National Defense Industrial Association
Biometrics Conference
Technology and Standards Panel
21 January 2010

DoD Forensic Science & Technology
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The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.
Standards, Conditions, and Activities Very Different

Host Country Involvement
Criminal/Law Enforcement Purpose
Time on Site

Intelligence Purpose
U.S. Military Involvement

Spectrum of Conflict

WAR
General
Insurgency
Unstable
Stable

PEACE

Level

High
Low
Roadmap

• Centralized vs Decentralized
  • Faster, Better, Cheaper
  • NAS Report
  • Managing Results

• Gaps
  – Existing DoD Projects
  – Future Projects
Faster

Better

Cheaper

New

Different
Better, Faster, Cheaper
Smaller, Rugged
NAS Report – Executive Summary

Forensic science

forensic $cience

forensic $cience
NAS Report – S&T Summary

• Recommendation 3 – NAS Report
  – Establish validity of forensic methods
  – Determine estimates of uncertainty
  – Develop measures of reliability and accuracy

• Recommendation 5 – NAS Report
  – Investigate human observer bias
  – Identify sources of human error
  – Develop model protocols to minimize these errors

• Recommendation 10 – NAS Report
  – Support graduate education programs/fellowships
  – Emphasize multidisciplinary fields
  – Support continuing legal education programs
Recommendation 3 – NAS Report

Peer-reviewed research on uncertainty, accuracy and reliability
Recommendation 3 – NAS Report

Peer-reviewed research on uncertainty, accuracy and reliability
Recommendation 3 – NAS Report

Peer-reviewed research on the scientific basis & validity
Wine Tasting

The Wine News, as quoted on wine.com "Dusty, chalky scents followed by mint, plum, tobacco and leather. Tasty cherry with smoky oak accents…"

The Wine Advocate, describes a wine as having "promising aromas of lavender, roasted herbs, blueberries, and black currants.”
Forensics – Information Sharing

- Logical
- Technical
Forensic S&T Workshop

- Engage DOD & interagency leadership
- Establish an S&T baseline for the forensic program
- Map the baseline to desired future capabilities
- Enable a DOD S&T roadmap that defines transition paths to formal acquisition programs

Outcome

- 25 findings and 34 recommendation
  - Identified forensic S&T gaps
  - Stand up a Forensic S&T Working Group to address forensics issues and gaps across the community
DoD Forensic S&T Current Projects

ANDE

Fuctionalized Lanthanide Oxide Nanoparticle

Apply

Detect

A Single Kit to Screen for Explosives, Drugs, and GSR in the field
Man eats underwear to beat breathalyzer

By PARCY RICKARD of The Advocate

STETTLER — An 18-year-old Stettler man tried to eat his underwear in the hope that the cotton fabric would absorb alcohol before he took a breathalyzer test, provincial court heard this week.

David Zuurhut was subsequently acquitted of a charge of impaired driving because he blew 0.0, the legal limit.

But the testimony broke up people in Judge David MacNaughton’s provincial court here Thursday afternoon.

Mr. Zuurhut was collared by RCMP Const. Bill Robinson after he ran from his vehicle, which had been seen weaving down the highway.

While sitting in the back of the patrol car, Mr. Zuurhut tried to eat his shorts. Const. Robinson told the court.

Mr. Zuurhut said he ripped the cotton out of his shorts, stuffed the fabric in his mouth and then spit it out.

A class of law students from William E. Hay Composite High, in court as observers.
DoD Forensic S&T Future Questions

- Age of __________?
- __________ instead of DNA?
- __________ to find Gun Shot Residue?
- __________ instead of CODIS, IAFIS, NIBN, ...?
- ±___ and error rate = ___ instead of match, consistent with, etc
- __________ in min, secs instead of days, weeks, months?
Summary

✓ Centralized vs Decentralized
  ✓ Faster, Better, Cheaper
  ✓ NAS Report
  ✓ Managing Results

✓ Gaps
  ✓ Existing DoD Projects
  ✓ Future Projects
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