THIS IS A SOURCES SOUGHT FOR MARKET RESEARCH PURPOSES ONLY. The Naval Sea Systems Command (NAVSEA), Program Manager , Explosive Ordnance Disposal (EOD , Counter Radio-Controlled Improvised Explosive Device Electronic Warfare (CREW) and Anti-Terrorism Afloat (ATA) (PMS 408) is in the process of locating capable businesses that are interested in providing Combat/Battle Helmets that meet the specifications listed below. This is a request for information (RFI) and not a formal solicitation. Any formal solicitation will be announced separately at a later time. Information provided to the Government as a result of this posting is strictly voluntary and given with no expectation of compensation, and clearly provided at no cost to the Government. Contact with Government personnel, other than the Points of Contact (POC) listed herein, by potential offerors or their employees regarding this requirement is strictly prohibited.

HELMET, MARITIME SECURITY (MSH): To be used by Navy personnel to provide the user with protection from multiple ballistic hazards while performing security and Anti-Terrorism/Force Protection (AT/FP) duties.

The MSH shall be manufactured in a single shell size with an adjustable suspension system to fit head sizes from size 6 3/4 to size 8. Area of coverage shall be laterally mid-ear to mid ear, and longitudinally one inch above the eye brow to the C-6 vertebrae.

The helmet design shall incorporate a replaceable and adjustable suspension system for quick sizing adjustment. The helmet shall contain a 4-point chinstrap/nape strap retention system having a quick donning/doffing feature.

The retention system chinstrap shall use an open cup for the chin. The chins trap shall use a side release buckle to secure the chinstrap to the user. No component of the retention system shall fail, the retention system closure device shall not release (open), and the webbing shall not slip when subjected to a load of at least 50 lb.

The MSH shell shall provide ballistic protection from fragments as well as 9mm projectiles. Protection shall meet the requirements set forth in this document throughout the entire surface area of the helmet unless specified otherwise.

The helmet shell shall be capable of providing the minimum V_{50} BL(P)s listed in Table I at 0° obliquity against the specified right circular cylinder (RCC) and Fragment Simulating Projectile (FSP) projectiles under the following conditions:

a. ambient
b. extreme hot (160°F)
c. extreme cold (-60°F)
d. after immersion in seawater, tested at ambient temperature
e. after exposure in weatherometer, tested at ambient temperature
f. after accelerated aging, tested at ambient temperature

TABLE I. Minimum V_{50} BL (P)s

Projectile	Minimum V_{50} BL(P) at 0° Obliquity (ft/sec)
2-grain RCC	4200
4-grain RCC	3475
16-grain RCC	2475
64-grain RCC	1750
17-grain FSP[1]	2200

[1]Fragment Simulating Projectile – MIL-DTL-46593B with Amendment 1, 1 April 2006, with the exception of Hardness Testing per ANSI/ASQ Z1.4, Special Inspection Level S-3.

The helmet shell, including any hardware exposed on the outside of the shell, shall be resistant to penetration from a 9mm Full Metal Jacketed Round Nose (FMJ RN) bullet with a nominal mass of 124 grains in accordance with NIJ 0106.01 at 1400 (± 30) feet per second at 0° obliquity when tested under the following environmental conditions:

a. ambient
b. extreme hot (160°F)
c. extreme cold (-60°F)
d. after immersion in seawater, tested at ambient temperature

Ballistic transient deformation of the shell shall not cause a deformation in clay in excess of 0.63-inch (16.0 mm) against 9mm projectile under the environmental conditions specified at 1400 (± 30) feet per second at 0° obliquity for shots made to the right side, left side, and crown. Shots made to the front and back shall not exceed 1.0-inch (25.4 mm).

The threshold maximum weight of the finished helmet shall not exceed 4.00 lbs. The finished helmet shall be weighed with the adjustable suspension system and retention system installed.

The maximum thickness for the helmet shells shall not exceed 0.400-inches regardless of the nominal thickness of the helmet. Thickness variations in the helmet shall be gradual. The shell thickness shall not vary by more than 0.100-inches over the entire surface of the helmet.

The finished helmet shall provide non-ballistic impact protection to the wearer by reducing acceleration of the head during low velocity blunt impact events at various temperatures. As a threshold and for all tests including the various impact sites and temperatures specified as well as both first and second impacts, no individual acceleration shall exceed 300 G (gravitational constant) as a threshold. Greater impact protection (150 G maximum) is desired as an objective. There shall be no physical damage to the helmet shell such as delamination, ply separation, or shell fracture or indentation in excess of 0.15-inch present after impact testing. Additionally there should be no damage to any part of the retention system or suspension system.

All helmet components shall be constructed such that they can withstand various environmental extremes without degradation.

a. There shall be no structural, visible or operational degradation to the finished shell when subjected to immersion in seawater. The finished shell shall show no evidence of softening, peeling, blistering cracking, delamination, or increase in weight of greater than 3 percent over dry weight or increase in thickness greater than 2.5 percent.

b. There shall be no structural, visible or operational degradation to the finished shell when subjected to weatherometer exposure. The finished shell shall exhibit no evidence of cracking, blistering, delamination, and ply separation, separation of edging, increase in thickness greater than 2.5 percent, finish defects or ballistic degradation.

The finished shell, when exposed or subjected to the following agents shall show no evidence of softening, peeling, delamination, ply separation, or tackiness.

a. DEET insect repellent, NSN 6840-01-284-3982, O-I-503 Type II, Concentration A
b. Gasoline, ASTM D910
c. Motor Oil, MIL-PRF-2104
d. Hydraulic fluid, petroleum base, MIL-PRF-6083
e. Fire resistant hydraulic fluid, MIL-PRF-46170
f. Fuel Oil, Diesel, ASTM D975
g. Turbine Fuel, Aviation, JP-8, MIL-DTL-83133
h. Rifle Bore Cleaning Compound, NSN 6850-00-224-6656, MIL-PRF-372
i. Lubricating Oil, Weapons (LSA), NSN 9150-00-935-6597
j. Lubricating Oil, Arctic, Weapons, NSN 9150-00-292-9689
k. Face paint, NSN 6850-01-493-7309

The finished shell shall be self-extinguishing with no after-flame greater than 2.0 seconds (Threshold), 0.5 seconds (Objective). Flaming before the withdrawal of the flame source is permitted according to ASTM D 6413. There shall be no melting or dripping. It is desired, however, that the finished shell be ignition resistant.

All helmet components including the shell, suspension system, retention system, and hardware shall exhibit no structural, visible or operational degradation or physical damage when subjected to elevated temperature exposure (160°F), low temperature exposure (minus 60°F) or temperature shock (low to high, high to low). The shell shall exhibit no cracking, delamination, separation of plies, distortion, softening, change in thickness greater than 2.5 percent, or other deterioration. The paint (coating) shall suffer no degradation or deterioration. The retention system shall be operable (webbing slides, retention system can be cinched down, etc.) and shall have no cracked or damaged

components. The suspension system shall have not have suffered any degradation or damage.

All helmet components including the shell, suspension system, retention system, and hardware shall exhibit no structural, visible or operational degradation or physical damage when subjected vibration in accordance with MIL-STD-810, Method 514.6, Procedure II (Loose Cargo Transportation). There shall be no structural, visible or operational degradation to the finished helmet when subjected to vibration. Minor coating and edging scuffing, marring or wear marks are acceptable. No helmet parts shall become loose or disassembled when subject to vibration. “Loose” shall be defined as not meeting the original adhesion, tightness, or torque (as applicable) as when manufactured or assembled.

The finished helmet shall resist physical damage from impacts. The shell material (not including the finish) shall show minimal signs of structural damage such as delamination, ply separation, or shell fracture or indentation, when subjected to a 40 feet per pound impact. Any resulting indentation in the shell shall be less than 0.150-inch in depth. No damage is desired. The exterior finish shall exhibit no flaking, peeling, loss of adhesion, or other failure of the finish except within a 2.0-inch radius around the center point of impact.

The unfinished shell (no coating or edging) shall be resistant to repeated compressions (400-pounds) in the top to bottom direction. There shall be no dimensional change in excess of 0.020-inch immediately (within 5-minutes) following compressions and 0.010-inch after 24 (± 1) - hours when compared to the pretest dimension. Additionally, the shell shall exhibit no visible delamination, ply separation, distortion after the compressions.

The unfinished shell (no coating or edging) shall be resistant to repeated compressions (300 lbs) in the side to side direction. There shall be no dimensional change in excess of 0.125-inch immediately (within 5-minutes) following compressions and 0.100-inch after 24 (± 1) - hours when compared to the pretest dimension. Additionally, the shell shall exhibit no visible delamination, ply separation, distortion after the compressions.

The finished shell shall suffer no structural, visible or operational degradation to the finished shell when subjected to accelerated aging/shelf life exposure according to ASTM D1149 paragraph 5 test apparatus. The finished shell shall exhibit no evidence of cracking, blistering, delamination and ply separation, separation of edging, increase in thickness greater than 2.5 percent, finish defects or ballistic degradation.

The minimum shelf life of all components and materials in the finished helmet shall be 5-years. The components and materials shall suffer no degradation in performance after storage for a period of 5-years.

The finished helmet shall be safe to use and not contain any harmful materials.

The finished helmet shall be designed so that under all conditions of normal use and under a likely fault condition, including human error, it protects against the risk of hazards. The potential for injury while assembling, donning/doffing, cleaning and maintaining the helmet system shall be eliminated or minimized to the maximum extent. There shall be no loose parts that would be susceptible to snagging.
The finished helmet shall not present a dermal health hazard when used as intended.

Hazardous materials that can be exposed to personnel or the environment during any operational (to include fabrication, transportation, and setup/tear-down) or maintenance procedures, or exposed as a result of damage to the equipment, or requiring special disposal procedures, shall be kept to an absolute minimum, consistent with operational requirements. Environmentally acceptable substitutes shall be used whenever possible without degrading operational function and maintaining cost effectiveness. Hazardous material exposure to personnel shall be controlled to levels below the OSHA Permissible Exposure Limits. The finished helmet shall not present any uncontrolled health hazard throughout the life-cycle of the item. The following shall be included when designing the helmet system:

a. Avoid the use of materials that cause skin irritation or allergies.
b. Utilize materials that are resistant to dirt, fungus, bacterial growths and etc.
c. Allow for easy cleaning and/or replacement of parts that could present health hazards to the wearer.

Respondent shall show that they have made similar type helmets, which meet the requirements of AR/PD 10-02 and provide written proof of such conformance.

Responses should be submitted electronically, in Portable Document File (PDF) format, and be limited to 50 pages. Respondents should submit an initial synopsis (commonly referred to as white paper) which outlines potential solutions based on the ability to meet the performance requirements outlined in this document. Specific information describing how the proposed solution meets the requirements is requested. If a potential solution meets some of the performance requirements, respondents are asked to highlight what can be met and what cannot. For those performance requirements that cannot be met, please detail the level and/or reason for the shortfall.

REGULATORY REQUIREMENTS. The respondent is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

The Navy invites both large and small businesses to address the questions below. The applicable North American Industry Classification System (NAICS) for this requirement is 339113. Interested small business concerns who are certified and qualified as small business under NAICS 339113, and registered in the Central Contractor Register (CCR) under NAICS 339113 shall provide evidence that the company can supply the required supplies. All companies are encouraged to respond and submit their information to this office no later than (NLT) close of business (COB) on 28 Feb 13.

If you are a Small Business that performs on contracts under NAICS 339113 and plan on responding to this RFI, please provide information relative to past performance and/or experience providing the supplies requested above. Information should be sufficient to demonstrate the ability to provide this requirement to include (i) Business size, average numbers of employees and approximate annual gross revenue; (ii) specific small business status (if applicable) for your company whether (a) HUB Zone Small Business; (b) Small Disadvantaged Business; (c) 8(a) Firm; (d) Women-owned Small Business; (e) Service-Disabled Veteran-Owned Small Business; (f) Veteran-Owned Small Business; and (g) other (explain); (iii) company's name, CAGE code, DUNS, Tax ID Number (TIN), address, point of contact, telephone number, and e-mail address. All responses must be provided no later than 1700 EST 28 Feb 13. **Firms should provide their information via e-mail to Peter Agyei-Sarpong, at** peter.agyei-sarpong@navy.mil **(202-781-3600).**