

Tutorial: Fixed-position monitoring using split-beam hydroacoustics

(Approved for 0.4 Continuing Education Units and 4 Professional Development Hours)

Instructor: Eric Munday

Overview

This session will present an overview of the design, installation and operation of split-beam automated monitoring systems. Systems can be configured for fish or marine mammal detection and counting at seafloor observatories, debris monitoring and early warning at cooling water intakes, and or detection and quantification of specific targets of interest. Output reports include track lists with the location, direction of travel, speed, and size of all detected targets. An explanation of split beam technology will be presented including:

- Split beam hydroacoustic principles – How split beam works and allows for 3-D positioning and sizing of individual targets
- Site Selection – Important criteria in evaluating potential installation locations
- Evaluating Scope and Effort – Breakdown of each project component from study design through demobilization.
- Use of mechanical rotators – Explanation of how dual axis motors with sweep/scan functions can increase sampling area and ensure accurate transducer positioning.
- Software Options – An explanation of some of the latest software available for data collection and automated processing, early warning for targets of interest, and system watchdog for
- Case studies – Project overview of several split beam monitoring systems deployed in various configurations (seafloor, ROV, power plant cooling water intake, and shore mounted)

Target Audience

Expected participants will be from the following industries and interest groups:

- MHK project managers
- Port and harbor security
- Nuclear and hydroelectric plant operators
- Academics interested in behavioral impacts on aquatic organisms

No prior knowledge is required.

What will the participants learn?

Summary of split beam monitoring system technology, capabilities, hardware, software, and typical project considerations.

Content Details

1. Split beam technology explanation (20 min)
2. Related case studies and background (30 min)
3. Site selection process and considerations (20 min)
4. Typical installation requirements and scope (15 min)
5. Break (20 min)
6. System Configuration and Tuning (20 min)
7. Day-to-day Operation (10 min)
8. Auto-Processing Software Demo (45 min)

Format

Powerpoint & Software demonstrations

Visual Acquisition with Auto Track and Clutter Map Modules for echosounder config, operation and track list

Standard projector/screen

Instructor Bio:

Eric Munday

emunday@biosonicsinc.com

www.biosonicsinc.com

Five years experience in hydroacoustics and providing training in mobile hydroacoustics survey methods, echosounder operation and data processing. Seasoned public speaker, extensive experience composing and conducting live and interactive web-based seminars.