DHS SCIENCE AND TECHNOLOGY

Test and Evaluation of Emerging Threats In Complex Environments

Homeland Security

Science and Technology

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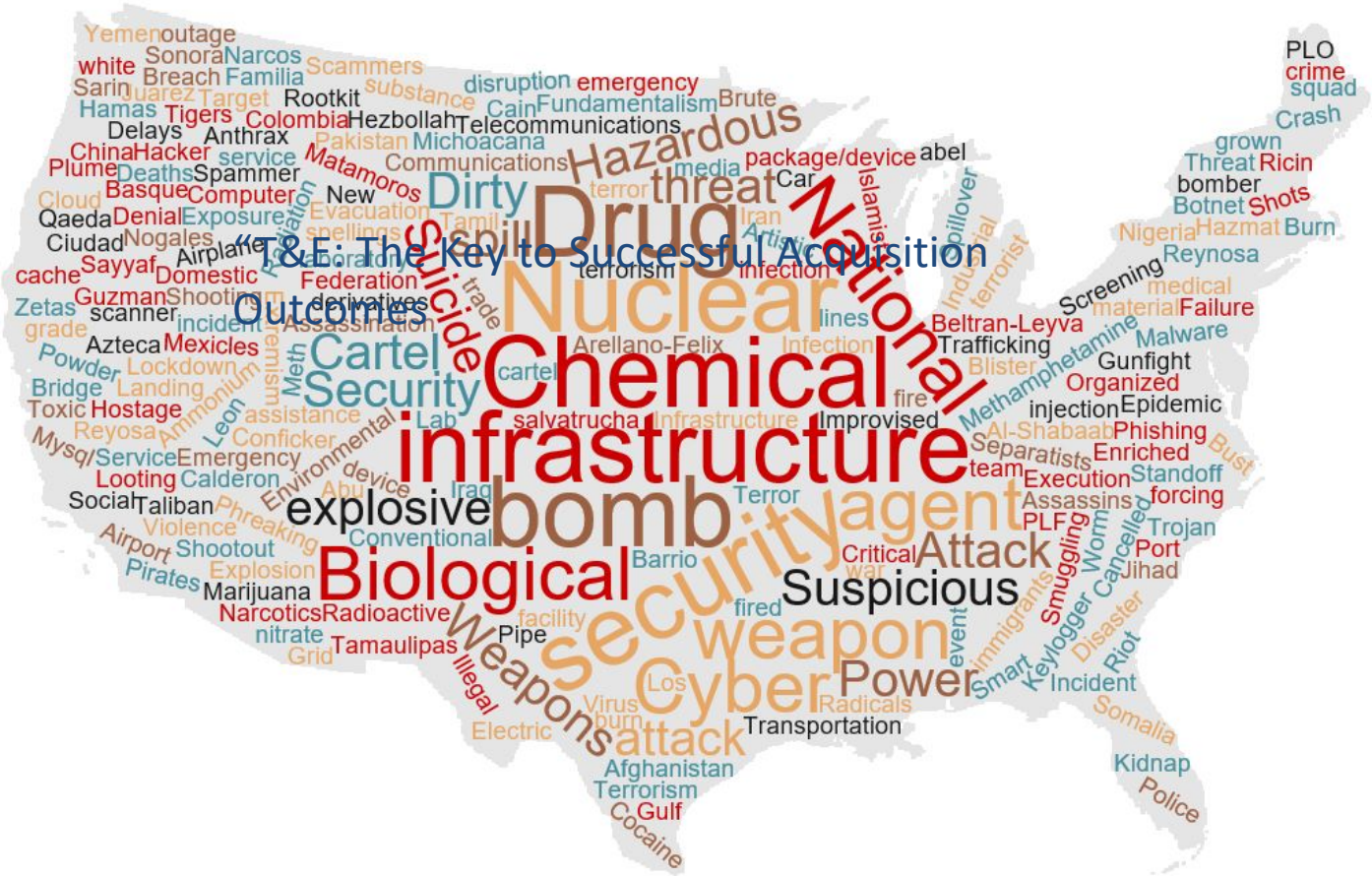
The Homeland Security Threat



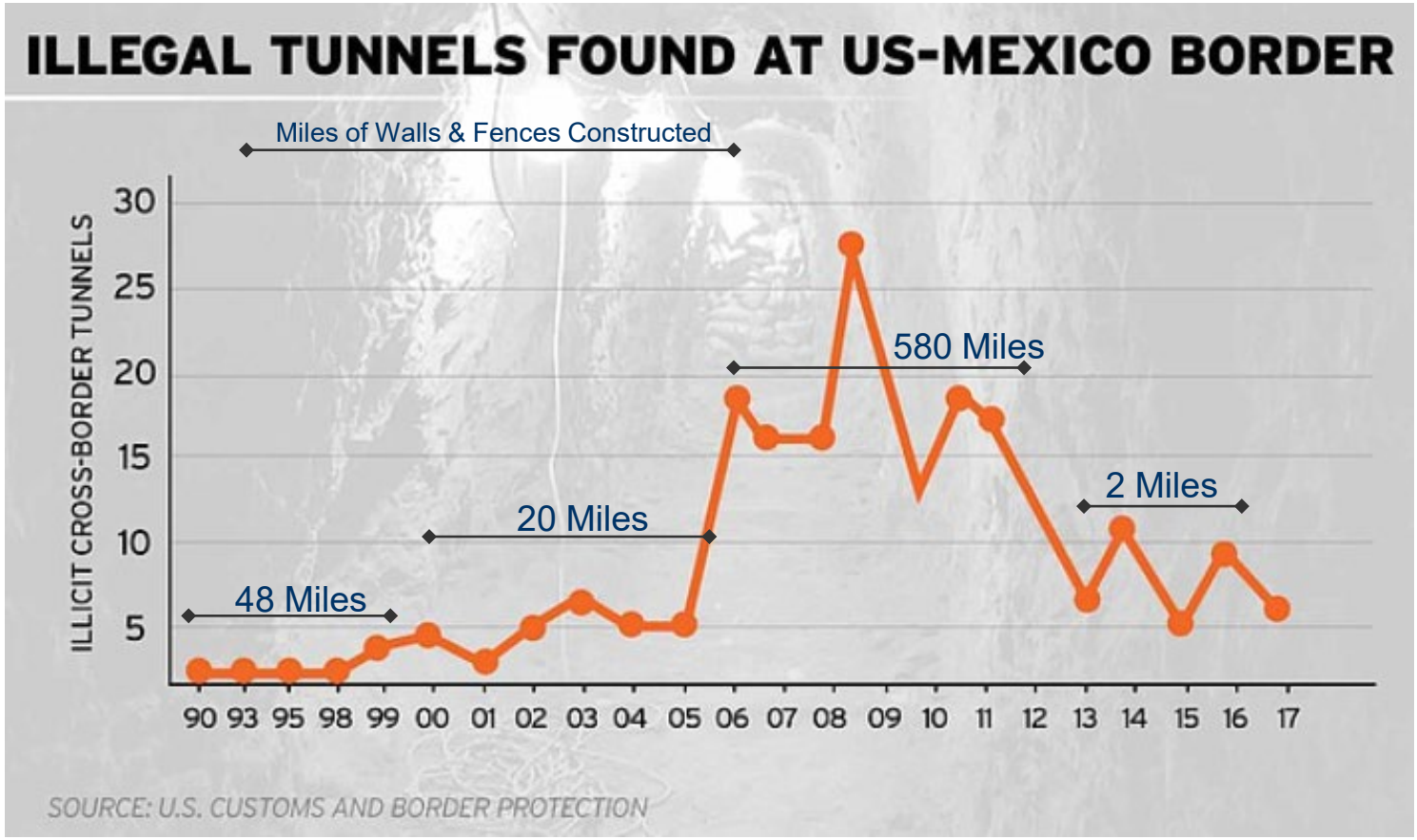
T&E: The Key to Successful Acquisition Outcomes

Cross-Border Tunnels

Depth – 22 feet
Length – 590 feet
Discovered in August
San Luis, AZ

261 lbs. - methamphetamine
14 lbs. cocaine
30 lbs. white heroin
13.7 lbs. brown heroin
6.8 lbs. fentanyl (~3 million doses)
Street value more than $1M

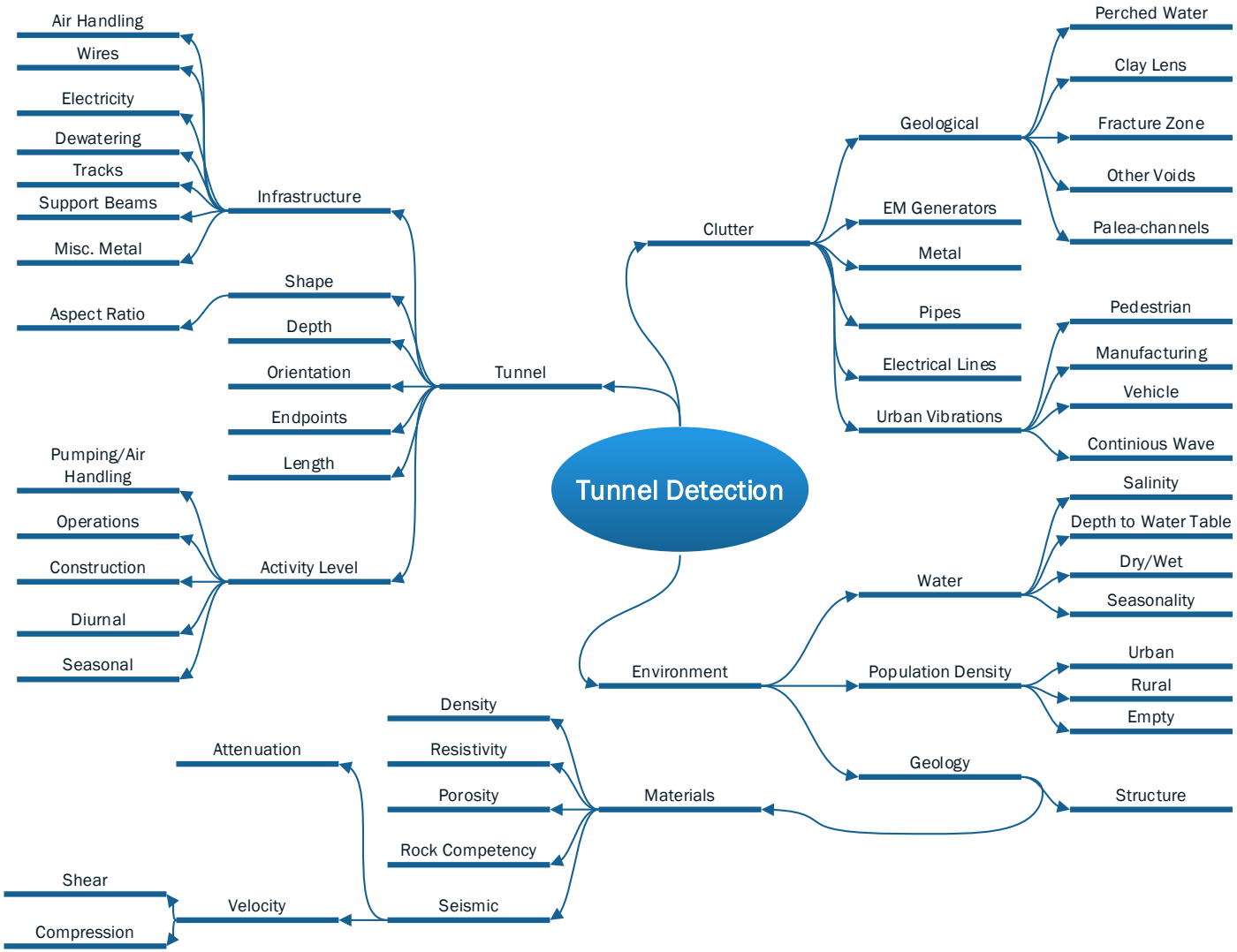
The Tunnel Threat



Tunnel Test Beds (Ranges)

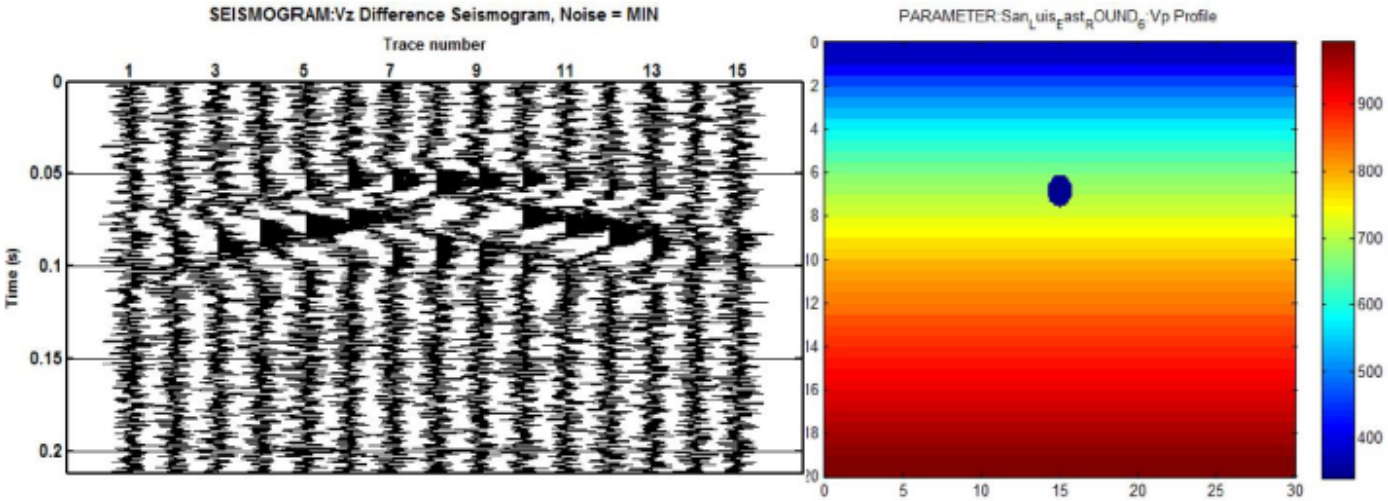
- Two tunnels built specifically for tunnel-related efforts
  - Yuma, Arizona – Joint DoD, DHS effort
  - Dugway, Utah
- Approximately 80 other tunnels available CONUS
  - S&T and CBP have worked with DoD, DTRA to catalog all CONUS-based tunnels
- Challenges
  - Representative geology
  - Operationally representative
  - Safety
  - Operational security
- Need for multipurpose tunnel test bed
  - Technology development (R&D)
  - Training-technology and tunnel operations

Tunnel Detection Variables



Modeling and Simulation

- Use of M&S vital to understand system performance with so many variables
- M&S used to support Analysis of Alternatives (AoA) early in the acquisition process
- Independent V&V conducted early



Partnerships

- Air Force Institute of Technology (AFIT)
- Defense Advanced Research Projects Agency (DARPA)
- Armament Research, Development and Engineering Center (ARDEC)
- Engineer Research and Development Center (ERDC)
- Lawrence Livermore National Labs
- Combating Terrorism Technical Support Office (CTTSO)
  - Annual tunnel working group – grown from 5 agencies to 14
  - Leverages financial, manpower, and brain power of our allies
    - Canada, United Kingdom, Israel, Singapore, and Australia