Joint Expeditionary Collective Protection (JECP)
Family of Systems (FoS)

Joint Committee on Tactical Shelters
3 November 2009

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**Joint Expeditionary Collective Protection (JECP) Family of Systems (FoS)**

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**6th Bi-Annual DOD JOCOTAS Meeting with Rigid & Soft Wall Shelter Industry & Indoor & Outdoor Exhibition, 2-4 Nov 2009, Panama City Beach, FL**

**Abstract**

**Subject Terms**

**Security Classification of:**
- Report: unclassified
- Abstract: unclassified
- This Page: unclassified

**Limitation of Abstract:** Same as Report (SAR)

**Number of Pages:** 13

**Name of Responsible Person:**

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*Standard Form 298 (Rev. 8-98)*
Prescribed by ANSI Std Z39-18
JECP Capability

• JECP Family of Systems (FoS) will collectively protect Joint Expeditionary Forces personnel, assets and infrastructure in a Chemical and Biological (CB)/Toxic Industrial Material (TIM) contaminated environment.

• The JECP FoS will be smaller, lighter in weight, easier to transport, erect, strike and operate compared to fielded Collective Protection systems.
FoS Overview

• CP Tent Kits
  – A lightweight, easily maintained, assembled and disassembled CP capability added to selected fielded tents

• CP Structure Kits
  – One or more approaches to render an enclosed space of opportunity collectively protected
    • Improved Host Structure
    • Unimproved Host Structure*

• Standalone Shelter Systems
  – Collectively Protected shelter system which is self contained, lightweight, easily transported, erected, and struck.
  – Must be available in various sizes (man-portable, small, medium and large configurations) to meet differing mission requirements
    • Man-portable (2 personnel)
    • Small (6-8 personnel)
    • Medium* (12-20 personnel)
    • Large (20+ personnel)

* The Unimproved Structure Kit and Medium Standalone shelter will use the same design
Accomplishments

• Tailored Analysis of Alternatives, FY06-FY07
• Conducted Technology Demonstrations, FY06-FY08
• Conducted Limited Objective Experiment, Apr 07
  – Evaluated & Updated Tactics, Techniques, and Procedures
• Successful MS B Decision Review, Mar 08
• Contract Award to SAIC, partnered with Production Products (PPSTL), Aug 08
• Follow-on System Requirement Review, Oct 08
• System Function Review & Preliminary Design Review, Jun 09
• Post-Preliminary Design Review Assessment, Sep 09
## JECP Program Structure

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Standalone Large System

Key Features:
- Complexes on Four Sides
- Liner also used in Tent Kit
- Integrates with SPE and MPE
- Integrated Hanging Mechanisms

SAIC Preliminary Designs

UNCLASSIFIED
Tent Kits

3 configurations

Key Features:
- Complex on 4 sides
- Integrated Hanging Mechanisms
- Integrates with SPE and MPE
- TSI LM200 Liner Material
- Meets CB barrier requirements
Structure Kit – Improved

Key Features:
- Floorless Design with Non-Destructive Anchor
  - Preserves Infrastructure, Including Furnishings and Stationary Equipment
- Frameless Design
- Complexes on Four Sides
- Integrates with SPE and MPE
- Integrated Hanging Mechanisms

SAIC Preliminary Designs

Active System

TSI LM200

PPSTL Non-Destructive Anchoring System (Vacuum Seal)
Standalone Medium and Structure Kit – Unimproved

Key Features:
- Single Skin CB Barrier Fabric with Integrated Blackout Capability
- Integrated Hanging Mechanisms
- Integrates with SPE and MPE
- Complexes on Two Sides
- Single solution 2 systems

Uses a Modified Utilis TM-24 or wall anchor in a cave

C-Zipper Door

Triosyn ® Passive Filter Media Panels

UNCLASSIFIED
Key Features:
• Single Skin CB Barrier Fabric with Integrated Blackout Capability
• Integrated Hanging Mechanisms

Note: Roof filter panels removed for weight considerations. Effective CO2 removal of new design has been successfully modeled.
Standalone Man-Portable

Key Features:

- 3/4-inch Aluminum Frame
- Single Skin CB Barrier Fabric with Integrated Blackout Capability

- Triosyn® Passive Filter Media Panels
- SAIC Preliminary Designs

U-Zipper Door

Passive System
Trade Studies & Technical Challenges

- Standalone Large liner vice single skin solution
  - Future Increment

- USMC CAPSET III Tent Kit integration
  - Single piece liner vice multiple piece liner
  - Current Generator and ECU Trailer (GET) not compatible with collective protection
  - Future Integrated ECU and generator (ITEG) II: coordination to ensure compatibility
Trade Studies & Technical Challenges (continued)

- Tent Kit liner attachments (simulate 30 strike/erect cycles with 100 lb weight) and hanging mechanisms (24-hour duration with 100 lb weight)
  - Web buckle meets requirements but not User friendly
  - Arrowhead does not meet requirements
- Closure mechanism options for entry/exit and complexing
  - Must be Berry amendment compliant (domestic source)
  - Evaluated impermeable/gas tight zippers; problems with teeth breaking on radius turn and straight sections
  - Heavy gauge zippers with liquid cover flaps like on CBPS; raised lip liquid intrusion prevention) creates tripping hazard
  - Magnetic seals future possibility if ruggedized
  - Next generation of hook and pile fasteners future possibility if issues with durability/leakage are resolved
  - Others?