Underwater Imaging

PROBLEM STATEMENT



- Decision-makers can't see what is underwater.
- Conditions at dry dock sills, caisson gate seats, piers, and quaywalls usually reach them as a diver's verbal description, a sketch, or video from near-zero visibility.
- Leaders are left deciding on docking readiness, repairs, and schedule based on someone else's interpretation.

BENEFITS



- Stakeholders see the actual condition, not a description of it.
- Finds what divers can miss: on one Virginia bridge, multibeam located an abandoned foundation inside the navigation channel.
- Measurable images: quantify spalls, scour, debris, and misalignment.
- Fewer dive hours and less diver exposure for the same coverage.
- A dated baseline that later surveys can be compared against to track change.

TECHNOLOGY SOLUTION



- 2D scanning sonar (Kongsberg Mesotech) 3D imaging sonar (CODA Octopus Echoscope) that works in zero visibility.
- Multibeam hydrographic surveys (R2Sonic) for bottom, scour, and obstruction mapping.
- ROVs and drones to extend coverage above and below the waterline.
- Above- and below-water data merged into one measurable model.
- Interpreted by engineer-divers, with survey leads who have performed more than 1,000 surveys.

GRAPHIC

