

MSI SONAR TRANSDUCERS and ARRAYS

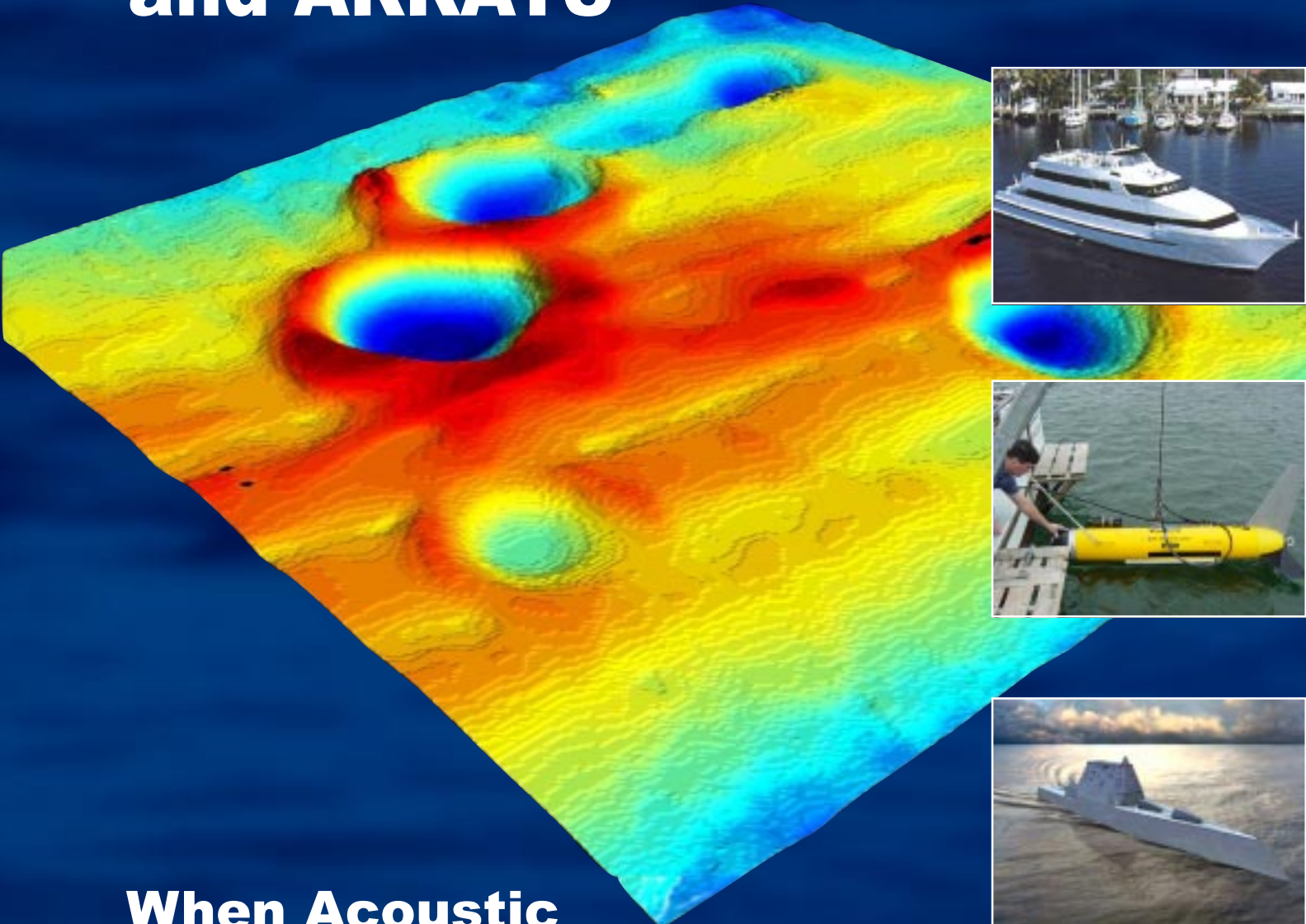


Image courtesy Benthos, Inc.

Image courtesy Raytheon Company

**When Acoustic
Performance
Matters**



Materials Systems Inc.

MSI Sonar Transducers and Arrays

Minehunting

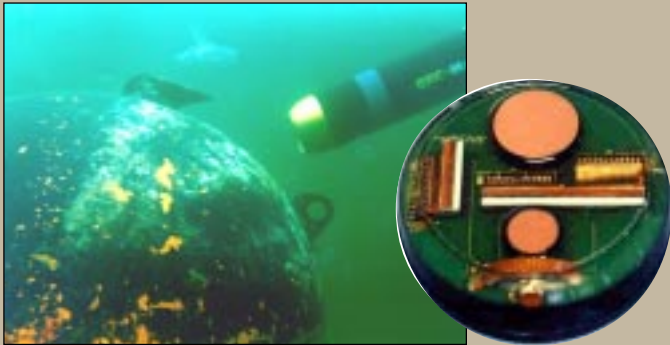


Image courtesy GEC Marconi

Seabed Mapping



Image courtesy Benthos, Inc.

Obstacle Avoidance

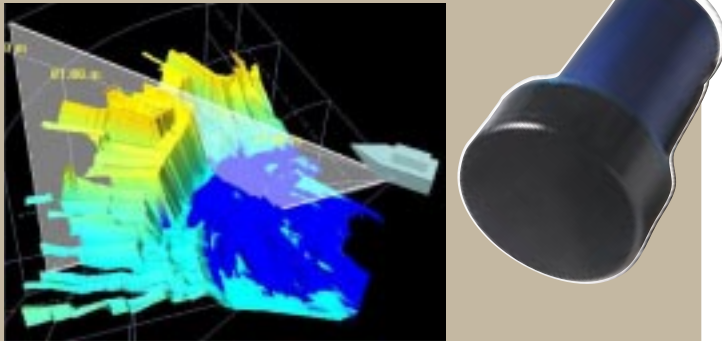


Image courtesy Farsounder, Inc.

Diver-Held Sonar

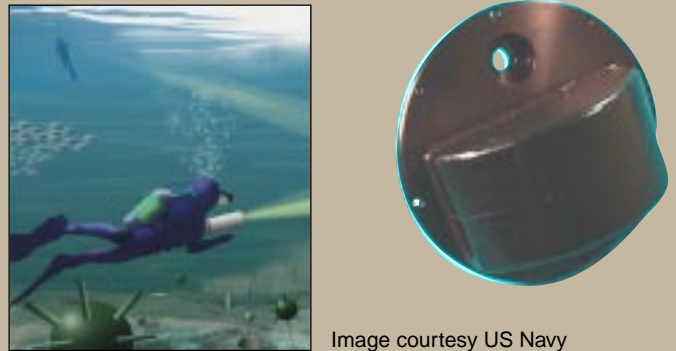


Image courtesy US Navy

Acoustic Communications



Image courtesy KDD-Japan

Sub-Bottom Profiling (Parametric Sonar)

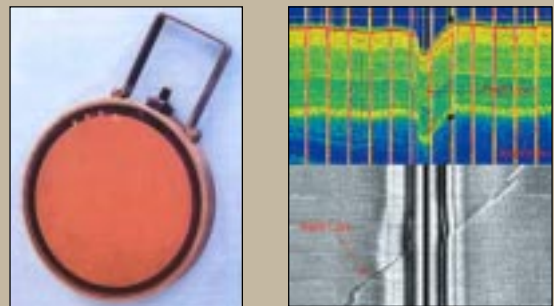
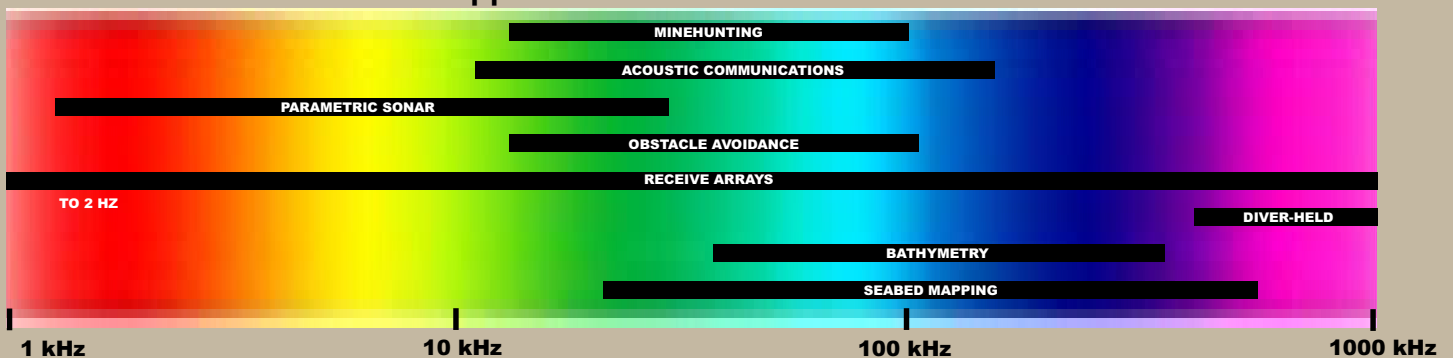


Image courtesy NAVSEA NUWC

Applications from 2 Hz to 1 MHz



Injection Molded Piezocomposite – the MSI Advantage!

MSI designs and manufactures custom piezocomposite transducers and arrays for sonar system integrators. Piezocomposite provides a range of advantages in design, performance, and manufacturing.

Design Flexibility

- Multiband Operation Capability
- Piezocomposite Conforms to Fit Curved Surfaces
- Cost-Effective, High Element Count 2-D Arrays
- Easily Shaded for Sidelobe Control
- Compatible and Economical for Large Areas
- Directivity Tailorable
- Configurable to Fit Limited Space Applications

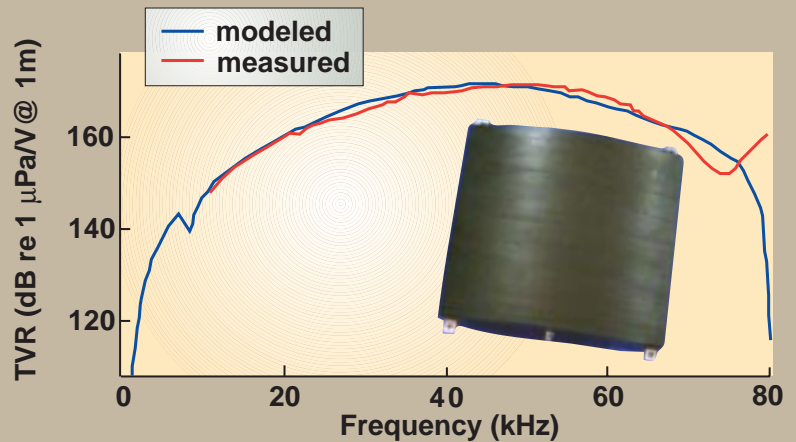


Curved ACOMMS array and sidescan sonar mounted to REMUS vehicle for Woods Hole Oceanographic Institution.



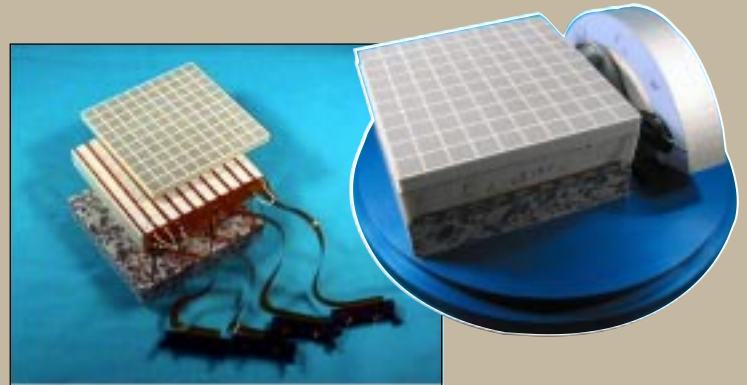
Advanced Performance

- Wide Bandwidth
- Fast Ring Down
- High Receive Sensitivity
- High Source Level
- Element-to-Element Uniformity
- Shock-Resistant
- Custom Beampatterns
- Compatible with Parametric Sonar



Efficient Manufacturing

- Wide Range of Design and Manufacturing Options for Optimal Cost
- Integrated Materials and Array Manufacturing
- Cost-Effective Multi-Layered Array Assembly Techniques
- Injection Molded Piezocomposite Reduces Transducer Costs
- Rapid Transition from Prototype to Production Reduces Time to Market



MSI's layered manufacturing technique reduces assembly labor to minimize transducer cost.

WHAT OUR CUSTOMERS SAY ...

“Even though we were undertaking our first commercial sonar system development, MSI gave us dedicated attention and responded promptly to our unique requirements. The transducer unit that they delivered was an integral part of our FS-3 Forward-Looking Sonar System.”

Cheryl Zimmerman
President & CEO
FarSounder, Inc.

“The proof-of-performance of the MSI transducers is evident in the high-resolution 3-D acoustic images that our customers are collecting with our new C3D Sonar Imaging System. The MSI design team worked closely with us during the entire development cycle and was extremely responsive to our technical and schedule requirements.”

Bill Charbonneau
Product Line Manager
Benthos, Inc.

MSI has been honored the past three years by the Office of Naval Research with inclusion in the Department of the Navy's highly respected document ...

Small Business Innovation Research / Small Business Technology Transfer Success Stories

History of Innovation

Founded in 1991, Materials Systems Inc. (MSI) develops and manufactures custom transducers and arrays for defense and commercial systems customers.

Our core strength lies in our ability to understand our customers' sophisticated sonar system requirements and provide a complete transducer solution that integrates engineering and innovative design with high or low volume manufacturing.

Almost half of our staff are technologists, with backgrounds ranging from mechanical, electrical and acoustical engineering to materials science and physics. This technical breadth enables us to provide a complete range of services to meet your requirements, including:

- Custom Product Design
- Prototyping and Development
- Low and High Volume Manufacturing
- Engineering and Measurement

MSI is headquartered in Littleton, Massachusetts, 30 miles northwest of Boston. Our 20,000 square foot (2,000 square meter) facility offers complete design, engineering, manufacturing, and testing capabilities.



Image courtesy Australia DSTO

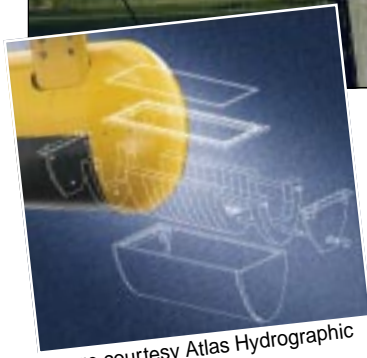
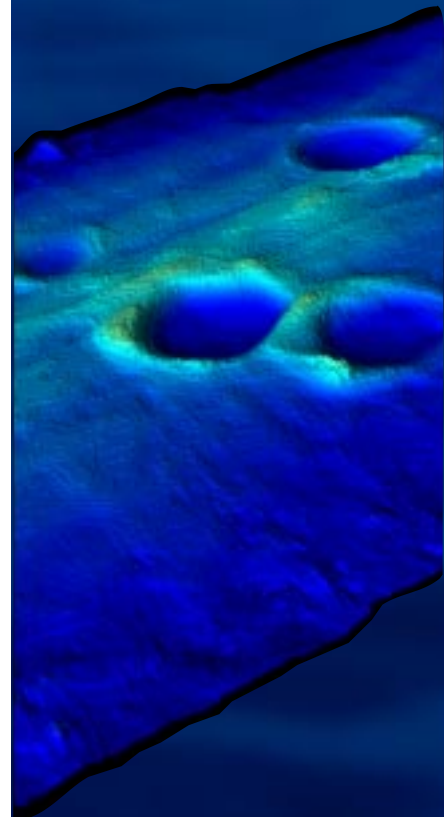


Image courtesy Atlas Hydrographic

MSI's broadband array technology is at the heart of Atlas Hydrographic's advanced multibeam echosounder, shown here mounted to a state-of-the-art Unmanned Underwater Vehicle (UUV) from Australia's Defense Science and Technology Organization.



An oil rig footprint stands out in this bathymetric image courtesy of Benthos, Inc.

Materials Systems Inc.

543 Great Road
Littleton, MA 01460
Tel: 001.978.486.0404
Fax: 001.978.486.0706
Email: ideas@matsysinc.com
www.matsysinc.com



Materials Systems Inc.