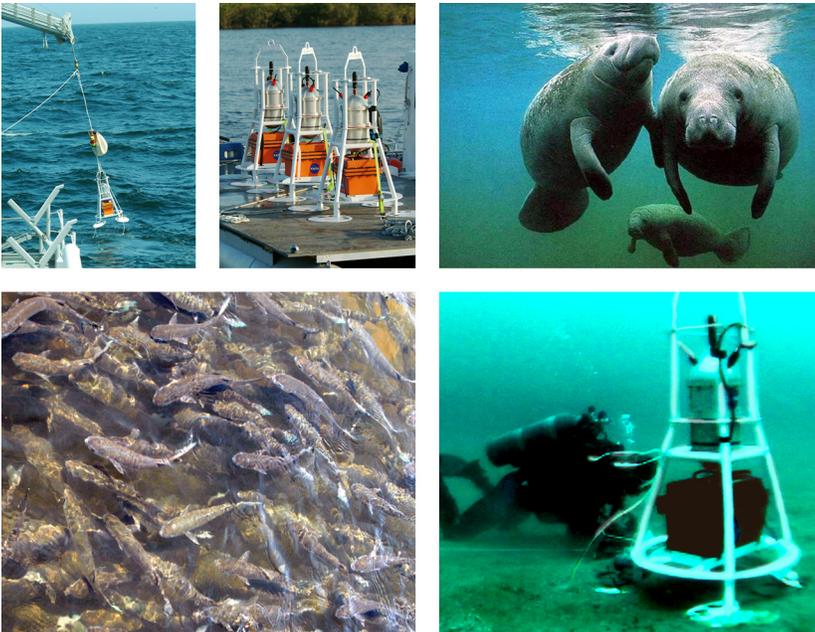




John F. Kennedy Space Center

Passive Acoustic Monitoring and Location System for Fish and Other Underwater Sound Sources



The National Aeronautics and Space Administration (NASA) seeks cooperative research opportunities using the Passive Acoustic Monitoring and Location System for Fish and Other Underwater Sound Sources developed at the John F. Kennedy Space Center (KSC), FL. The term “Passive Acoustic Monitoring Systems” (PAMS) describes a developmental sensing-and-data-acquisition systems for recording underwater sounds. PAMS is the first deep-sea instrumentation design to provide a capability for studying soniferous marine animals (especially fish) over a wide depth range and enables a variety of under-sea missions using a variety of sensors. The sounds (more precisely, digitized and preprocessed versions from acoustic transducers) are subsequently analyzed by a combination of data processing and interpretation to identify and/or to locate the sources of those sounds.

BENEFITS

- Pressure housing reduces corrosion and noise
- Easily deployable
- Self-contained acoustic data acquisition unit
- Stable bottom positioning on ocean floor

technology ■ opportunity

APPLICATIONS

- Marine biologists
- Fishery management companies
- Navy and Coast Guard
- Homeland Security

TECHNOLOGY STATUS

- Patent pending
- U.S. patent
- Copyrighted
- Available to license
- Available for no-cost transfer
- Seeking industry partner for further codevelopment

Technology Details

PAMS operates with a combination of advanced sensing, packaging, and data-processing features from proven marine instrumentation systems. Interpretation of acoustic data can include visual inspection of power-spectrum plots for identification of spectral signatures of known biological species or artificial sources. Additionally, data analysis can include determination of relative signal times of arrival at different acoustic sensors arrayed at known locations.

PAMS is packaged as a battery-powered unit mated with external sensors that can operate in the ocean at any depth from 2 m to 1 km. A PAMS includes a pressure housing, a deep-sea battery, a hydrophone, an external monitor and keyboard box, and can optionally include temperature probes and/or underwater cameras. Currently, the PAMS can be deployed at sea for four days, but the deployment time and sampling rates are battery and hard drive dependent.

Partnership Opportunities

NASA is seeking partners for further research and development of the Passive Acoustic Monitoring and Location System for Fish and Other Underwater Sound Sources. If your company is interested in the new Passive Acoustic Monitoring and Location System for Fish and Other Underwater Sound Sources technology, or if you desire additional information, please reference Case Number KSC-12634 and contact:

Jeff Kohler
Technology Programs and Partnerships Branch
Mail Code: KT-A2
Kennedy Space Center, FL 32899
Telephone: (321) 861-7158
Fax: (321) 867-2050
jeffrey.a.kohler@nasa.gov