

Improving Offshore ROV Efficiency with Teledyne BlueView 2D Imaging Sonar (Acoustic Cameras)

The Challenge – Reduce offshore operation costs by minimizing downtime and maximizing ROV efficiency.

Maximize Mission “Uptime”

Teledyne BlueView’s 2D acoustic cameras will operate in low and even zero visibility conditions. ROV operators can minimize the downtime associated with poor visibility conditions with Teledyne BlueView, enabling real-time navigation, operations monitoring, target tracking, and equipment placement despite poor water clarity conditions.

Example 1: Avoid Costly Delays Caused by Poor Visibility

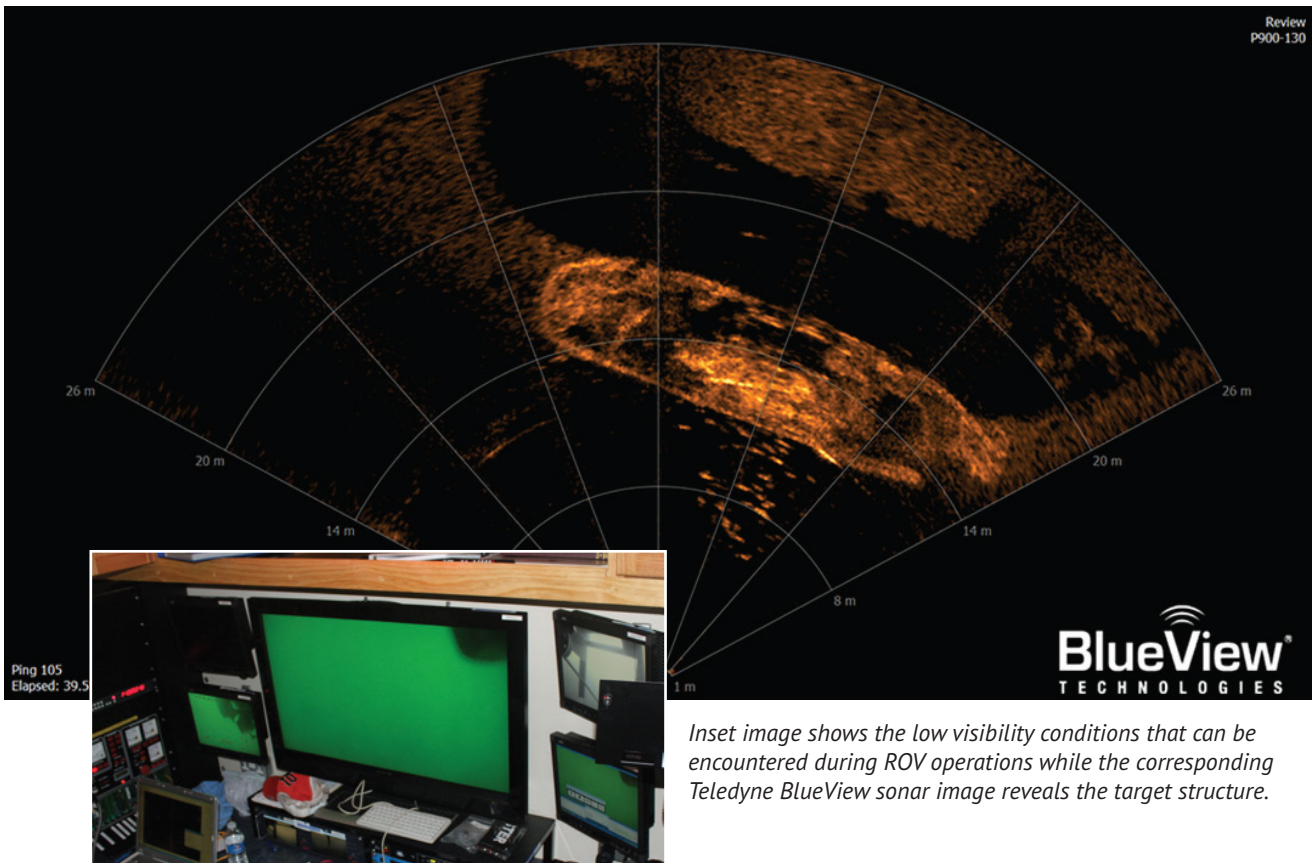
Assume that a time-sensitive ROV mission was estimated to take 5 days to complete at a cost of \$225,000/day. While on site the ROV operator encounters poor visibility conditions, resulting in a

24 hour delay waiting for conditions to improve. The following calculation applies if using a Teledyne BlueView 2D Imaging Sonar enabling ROV operations to continue despite poor visibility conditions:

Description	Value
Total time loss	1 day (24 hours)
Daily cost	\$225,000
Cost of delay (poor visibility)	\$225,000*

Continuous Operation and Situational Awareness

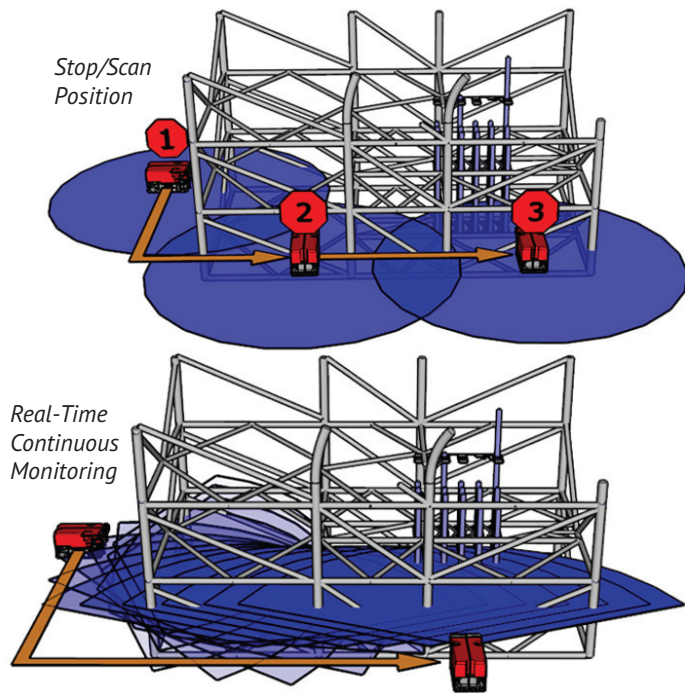
Teledyne BlueView’s 2D Imaging Sonar operates while in motion or from a stationary position, providing ROV operators with real-time, high resolution sonar imagery and data continuously, much like streaming video. ROV mission times are significantly improved by eliminating the need to stop and scan the area required with traditional scanning sonar.



Inset image shows the low visibility conditions that can be encountered during ROV operations while the corresponding Teledyne BlueView sonar image reveals the target structure.

Example 2: Improve Mission Time

Working in a complex environment with a marginal visibility range of 50 ft. a work-class ROV conducting an observation mission for a damaged structure is tasked to travel a total distance of 6,000 ft. along the structure. An ROV pilot determines that at a traveling speed of 1/4 knot (~25 ft./minute) he will stop the



Teledyne BlueView's video-like sonar imagery eliminates the stop-and-scan time associated with traditional scanning sonar, and turns the cumulative time savings into real operating time.

ROV every 2 minutes to take a sonar scan of the area to determine his position and the position of the structure (situational analysis). It takes an average of 30 seconds to make each scan and analyze the data. Assume that operation costs \$225,000/day (\$9,375/hr.), the following calculation applies:

Description	Value
Total stops for sonar scans 6,000 ft. / 50 ft. (distance between scans)	120
Total scan time 120 stops X 0.5 minutes per stop	60 min. (1 hr.)
Total time for ROV to run mission distance 6,000 ft. / 25 ft. (distance traveled per minute)	240 min. (4 hrs.)
Total mission time, with sonar scans 1 hr. (for sonar scans) + 4 hrs. (ROV)	5 hrs.
Mission time savings A mission time savings of 20%*	1 hour*

*Using a Teledyne BlueView 2D Imaging Sonar eliminates having to stop the ROV to make a sonar scan replacing it with real-time sonar imagery and data while the ROV is in motion. In this example the time efficiency improvement is 20% (1 hour) representing a margin improvement for the ROV operator, a cost savings of \$9,375.



About Teledyne BlueView

Teledyne BlueView, Inc. provides state-of-the-art compact acoustic imaging, measurement solutions for navy, energy, civil engineering, transportation and port security applications worldwide.