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Explosive detection- Summary of results

CREATIF

Network of Testing Facilities for CBRNE detection equipment

SEVENTH FRAMEWORK PROGRAMME

SEIBERSDORF LABORATORIES DGA BAM Bundesanstalt für Materialforschung und -prüfung COTECNA FOI TNO innovation for life

Content

- What is E- detection?
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What is E- detection?

- **Detection of solid, liquid, gaseous explosives or precursors**

- **Trace detection**
  - **trace amounts of explosive in gas phase or in solid or liquid particles**

- **Bulk detection**
  - **large amount of explosive in pyrotechnic devices or luggage, vehicles..**

- **Many different detectors on the market**

Data base on test facilities for E detection equipment

- ~15 testing facilities (=organisations) for explosives detection systems identified in 6 different European countries

Available standards and protocols

ECAC protocols (European Civil Aviation Conference)	Common Test Methodology (CTM). Restricted documents
ASTM E2520 – 2007 (international/US)	Standard Practice for Verifying Minimum Acceptable Performance of Trace Explosive Detectors
DSTO-TR-2033 (Australia)	Standard Protocol for the Evaluation of Explosive Detection Equipment
NIJ Report 100-99 U.S. Dept. of Justice	Evaluation of a Test Protocol for Explosives Trace Detectors Using a Representative Commercial Analyzer

➔**NO European Standards,** except Aviation confidential protocols

➔ US and Australian standards are too heavy (lot of tests), time and money consuming

➔UE labs have their own protocols, but keep them internally (confidentiality reasons)

➔ Particular installations required (clean rooms), and safety constrains

➔Many types of explosive to detect (military, civil and home made explosives) in different phases (solid, liquid, gas)

UE Standardization needed

• Need to develop European civilian standards, taking into account usability, human factors, operational issues

• ECAC process could serve as an inspiration or model for the future work on harmonizing test methods and protocols for E detection equipment

• Need for some coordination with other UE Groups (NDE Network on the Detection of Explosives, ERNCIP European Reference Network for Critical Infrastructure Protection) to avoid duplication and increase of work for involved experts.

Joint exercise needed

Road Map towards a Round Robin Exercise for testing laboratories working on Explosive detection equipment

➔ Find some voluntary participants

➔ Agree on the equipment or technology to be tested

➔ Agree on an explosive sample (TNT as a frequently used substance). Difficulty exchanging explosive samples (problem of transport legislation)

➔ Agree on a protocol to follow (pragmatic, not time and money consuming)

➔ Identify who can do what? (providers of samples, providers of detectors, send some specialists to work in a specific lab…)

➔ Verify that participants are able to perform tests according to the chosen protocol

Coordination between international working groups needed

➔ At National level:
police, gendarmerie, civil aviation, MoD

➔ At European level:
CREATIF, NDE (Network on the Detection of Explosives), ERN-CIP (European Reference Network for Critical Infrastructure Protection) , EDA C-IED Detection expert group (European Defense Agency Counter-Improvised Explosive Device), ECAC (European civil aviation conference)

➔ At International level:
NATO SCI 193 (detection and neutralization of road threats).

Need to put forward a synergy between these groups, to stimulate crossed exchanges of results. Benefits to coordination

Conclusions

Key points:

➔ Positive:

Better knowledge of the network of experts and the capacities of labs and organizations in E detection

➔ Challenge: be able to exchange classified protocols and results

➔ Certification system for E detection equipment to set up

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