



US Army Ordnance Corps EOD Directorate Fort Lee, Virginia



**Global EOD Conference & Exhibition
MAY 2014**

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Agenda



- **EOD Directorate MSD Initiatives**
- **EOD Directorate MSD Future Initiatives**
- **Photos**
- **Conclusion**
- **Questions**



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EODD MSD Initiatives



- **Medium Mine Protected Vehicle**
- **Dismount Reconnaissance SKO (DR-SKO)**
- **EOD Robotics**
- **Binocular Night Vision Goggles (BNVG)**
- **EOD Vehicular Blast Overpressure Tool (EODVBOT)**
- **Next Generation Advanced Bomb Suit (NGABS)**
- **EOD Equipment Optimization / SKOs**
- **Future Radiographic System**
- **Future EOD Communication Capability Mobile User Objective System (MUOS)**
- **Explosive Identification Kit (EIK)**
- **EOD Information Management System (IMS)**



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EODD MSD Future Initiatives



- **Portable Isotopic Neutron Spectroscopy (PINS-3)**
- **Flexible X-Ray**
- **Explosive Cutting Tape**
- **Ultra Light Reconnaissance Robot (ULRR)**
- **Joint EOD Decision Support Software Inc 2 (DSS-2)**
- **Improved Robot Semi-Autonomy**



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Medium Mine Protected Vehicle Panther



Desired End State:

- Fielding begins in 3Q FY14; completed by FY18

Current Status:

- All indicators point toward the successful start of fielding efforts in FY14

Key Milestone:

- Initiation of fielding followed by IOC status

Way Ahead:

- A follow-on MMPV Panther benchmark will be achieved in FY18 after vehicle platforms are fielded to all active and NG Army EOD units

Additional Information:

- A total of 712 Panthers will be fielded.

576 Panthers go to EOD Companies
24 Panthers go to Ordnance School (Ft. AP Hill)
24 Panthers go to Tech Escort EOD Teams
48 Panthers go to Tech Escort CR Teams
4 Panthers go to PM AMS
9 Panthers be ORFs
27 Panthers go to APS

MOE:

Achieve milestone of the first vehicle fielding during FY14 followed by IOC and FOC statuses

LOE #4 Key Initiative 4.1.3

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DR SKO



Current Status:

- DR-SKO will be modular and initial configurations tailored to meet Army mission tasks. It will be transportable with organic transportation assets
- DR-SKO will provide a sample collection capability to confirm the presence of CBRN material at a suspected site or accident

Desired End State:

- DR-SKO will provide the Army with the capability to conduct dismounted CBRN reconnaissance, WMD detection or denial, and characterization of hazardous material events

Key Milestones:

- The Joint Requirements Oversight Council (JROC) approved the Initial Capabilities Document (ICD) for CBRN Sensors on 23 FEB 06 and the CBRN DR SKO CDD was approved on 7 SEP 10

Way Ahead:

- MSCOE adding EOD units to BOIP
- Complete fielding all CONUS, OCONUS, National Guard and Training Authorizations by FY2015

Additional Information:

- DR SKO will provide the joint force with the means to timely and accurately assess and characterize the CBRN hazard within an environment/area



POC: MAJ Rhone, Chief Materiel
 LOE #2 Key Initiative 2.3.1

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DR SKO



DR SKO Equipment

JCAD M4A1 3	Chempro100i 3	MultiRAE Pro 3	AN/PDR-77 3	identiFINDER U 3	Fido XT 3
TruDefender FT 9	FirstDefender RMX 9	AN/UDR-14 3	JCBRAWM M329 3	Level A Suit 27	SCBA 27
Camera and Kestrel 4500 3	XTS 5000 18	MEP 95-531A 3		PAPR 27	M328 Marking Kit 3
Air Compressor and Fill Station 3	ECU and Sampler Coolers with HHAs 3	3	3	QSA 102 Sampling Kit 1	Collapsible Cart 3
			Decon Expeditionary Bag 3	CF-31 with CoBRA Decision Support Software 1	3

*For quantity of issue see notes

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Advanced EOD Robotics System (AEODRS)



Desired End State:

- AEODRS Family of Systems platforms replace the Army's current fleet of MTRS (MK 1 and MK 2) and RONS (MK 3) robots

Current Status:

- AEODRS Inc I CPD approved JUL 2013
- AEODRS Inc I funding required over multiple POMs
- AEODRS Inc II and Inc III; concurrent development

Key Milestones:

- Cost Benefit Analysis document is in the early stages of development and will take several months for the EODD to complete

Way Ahead:

- 1Q FY16 IOC AEODRS Inc I
- 3Q FY19 FOC AEODRS Inc I
- HQDA determining if Army will commit to Inc II participation. Inc III fielding will take place after Inc II

Additional Information:

- The following quantities of AEODRS platforms will be issued in the future:
 - Army EOD AEODRS Inc I Totals = 600
 - Army EOD AEODRS Inc II Totals = 1200
 - Army EOD AEODRS Inc III =70

MOE:

Receipt of AEODRS CPD and verification that its contents match verbiage in BOIP MFR, EXSUM MFR and AROC Briefing Product. Complete AEODRS Cost Benefit Analysis

LOE #4 Key Initiative 4.1.3

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Binocular Night Vision Goggles (BNVG)



Desired End State:

Current Status:

Key Milestones:

Way Ahead:

Additional Information:

MOE:

Receipt of AEODRS CPD and verification that its contents match verbiage in BOIP MFR, EXSUM MFR and AROC Briefing Product. Complete AEODRS Cost Benefit Analysis

LOE #4 Key Initiative 4.1.3

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EOD VBOT



Image represents current Vehicular Modular Disruption System

Desired End State:

- EODVBOT will replace limited quantities of JIEDDO funded Vehicle Modular Disruption Systems (VMODS) that exist

Current Status:

- Optimized CDD funding profile and reliability verbiage submitted to SCoE Gatekeeper. Review activities by the Gatekeeper are ongoing

Key Milestones:

- Completion of CDD staffing with SCoE and ARCIC

Way Ahead:

- 1773 EODVBOT modules will be issued to EOD units. This will allow each EOD Team to have three modules. Three modules make one tool

Additional Information:

- The EOD Vehicle Blast Overpressure Tool is a device used to disrupt IEDs located in vehicles

MOE:

- Complete EODVBOT CDD staffing with SCoE Gatekeeper so that the document can be reviewed by ARCIC

LOE #4 Key Initiative 4.1.3

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Next Generation Bomb Suit



Focus Areas:

- HQDA Fielding Plans
- First Unit Equipped (FUE) FY15

Desired End State:

- Beginning fielding FY2015
- Complete fielding all CONUS, OCONUS, National Guard and Training Authority by FY2018



Current Status:

- The current Advanced Bomb Suit (ABS) technology is 13-years old and steadily being overtaken by the increased lethality of Improvised Explosive Devices (IED's) threats and scenarios
- The requirement is to develop an NGABS Ensemble that is ergonomically superior to the ABS and provide increased protection and functionality to operate in current and future threat environments
- The helmet should incorporate an integral night vision/thermal capability that does not obstruct, distort or otherwise interfere with vision and include an integral communications system that leverages a microphone, headphone and public address capability

Key Milestones:

- Draft NGABS Capability Development Document (CDD) reformatted to meet new TRADOC CDD (alternate format) Writer's Guide – AUG 13
- Conduct worldwide staffing through Sustainment Center of Excellence (SCoE) Gatekeeper – SEP 13
- Army Capabilities Integration Center (ARCIC) Gatekeeper approval is required prior to HQDA submission and subsequent approval

Additional Information:

- The NGABS ensemble will allow the EOD Soldier to support major combat operations, stability and homeland security operations
- Leverage scientific material advances – Lighter / Stronger (objective = 49 pounds, versus current 65)
- Improved ballistic protection (including backside)
- Integrated add-ons – communication, cooling, heads up display (includes night vision)
- Ergonomic improvement for better maneuverability / fit
- Option to add Enhanced Small Arms Protective Inserts (ESAPI) plates

POC: MAJ Rhone, Chief Materiel
LOE #2 Key Initiative 2.2.3

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EOD Equipment Optimization / SKOs



	<p>Current Status:</p> <ul style="list-style-type: none"> •address capability <p>Desired End State:</p> <ul style="list-style-type: none"> • Beginning fielding FY2015 • Complete fielding all CONUS, OCONUS, National Guard and Training Authorizations by FY2018
<p>Key Milestones:</p> <ul style="list-style-type: none"> • Draft approval 	<p>Additional Information:</p> <ul style="list-style-type: none"> • The NGABS ensemble will allow the EOD Soldier to support Option to add Enhanced Small Arms Protective Inserts (ESAPI) plates



POC: MAJ Rhone, Chief Materiel
 LOE #2 Key Initiative 2.2.3

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Future Radiographic System (FRS)



Desired End State:

- The FRS Increment I replaces current inventories of MK 32 and MK 41 x-rays
- The second increment serves as a light weight radiographic solution for EOD Teams to employ during response missions

Current Status:

- The EODD will continue to participate in the FRS Increment II CPD build via RWG sessions

Key Milestones:

- Increment II IOC and FOC windows for Army EOD recently submitted to RWG by EODD
- The first increment of the FRS is projected to begin fielding to EOD units during 4Q FY13

Way Ahead:

- EODD participation in the next RWG scheduled for 14 May 2013

Additional Information:

- 640 FRS Increment II and Increment I systems are slated for Army EOD fielding

MOE:

Complete RWG CPD developmental efforts and finalize requirement document for staffing

LOE #4 Key Initiative 4.1.3

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Future EOD Communications Capability



	<p>Current Status:</p> <ul style="list-style-type: none">•address capability <p>Desired End State:</p> <ul style="list-style-type: none">• Beginning fielding FY2015• Complete fielding all CONUS, OCONUS, National Guard and Training Authorizations by FY2018
<p>Key Milestones:</p> <ul style="list-style-type: none">• Draft approval	<p>Additional Information:</p> <ul style="list-style-type: none">• The NGABS ensemble will allow the EOD Soldier to support Option to add Enhanced Small Arms Protective Inserts (ESAPI) plates

POC: MAJ Rhone, Chief Materiel
LOE #2 Key Initiative 2.2.3

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Explosive Identification Kit (EIK)



Image represents current hand held Raman capability

Desired End State:

- EIK becomes the POR solution to the Ahura systems that EOD units used in the past

Current Status:

- Awaiting requirement document to complete joint staffing
- EODD is socializing the first drafts of the BOIP and EXSUM MFRs that SCoE Gatekeeper requires

Key Milestones:

- IOC in 1Q FY18, FOC projected at 4Q FY20

Way Ahead:

- EODD completes BOIP MFR, EXSUM MFR, AROC Briefing Product and Cost Benefit Analysis for the SCoE Gatekeeper
- Achieve IOC quantity of 175 systems for Army EOD units

Additional Information:

- EIK uses Raman spectroscopy and Fourier Transform Infrared (FTIR) spectroscopy to provide the EOD personnel with a hand held detection capability
- 640 EIK systems are slated for Army EOD use
- Receipt of 69 Ahura First and True Defenders via the CIED NSE AROC process as bridging solution

MOE:

Complete socialization of BOIP and EXSUM MFRs, generate AROC Briefing Product and Cost Benefit Analysis document

LOE #4 Key Initiative 4.1.3

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EOD Information Management System (IMS)



	<p>Current Status:</p> <ul style="list-style-type: none">•address capability <p>Desired End State:</p> <ul style="list-style-type: none">• Beginning fielding FY2015• Complete fielding all CONUS, OCONUS, National Guard and Training Authorizations by FY2018
<p>Key Milestones:</p> <ul style="list-style-type: none">• Draft approval	<p>Additional Information:</p> <ul style="list-style-type: none">• The NGABS ensemble will allow the EOD Soldier to support Option to add Enhanced Small Arms Protective Inserts (ESAPI) plates

POC: MAJ Rhone, Chief Materiel
LOE #2 Key Initiative 2.2.3

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EODD Future Initiatives



- **Portable Isotopic Neutron Spectroscopy (PINS-3)**
 - xxx
- **Flexible X-Ray**
 - xxx
- **Explosive Cutting Tape**
 - xxx
- **Ultra Light Reconnaissance Robot (ULRR)**
 - xxx
- **Joint EOD Decision Support Software Inc 2 (DSS-2)**
 - xxx
- **Improved Robot Semi-Autonomy**
 - xxx



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Explosive Ordnance Disposal Portfolio



**Small Caliber Dearer
(SCD) MK 38 MOD 0**



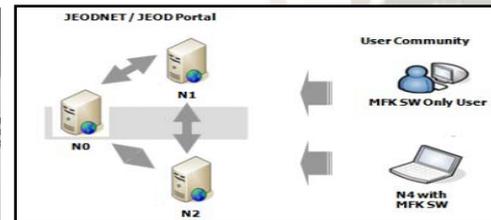
**Stand-Off Disrupter- Unexploded Ordnance
Tool (SD-UXO) MK 40 MOD 0**



Hook and Line Kit



Decision Support System (DSS)



**Medium Directional
Energy Tool (MDET)**



**Transmitter,
Countermeasure
(TCM): AN/PLT- 4**



NBC module



IED module



IED module cont'd



Marking module

**Small Caliber Dearer
(SCD) MK 38 MOD 0**



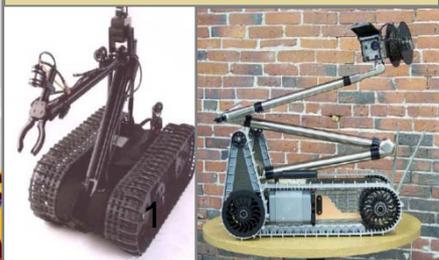
**Remote
Ordnance
Neutralization
System**



**Stand-Off Disrupter IED
Tool – PAN Disrupter**



**EOD Manual Transport Robotic
System (MTRS)**



Advance Radiographic System MK 41 MOD 1



EOD Response Kit



**Transmitter, Countermeasure
(TCM): AN/PLT- 5**





EODD Contacts



- **Director** 804.xxx.xxxx
- **Deputy Director** 804.734.5360
- **Sergeant Major** 804.765.9723
- **Chief, Training Development** 804.765.9653
- **Chief, Materiel Systems** 804.765.9646
- **Chief, Capability Development and Doctrine** 804.734.5360
- **Senior Doctrine NCO** 804.765.9676
- **Technical Forensics Exploitation Analyst** 804.765.9688
- **Technical Forensics Exploitation Analyst** 804.765.9686



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Questions



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Next Generation Bomb Suit



Focus Areas:

- HQDA Fielding Plans
- First Unit Equipped (FUE) FY15

Desired End State:

- Beginning fielding FY2015
- Complete fielding all CONUS, OCONUS, National Guard and Training Authorizations by FY2018

Current Status:

- The current Advanced Bomb Suit (ABS) technology is 13-years old and steadily being overtaken by the increased lethality of Improvised Explosive Devices (IED's) threats and scenarios
- The requirement is to develop an NGABS Ensemble that is ergonomically superior to the ABS and provide increased protection and functionality to operate in current and future threat environments
- The helmet should incorporate an integral night vision/thermal capability that does not obstruct, distort or otherwise interfere with vision and include an integral communications system that leverages a microphone, headphone and public address capability

Key Milestones:

- **NGABS Capability Development Document (CDD) reformatted to meet new TRADOC CDD (alternate format) Writer's Guide – Aug 2013**
- **Met with PM 11 Dec 2013; awaiting additional system cost data**
- **Conduct worldwide staffing through Sustainment Center of Excellence (SCoE) Gatekeeper – Jan 2014**
- **Army Capabilities Integration Center (ARCIC) Gatekeeper approval is required prior to HQDA submission and subsequent approval**

Additional Information:

- The NGABS ensemble will allow the EOD Soldier to support major combat operations, stability and homeland security operations
- Leverage scientific material advances – Lighter / Stronger (objective = 49 pounds, versus current 65)
- Improved ballistic protection (including backside)
- Integrated add-ons – communication, cooling, heads up display (includes night vision)
- Ergonomic improvement for better maneuverability / fit
- Option to add Enhanced Small Arms Protective Inserts (ESAPI) plates





Future Radiographic System



Focus Areas:

- Army Acquisition Objective (AAO) is 510 Future Radiographic Systems (FRS) to increase penetration, resolution; larger active imaging area and software manipulation
- Technical/Schedule
 - Milestone C achieved 14 NOV 12
 - Test Readiness Review (TRR) achieved 17 JUN 13
 - First Article Test (FAT) initiated 19 JUN 13

Desired End State:

- Beginning fielding FY2014
- Complete fielding all CONUS, OCONUS, National Guard and Training Authorizations by FY2018

Key Milestones:

- Failed First Article Testing (FAT) 19 JUN 13, imager failed 4 of 5 FAT's after taking good images
- FRS funding currently on hold until another COA to procure an X-ray can be established
- Vendors have fixed deficiency found during the FAT testing and forwarded new test article to TECHDIV Testing results pending

Current Status:

- Joint service AoA completed 30 MAR 07
- Requirements Document (RD) Abbreviated Acquisition Program approved 17 APR 08
- Acquisition Category (ACAT) IVM program, Navy unique
- Penetration requirements relaxed 12 DEC 11, revision A Change 1 adjusting Key Performance Parameters (KPP)
- FRS Requirements Document Rev A Change 2 approved by CNO Resource Sponsor per action memo dated 30 SEP 12 (in lieu of CPD)

Additional Information:

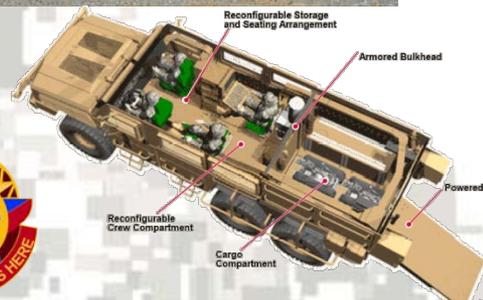
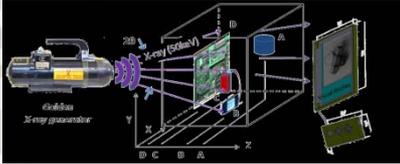
- Modified Commercial-Off-The-Shelf acquisition approach
- Replacement for the MK 41 MOD 0/1/2 EOD Tool Set (X-Ray)
- The FRS operational composition; Operator Control Unit (OCU), Software, Imager, Communication Units, and Accessories
- Initial capability will increase penetration & resolution, allow for a larger active imaging area, and include software manipulation
- Increment two Requirements Working Group (RWG) efforts kicked-off 23 NOV 12; efforts ongoing
- Increment two FRS will address dismantled operations

POC: MAJ Rhone, Chief Materiel
LOE #2 Key Initiative 2.2.3

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MMPV Type 1 Panther



Focus Areas:

- HQDA Fielding Plans
- FORSCOM EXORD
- First Unit Equipped (FUE) AUG 14 Fort Hood TX

Desired End State:

- Beginning fielding 4QFY2014
- Determination by FORSCOM regarding 20th CBRNE Point Paper that Panther was unsuitable for fielding within the 20th CBRNE

Key Milestones:

- 1 NOV 13 ARCIC signed MMPV Type I Re-Evaluation Study Directive w/ 45 day suspense. Eight alternatives being considered
- Possible adjustment of allocation rules lowering the number of Panther vehicles per EOD CO as a result of the FORSCOM briefing

Way Ahead:

- Verification and validation of 23P maintenance manuals 2QFY 2014
- Review the Re-Evaluation Study Directive Results

Current Status:

- MMPV Re-evaluation Qualitative model approval 6DEC13
- Logistics Demonstration Plan 6-22 JAN14
- Fielding of Panther to FORSCOM units on track beginning in AUG 14
- Interim Contractor Logistic Support (ICLS) scheduled for two years ending with approval of 23P maintenance manuals
- Program of Record (POR) 138 vehicles available for delivery beginning 2Q14
- RECAP ONS vehicles available for delivery beginning 3Q14
- RG33L+ RECAP available beginning 3Q15

Additional Information:

- The Panther is only replacing the Body EOD (BEOD) and trailer for the EOD Platoon response teams excluding the 21st WMD, 28th SOF SPT and 55th CONUS Support CO's
- Unit Panther Fielding will include Operator New Equipment Training (OPNET) and Field Level Maintenance Training (FLMNET)
- 6-9 months before fielding PM AMS will conduct a New Materiel Introductory Brief (NMIB) at the unit and the unit will sign a Materiel Fielding Agreement acknowledging/accepting the fielding schedule
- FLMNET is 80 hours. OPNET is 40 hours

POC: MAJ Rhone, Chief Materiel
LOE #2 Key Initiative 2.3.1





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POC: MAJ Rhone, Chief Materiel
LOE #2 Key Initiative 2.3.1





Robotics



Focus Areas:

- Existing EOD robotic systems sustainment
- Advanced EOD Robotic System (AEODRS) Increment I, II, III
- University of Michigan \$150k grant for robot autonomy study focused on EOD requirements

Desired End State:

- To ensure EOD Soldiers continued use of Unmanned Ground Systems (UGS) that address EOD specific requirements and capabilities

Current Status:

- Continued sustainment and MOD upgrades for the MTRS (MK1 / MK2) and RONS (MK3)
- AEODRS Inc I CPD awaiting signature
- AEODRS Inc II and Inc III concurrent development
- ASA(ALT) directed an Analysis of Alternatives (AoA) for **Army robotics** (focused by MTRS Inc II)
- Participated in 20 NOV 13 Univ. of Michigan “Start Work Meeting”

Key Milestones:

- AEODRS Inc I: IOC FY16 and FOC FY19
- AEODRS Inc II and Inc III: FY19 MS C
- 16 OCT 13 ARCIC signed MTRS Inc II AoA Study Directive

Way Ahead:

- Continue participation in Joint Service EOD IPTs and working groups
- Continue participation in Army UGS AoA, IPTs and working groups
- **Univ. of Michigan site visit to Fort Lee (20 JAN 14)**

Additional Information:

- AEODRS CDD (Inc I, II, and III) approved NOV 2010
- **Received Common Light Autonomous Kit (CLARK) briefing from ARCIC. CLARK is a family of small robotic systems and sensors packaged into an assault pack.**

POC: Mr. Tim Dye, Materiel Development
LOE #2 Key Initiative 2.2.3

