IMEMG MURAT
EUROPEAN MANUFACTURERS GROUP

The 3rd European IM Day
Amsterdam, 18-19th May 2017

Session chair
Almuth Kessler

SESSION 2

REGULATION & LEGAL FRAMEWORK

IM Policies & Implementations

National implementation

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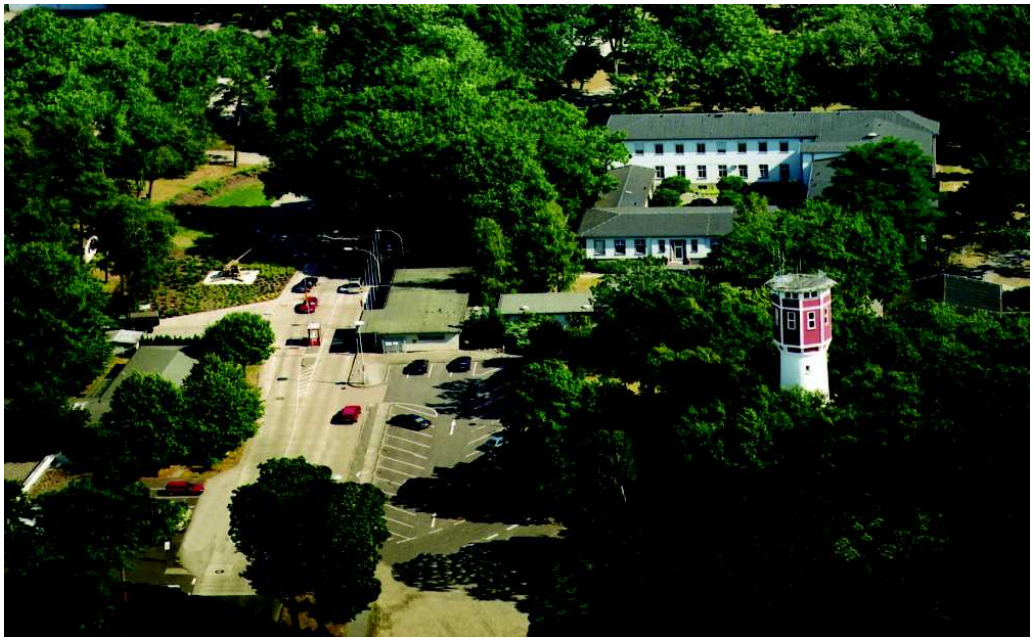
Wehrtechnische Dienststelle für Waffen und Munition



German Ammunition Safety and IM Policy
- an update -

Bundeswehr
Wir. Dienen. Deutschland.

Topics

- Ammunition Safety Principles in Germany
- Responsibilities for Ammunition Safety
- Insensitive Munitions Regulations in Germany

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- Responsibilities for Ammunition Safety
- Insensitive Munitions Regulations in Germany

Ammunition Safety

- German Federal Explosives Law **does not apply** to the Bundeswehr (German Armed Forces, GAF)
- However GAF are legally bound to lay down rules to substitute federal law
- The BMVg (German MoD) is author of the „*Concept of Technical Safety for Ammunition*“ (KMS)

Concept of Technical Safety for Ammunition (KMS)

- states that the Bundeswehr:
  - follows all applicable laws & regulations
  - applies all established safety standards
  - applies all nationally implemented NATO-Standards (like STANAGs for IM)

Concept of Technical Safety for Ammunition (KMS)

- formally establishes responsibilities for Ammunition Safety:
  - BAAINBw is responsible for Technical Ammunition Safety
  - Forces establish requirements for each ammunition on overhead safety, insensitivity, …, which BAAINBw has to meet
  - Forces are responsible for ammunition safety during storage, logistics and usage
  - waivers to safety requirements require approval by MoD, especially IM

Concept of Technical Safety for Ammunition (KMS)

- <u>contains statements regarding IM Policy</u>
  - Newly procured Munition has to fulfill the requirements in terms of Insensitive Munition.
  - A Threat-Hazard-Assessment (THA) has to be done by the Forces
- <u>clarifies Responsibilities</u>

Topics

- Ammunition Safety Principles in Germany
- Responsibilities for Ammunition Safety
- Insensitive Munitions in Germany

Project Manager - Responsibilities

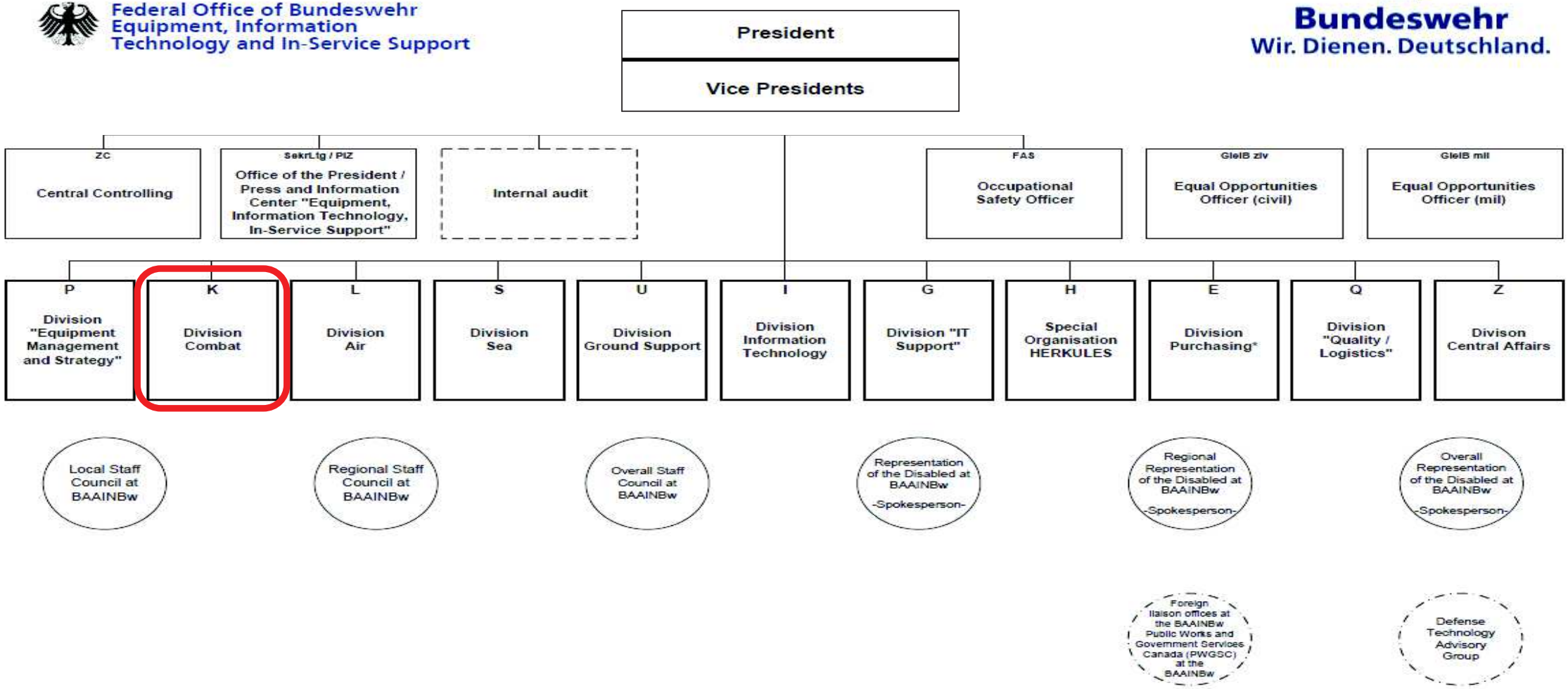
- responsible for all aspects of ammunition safety
- provides information to and requests evaluation from subject matter experts for relevant areas
  - initiators, fuzes, rocket motors, warheads, environmental protection, laser & radiation safety, packaging, environmental testing,…
  - on safety, reliability, performance
  - on IM characteristics

Project Manager - Responsibilities

- involves the Central Office For Technical Ammunition Safety (ZMS)
  - recommended: during early stage of project for advice
  - mandatory: prior to release to Forces
- manages time, funds and contracts with industry

Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support

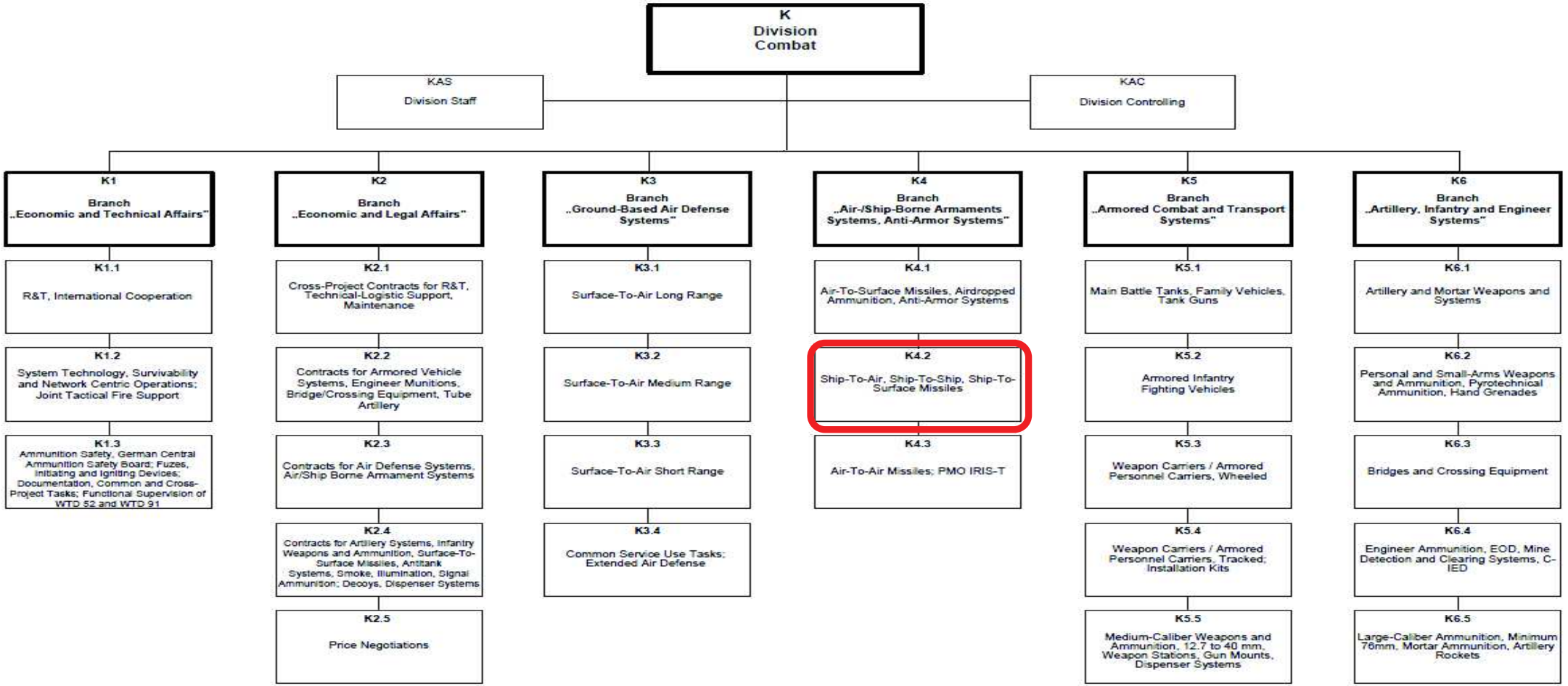
Bundeswehr
Wir. Dienen. Deutschland.



* At the same time Defense Materiel Disposal Officer at BAAINBw (BVW-BAAINBw)

---- Temporary organizational unit of the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support until tasks are taken over by the assuming organizational area

Date: October 2012


K
Division
Combat
KAS
Division Staff
KAC
Division Controlling
K1
Branch
„Economic and Technical Affairs"
K1.1
R&T, International Cooperation
K1.2
System Technology, Survivability and Network Centric Operations; Joint Tactical Fire Support
K1.3
Ammunition Safety, German Central Ammunition Safety Board; Fuzes, Initiating and Igniting Devices; Documentation, Common and Cross-Project Tasks; Functional Supervision of WTD 52 and WTD 91
K2
Branch
„Economic and Legal Affairs"
K2.1
Cross-Project Contracts for R&T, Technical-Logistic Support, Maintenance
K2.2
Contracts for Armored Vehicle Systems, Engineer Munitions, Bridge/Crossing Equipment, Tube Artillery
K2.3
Contracts for Air Defense Systems, Air/Ship Borne Armament Systems
K2.4
Contracts for Artillery Systems, Infantry Weapons and Ammunition, Surface-To-Surface Missiles, Antitank Systems, Smoke, Illumination, Signal Ammunition; Decoys, Dispenser Systems
K2.5
Price Negotiations
K3
Branch
„Ground-Based Air Defense Systems"
K3.1
Surface-To-Air Long Range
K3.2
Surface-To-Air Medium Range
K3.3
Surface-To-Air Short Range
K3.4
Common Service Use Tasks; Extended Air Defense
K4
Branch
„Air-/Ship-Borne Armaments Systems, Anti-Armor Systems"
K4.1
Air-To-Surface Missiles, Airdropped Ammunition, Anti-Armor Systems
K4.2
Ship-To-Air, Ship-To-Ship, Ship-To-Surface Missiles
K4.3
Air-To-Air Missiles; PMO IRIS-T
K5
Branch
„Armored Combat and Transport Systems"
K5.1
Main Battle Tanks, Family Vehicles, Tank Guns
K5.2
Armored Infantry Fighting Vehicles
K5.3
Weapon Carriers / Armored Personnel Carriers, Wheeled
K5.4
Weapon Carriers / Armored Personnel Carriers, Tracked; Installation Kits
K5.5
Medium-Caliber Weapons and Ammunition, 12.7 to 40 mm, Weapon Stations, Gun Mounts, Dispenser Systems
K6
Branch
„Artillery, Infantry and Engineer Systems"
K6.1
Artillery and Mortar Weapons and Systems
K6.2
Personal and Small-Arms Weapons and Ammunition, Pyrotechnical Ammunition, Hand Grenades
K6.3
Bridges and Crossing Equipment
K6.4
Engineer Ammunition, EOD, Mine Detection and Clearing Systems, C-IED
K6.5
Large-Caliber Ammunition, Minimum 76mm, Mortar Ammunition, Artillery Rockets

Subject Matter Experts - Responsibilities

- provide expert advice in specific areas of ammunition technology and safety
- evaluate documentation provided by project and industry
- recommend and perform testing

Subject Matter Experts - Responsibilities

- Compile report on test & evaluation results
  - on all areas for project manager
    - Safety
    - Performance
    - Reliability
  - on Technical Ammunition Safety only for ZMS
    - Standardized short format
- Subject Matter Expertise for Insensitive Munition within German Armed Forces is located at the **WTD 91**

Bundeswehr Technical Center for Weapons and Ammunition (WTD 91)

Bundeswehr
Wir. Dienen. Deutschland.

LTG — **Bundeswehr Technical Center for Weapons and Ammunition** (Meppen) — 001 — Tel. 2000

- 010 — Staff** — Tel. 2010
- Occupational Safety Officer (FAS)* — Tel. 2150
- 020 — Commissioner for Gender Equality — Tel. 2020

TBS 100 — Engineering and Operational Services, General Services, Occupational Safety and Health — Tel. 2100

- Site and Construction Services — Tel. 2110
- Workshops, Preparation of Work , Construction — Tel. 2120
- Environmental Simulation, Ammunition Arsenal, -Packaging, -Testing, Hazardous Goods Officer — Tel. 2130
- Teaching Staff for Ammunition and Explosives — Tel. 2140
- Protection Services FAS — Tel. 2150

GB 200 — Metrology — Tel. 2200

- Test Operations, Firing and Detonation Safety — Tel. 2210
- Measuring Technology, IT-Service — Tel. 2220
- Flight Path Tracking; Telemetry — Tel. 2230
- Very-High-Speed-, High-Speed- Photo, Film and Video Documentation — Tel. 2240

GB 300 — Explosives Center — 2300

- Chemistry and Mechanics of explosives — Tel. 2310
- HE, Pyrotechnics, IM-Technology — Tel. 2320
- Rocket Propulsion Systems, Gun Propellants — Tel. 2330
- Ignition and Initiation Systems — Tel. 2340
- Central Ammunition Surveillance, Classification — Tel. 2350

GB 400 — Weapons, Ammunition, Missiles, Effects and Protection — Tel. 2400

- Weapons and Ammunition Technology, Effects and Protection, Safety Aspects — Tel. 2410
- Gun systems and Ammunition — Tel. 2420
- Rockets, Guided Missiles, UAV, Airdropped Ammunition — Tel. 2430
- Effects and Protection of Mobile Platforms, Warheads — Tel. 2440
- Protection and Environment of the Soldier, Human/Technology — Tel. 2450

GB 500 — Simulation, Reconnaissance and Sensors — Tel. 2500

- Simulation, Simulation technology, Network Centric Warfare — Tel. 2510
- Optics/Optronics, Laser Technology, Directed-Energy Weapons, Combat Training Facilities, Battlefield Reconnaissance — Tel. 2520
- Acoustics , Bundeswehr Noise Measurement and Evaluation Center — Tel. 2530
- Geoinformation — Tel. 2540

WAS 900 — Economic and Administrative Services — Tel. 2900

- Internal Services, Security — Tel. 2910
- Personnel, Organization — Tel. 2920
- Budget, Procurement, Contracts, Materiel Management — Tel. 2930

Address: Wehrtechnische Dienststelle für Waffen und Munition, Schießplatz, 49716 Meppen

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E-mail: WTD91@bwb.org
Internet: www.bwb.org/wtd91

Key:
Ltg: Director
TBS: Economic and Administrative Services
GB: Business Division
WAS: Economic and Administrative Services

* **Occupational Safety Officer (FAS)**
Performs tasks autonomously and directly reports to the Director of the Technical Center in matters of occupational safety

** **Executive Quality Management Officer (QMB)**
directly reports to the Director of the Technical Center in matters of quality management

Local Staff Council at WTD 91 — Tel. 2080

Spokesperson of Severely Disabled Persons at WTD 91 — Tel. 2087/2834

Date: February 2011

ZMS

„Zentrale Stelle für konstruktive MunitionsSicherheit“

(Central Office for Technical Ammunition Safety)

- created 19.02.2002 as an independent Safety Board
- establishes working principles and procedures
  - coordinates meeting of subject matter experts to evaluate overall technical ammunition safety
  - provides recommendations to projects
  - ZMS involvement by projects is mandatory
- part of the department „Land-Warfare“, where all ammunition development and procurement projects are managed

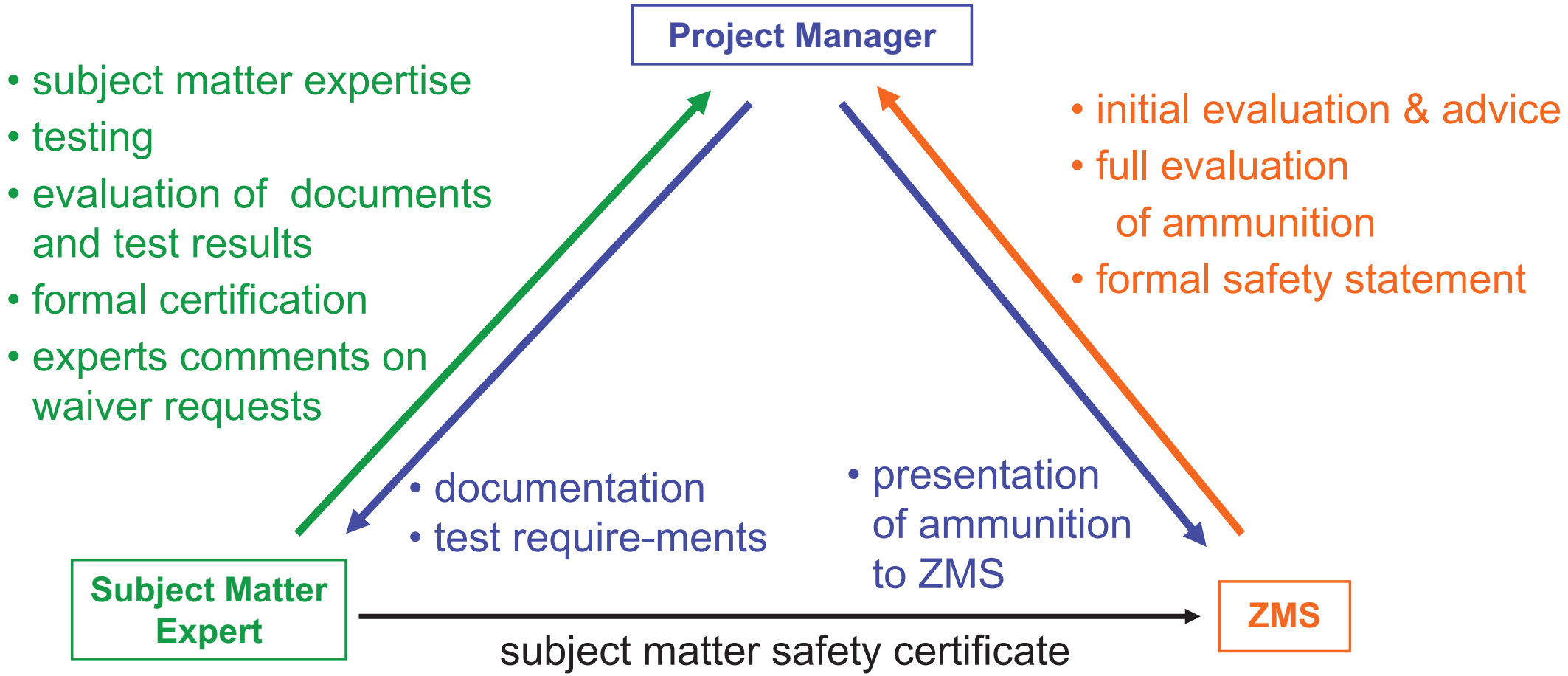
ZMS

- provides advice to Project Manager
  - which areas of ammunition technology and safety need to be dealt with and the respective subject matter experts
  - applicable regulations
  - information on technical ammunition safety and related subjects
  - recommendations only

ZMS

- <u>evaluates technical ammunition safety</u>
  - independent of project
  - based on subject matter expert‘s results (direct link)
    - verifies documentation is complete and plausible and
    - covers all relevant aspects
    - documents identified shortcomings, and recommends corrective actions or limits on usage
  - guarantees the same level of scrutiny for all projects
- <u>issues technical ammunition safety statement</u>

Cooperation



Topics

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- Responsibilities for Ammunition Safety
- Insensitive Munitions in Germany

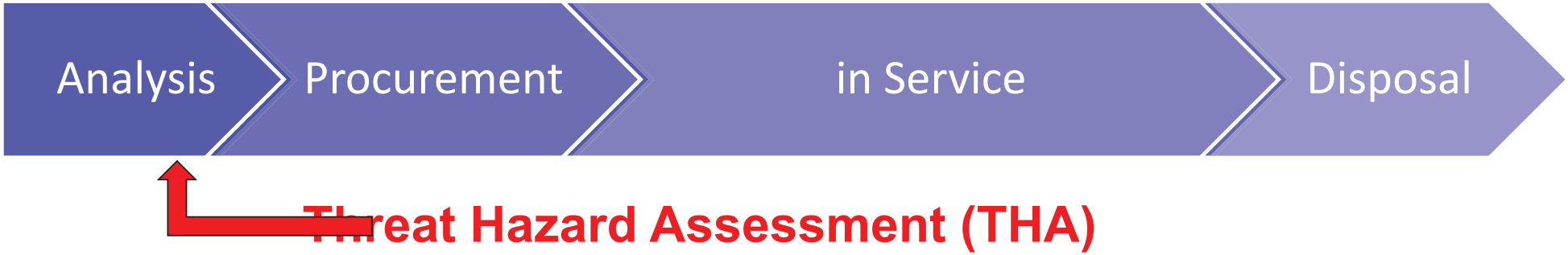
Insensitive Munitions (IM)

- Germany does not have a particular IM Policy document, but has statements on IM included in its KMS
- Germany signed the MSIAC MoU in 2005
- Since then R&D as well as cooperations with industry and other countries improved our know-how, and continue to do so

IM-Assessment of Ammunition

- IM Assessment of Ammunition is part of the regular procurement process of ammunition
- The Procurement Process in Germany is based on the „Customer Product Management“ (CPM(nov.))

IM-Assessment of Ammunition



- At the end of the Analysis phase it is decided what kind of ammunition will be procured, including IM requirements (THA)
- In the beginning of the Realization phase the contract with the industry is signed
- The IM requirements are to be part of this contract
- Tests are performed in the Realization phase

IM Testing

- WTD 91 performs all tests concerning Ammunition Safety
- All Insensitive Munitions Tests are performed at WTD 91 as well
- At WTD 91 we can perform almost any kind of test (standard or tailored)
- All tests are performed according to STANAG 4439 and AOP 39
- LPG instead of kerosene
  (to be implemented into STANAG 4240 in 2017)

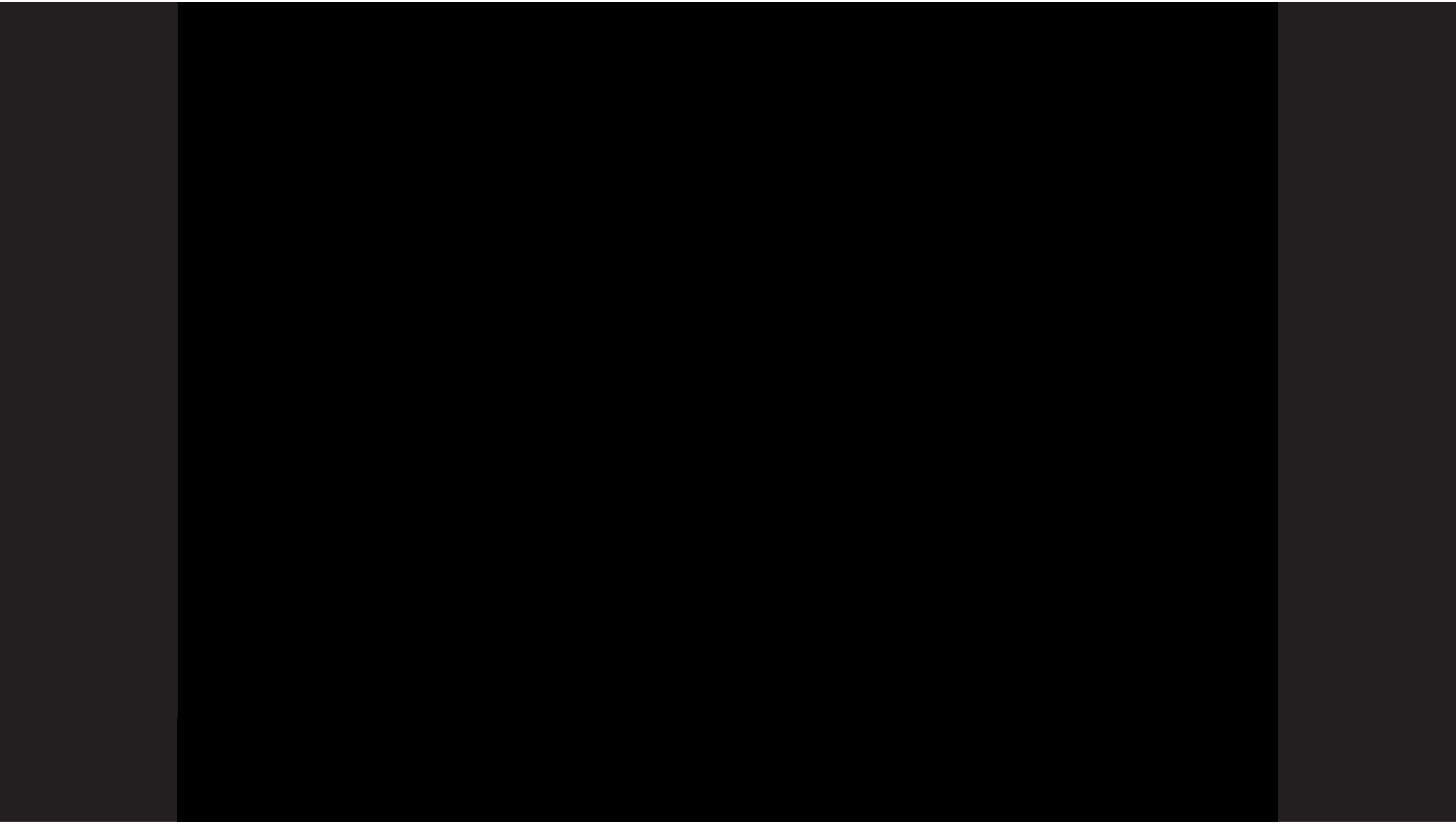
Fast Heating Test Procedure

Fast Heating:

- LPG- (Propane) Fire for better reproducibility and environmental compatibility
- Comparable to kerosene in terms of temperature and heat flux

LPG

Kerosene



Summary

- No independent IM-Policy document in Germany necessary
- All ammunition safety aspects are considered in document A-2070/3 (Ammunition safety, range safety)
- Standardized procurement system
- IM tests are performed at the WTD 91 according to NATO IM standards (STANAG)

Questions?
Thank you very much for your attention!