

Oceaneering's Remote Ops Group (ROG) Delivers Innovative Single-Touch Communication Solution

Advanced communication links enable reduction of POB without compromising connectivity

Project Overview

In June of 2019, Oceaneering was contacted to develop an innovative technical solution that could provide a full connectivity and communications network for a major global client completing complex seismic survey operations in the Gulf of Mexico.

Oceaneering's Remote Ops Group was tasked with engineering a single-touch communication solution that maximized uptime, visibility, and scalability to perform mission-critical applications remotely. The client was focused on maintaining uptime and lines of communication while effectively reducing their personnel on board numbers.

Issues

This was the first time a major industry player had enlisted a robotics company to oversee the entire communications set-up. The use of third-party vendors traditionally left clients with demarcation of data sets, filtered information, and a lack of accountability when problems needed to be addressed in real-time. Oceaneering's Remote Ops Group embraced



these issues and focused on providing the client with uptime and accountability. There was certainly a learning curve for all parties involved, but the end result demonstrated a significant improvement to traditional methods working offshore.

The Oceaneering Solution

Oceaneering's Remote Ops Group worked closely with the client to ensure their objectives were met and that we were able to provide application, network, and cloud storage support to ensure a single, unified picture for maximum uptime and quality of service.

We proposed the use of two Oceaneering Satellite Agnostic Intelligent Link (SAIL) systems onboard the projected vessels each equipped with cellular LTE connectivity. The SAIL systems enabled a reliable and effective solution to the client for a reduction in field personnel on board. Oceaneering also developed a Remote Copy File Transfer Portal that enabled access and review of data in real-time from various global locations.



In order to facilitate the implementation of such a complex and innovative system, Oceaneering had to liaise with seven different stakeholders and, most importantly, get sign off to provide data prioritization, hand-off, voice services, VHF-interconnection, and remote software that enabled remote workstations to operate in Belgium,

Vancouver, Dallas, and Houston. By setting up the remote workstations, the client was able to augment eight personnel per day to shore-based operations.

Oceaneering identified the required hardware and services for both the vessel and remote workstations.

Vessel Hardware	Remote Workstation Hardware Office network kits to include:
2 x SAIL skid solutions	» Router » Switch » IP phone with handset » Clear Com station
2 x Indoor units with hardware spares and redundancy	
3 x IP phones with handsets	
4 x Clear Com stations with integration hardware and wireless headsets	
4 x Video encoders	
2 x Out of band management systems	
Vessel Service	Remote Workstation Service
6/6Mbps GeoSat "A" [SAIL System A] 6/6Mbps Geosat "B" [SAIL System B] 2/10Mbps LTE [Inside Tampnet Coverage Area] 24/7 NOC Support	» ClearCom party line with private channel for client and dynamic structures » Dedicated voice line encrypted traffic to remote command centers » 24/7 monitoring and support
Voice + Video 3 x Voice lines w/unlimited long distance (CONUS) 1 x Clear Com party line with secure channel to dynamic structures 4 Video streams FTP queuing for transferring survey files from the vessel	

The hardware and services had to meet the client's requirement for dedicated IP and VHF communications paths that would

remain available between all globally-located stakeholders throughout the duration of their seismic survey campaign. In total, this meant 24/7 coverage over multiple continents for 65 days. As the client needed to ensure an easy-to-integrate and flexible solution, the system designed by Oceaneering's ROG Team was scalable to meet the projects needs as they emerged

Execution Plan

Oceaneering's ROG Team was awarded the project contract on May 29th, 2019. As this single-touch solution covering a large number of global stakeholders was a new approach for the client, Oceaneering arranged for a thorough trial of the system prior to its mobilization and installation.

Test activities were completed from Oceaneering's Houston offices at the end of June. The testing enabled ROG Network Architects to simulate an extra latency hop via a VPN tunnel in addition to synthesizing an artificial latency via a proprietary network emulator instrument. This enabled Oceaneering to simulate and benchmark optimal bandwidth speeds, delay, and packet loss based on each stakeholder's unique mission-critical application.

All equipment was installed on the vessel and at remote workstations in early August



2019. The full suite of hardware and services provided by Oceaneering was successfully commissioned on August 15, 2019 and supported the entire 65-day seismic survey campaign.

Challenges

A major challenge to this project was the adoption of a new, innovative communications solution that has nearly 10 times the speed/resilience of its predecessors. The project's key performance indicators were clearly identified and required a 99.9% service level availability, retaining party line connectivity between all stakeholders, and automated ticket creation and customer notifications.

Results

This was the first project that delivered communication, video, radio, and FTP software under a single managed day rate and its success foreshadows the advantages and attainability of working from remote command centers in the future.

The client was able to maintain the lines of communication through the duration of the seismic survey activities. We were able to help them meet their objective of reducing POB and effectively de-risked operations by moving seven team members onshore. Depending on the day rate these individuals command, the cost savings for this factor alone amounted to between 650,000 and 1,100,000USD over the 65-day campaign.

The client is now interested in further exploring the possibilities of remote workstations and Oceaneering single-touch communications solutions to provide the connectivity required to support their diverse global operations.

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