

Cold Temperature and Arctic Protection System (CTAPS) (Base, Insulative, Softshell, Extreme Cold Layers), Concept SOW

Overview

AFFOA plans to award a single or multiple contract(s) to clothing design/cut/sew supplier(s) to produce 200-300 experimental cold wet weather clothing systems in six sizes with a receipt date no later than 7 DEC 2020 for a Winter 2021 limited user evaluation (LUE). AFFOA has detailed technical illustrations and digital patterns of the clothing items based on past evaluations.

Cold Temperature and Arctic Protection System (CTAPS) Ensemble Overview

- Baselayer (top and bottom): baselayer is comprised of a mid-weight knitted fabric to be worn against the soldier's skin for comfort and moisture management.
- Insulated Jacket (jacket only): Consists of a hooded insulated jacket that is intended to be worn under the softshell uniform jacket for added insulation in colder environments.
- Softshell Uniform (jacket and trouser): The softshell uniform will be the soldier's mid-weight uniform in colder environments, designed to integrate with all other layers in the system.
- Cold Wet Weather (jacket and trouser): The cold wet weather jacket and trouser is a hardshell intended to be worn over the softshell uniform, as well as integrate with body armor and other kit. NOTE: the Cold Wet Weather jacket and trouser is not a part of this solicitation, however it is provided in the ensemble overview for context. There is a separate solicitation for Cold Wet Weather Ensemble.
- Extreme Cold (Parka and trouser): The extreme cold parka and trouser is intended to be worn over the softshell uniform in the most austere environments, offering protection down to -65F temperatures.

Responses

To respond to this solicitation, AFFOA will furnish detailed technical illustrations depicting designs and a Bill of Materials (BOM) which includes required fabrics and findings. In addition, AFFOA shall furnish electronic patterns in base size Medium Regular for proposal costing purposes only. Interested supplier's proposal shall quote on the garments as designed without changes with unit price and delivery terms. Proposals shall include estimated labor and material costs. The quote may also include a quote for a second design via a manufacturability report (template provided by AFFOA) which proposes modifications to the design to enhance performance and ease of use, ease of manufacturing with rationale, pricing and delivery terms.

Due to critical requirements the base materials for all the clothing items CANNOT be changed. See detailed illustrations and BOM in respective clothing item spreadsheet for this SOW. The contractor shall identify the risks to meeting the delivery schedule and how they will mitigate the risks. No detailed performance specification will be furnished so AFFOA shall rely on suppliers to fabricate the garments based upon their experience in construction of military field and/or combat garments and utilize their best commercial production and inspection practices. During the first 10 business days of the solicitation period, interested suppliers can view a mockup of the cold weather system features via an approved video conference by appointment for a maximum of 1 hour. Patterns shall be provided in electronic format in a recent Gerber

AccuMark version. For contractors without access to compatible AccuMark CAD and/or plotting capabilities is recommended to utilize a 2nd party Pattern Service for pattern conversion and/or plotting. AFFOA's ultimate sponsor owns all data rights from this effort.

Evaluation of Quote Responses

Submissions will be evaluated for Programmatic and Technical content.

1. Programmatic review will be conducted by AFFOA Program Managers and an evaluation team comprised of Subject Matter Experts in accordance with the following criteria:
 - a. Ability to meet delivery date.
 - b. Delivery risks identified and mitigation strategy.
 - c. Berry Amendment and Buy America Act compliance.
 - d. Potential for Product Scale up and large scale manufacturing (domestic only).

2. Technical review will be conducted by the Evaluation Team in accordance with the following criteria:
 - a. Ability to meet critical requirements of the system.
 - b. Inspection processes and any relevant quality certifications the supplier may have.
 - c. Material and labor costs.

Scope of Work (Post-award)

1. PATTERN REVIEW. The Contractor will review the AFFOA furnished patterns to determine if any clarifications are needed at the Design Review after award. The Contractor will make all pattern adjustments over the duration of the contract, if needed, but only after approved in Design Review. All recommendations should be provided for the design review via the manufacturability report (template provided by AFFOA). Approved changes made to patterns must be supplied back to AFFOA in the same electronic format as received from AFFOA (hard copies of the pattern (in base size) used for production are also being requested).

2. DESIGN REVIEW: A Design Review will be conducted via telecom within 5 days of contract award. AFFOA and Contractor shall review the proposed garment design, provide clarification, as required, and finalize approach.

Note: Before the contract award, AFFOA may make minor changes to the final designs and patterns of the jacket and trousers based on new feedback from a Winter 2020 field evaluation. Changes may include minor modifications for fit, zipper lengths, changing hoods to

stowable or removable hoods, and other minor changes. Interested supplier will have the opportunity to revise the estimated labor and material costs based on these changes.

3. **MOCK UP GARMENT SAMPLES:** While the contractor orders and waits for materials and findings for production, the contractor shall fabricate a sample of the applicable awarded systems, using surrogate or sample materials, based upon the patterns and design agreed upon in the Design Review. The mock up sample shall be furnished to AFFOA within 2 weeks after contract award including shipper and tracking number. Based upon the contractor’s experience making the sample, they can propose minor modifications to facilitate manufacturing without a cost, price or schedule increase, via the manufacturability report. AFFOA has 10 business days to review the samples, discuss findings in a telecom and approve the sample configuration for production. AFFOA shall return the approved sample to the contractor with a tag citing any exceptions via overnight shipment. If time and need permits, a second sample fabrication can be executed, if beneficial.

4. **PRE-PRODUCTION SAMPLES:** The contractor shall make two (2) pre-production samples in Size Medium Regular (MR) and one (1) each pre-production samples in sizes SR, ML, LR, LL, and XLR. The pre-production must be made in the selected test item fabrics, however, different color fabrics can be used if they are the only ones available while the actual fabric order for fabrication is on-going. The contractor will annotate any adjustments they may have made to facilitate production which differ from the inspected mock up sample. The contractor shall ship the pre-production samples to the AFFOA Point of Contact and furnish tracking number information. AFFOA will approve or identify improvements within 10 business days. AFFOA will retain one (1) MR pre-production sample and overnight ship the remaining samples to the contractor tagged with approval and clarification as reference. At the end of the contract, all pre-production reference samples will be delivered to AFFOA.

5. **PRODUCTION:** The contractor shall supply personnel and equipment to fabricate 300 each of the experimental clothing system, in the size tariff listed below using best commercial fabrication and quality practices to minimize defects that cause failure in the military field use.

a. Sizing tariff Base layer, Insulation Layer, Softshell Layer

<u>Size</u>	<u>Quantity</u>
Small Regular (SR)	27
Medium Regular (MR)	117
Medium Long (ML)	24
Large Regular (LR)	99
Large Long (LL)	21
XLarge Regular (XLR)	12
Total	300

b. Sizing tariff for Extreme Cold Layer Size Quantity

Small Regular (SR)	18
Medium Regular (MR)	78
Medium Long (ML)	16
Large Regular (LR)	66
Large Long (LL)	14
XLarge Regular (XLR)	8
Total	200

6. LABELING: The contractor shall label each garment which shall include CTAPS Item Description (See Spreadsheet, Year, Size, and Contract Number). The label shall be positioned at the center back of the top item neckline and center back of the trouser waist band and shall not cause wearer discomfort and shall be durable to 20 launderings.
7. INSPECTION: The contractor shall conduct quality inspection which includes 100% finish garment quality inspection and make any repairs necessary to prevent latent defects causing failure in military field use. AFFOA reserves the right to participate in the contractor's end item inspection at their location. The contractor shall furnish to AFFOA the finished garment dimensions they record, their quality inspection record and repair record. The contractor shall provide AFFOA a list of proposed changes via a manufacturability report (using the AFFOA provided template) to improve manufacturability based upon their experience fabricating the 200-300 clothing sets. AFFOA will consider proposed changes if the items proceed for further development.
8. PACKING/SHIPMENT: CTAPS Clothing items shall be boxed and marked separately and ship to the following locations with a 7 Dec 2020 delivery date. Cartons containing mixed sizes are permitted provided they are clearly marked on the exterior. The clothing items shall be individually packaged inside plastic bags for protection during shipment and storage. Current shipment locations have not been determined, however they will likely be to the states of Alaska, upstate New York, Washington State, Vermont, and potentially the country of Norway.

<u>Location</u>	<u>Total Quantity</u>
TBD	290
10 General Greene Ave. Natick, MA 01760	10

9. PATTERNS: The contractor shall furnish AFFOA the nest of patterns used in production in Accumark Version 9 electronic format and paper print out of each size.
10. MATERIALS: The contractor shall furnish AFFOA with 10 yards of each fabric used in the production garments for physical property testing. The fabric may be sent during anytime during the manufacturing process, though preferably as soon as available. The contractor and the entire supply chain are required to adhere to the Berry Amendment.

Note: If applicable, for the baselayer which utilizes AFFOA furnished fabric, the contractor shall return all unused fabric to Natick, MA or as designated by AFFOA.

11. PROJECTED COST: At the end of the fabrication effort, the contractor shall delineate what they expect is a fair and reasonable price to produce and deliver the item on a large scale. Note that this is a separate cost estimate than the original quote for prototypes. The volume scale should consider production starting at 5,000 units/year followed by increments of 5k up to 20,000 units/year. The total unit cost shall be broken down into material and labor costs. The contractor shall include recommendations for cost reduction if and where applicable. NOTE: Future costing is for planning purposes only and IS NOT an obligation from AFFOA for future funding or follow-on contracts.