Defense
Forensic Enterprise System

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The National Academies
Needs of the Forensic Science Community
Woods Hole, Massachusetts
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Defense Forensics Overview

- DoD Forensic Future Vision
- How did we get here?
  - Warfighter Needs — Interim Solutions
  - Requirements Driven
- Defense Forensics Enterprise System (DFES)
- Next Steps and Homeland Security Implications
DoD Forensics Transformation

**Traditional:**
- Criminal Investigations
- Casualty Identifications
- Medical Examiner
- Network Intrusions
- Forensic Expert Testimony
- Repositories
- Research & Development
- Consulting Services

**Emerging/Non-Traditional:**
- Intelligence
- Counter-Intelligence
- Support to GWOT
- Expeditionary Forensics
- Foreign Language Forensic Documents Capability
- Sensitive Site Exploitation
- Support to “significant” investigations
- Education/Training
- Contract Theater Forensics

**Future:**
- DOD Forensics CONOPS
- DOD level leadership
- DOD/Fed Agency Integration
- DOD/Intl Agency Integration
- DOD/National Databasing
- Forensics/Biometrics Organic Capability
- Support to WMD
- Technology Transfer
- Long-Term Evidence Storage

**Goal:** Coordinate forensic science expertise across DOD for criminal investigation and warfighter operations
Why Battlefield Forensics?

“Combat Identification … is the process of attaining an accurate characterization (so) that a high confidence, timely application of tactical options, and weapons resources can occur.”

“… tactical decisions that must be made…characterization will be at least…”friend,” ”enemy,” or ”neutral.”

“Combat identification functions encompass cooperative and non-cooperative identification capabilities.”

Joint Pub 3-01, 5 Feb 2007

Biometrics allows us to identify…
Forensics (and intel) allow us to “characterize”
Forensic Value

**COLLECTION**

1. ENROLLED IN BAT SUSPECTED SMALL ARMS FIRE
2. LATENT PRINTS RECOVERED FROM IED MATERIALS

**MATCHING & STORAGE**

3,7. DOD ABIS Clarksburg, WV

**INTEL EXPLOITATION**

4. NGIC PRODUCES BIAR LATENT MATCH NOTIFICATION
5. **CAPTURED** during Screening via HIIDE
6. Additional latent prints from same materials searched in ABIS
7. Enrolled in due to capture as a result of Tier 1 alert in HIIDE

**ACTIONS**

- PLACED ON BIOMETRICS WATCHLIST TIER 1 (DETAIN IF ENCOUNTERED)
- RECORD FLAGGED IN ABIS AND ALERTED IN BAT
Biometrics / Forensics Timeline

**FY 04**
- Q1: DNA Lab deployed
- Q2: Fallujah Lab deployed (NCIS/Marine) Latent Print
- Q3: Latent Print capability added to CEXC
- Q4: Combined Explosives Exploitation Cell (CEXC) Established

**FY 05**
- Q1: Joint Staff: Capabilities Based Assessment to advance biometrics/forensics (Quick Turn CBA)

**FY 06**
- Q1: Army Provost Marshal Office (PMO/CID) Law Enforcement Forensic Lab (LEFL) deployed Firearms/Toolmarks and Latent Print
- Q2: DNA Lab deployed

**FY 07**
- Q1: Joint Staff: Improve forensics capabilities
- Q2: DNA Lab incorporated into PMO LEFL
- Q3: Multiple Initiatives by Multiple Communities

**Multiple Initiatives by Multiple Communities**
DoD Forensic Community Challenges

• **Forensics Lacks Definition** —
  • No DoD Concept of Operations (CONOPS)

• **Forensic Limited by Perception**
  • Traditionally viewed as “law enforcement”, not warfighting

• **Forensics Community Lacks Central Management and Strategy**
  • No DoD level leadership and resource advocate

• **Role Transformation for Warfighter Support**
  • Criminal Justice vs. Combat Operations (site exploitation/targeting)
  • Asymmetric Needs — Thoroughness/accuracy vs. Speed for Combat Intelligence
Expeditionary Forensics Challenges

- Expeditionary & warfighter support — emerging forensic needs
- Independently deployed labs to fill operational in-theater void
  - Law Enforcement Forensics Lab (LEFL) (Counter sniper / DNA)
  - CEXC (Watch list targeting / Counter IED)
  - Navy/NCIS (Latent print)
  - DIA (CBRNE)
- Efforts not integrated, uncoordinated
Expeditionary Forensics Challenges (cont.)

- Costly, narrowly focused and not sustainable
- Do not leverage DoD forensic expertise/capability potential
- Areas of Coordination for Interoperability and Quality Assurance
  - Training — Technical Staff & Combatant Commanders
  - Laboratory Accreditation/Staff Certification
  - Databasing — Integration
  - Evidence Triage — Intel through Rule of Law uses
  - Appropriate Analysis Protocols/Quality Control
- Rotational Base(s) for Deployment Needed
Joint Expeditionary Forensic Facilities (JEFF)
Way Ahead

- Modular for expansion to full-spectrum (Latent prints, ballistics, digital, DNA etc.)
  - Joint design for interoperability within services

- Full forensic support to both targeting (Intel) and rule of law
  - Labs are integrated by inter-lab protocols
  - “Customer oriented”, with automatic feeds into policing systems

- Forensic “items” managed for “chain of custody” use; triaged for intel use

- Reach back to United States Army Criminal Investigation Laboratory (USACIL) for all-agency coordination
JEFF Examples
Joint Expeditionary Forensic Facilities (JEFF)
Way Ahead

1) Evidence Receiving
2) Photo Laboratory
3) Dry Laboratory (Non Porous)
4) Wet Laboratory (Porous)
5) Conference Room / Office
6) Firearms Examination (IBIS)
7) Firing Bay & Ref. Library
8) Un-Processed Evidence storage
9) Storage
10) Processed Evidence Storage
Deployable Examples

- Leverages Previous Success & Concepts
  - NAVEODTECH
  - CEXC
  - NIJ/NFSTC

- Internal access via causeways

- Configured for shore power with emergency generator backup

- Each shelter unit ~400SF

- Transportable
Defense Forensics Enterprise System (DFES)
Way Ahead (1 of 2)

➢ Synchronizes DOD’s forensic capabilities in all operational environments

➢ Defense Forensic Network (DFN) connects DOD forensic operations virtually
  ▪ electronically share all forensic operations information
  ▪ link U.S. forensic, biometric, law enforcement, medical, and intel systems and databases to support DOD, U.S. governmental agencies, and allies to maximize effectiveness
Defense Forensics Enterprise System (DFES)
Way Ahead (2 of 2)

- Provides rapidly deployed forensic capabilities anywhere in the world
- Synchronizes world-wide DOD forensic operations
  - identification and collection of items wherever found
  - analysis, storing and sharing of forensic information and reports throughout DOD, U.S. inter-agencies, and our allies
Defense Forensic Enterprise System

**Defense Forensics Program Office:**
- Forensics Policy, Doctrine & Tech Supv HQ
- Integration & Interoperability of Forensic databases
- Validates, prioritizes & directs deployable mission requirements
- Develops strategic forensic plans & programs

**Defense Forensic Training & Research Academy:**
- Provides trained forensic examiners & technicians to DOD
- Develops forensic courses to support operational needs
- Serves as the R&D center for DOD forensics

**Defense Institutional Forensic Laboratories:**
Provide the sustainment, rotational, and training base, and reach-back for worldwide forensic analyses.

**Forensic Exploitation Cell:**
- Tech Supv of JEFFs
- Forensic Plans
- Forensic Case Mgmt

**Joint Expeditionary Forensic Facilities (JEFF):**
- Provide in-theater forensic analyses support
- Modular, tailorable
- Reach-back to institutional forensic laboratories for full forensic and databasing capabilities

**Forensic Science Advisors:**
Provide forensic advice to the senior warfighter.

**Tech/Spl Collection Teams:**
Provide warfighters specialized collection capabilities

**Unit Forensic Collection Teams:**
Provide warfighters with surge capacity, presumptive tests, and in-transit storage and visibility

**Individual Collection:**
Provide warfighters with standard collection capabilities

**Operational Forensic Requirements:**
- Rotational Base
- Comp/Prof Testing
- Training Base
- Research & Dev
- Hiring / Prof Dev
- Forensic Contracting
- Forensic Programmatic
- Quality Mgmt

**Tactical Forensic Requirements:**
- Modular
- Standardized
- Shared LIMS
- Reach-back Capable
- Shared Data-basing
- Accredited
- Airlift Capable
- Interoperable Protocols & Equipment

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**Strategic National (DOD):**
**Strategic Theater:**
**Operational:**
**Tactical:**
Training:

- Responsible for all DOD forensic examiner training
- DOD’s forensic examiner and technician certification authority, ensuring a common threshold of expertise throughout DOD
- Administers competency and proficiency testing
- Provides laboratory specific forensic training to others:

<table>
<thead>
<tr>
<th>DOD Senior Leaders</th>
<th>Military &amp; Host-Nation Lawyers</th>
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<tbody>
<tr>
<td>Military &amp; Host-Nation Judges</td>
<td>Forensic Science Advisors</td>
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<tr>
<td>Forensic Science Officers</td>
<td>Specialized Collection Teams</td>
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</tbody>
</table>
Research & Development:

- DOD’s forensic research and development center
  - Conducts in-house forensic R&D
  - Partner with academia, industry, DOD & government agencies
  - Collaborate with the National Forensic Science Technology Center (NFSTC) to leverage their work in deployable forensic instrumentation and technologies
  - Collaborate with the National Institute of Justice (NIJ) and the Forensic Resource Network (FRN) on technology transfer strategies, methodologies and initiatives.
Homeland Security Implications

- Deployable JEFFs for U.S. use
  - Critical incidents
  - Disasters (e.g. Katrina)

- Database evolution and linkage toward integrated intel systems
  (e.g. global identify management)

- Creation of FORSINT — forensic intelligence for COIN and criminal intel

- Technology transfer to criminal justice

- Standardizing forensic training
Defense Forensics Summary

- DoD Forensic Future Vision
- Created by Warfighter Needs
- Defense Forensics Enterprise System (DFES)
  - Leadership
  - Training
  - Reachback
  - Integration
- Homeland Security Implications
  - Theater to homeland transition
Disclaimer

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Backup Information Slides
Historical JEFF Perspective

Building a Capability

- Tactical Optics Kit (See the threat)
- Field Forensic Collection Kit (Evidence Against Threat)
- Lab Training Facility (Analysis Forward)
- WIT Team Training

CEXC bound for Iraq

CEXC Afghanistan
# DOD Forensics Management

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<th>Domains</th>
<th>DOD Forensic Program</th>
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<tbody>
<tr>
<td><strong>Doctrine</strong></td>
<td>Establish DOD policy &amp; doctrine for forensics</td>
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<tr>
<td></td>
<td>Provide technical oversight for forensic operations</td>
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<td></td>
<td>Develop DOD accreditation and certification standards</td>
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<td></td>
<td>Maintain DOD forensic databases</td>
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<td></td>
<td>Prioritize &amp; obtain funding for forensics</td>
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<tr>
<td></td>
<td>Establish DOD Forensic LIMS or LIMS interoperability</td>
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<tr>
<td></td>
<td>Establish collection policy, standards &amp; doctrine</td>
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<td></td>
<td>Program Management with acquisition discipline</td>
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<tr>
<td><strong>Organizations</strong></td>
<td>Develop standardized org templates are used to ensure interoperability</td>
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<td></td>
<td>Standardize deployable modules for shared forensic specialties</td>
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<td></td>
<td>Establish DOD wide forensic database(s)</td>
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<td><strong>Training</strong></td>
<td>Designates forensic training school(s)</td>
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<td>Standardizes POIs by forensic discipline</td>
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<td></td>
<td>Standardizes certification &amp; proficiency standards by forensic discipline</td>
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<td></td>
<td>Establishes collection training needs and courses</td>
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<tr>
<td><strong>Materiel</strong></td>
<td>Establishes forensic equipment standards for institutional labs and JEFFs</td>
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<td>Prioritizes &amp; POMs for forensic equipment requirements</td>
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<tr>
<td></td>
<td>Establishes collection equipment needs</td>
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<td></td>
<td>Establishes a WG to chart future Forensics/Biometrics integration solutions.</td>
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<td><strong>Leader Development</strong></td>
<td>Establishes leader development requirements for DOD/Service leaders.</td>
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<td><strong>Personnel</strong></td>
<td>Establishes forensic examiner hiring &amp; retention standards</td>
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<tr>
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<td>Centralizes/streamlines forensic hiring procedures</td>
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<td>Obtains HDLD designation for all forensic examiner positions</td>
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<td><strong>Facilities</strong></td>
<td>Establishes forensic facility standards</td>
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<td>Establishes forensic facility strategic plans (e.g., long term repository)</td>
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<td>Prioritizes &amp; POMs for forensic facility requirements</td>
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Create **DOD Level Defense Forensics Program Office** to:

- Promulgate forensic policy across DOD

- Develop and integrate forensic capabilities across DOD to create a sustainable, holistic suite of forensic capabilities

- Supports judicial, medical, and operational requirements

- Ensures interoperability with U.S. and international agencies and standards
Defense Forensic Enterprise Management
Way Ahead (2 of 2)

- Synchronizes forensic institutional labs and JEFFs
- Integrate forensics and biometrics into complementary, supportive capabilities
- Integrate and maintain DOD forensic databases and integrate these with applicable biometric, investigative, intelligence, and USG databases
- Identify future forensic applications and solutions