



PROGRAM EXECUTIVE OFFICE SOLDIER

THE BEST
FOR THE BEST

Advance Combat Helmet

Advanced Planning Brief for Industry

8 May 2008

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Office of the Product Manager
Soldier Survivability



Briefing Topics



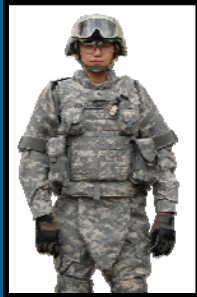
- PM-SSV Areas of Responsibility
- Ballistic Helmet and Accessories
- ACH Improvements
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- Helmet Sensor Download Process
- ACH 7.62 Initiative
- Upcoming Events
 - SPD VI—Lower Extremity Protection



PM-SSV Areas of Responsibility



Interceptor Body Armor (IBA)



Improved Outer Tactical Vest (IOTV)



Combat Vehicle Crewman Helmet



Nape/Neck Protector



Advanced Bomb Suit (ABS)



EOD-9 / NVVS Helmet



Concealable Body Armor (CBA)



Enhanced Small Arms Protective Insert (E-SAPI)



Advanced Combat Helmet (ACH)



Helmet Sensors (HS)



Non Destructive Test Facility (NDTF)



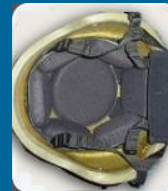
Body Armor Set Individual Countermine / BPFS (BASIC)



Improved Cupola Protective Ensemble (ICPE)



Military Combat Eye Protection (MCEP)



ACH Pad Suspension System



Ballistic-Non Ballistic Protection



Ballistic Helmet and Accessories



System Description:

- ACH: A modular helmet with suspension and neck protection pads provides improved fragmentation, ballistic, and impact protection while reducing weight, improving fit, and increasing comfort.
- Neck Protector: Provides fragmentation protection to the nape area of the neck, and improves overall stability of ACH.
- Pad Suspension System: Modular, lightweight, flame retard, and moisture resistant series of pads that act as the suspension system between the wearer's head and the helmet.
- Helmet Sensor: Small, low power sensor suite mounts on both ACH and CVC to detect, measure and record impact and blast overpressure associated with concussive events

Objective:

- To improve the Soldier's survivability

BOI:

- ACH: Based on guidance from VCSA will replace PASGT helmet as a one-for-one replacement system.
- Helmet Sensor: Per VCSA guidance, one sensor per Soldier ACH (2 BCT's)

Capabilities:

- ACH: 9mm protection and increased fragmentation protection; Low velocity impact protection; Improves field of view, stability, hearing and interface with other individual equipment items
- NAPE Pad: 22 layers Spectra fragmentation protection
- Pad Suspension System: Blunt impact force protection level of 150g max at 10 fps
- Helmet Sensor: Measure helmet acceleration and pressure associated with concussive events



ACH Improvements

ACH Fielding (initial)



Helmet weight
Decrease from
3.5 lb to 3.0 lb
(approx.)

Nov
2002



ACH Cover in
universal print with
IFF introduced

Jan
2005



Pad improvement
impact level increase
to 150g max at 10 fps

Dec
2006

N.A.P.E. Pad™
Introduced



Mar
2007

Helmet Sensor
Introduced



Sep
2007

ACH 7.62
development to
provide increased
protection from 9mm
to 7.62mm

ACH Pad
improvement impact
level increase to
150g max at
14.1 fps

CY
2008

Helmet Sensor Overview



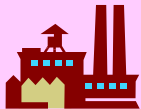
Academia:

MIT Institute for Soldier Nanotechnologies
MIT Biological Engineering Dept
UVA Center for Applied Biomechanics
NCAA*



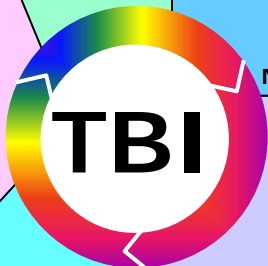
Laboratories:

Natick Soldier Research Development & Engineering Center
Army Research Laboratories - SEDD
Army Research Laboratories - WMRD
Tank-Automotive Research Development Engineering Center
Naval Research Lab



Industry

NFL*



Medical Community:

Army Medical Research & Materiel Command:
Army Aero Medical Research Laboratory
US Army Research Institute of Environment Medicine
Defense & Veterans Brain Injury Center
Walter Reed Army Medical Center



Services:

PEO Soldier
PM-SEQ
Rapid Equipping Force
USMC
JIEDDO
USAIC

Description:

The Helmet Sensor is a small, lightweight, low power sensor suite that mounts to the Advanced Combat Helmet or the Combat Vehicle Crewman Helmet. The Helmet Sensor will detect, measure and record impact (acceleration in three degrees of freedom) and blast overpressure associated with concussive events/IED blasts that Soldiers may experience in operational environments. Data is downloaded via a USB port to any computer.

Objective:

Collect data in theater from combat units to understand and characterize the events that may cause Traumatic Brain Injury (TBI) as a result of IED/blast impact and other occupational hazard events.



Helmet Sensor Download Process



Helmet Download
and
AAIRS Web-Form



30 days of combat ops prior to scheduled HS download

1

Field Location

All Soldiers in unit with a HS



Download Helmet data

2

Company Area

Helmet info downloaded and helmet reset



CD

AAIRS Form completed online following Blast event

AAIRS Web-Form



Transfer data to SIPR Network via CD

3

Battalion Hqs

Bn personnel receive helmet data and transmit via Global SIPRNET In-country JTAPIC facilitator



HS Data—via web



Data stored in AATF Database in CONUS

4

NGIC

Data received in AATF database and stored for future study



Anti Armor Incident Reporting System (AAIRS)



Linking BR# and Sensor ID

During HMS initialization process, the soldiers BR# are programmed to be stored in the sensor



Output: File naming convention:
BR# + Sensor ID + DTG
Example: S1234-326361-260930OCT2007.txt





Anti Armor Incident Reporting System (AAIRS)



PERSONNEL INFORMATION:	
POSITION: <input type="text"/>	
Occupied? <input type="radio"/> N <input type="radio"/> Y	
Other: <input type="text"/>	
Injuries <input type="radio"/> None <input type="radio"/> WIA <input type="radio"/> KIA	
Force: <input type="text" value="US Army"/>	Exposure? <input type="text" value="Combat Locked"/>
Other Force: <input type="text"/>	
CTRY: <input type="text"/>	
	Other Rank: <input type="text"/>
SSN (Last 4): ###-##- <input type="text"/>	BTL RSTR# <input type="text"/>
Last Name: (First Initial): <input type="text"/>	Rank: <input type="text" value="E1"/>
Describe Injuries: <input type="text"/>	
Treated at (pick highest): <input type="text" value="On site"/>	

Filling in all the Battle roster numbers on the AATF Incident Form for all the Soldiers involved in the incident is essential.



ACH 7.62



- **Material Performance Baseline**
 - High Molecular Weight Polyethylene
 - Aramid Fabrics
 - Flat panel tests

- **Material Processing Baseline**
 - Methods being explored to get consistent results
 - Fabrication changes by helmet makers

- **End Item T&E in 3QFY08**
 - Ballistics, Impact, Compression, Environmental
 - Best material and processing to be down selected

- **End Item Options**
 - Rifle Protection Helmet
 - Performance requirement: 7.62x39mm MSC at 100M stand off; M80 protection; 50% heavier than current ACH
 - Enhanced ACH
 - Performance Requirement: some degree of rifle protection, muzzle 7.62x39 LEAD, M80 stand off; same weight as current ACH



Upcoming Events—SPD VI

LOWER EXTREMITY PROTECTION



Soldier Protection Demonstration (SPD) VI



Lower Extremity Protection (LEP)

Objective:

Assess lower extremity protection system(s) (and/or system characteristics) which provide ballistic protection for Soldiers performing duties and functions for mounted and dismounted operations. Demonstration of candidate systems of lower extremity body armor to recommend best technical approaches, identify best solutions and current capabilities.



Milestones



SSV Products	Key Milestones	Projected Contract Actions
ACH 7.62 Variant	Testing: D/OT&E Down Select: 4QFY08	Sep 08
ACH Pad Suspension System--Improved	RFI: Closed Feb 08 Down Select: Apr 08	Sep/Oct 08
Helmet Sensor	Data Collection: Phase II	Oct 09
Lower Extremity Protection	SPD VI: 4QFY08	Oct/Nov 08
ACH Standard	Completed	None



QUESTIONS

