

# ITEM OPPORTUNITY SYNOPSIS

**Name of the item to be scouted:** Smart Clothes (clothing that turns body heat into electricity)

**State item to be used in:** -- None --

## Describe the Item:

**Please describe the item application/the end use of item.** Due to the increasing conflict, it is expected that the warfighter will be fighting in extreme temperatures such as cold artic. Therefore, my branch is scouting to see what technology exists in wearable sensor clothing.

## Supplier Information:

**Type of Supplier being sought (select from list below)**

**Manufacturer**

Contract Manufacturer

Distributor

Other (please specify)

**Reason for scouting submission (select from list below)**

2<sup>nd</sup> Supplier

Price

Re-Shore

Past supplier no longer available

**New Product Startup**

Other (please specify)

## Summary of Technical Specifications and Performance Requirements:

**Describe the manufacturing processes (elaborate to provide as much detail as possible).** Sewn to military specification YACL-WP PD 99-01

**Provide dimensions / size / tolerances / performance specifications of the item.** Clothing must be able to accommodate the 5th and 95th percentile of both male and female populations. Clothing must be fire resistant, durable, easy to launder, and to be in the appropriate colors of the military (i.e. sage green, brown, blue, black, tan)

**List required materials needed to make the product, including materials of product components, if applicable.** Nomex, Gore

**Are there applicable certification requirements?**

**Yes**

**No**

**Please Explain:**

ASF  
DFARS  
SQF/BRC

**Are there any applicable regulations that apply to the production of this item?**

**Yes**

**No**

**Please Explain:** Sewn to military specification YACL-WP PD 99-01 Needs to be NIR compliant. NAWC PD 4631-04-02 - Cloth, Knitted, Fleece, Velour, Flame Resistant COMMERCIAL ITEM DESCRIPTIONS A-A-55217 - Thread, Aramid, Spun Staple DEPARTMENT OF DEFENSE SPECIFICATIONS MIL-DTL-32075 - Label: For Clothing, Equipment, and Tentage (General Use) MIL-PRF-32717 - Cloth, Knitted, Silk Weight, Stretch, Flame Resistant ENVIRONMENTAL PROTECTION AGENCY EPA chemicals-and-toxics-topics Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). AATCC 20A - Fiber Analysis: Quantitative AATCC 135, I, II, A - Dimensional Changes of Fabrics after Home Laundering. ASQ-Z1.4 - Procedures, Sampling and Tables for Inspection by Attributes

**Are there any other standards, requirements?**

**Yes**

**No**

**Please Explain: ASTM D276 FTIR Analysis** – Standard Test Method for Identification of Fiber Textiles. ASTM D1777 - Standard Test Method for Thickness of Textile Materials. ASTM D2594 - Standard Test Method for Stretch Properties of Knitted Fabrics Having Low Power. ASTM D 3375 - Standard TEST Method for Column Capacity of Parachute Mixed Bed Ion Exchange Materials. ASTM D3774 - Standard Test Method for Width of Textile Fabrics. ASTM D3776/D3776M - Standard Test Method for Mass per Unit Area (Weight) of Fabric. ASTM D5034 - Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test). ASTM D6193 - Stitches and Seams, Standard Practices for ASTM D6413 - Standard Test Method for Flame Resistance of Textiles (Vertical Test) MIL-C-83141 Coveralls, Flyer's Summer, Fire Resistant MIL-C-85704 Cleaning Compound, Turbine Engine Gas Path MIL-DTL-5624 Turbine Fuel, Aviation, Grades JP-4 and JP-5 MIL-DTL-44410 Insect Repellent, Clothing Application, Individual Dynamic Absorption Application (IDAA) Kit MIL-DTL-83133 Turbine Fuels, Aviation, Kerosene Types, NATO F-34 (JP- 8), NATO F-35, and JP-8+100 MIL-H-87257 Hydraulic Fluid, Fire Resistant; Low Temperature, Synthetic Hydrocarbon Base, Aircraft and Missile MIL-L-19701 Grease, Aircraft Ordinance MIL-L-85762 Lighting, Aircraft, Interior, Night Vision Imaging System (NVIS) Compatible MIL-PRF-7808 Lubricating Oil, Aircraft Turbine Engine, Synthetic Base MIL-PRF-16173 Corrosion Preventive Compound, Solvent Cutback, Cold- Application MIL-PRF-23699 Lubricating Oil, Aircraft Turbine Engine, Synthetic Base MIL-PRF-49506 Performance Specification Logistics Management Information MIL-PRF-81309 Corrosion Preventive Compound MIL-PRF-85570 Cleaning Compound, Aircraft, Exterior MIL-PRF-87252 Coolant Fluid, Hydrolytically Stable, Dielectric CO/PD 04-19 Personal Armor, Enhanced Small

Arms Protective Insert MIL-STD-810 Test Method Standard for Environmental Engineering Considerations and Laboratory Tests MIL-STD-882 System Safety Program Requirements

**Additional Comments:**

**Additional technical comments:** A-A-55634 ARIP 89-20 Zippers (Fasteners, Slide Interlocking) Army Research Institute Publication (ARIP) 89-20: Questionnaire Construction Manual 12 MCO 1200.17 Military Occupational Specialties (MOS) Manual MCBUL 1200 - 2007 Military Occupational Specialties (MOS) Manual Bulletin NAVAIR 13-1-6.7 Aircrew Personal Protective Equipment Manual NAVAIRINST 3710.9 Anthropometric Accommodation in Naval Aviation NAVAIRINST 13650.1 Aircraft Maintenance Material Readiness List NAVPERS 18068 Navy Enlisted Manpower and Personnel Classifications and Occupational Standards NAVPERS 15839I Navy Officer Manpower and Personnel Classification NIJ 0101.04 Ballistic Resistance of Personal Body Armor PMA 202-07000 PMA 202-08001 Performance Specification for Common Mobile Aircrew Restraint System (CMARS) Aircrew Integrated Recovery Survival Armor Vest and Equipment (AIRSAVE) Interface Specification for Common Mobile Aircrew Restraint (CMARS) System Technical Report Natick/TR-97/012 (ADA 324730) Gordon, CC, Corner BD, Brantley JD (1997). Defining Extreme Sizes and Shapes for Body Armor and Load Bearing Systems Design: Multivariate Analysis of U.S. Army Torso Dimensions. Army Soldier Systems Command: Natick MA. USATECOM International Test Operating Procedure 4-2-805 Projectile Velocity and Time of Flight Measurements USATECOM Test Operating Procedure 7-3-529 Ingress, Emergency Egress, and Emergency Evacuation Testing of Army Aircraft

**Volume and Pricing:**

**Estimated Potential Business Volume (i.e. #Units per day, month, year):** 5,000 units per year

**Estimated Target Price / Unit Cost Information:** \$150 per unit

**Delivery Requirements:**

**When is it needed by? (Immediate, 30 days, 6 months, etc)** 2-3 years

**Describe packaging requirements (i.e., individually/ group packaging).** None

**Where will this item be shipped?** These items will be shipped directly to both a central location and end consumers.