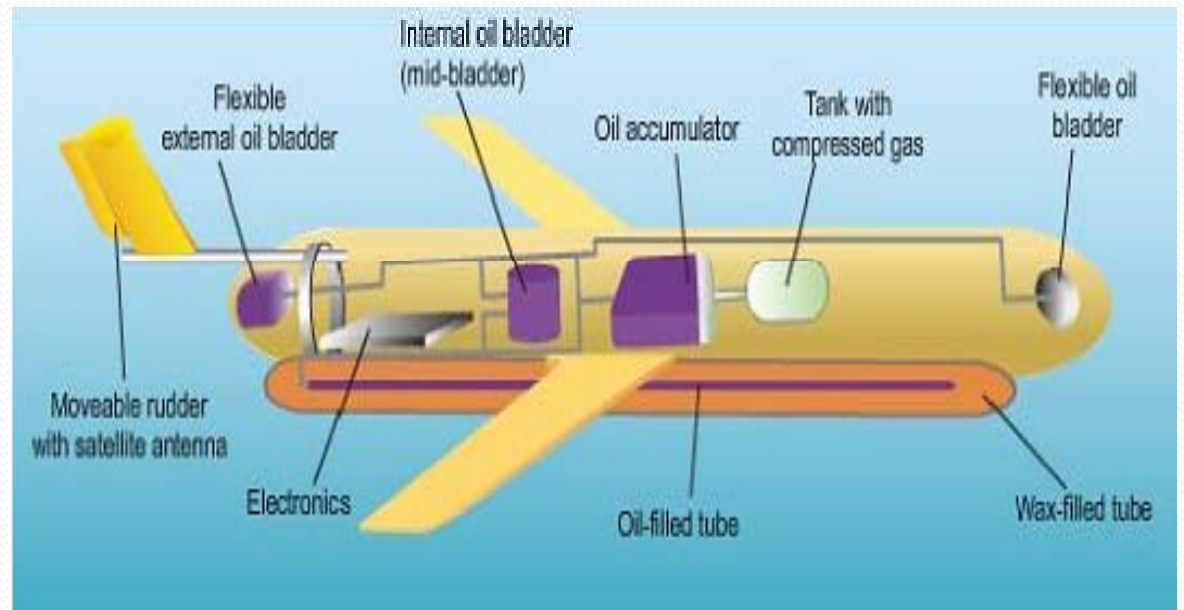
Single Board Computer to provide the interface between all the devices



**Li-ion rechargeable battery to provide
the energy required for VCB's electronics**



Buoyancy Driven Engine

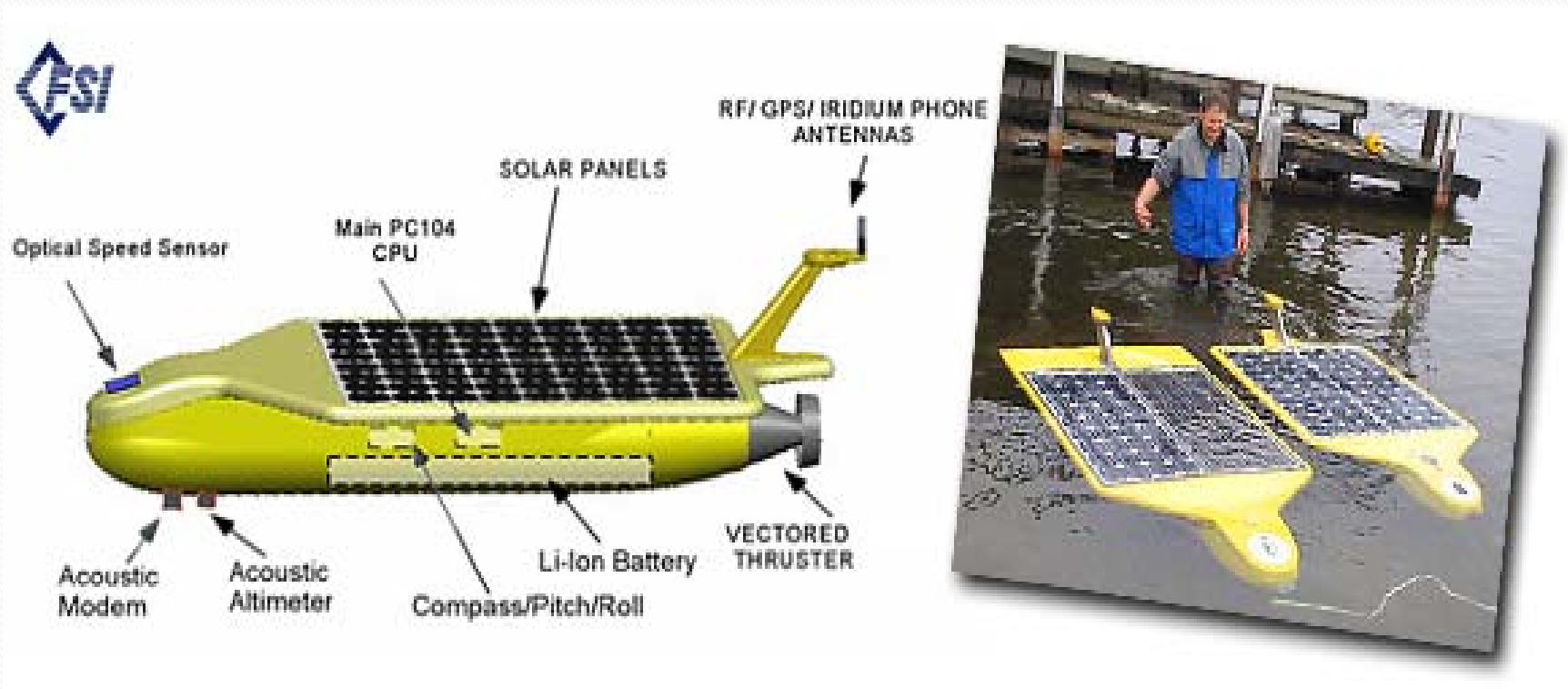



Power Budget of the VCB

Instruments	Average Power Consumption (Watt)
Iridium Modem	0.85
Acoustic Modem	0.28
GPS Receiver Card	0.25
Single Board Computer	3.0
Total	4.38
Energy available from the battery	38380 watt hour
Endurance of VCB	8760 hrs or 365 days or One Year

Scope of Work

- Endurance of the VCB can be significantly increased by using low power SBC's and by extending the transmission/reception time of signal.
- The net power consumption of the VCB can be reduced to “zero” by using solar energy.





THANK YOU