

Appendix Two

MARINE SCIENCE AND TECHNOLOGY INDUSTRY STRUCTURE

Sectors and sub sectors found in the New England cluster

I. Marine Instrumentation and Equipment (MIE)

- Marine acoustics

For underwater remote sensing / imaging / positioning: sonar; transducers; magnetometers; dopplers; bioacoustic equipment.

- Oceanographic and Geophysical Measuring Instruments

Current meters; gravity meters, magnetometers, seismic acquisition equipment.

- Marine Electronics

- Electronics for Marine Instruments and Platforms

Electronics designed to allow instruments to function in extreme, underwater conditions to perform tasks like sensing / imaging / positioning / monitoring / data acquisition and processing. Examples include: smart sensors; onboard computer chips; data acquisition and processing systems; electronics ‘packaged’ for underwater use; ‘miniaturized’ devices; underwater power sources or power generation equipment.

- Electronics for Marine Navigation and Communications (above and under water)

Electronics to enable onboard under and above water navigation and communication; Examples include GPS systems; nautical and navigation instruments (acoustic, GPS, microwave; satellite); fiber optic systems to allow internet-based communications relays; buoy communications systems; Electromagnetic sensors and instruments for remote sensing (radar, array receivers, etc.).

- Underwater Vehicles (UV) manned submersibles; remotely operated vehicles (ROV); automated undersea vehicles (AUV); unmanned undersea vehicles (UUV);
- Underwater telecommunications systems
- Floatation equipment
- Underwater construction equipment
- Diving and underwater work equipment
- Underwater weapons (submarines; torpedoes)
- Remediation equipment

II. Marine Services (MS)

- Marine / Coastal Engineering
- Commercial Marine Research and Consulting (CMRC) – marine-related technical services: including applied research; design and engineering; testing and evaluation; GIS and other mapping services; defense-related consulting; specialized business services for marine-related activities.
- Marine Security and Defense Systems
Includes territorial security and defense contracting; port security contracting
- Marine Surveying and Exploration

- Marine Contracting and Construction
- Marine / Coastal Containment, Cleanup and Restoration
- Underwater telecommunications systems installation and maintenance
- Boat/ship research facilities
- Software and Systems Design for Marine Monitoring and Operations
- Marine Equipment Lease and Rental

III. Marine Research and Education (**MRE**)

- Marine Research and Consulting (**MRC**)
Applied ocean physics and engineering; biology; biotech; geology and geophysics; marine chemistry and geochemistry; physical oceanography)
- Marine Education (MRE)
- Industry and Technology Transfer Groups (**IG**)

IV. Marine Materials and Supplies (**MMS**)

- Machining
- Assembly
- Materials, Composites and Coatings
- Rigging, cords and cable, mooring systems
- Engines, components, and equipment
- Packing and crating

V. Shipbuilding and Design, major operations (**SBD**)