

2022 COS FORUM

Onshore Remote Operations
Oceanering International Inc.
Nicholas Rouge



Liberty™ E-ROV Outline

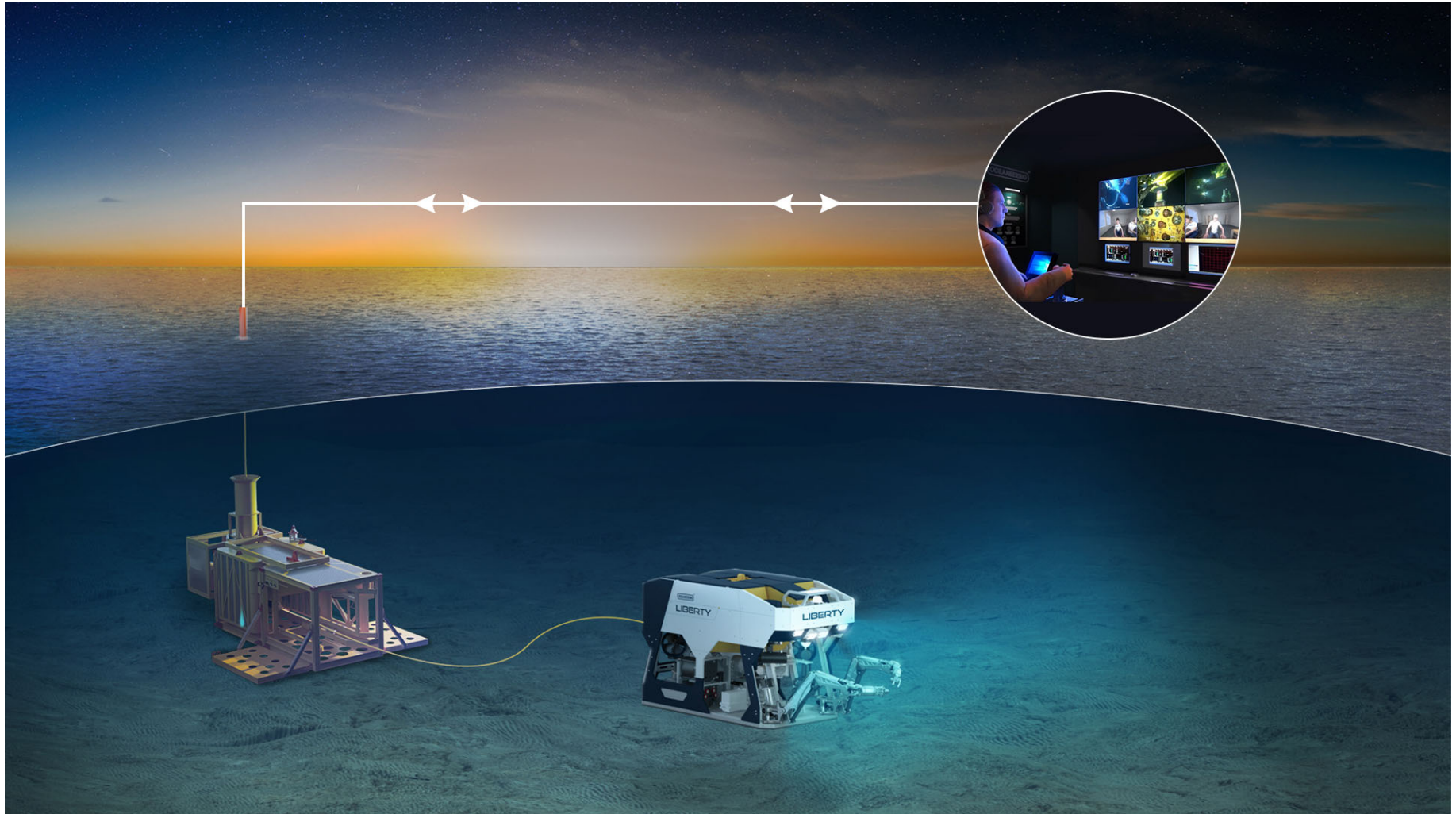
- Short Term Resident System
- Remote Piloting of Offshore ROVs
- Operational Impacts
- Personnel Safety Benefits
- Environmental Impact
- Additional Opportunities
- Industry Publications

Short Term Resident ROV System

- Full Electric Work Class ROV
 - eNovus
 - Electric Propulsion
 - Hydraulic
 - Manipulators
 - Tooling
- Self Deployed Communication Buoy
 - LTE Antennae
 - Battery
- Subsea Garage
 - 550 kWh L-Ion battery
 - 1000m depth rating
 - 1000m work range from subsea garage
 - Tooling Storage
 - Self Deployed Mud Mat

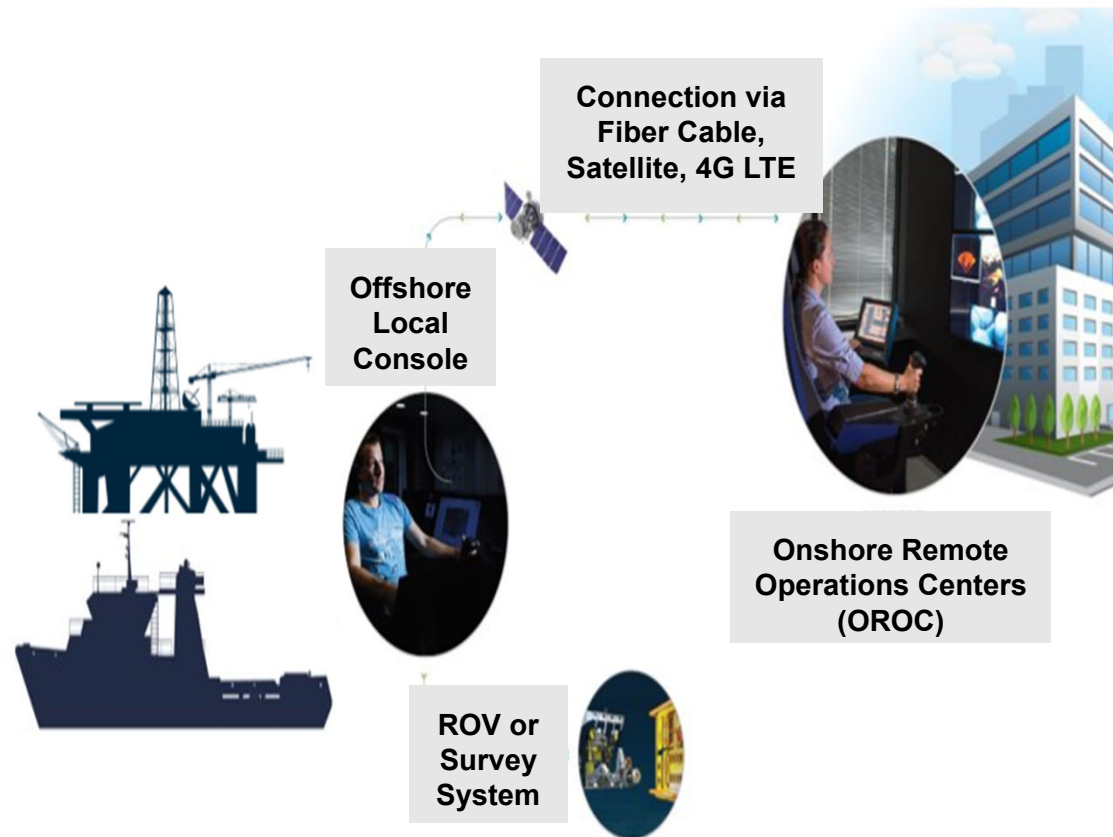


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Remote Piloting

- Traditional ROVs
 - 1/3 of ROV Crew Onshore
- Liberty E-ROV
 - ROV Pilot / Copilot
 - Tooling / Task Specialists
 - 3rd Party Inspectors
 - Customer Representatives



A large offshore oil rig is shown in the background, featuring a complex network of steel structures, cranes, and yellow storage tanks. The rig is situated on a dark blue sea under a clear sky. A semi-transparent white box is overlaid on the image, containing text.

Operational Impacts

Reduction in Launch and Recovery
Sea-States
Quantity

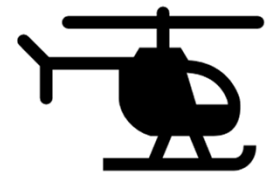
Continuous Operations
Reduce Sea-State Limitations

Reduce SIMOPS

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Personnel Safety Benefits

- ROV Crew
 - 170,000+ Offshore exposure days eliminated
 - 179+ Crew changes eliminated
- Vessel Crew
 - 7,525 Vessel days eliminated

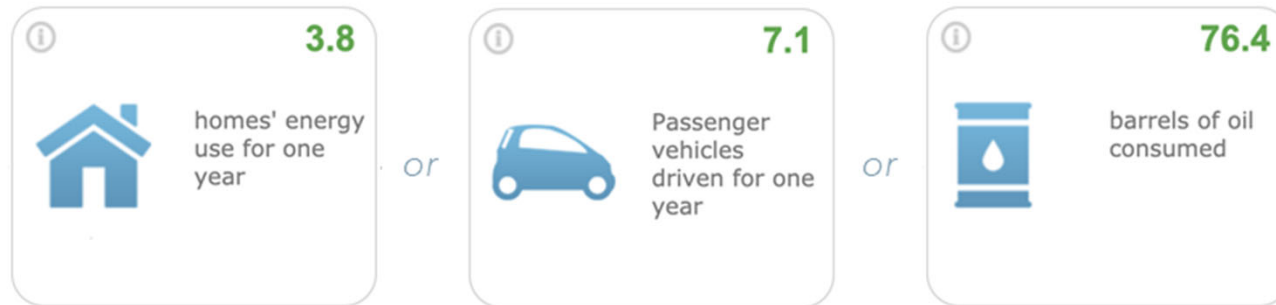


Environmental Impact - Daily

IMR vessel with conventional ROV: 46MT / day

IMR vessel with Liberty E-ROV: 13MT / day

CO2 emission reduction: 33MT / day



Additional Opportunities

- Dedicated LARS
- AUV Residency
- Observation Class Residency
- Resident Electric Tooling
- Power Buoys
- Deepwater (>1000m)



Industry Publications

UT3 Underwater Technology

- Three Years Later- Issue ONE 2020

Ocean News & Technology

- Supporting Subsea IMR with Resident ROV Systems – May 20, 2022
- The future of Lowering Carbon Emissions and Increasing Worker Safety Through Remote Operations - December 2021

Upstream Energy Explored

- BP, Oceaneering achieve a first with onshore control of ROV offshore Shetland – December 17, 2021

Underwater Robotics

- Remote Control – Issue 5

Ocean Robotics Planet

- Making the Case for Safe, Robust Remote Operations - Q1 2022

Marine Technology News

- Subsea Vehicles: To Be (resident), or Not to Be? – October 11, 2022

Offshore Magazine

- "Empowered" ROV provides reliable remote monitoring option – November 1, 2020

Hart Energy

- Offshore: Subsea Resident ROV Supports Critical Operations – May 11, 2020

Oceaneering Case Study

- Subsea Resident ROV Eliminates Vessel Requirements and Provides Substantial Cost Savings for Client

Questions