

Vessel Tracking



Interaction between the office and offshore operations.
Will continue to expand in the **future**.

Why interaction?

- Provide support
 - Monitor operations
 - Reduce HSE exposure
 - Optimize project management
 - Preventative maintenance
 - Remote meetings
 - File/data transfer
 - Improve efficiency
- Prevent mistakes
- **Cost Reduction**



Vision or Reality?

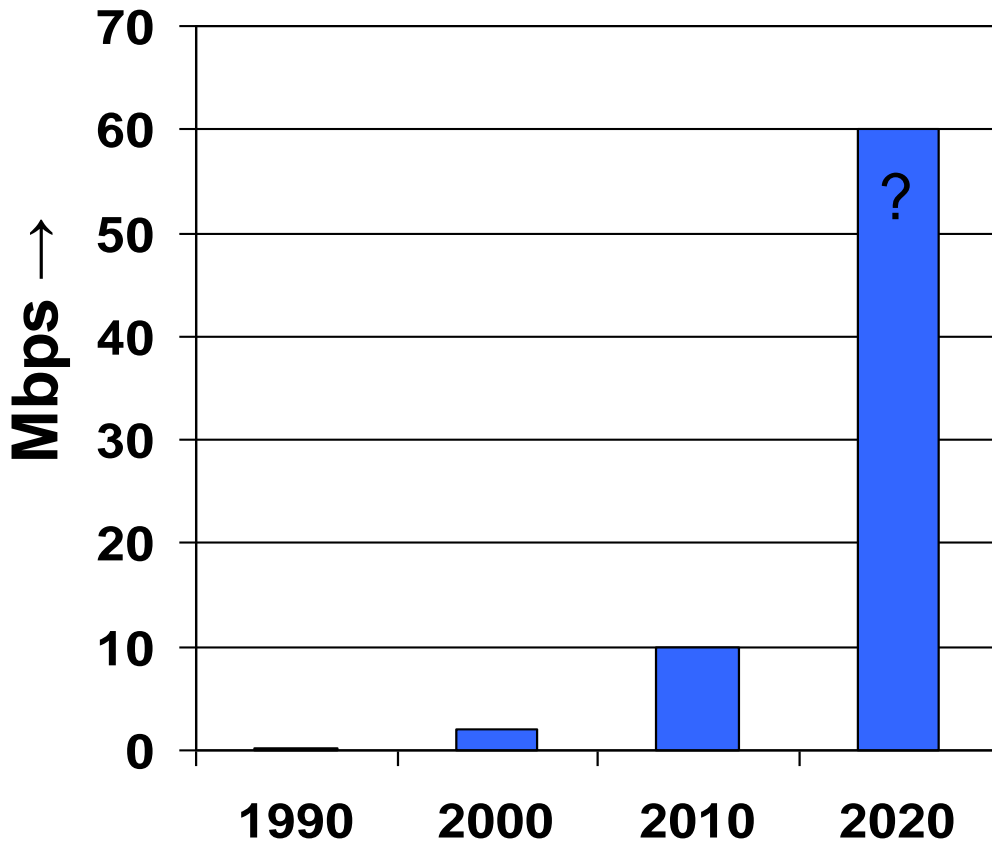


- Remote Control Centers
 - Access to real-time information
 - Common Operational Picture for all stakeholders

Key Elements

- 1. Internet connection**
- 2. IT Infrastructure**
- 3. Software**
- 4. Technology acceptance**

1. Offshore connectivity



Satellite internet speed has been increasing rapidly.
 More competition, lower data costs, creating more opportunities.

2. IT Infrastructure

Survey Equipment



Survey Network



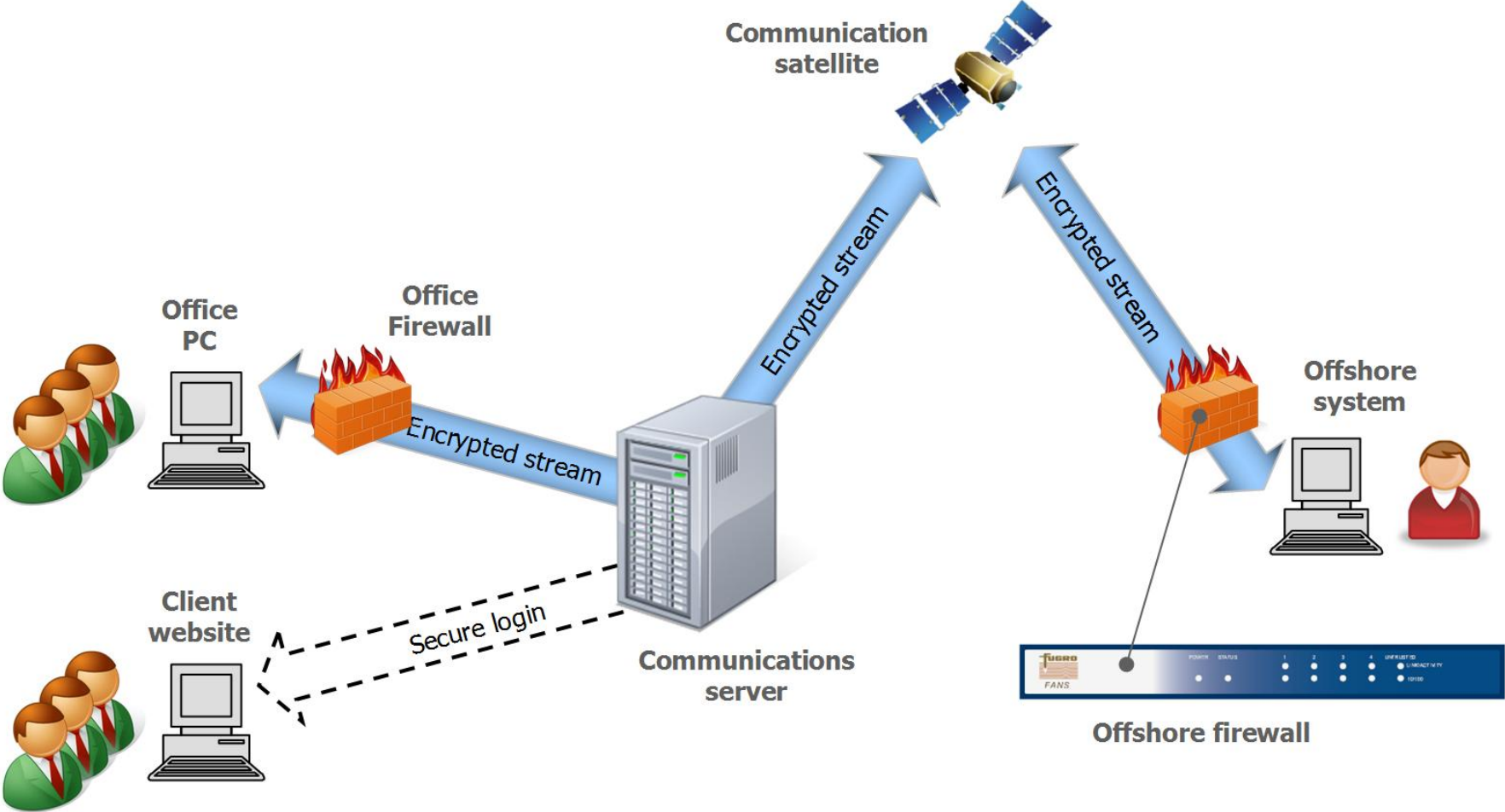
(Client Network)



Internet

A flexible and secure network setup is essential for offshore survey projects.

Example: Remote Services Infrastructure



Current Fugro Remote Services Network setup

3. Remote Services Software

- Supply encrypted connection
- Take over control of systems
- Gather and transmit data
- Supply stakeholder with access to status/data
- Remotely switch equipment on/off
- Handle all network situations:
 - Low bandwidth
 - High latency
 - Drop-outs

4. Technology acceptance

Offshore industry requires high reliability and low risk.
It takes time and effort to introduce new technology.

User acceptance:

- Perceived usefulness
- Perceived ease of use

Implement procedures and standardize methods

The Future

New global satellite internet systems:

- Higher bandwidth and low latency
- Higher reliability
- Lower price

New Possibilities: Streaming video and data

Further integration of systems:

- GIS
- Weather predictions
- Navigational charts
- ...

Why Remote Operations?

- Mitigate Risks
- Provide support
- Control and Supervision
- Reduced HSE exposure
- Remote Asset Management
- Involve Stakeholders Remotely
- Training and mentoring
- Cost reduction

Thank You



Demonstration at stand P8
remote-services@fugro.com

