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# **Test and Evaluation of Aviation Security Equipment in Germany"** **by Rainer Weinzierl,** **Head of Federal Police Technology Center**

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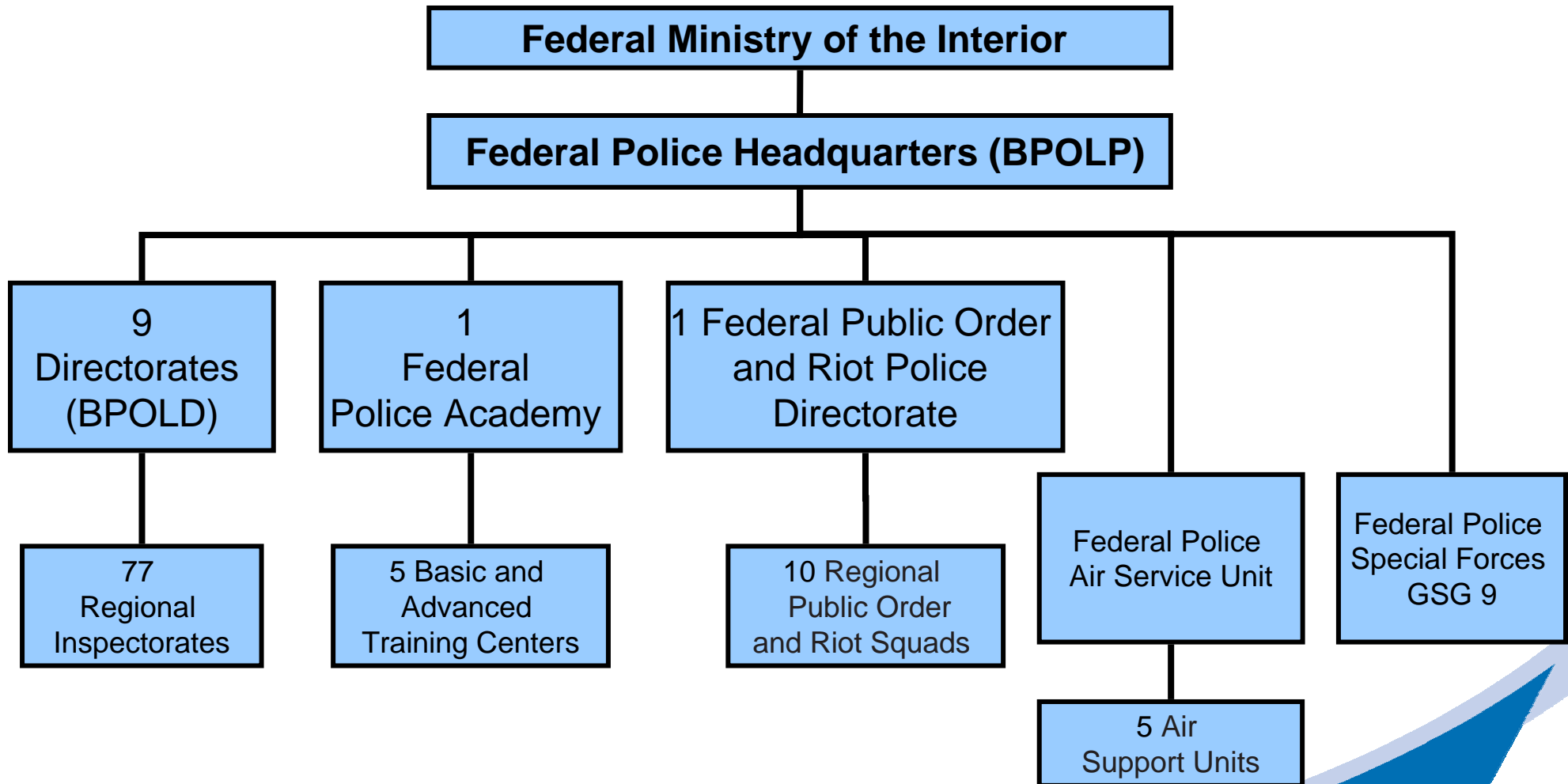
# Federal Police Overview

# Federal Police Overview

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- In the Federal Republic of Germany on principle it is the duty of the police forces of the individual Federal States to maintain public safety and order.
- Special police duties in important areas of public security and order are carried out by the Federal Police and the Federal Criminal Police Office
- The Federal Police:
  - is under the supervision of the Federal Ministry of the Interior
  - has approximately 40,000 employees, including more than 30,000 law enforcement officers,
  - duties are mainly regulated in the law on the Federal Police as well as in numerous other legal regulations

# Federal Police Organisation



# Federal Police Duties

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- Border security of the federal territory,
- railway policing,
- averting threats to the security of air traffic,
- law enforcement on the high seas, including environmental protection,
- protecting federal constitutional bodies
- involvement in police duties abroad under the responsibility of international organizations (UN, EU),
- supporting Federal States police forces particularly with large-scale operations
- ...

# Duties in the Field of Aviation Security

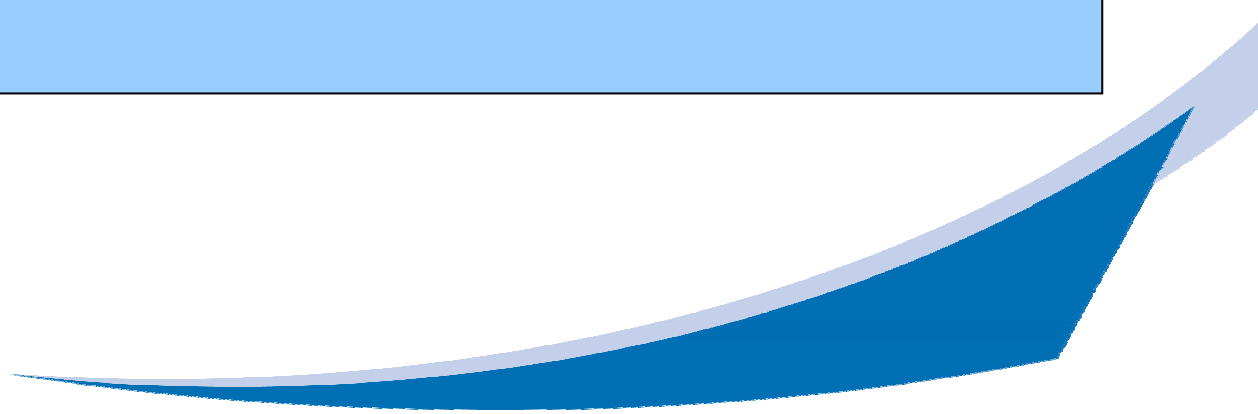
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- Screening of passengers and luggage
- Tendering and operating security equipment
- Measures when forbidden or harmful objects are identified => EOD
- Surveillance of the entire airport premises
- Carrying out protective measures for vulnerable flights and airlines (high-risk)
- ...

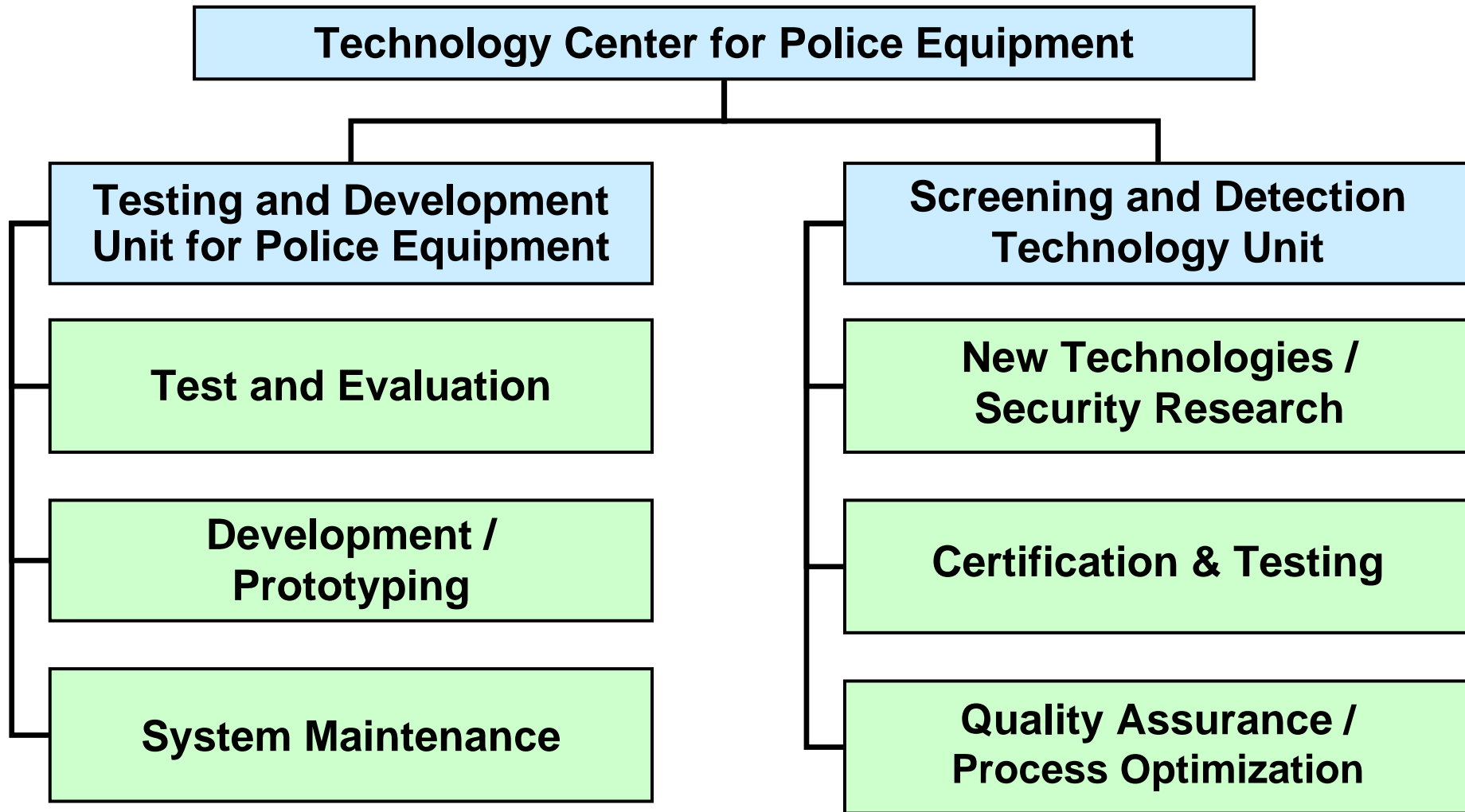
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# **Technology Center for Police Equipment**

Forschungs- und Erprobungsstelle FEM der BPol



# Organization



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# **Screening and Detection Technology Unit**

# Main Duties Screening & Detection Units

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- Market Monitoring
- Technology Assessment
- Test and Evaluation
  - Laboratory Assessment Testing
  - Tendering Process
- Development of Standards, Protocols and Test Articles
- Security Research (End User Know How)
- One of the four ECAC Test Center
- Process Description & Optimization
- Quality Assurance
- Participation in Study / Working Group (EU-Level)

# Infrastructure



Forschungs- und Erprobungsstelle FEM der BPol

# Development of EU- Certification Process

## **INTENTION: Standardized technical EU-Requirements**

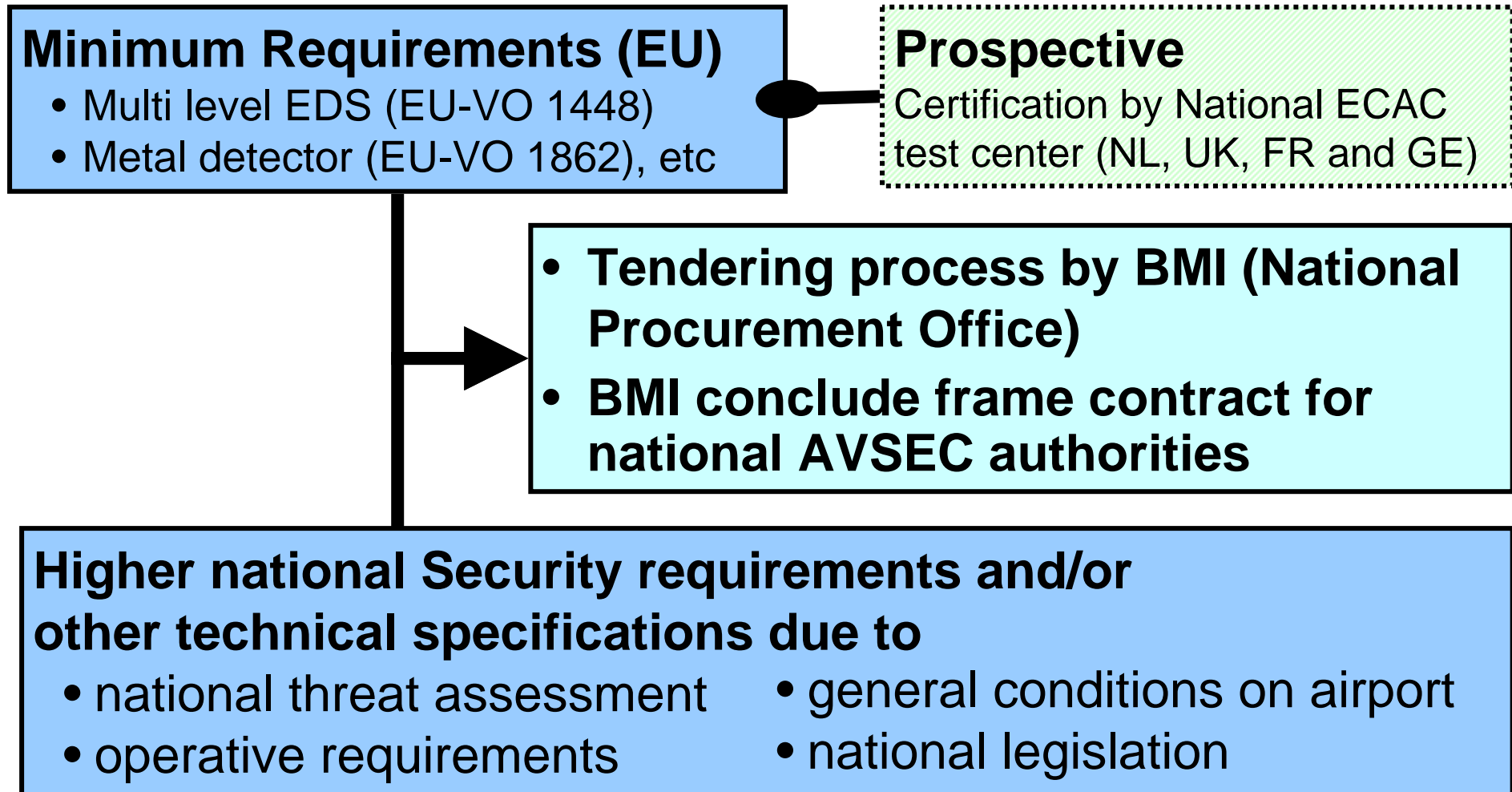
### **European Commission (AVSEC Comitee)**

- Conducts fundamental technical specifications (detection rate, etc.)
- Appoints ECAC TTF (specs in detail by national experts)

### **National Experts (technical level)**

- Development of European requirements in detail
  - (e.g. types of explosives, mixing ratio etc.)
- Description of the testing methodology
  - Definition of false alarm objects and concealments
  - Evaluation methods (counting of alarms, false alarms etc.)
  - Types, numbers and contents of test objects (e.g. suitcases)

# Requirements of AVSEC Equipment in Germany



# **National ECAC Test Center**

## **Common Evaluation Process (CEP)**

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- **Overall objective is to assist M.S. that security equipment used at EC airports meets EU specifications**
- **The ECAC Secretariat is the coordinating agency**
- **Tests are carried out at test centers volunteered by M.S.**
- **The Process**
  - **provides harmonized technical information**
  - **contributes to better informed decisions by M.S.**
  - **improves common technical standards within EC**
  - **is a voluntary cooperation program between M.S.**

# National ECAC Test Center

## Common Evaluation Process (CEP)

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- The Process is based on a common methodology for testing security equipment which is developed within the ECAC Technical Task Force and adopted at Directors General level.
- The Management Group
  - comprises representatives of the Contributing Authorities (which makes available at least one Participating Test Centre) and ECAC Secretariat
  - is chaired by a representative of a Contributing Authority
  - allocates equipment for testing at a Participating Test Centers
  - decides on the test results

# National ECAC Test Center

## Common Evaluation Process (CEP)

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### CEP assess compliance with EU-Standards (1 to 3):

- **Scoping test** to assess whether the system's performance justifies the resource expense of a full testing process.
- **Detailed Statistical Test** requires a Standardized Bag Set and Target Set. The materials used in the Target Set are a sub-set of a longer 'Threat Materials List' with a specific concealment scenario. Testing 75%, 100% and 200% Threat Quantity and a Laboratory Non-Threat Alarm Rate
- **Detailed Exploratory Testing,**
  - Alternative Targets
  - Larger Quantities
  - Density Alarm with cylinders of Steel and Aluminum

# Ongoing Test Projects

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- **Liquid Bottled Scanner**
  - Pilot Test at Fraunhofer ICT with Type A/B/C Machines
  - Fully operational trials at Frankfurt Airport
- **Whole Body Imager**
  - Laboratory Assessment of Automatic Detection
- **Advanced Cabin Baggage X-Ray Systems**
  - Laboratory and operational Trials
  - Optimization of Detection algorithms (ROC, Laptop, Liquid)
- **Trace Detectors**
  - ECAC Study Group work is ongoing (incl. USA and Canada)
- **Training Software**
- **Walk Through Metal Detectors**
  - Optimization Detection vs. Nuisance Alarm

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# **Testing and Development Unit for Police Equipment**

# Some Test Projects

## Police Gun 9mmx19

- ~ 34.000 Pistols incl. Level 3 Holster
- Tender volume: 16,500,000 Euro
- Lifecycle 25 years



## Vehicle Mounted Water Cannon

- Replacement of almost 80 Systems
- ~ 1,000,000 Euro per Unit
- Lifecycle 25 years

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**Thank you for your Attention!  
Questions?**