

Case Study

**Fugro becomes
the standard
for remote
optimised
operations.**



PROBLEM

Lack of visibility and scalability needed for remote operations.

SOLUTION

Remote optimising Fugro's network for greater livestreaming video capabilities.

INDUSTRY

Geo-Data Acquisition and Analysis

COMPANY

Fugro N.V.
Leidschendam,
The Netherlands
Fugro.com

Founded in 1962, Fugro has grown to become a global powerhouse supplying geo-data and analysis to the energy, power, infrastructure, mining, and nautical industries. Employing over 10,000 people in 60 countries, Fugro deploys large ocean vessels throughout the world to collect and analyse comprehensive information about the earth and any structures built upon it.



Summary

When Fugro ventures out on a geodata assignment, it's a military-scale operation. Hundreds of scientists, engineers, and crew personnel board vessels bound for locations all over the planet. It's costly. There's enormous risk. And each operation ties up vast amounts of resources for months on end.

This creates two problems. Either the resources are not available for further operations, or costly and wasteful redundancies have to be built into the system. In short, more boats were not the answer.

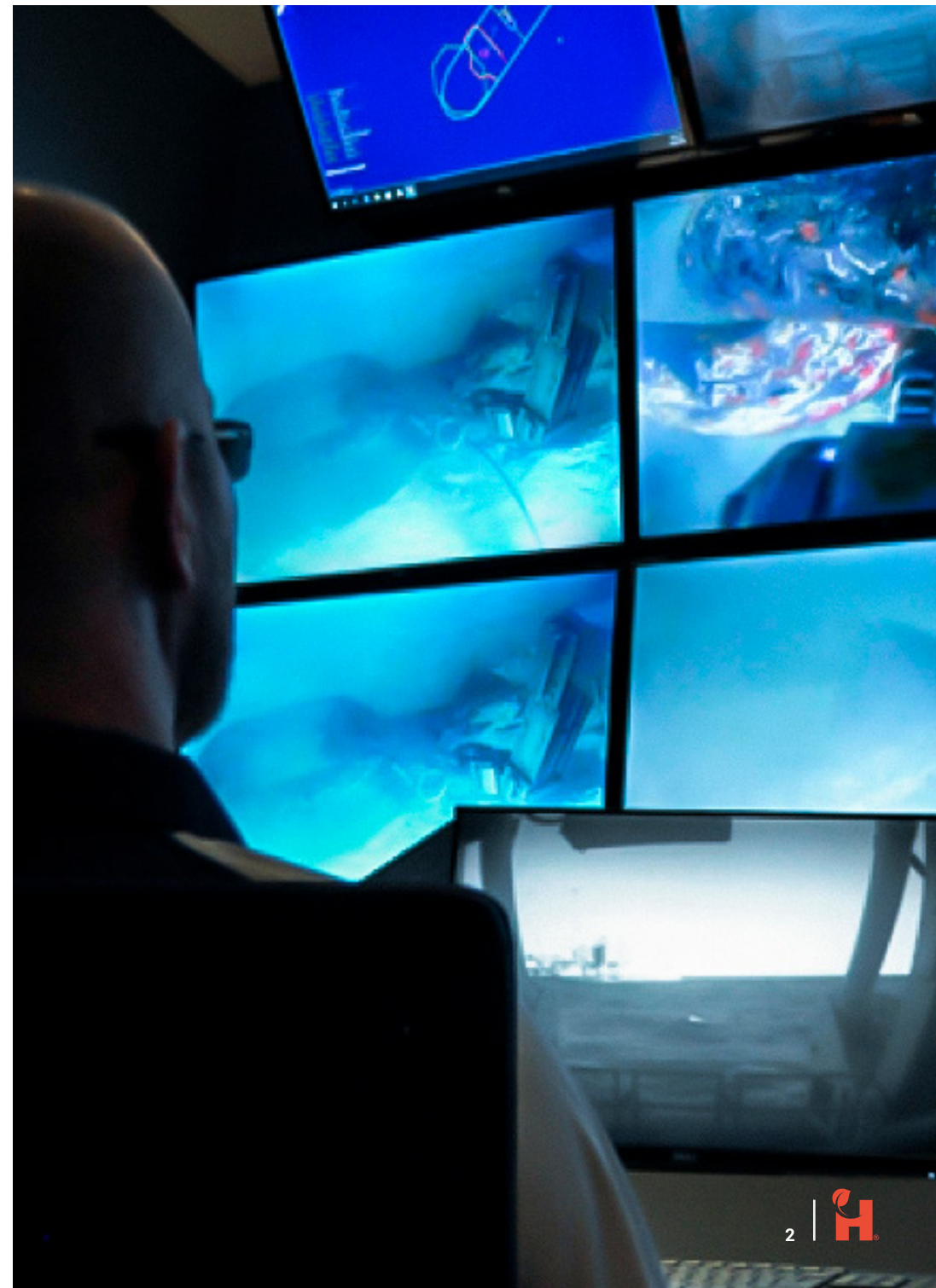
Fugro needed a remote capability that enabled them to take people off ships. However, their existing technology could not sustain remote operations due to poor video quality, congested bandwidth, and a limited number of channels.

In partnership with Harvest, Harvest developed an innovative streaming video solution that delivered eight times more video capacity than previous. And the versatility to allocate more resolution to streaming video systems whenever needed.

When the Harvest solution evolved to include management of remote and unmanned equipment, it delivered unprecedented reliability over low-bandwidth connections, allowing packet loss of up to 90% without any loss of control.

Highly effective. Highly reliable. And offering the highest levels of security—Harvest's solution helped Fugro optimise its operation for greater remote capabilities and set a new standard for the industry.

Now when companies need geodata for a groundbreaking billion-dollar mega-project, they look to Fugro's remote system as the gold standard.



How do you solve a million-dollar-a-day problem?

Huge industrial projects that shape our global economy need to be built on solid ground. Fugro uses command vessels manned with scientists, engineers, and crew members to gather geodata from some of the most inhospitable locations on Earth. As you can imagine, it's extremely expensive to send out a vessel for months at a time. In fact, some of these vessels cost as much as US \$1 million per day. Fugro wanted greater remote capabilities to reduce costs, decrease complexity, and increase the safety of its huge operations.

Remote inspection and control were the answer.

If Fugro's operations could be done remotely, it would remove the need to have huge crews of specialists on board massive ships. It would streamline the whole operation and dramatically speed up every project. However, before remote operations could become a reality, Fugro had to overcome substantial technical issues limiting the quality and capacity of its video system on each vessel. These included latency, inferior picture quality, and unreliable performance due to low and congested bandwidth. So Fugro turned to Harvest for a proprietary, innovative solution that would change how they would conduct operations moving forward.

Harvest helped Fugro go-live with a high-quality Remote Inspection System (RIS).

For Fugro, Harvest developed a proprietary system that optimised the ultra-low bandwidth available in the field and increased the number of video channels from one to eight. This finally enabled surveying to be performed remotely from a control center in Perth, Australia.



Infinity RIS enabled a high-definition 30fps video feed from remotely operated vehicles and divers onboard the vessel, also personnel fitted with RealWear video headsets livestreaming video and voice.

Harvest helped Fugro reliably control its remote operated vehicles.

Fugro was able to carry out remote operations more safely, securely and cost-effectively with the help of some innovative technology from Harvest. Fugro could operate their unmanned vehicles with unprecedented reliability and security over ultra low-bandwidth connections, allowing packet loss of up to 90% without any loss of control.



For reliable remote control, a self-healing error correction algorithm stopped data loss, minimized latency, and enabled real-time control of the vehicle.

Real-time control innovations like "The Shadow" were introduced to superimpose a graphic of the desired action over the video feed so an operator could accurately control equipment without the problem of latency.

Fugro's optimised remote operations have transformed an entire industry.

Harvest's Remote Inspection System (RIS) was the catalyst for a revolution in geodata.

Now personnel can carry out projects not only on vessels in their region but anywhere in the world. This drastically reduces downtime and enables Fugro to plan with pin-point accuracy. Instead of commissioning entire ships for the sole purpose of geodata acquisition, Fugro can piggy-back on vessels performing other missions and slash the costs of every project. Clients can attend the control centres and engage with the work ensuring the right person is in attendance at the right time to make critical on-the-spot decisions. Third-party specialists can also attend the operations control centre or have the stream sent to them wherever they are.

This has resulted in huge cost-savings in logistics and human resources. Plant and people no longer have to be flown around the world at a moment's notice. Vessels no longer have to be commissioned for months on end, and Fugro no longer has to keep capital tied up in redundant resources to ensure they can meet operational demands.

The RIS system has completely changed the business model for Fugro. It can be packed into a single shipping container and put on any vessel that is headed to the desired location. Due to its reliability, flexibility and cost-effectiveness, it's become the industry standard, creating an advantage for Fugro that organizations must meet to compete.

Harvest Technology Group

Harvest helps companies optimise their operations to have greater remote capabilities by enabling high-definition, real-time voice, video and data streamed from remote locations where connectivity is constrained or absent.

For more information on how Harvest can help you remote optimise your operation visit www.harvest.technology

“Real-time communications (visual and audio) with personnel directly involved with the operations provides a viable solution for remote support and coordination.”

Harvest is a professional company with a highly-competent team. The technology provided through Harvest enables a real-time view of the offshore environment previously not possible.”

– Fugro N.V.

