Ship Signatures Department (Code 70)

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Distribution Statement A: Approved for Public Release; distribution unlimited.
• Our Mission and Vision
• Acquisition Product Lifecycle
• Organizational Overview
• Facilities, Detachments and Site Support
• Supporting the Warfighter
• Summary
Mission

To provide technical solutions to the warfighter that ensure a signatures advantage for Navy submarines, surface ships, and small craft and keep our Fleet at sea, capitalizing on the Navy's prior investments in stealth and attendant reduced susceptibility.

Vision

A high-performing technical organization recognized as a world-class innovator for the underwater acoustic, underwater electromagnetic and topside signature reduction technologies required for advanced submarines, ships, unmanned vehicles and their respective systems.
# Acquisition Product Lifecycle

**Ship Signatures Department (Code 70)**

<table>
<thead>
<tr>
<th>Science &amp; Technology</th>
<th>Research &amp; Development</th>
<th>Test &amp; Evaluation</th>
<th>Product Delivery</th>
<th>Fleet Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Basic &amp; Applied Research</td>
<td>- Concept Studies</td>
<td>- Signature Measurement</td>
<td>- Threat Analysis and Requirements Development</td>
<td>- Direct Fleet Support</td>
</tr>
<tr>
<td>- Detailed understanding of Physics</td>
<td>- Technology Development</td>
<td>- Systems Development</td>
<td>- SHIPALTS/TEMPALTS</td>
<td></td>
</tr>
<tr>
<td>- Numerical &amp; Analytical Model Development</td>
<td></td>
<td>- Source Localization</td>
<td>- Ship Acquisition &amp; Construction Engineering</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Full Scale Trials</td>
<td>- Technical Warrant Holder Support</td>
<td></td>
</tr>
</tbody>
</table>

## Facilities

- ARD, Bayview
- STAFAC
- SEAFAC
- SFOMF
Organizational Overview
Ship Signatures Department (Code 70)

Signatures Characterization & Analysis Division (71)
- Signature Monitoring & Surface Ship Programs
- Susceptibility Assessment and Modeling
- Onboard Signatures and Fleet Support
- Radiated Noise Signatures
- Trial Directors, Facilities & Mission Readiness

Acoustic Signatures Technology Division (72)
- Signatures Materials Physics
- Structural Acoustics & Target Strength
- Hydroacoustics & Propulsor Development
- Acoustic Research Detachment (Lake Operations)

Signatures Measurement Technologies & Systems Division (73)
- Acoustic Systems Development
- Fleet Systems
- Signature Measurement and Processing
- Advanced Signatures Training & Decision Systems

Electromagnetic Signatures Technology Division (74)
- Radio Frequency (RF) Systems Development
- Infrared / Electro-optical (IR/EO) Technology
- Signatures Engineering
- Radio Frequency (RF) Technology Development

Above Water Electromagnetics

Underwater Electromagnetic Signatures & Technology Division (75)
- Theory, Modeling & Analysis
- Systems & Measurement
- Electromagnetic Sensors & Technology
- South Florida Ocean Measurement Facility

Underwater Electromagnetics

Acoustics

Nominally 575 Personnel
Signatures Characterization & Analysis Division (71)
Ship Signatures Department (Code 70)

**Areas of Technical Expertise**
- Underwater Acoustics Measurement & Analysis
- Vibration Transmission Path Analysis
- Machinery Vibration
- Life Cycle Assessment
- Design and Fleet Support

**Direct Fleet Interaction**
Help Ships Stay Undetected!

Static Ship Acoustic Testing
Twisted Bicone Arrays

Pacific Fleet Testing – SEAFAC Alaska
Atlantic Fleet Testing – STAFAC Bahamas

AMERICA’S FLEET STARTS HERE

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Develop and Deliver Advanced Acoustic Silencing Solutions for the Acquisition Community

Areas of Technical Expertise

- Hydroacoustics
- Structural Acoustics
- Propulsor Acoustic Design
- Advanced Acoustic Materials Development and Applications
- Target Strength Modeling and Measurement
- Shipboard Airborne Noise and Vibration
- Scale Model and Laboratory Acoustic Testing
- Analytical and Computational Acoustics Tools
Training Systems

- Common acoustic and visual simulation for Submarine, Surface, and Surveillance Sonar systems
- Delivered fleet schoolhouse trainers also leveraged for on-board training and testing of tactical systems

Guidance Systems

- Supports signature and sensor modeling for ASW mission planning and assessment
- Common acoustics and displays for Sonar, C2, Reconstruction and Analysis systems
Electromagnetic Signatures Technology Division (74)
Ship Signatures Department (Code 70)

Develop and Deliver Topside Signature Solutions

Areas of Technical Expertise
- Radar Cross Section Measurement and Reduction
- IR and Electro-Optical Signatures Measurement and Reduction
- Topside Design Integration
  - Combatants
  - Auxiliaries
  - Carriers
  - Special Warfare Personnel and Craft
  - Submarine Masts

IR/EO Measurement System On Navy MH-60S
Modeling and Simulation
RCS Measurements
Performance Validation

Full Scale Test Article
Mines and Ships Don’t Mix

Areas of Technical Expertise

- UEM Fields Modeling/Measurement
- UEM Silencing Systems Design
- UEM Advanced Modeling & Simulation
- Finite Element Analysis
- Electromagnetic R&D
- UEM Sensor Development
Summary
Ship Signatures Department (Code 70)

Continuously improving, transitioning cost-effective stealth technologies, and maintaining readiness:

• Collaboration across Naval Research & Development Establishment
• Real-world signatures data improves S&T, R&D
• Affordable technologies for back fit and new design applications
• Stealth and reduced susceptibility through Fleet diagnostics and tune-ups

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<table>
<thead>
<tr>
<th>Requirements Description</th>
<th>Incumbent Contractor</th>
<th>Anticipated Total Value</th>
<th>Anticipated Acquisition Strategy</th>
<th>Anticipated Solicitation Date</th>
<th>Anticipated Award Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signature Trainers Scenario Control</td>
<td>Leidos</td>
<td>$50M</td>
<td>Small Business Set-Aside</td>
<td>Released on 23 May 2018</td>
<td>Q4- FY18</td>
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<tr>
<td>Magnetic Silencing Facility Upgrades and Electromagnetic Support</td>
<td>AECOM/URS</td>
<td>$10M</td>
<td>Unrestricted</td>
<td>Q3- FY18</td>
<td>Q1- FY19</td>
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<tr>
<td>Synthetic Signature Generation Based Training Systems</td>
<td>Leidos</td>
<td>$65M to $95M</td>
<td>Unrestricted</td>
<td>Q4- FY18</td>
<td>Q3- FY19</td>
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<tr>
<td>Staves Contract</td>
<td>Channel Technologies Group (CTG)</td>
<td>$10M</td>
<td>TBD</td>
<td>Q3- FY19</td>
<td>Q3- FY20</td>
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<tr>
<td>Acoustic Research Detachment Support Contract</td>
<td>General Dynamics Information Technology</td>
<td>$50M</td>
<td>TBD</td>
<td>Q4- FY19</td>
<td>Q3- FY20</td>
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<tr>
<td>Virtual Reality Support</td>
<td>New Requirement</td>
<td>$25M</td>
<td>TBD</td>
<td>Q4- FY19</td>
<td>Q4- FY20</td>
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<tr>
<td>Underwater Electromagnetic Engineering Services Contract</td>
<td>ATR</td>
<td>$45M</td>
<td>Small Business Set-Aside</td>
<td>Q4- FY19</td>
<td>Q4- FY20</td>
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<tr>
<td>Acoustic Trials Engineering Support</td>
<td>ManTech</td>
<td>$45M</td>
<td>TBD</td>
<td>Q4- FY19</td>
<td>Q4- FY20</td>
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</table>