Modular Ballistic Protection System (MBPS & MBPS-X) [PM FSS, DFP]

PAO# U13-349

Overview

- Rapidly deployable ballistic protection
- Expeditionary protection from multiple ballistic threats (direct and indirect)
- Lightweight, low cost, redeployable, 100% reusable
- No Material Handling Equipment or special tools
- Day one protection in all battlefield environments
- Withstands high impulse blast overpressures
- MBPS-X (strikeface) developed to protect against the most common in-theater threats

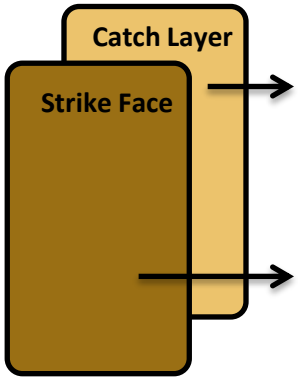
Current Status

- Six MBPS in theater via REF
- NSNs & Interim TM developed
- Milestone B tied to FPE CPD
- Partner: Advanced Structures & Composites Center (UMaine)

Program Timeline

Improved Modular Ballistic Protection System (MBPS-X)

PAO# U13-349



Fiberglass Composite: Advance Combat Helmet (ACH) equivalent

Ceramic Hybrid: Protection from the most common base camp threats

Development

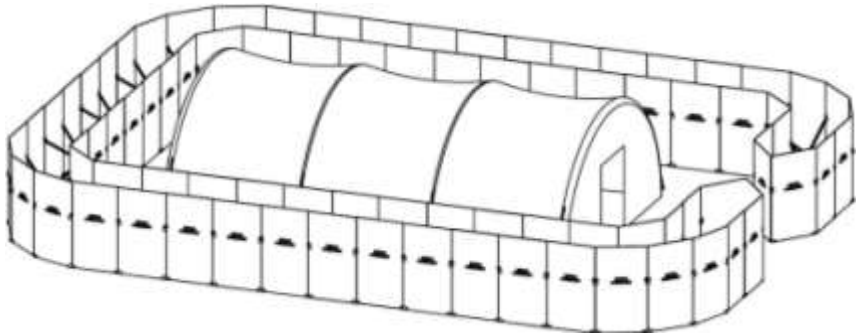
- Novel use of ceramic/composite hybrid
- Very low cost comparative to existing ceramic armor solutions
- Live fire testing demonstrates excellent protection against target threats
- MBPS-X continues simplistic design cues from MBPS

Current Work

- Manufacturing development – Optimization of performance & development of low cost production techniques
- ATEC testing 1QFY14: Wind loading/ durability / ballistics
- Spiral transition into MBPS PoR (TBD)

MBPS-Anchorless (2G) [PM FSS, DFP]

PAO# U13-349



Overview

- Anchorless design removes the largest variable in any expeditionary camp, that being soil conditions
- Foldable, single hinge, simplistic panel connection points, minimal hardware, no special tools
- Ultimate flexibility in deployment potential
- Utilizes the existing MBPS and MBPS-X panels
- Potential ability to fill with earthen material as equipment becomes available, system can evolve with the base camp

Current Status

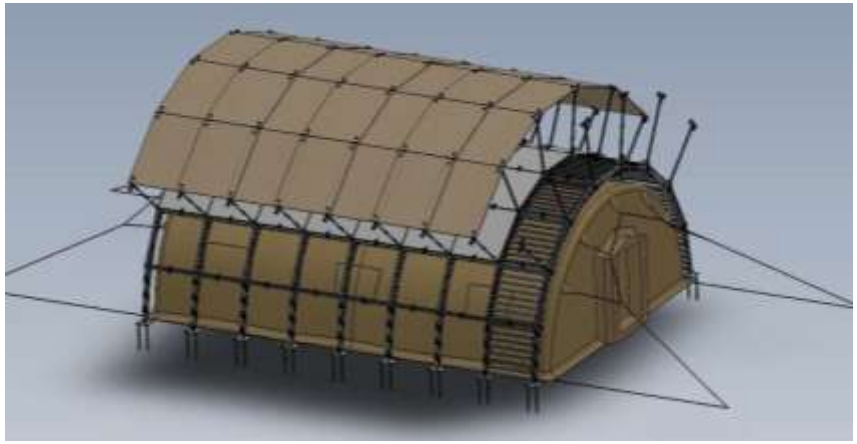
- Multiple prototypes developed
- Withstands blast overpressure
- Obj: Simplify components, improve deployment, & optimize pack volume

Program Timeline

2010	2011	2012	2013	2014	2015
1st Gen Concept Arena Test	2nd Gen Prototype		3rd Gen Prototype	4th Gen Prototype	Testing/ Spiral into MPBS

Overhead Threat Protection (OTP) [SBIR 10.3]

PAO# U13-349



Overview

- Rapidly deployable overhead protection while also being reusable/redeployable
- There are no other systems that provide this level of deployability for overhead protection
- Support the weight of ballistic catch layer and pre-detonation layer at a stand-off
- Withstands large dynamic (impulse) loading
- Minimal deflection into the covered volume

Current Status

- SBIR: Technical Products Inc (TPI) is in Year 2 of Phase II
- Full scale prototype in late FY14
- Core funding received for FY14

Program Timeline

Armored Command Trailer (ACT) / CoIST Hardened Shelter [DFP]

PAO# U13-349

Overview

- Hardened, expandable, trailer-based C&C shelter
- Designed to be HMMWV towable
- CoIST concept and handbook developed by the Asymmetric Warfare Group (AWG)
- CoIST often work out of an armor vehicle, removing a vehicle from mission availability
- Five minute deployment, workspace for three
- Onboard HVAC, short-term power generation

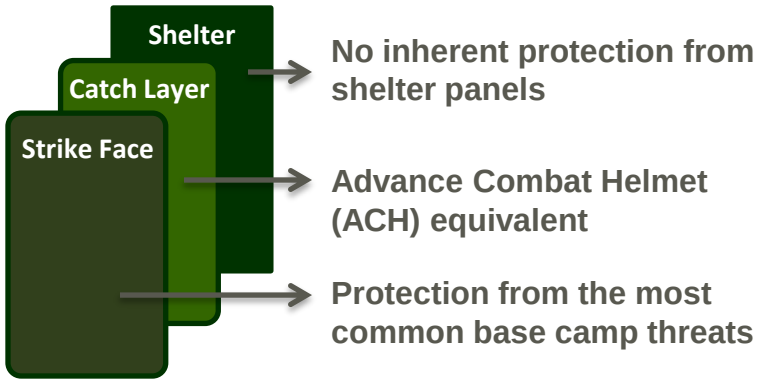
Current Status

- One year of funds from the DFP
- 1st gen full-scale prototype to be delivered in October 2013
- Program is unfunded after prototype delivery

Program Timeline

Expandable Shelter Uparmor System (ESUS) [Force Provider]

PAO# U13-349



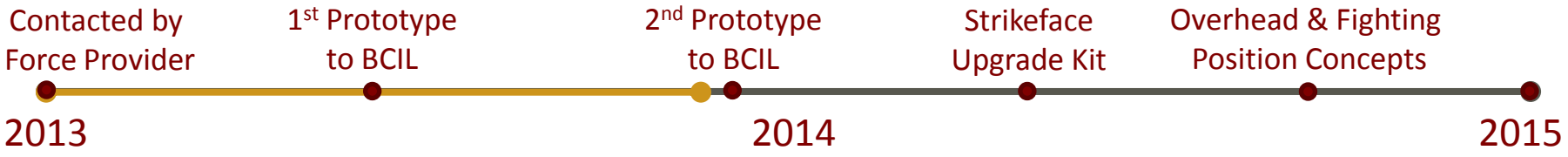
Overview

- Adds ballistic protection to FP rigid walled from the most common base camp threats (w/ strike face), both direct fire and fragmenting munitions shelters
- Designed around utilizing standardized ISO corner connection points as supports, deploys in minutes
- System has been engineered to pack into a standard TRICON container
- All components man-portable, no special tools
- Leverages proven MBPS panel technologies

Current Status

- 1st prototype system in May 2013, 2nd in October 2013
- Strike face kit/overhead protection as follow-on effort (unfunded)

Program Timeline



Identification & Characterization of Relevant Indirect Fire Threats

PAO# U13-349

Overview

- A systematic study of indirect fire threat fragmentation characteristics
- Expand the knowledge of threat fragmentation by collecting extensive z-data for current and future threats being used in relevant areas of operation
- Develop a laboratory test methodology for repeatability against indirect fire fragmentation allowing for the development of high performance materials to be more rapid and cost effective

Current Status

- New start in FY14, pending core funding approval
- Original threat summit was held in 2011 with members of NSRDEC, ARL, NGIC, ATEC, & AWG present

Program Timeline