



Platform for Expanding AUV exploRation to Longer ranges (PEARL)

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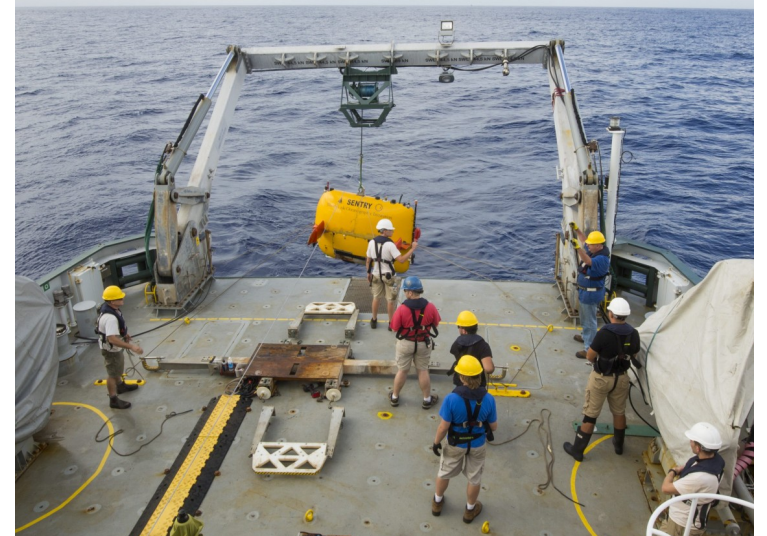
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Key challenges for AUVs: battery endurance and data return capacity

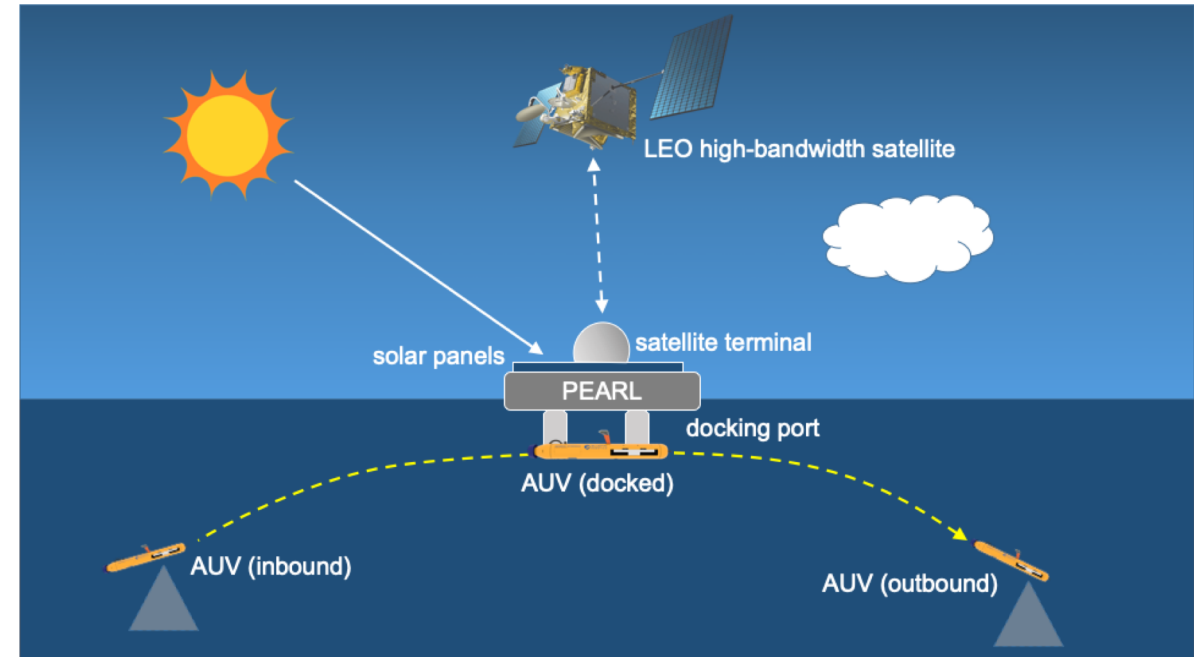
- Challenges for Autonomous Underwater Vehicle (AUV)-based ocean exploration:
 - battery endurance, and
 - data transmission latency.
- Results in need for frequent recovery to recharge batteries and offload data, requiring a support vessel and crew, which can cost in excess of \$30,000 per day.
- **Can we leverage new technology to reduce**
 - **operating costs - \$/AUV mission hour, and**
 - **data latency?**



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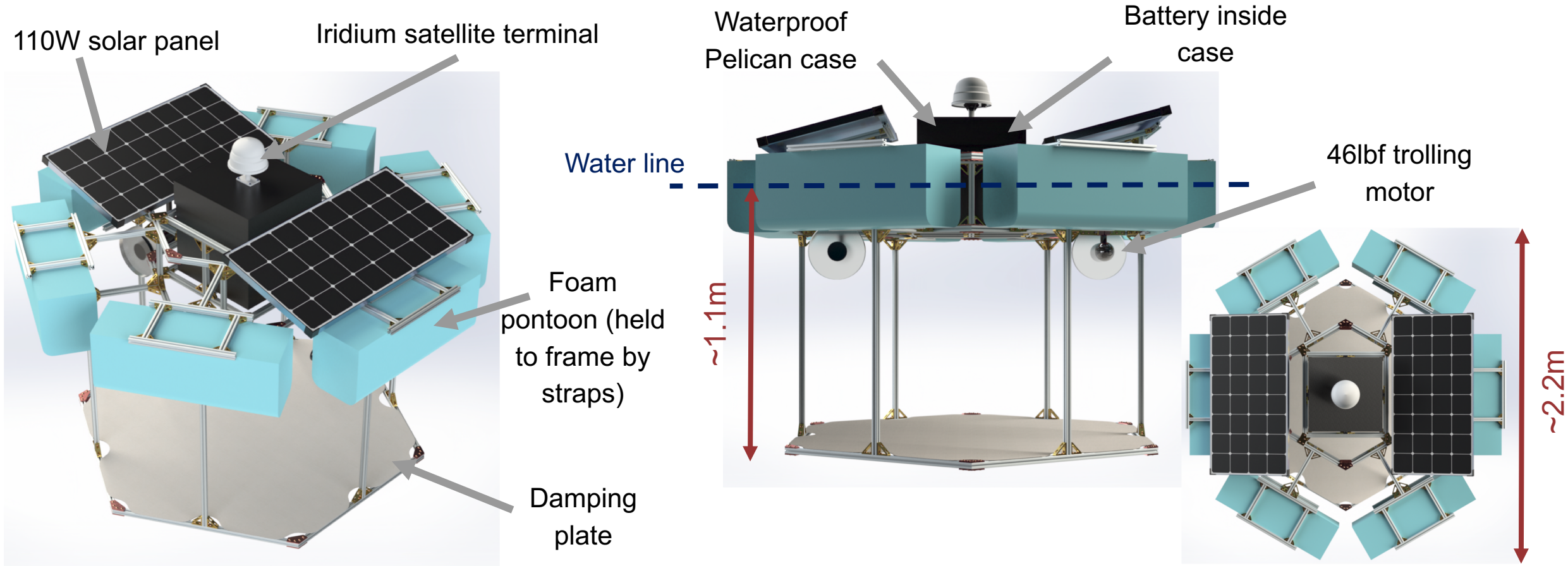
- **Goal: Extend the range and endurance of AUVs and allow for near-real-time data transmission by leveraging upcoming satellite mega constellations, thereby reducing operating costs via the Platform for Expanding AUV exploration to Longer ranges (PEARL).**
- PEARL will provide AUV recharging via renewable energy and data uplink via a new generation of high-bandwidth low-Earth orbit (LEO) satellite mega constellations.





PEARL 1:2.5 Froude-scale Ocean Prototype

- Goal: Investigate concepts of PEARL energy harvesting, data collection, and data transmission





Questions? Comments?