



ODC 2011 Industry Day

Julius Leber Kaserne Officers Club

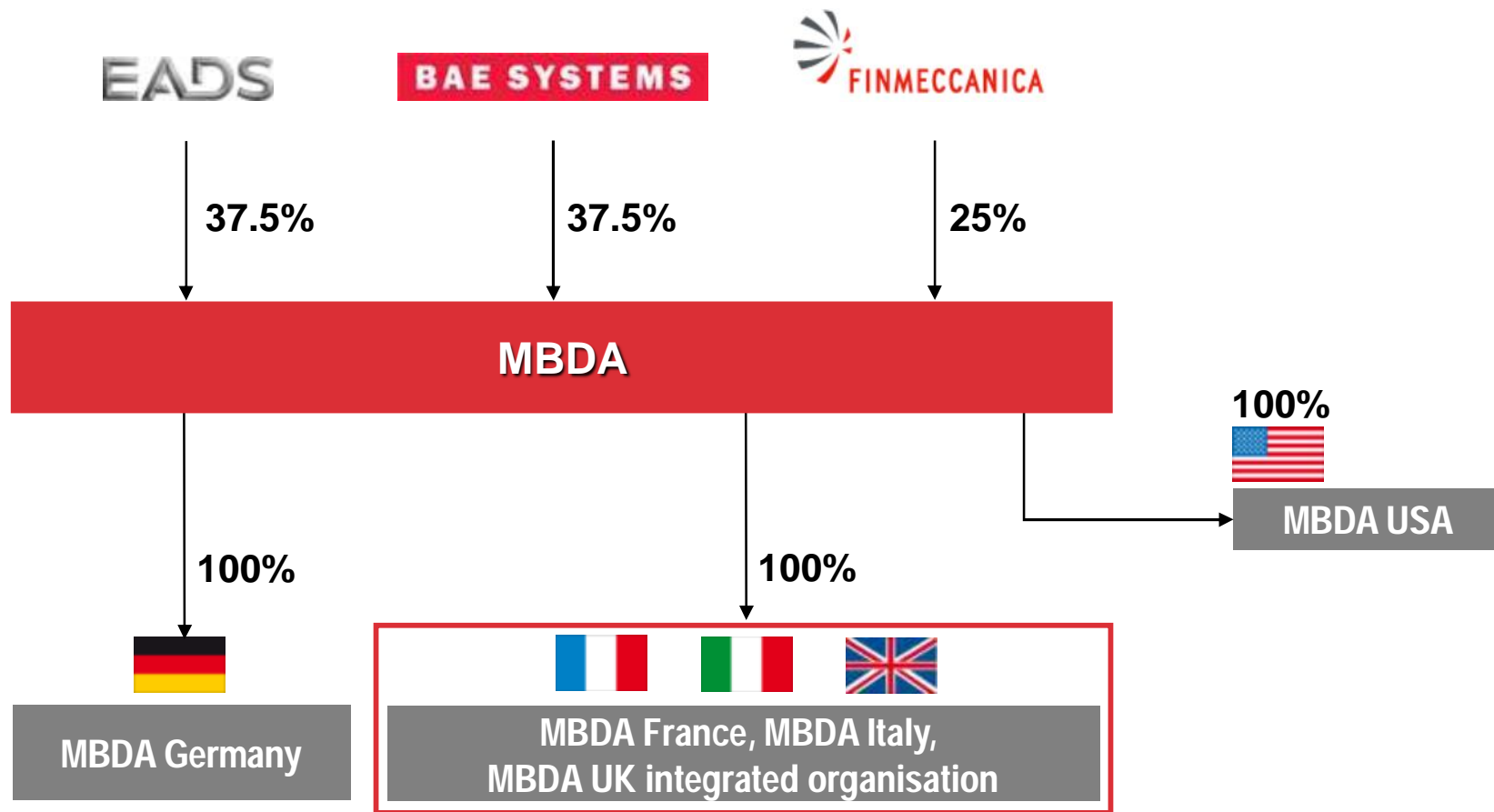


Oliver Dellschau
Head of Sales and Political Affairs

Content






- Group Structure
- The European Missile Systems House
- MBDA Germany – Site Schrobenhausen
- MBDA Germany – Ownership Structure
- MEADS
- PATRIOT
- RAM Block 2
- ESSM
- SHORAD (Fla)
- Questions

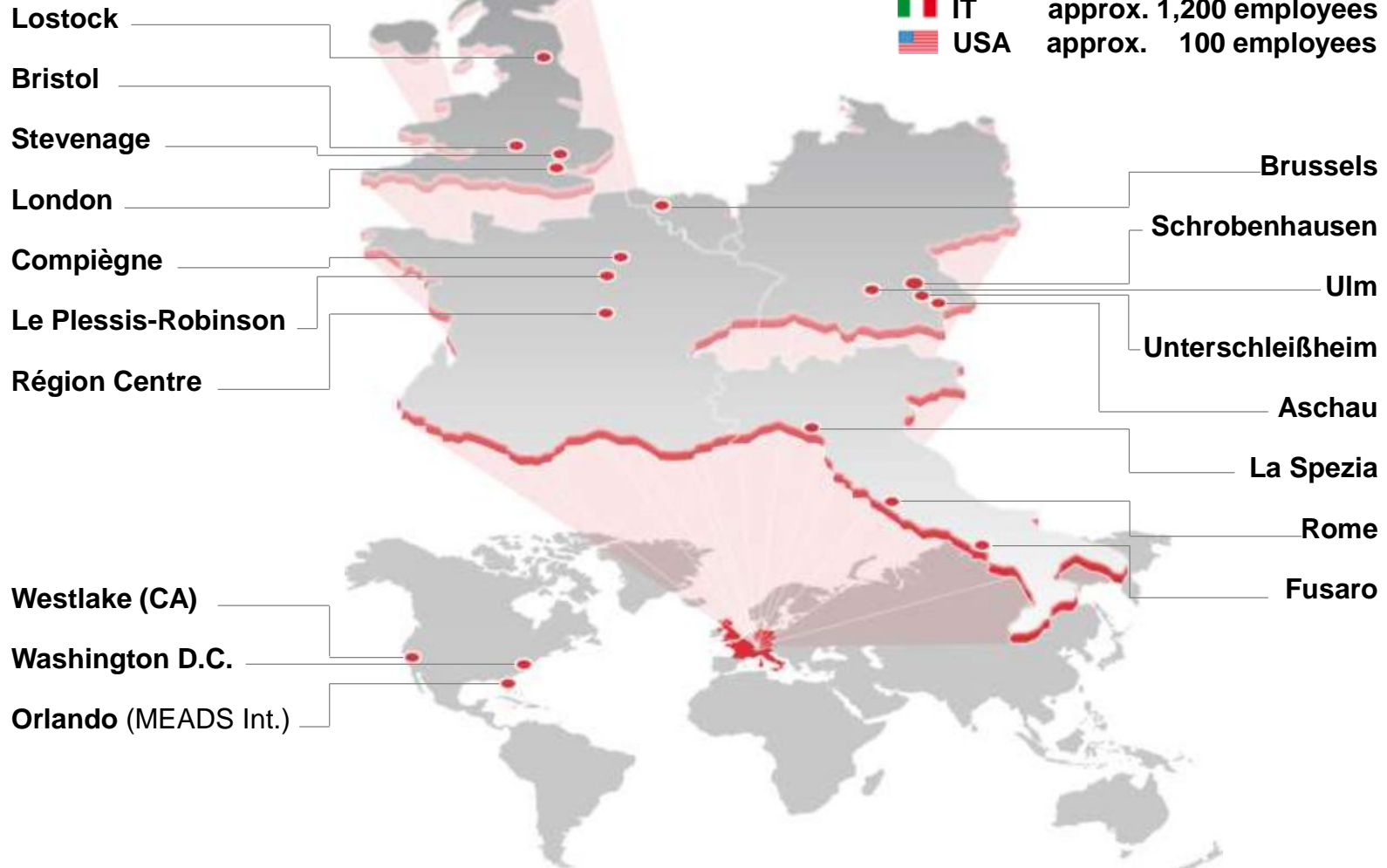
MBDA – Group Structure



MBDA – The European Missile Systems House

Employees: **approx. 9,600**
 Sales in 2010: **€2.8 Billion**

	FR	approx. 4,500 employees
	UK	approx. 2,500 employees
	DE	approx. 1,300 employees
	IT	approx. 1,200 employees
	USA	approx. 100 employees



MBDA Germany – Site Schrobenhausen

Schrobenhausen - Headquarters

Activities

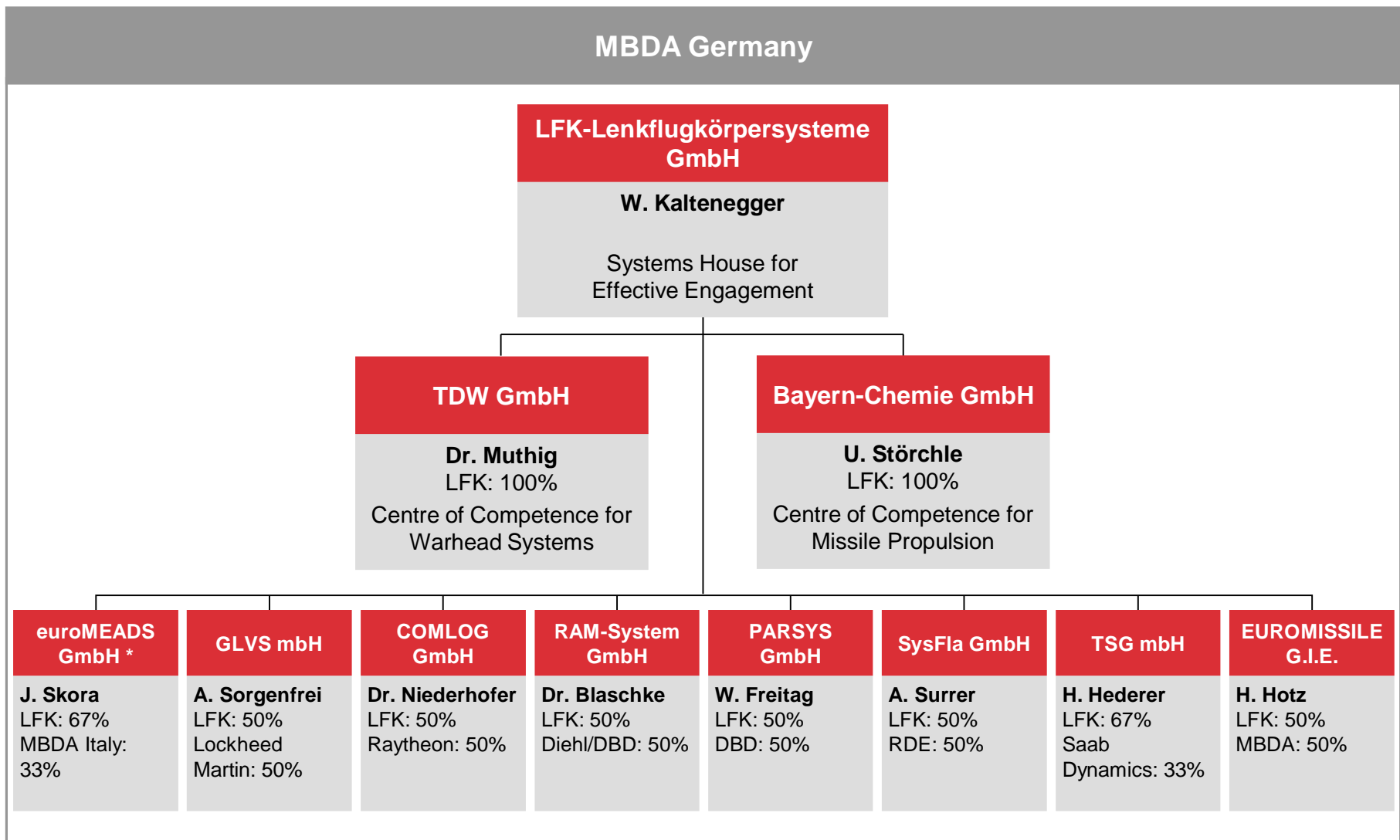
- Production
- Customer & Product Support
- Programmes / Sales
- Centre of Competence for Warhead Systems
- HR, Finance, Supply Chain Management

Admission for

- Storage of 240 t high explosives
- Warhead tests (up to 50 kg high explosives)
- Site terrain: 80,4 ha
- Test range: 20,8 ha



MBDA Germany – Ownership Structure

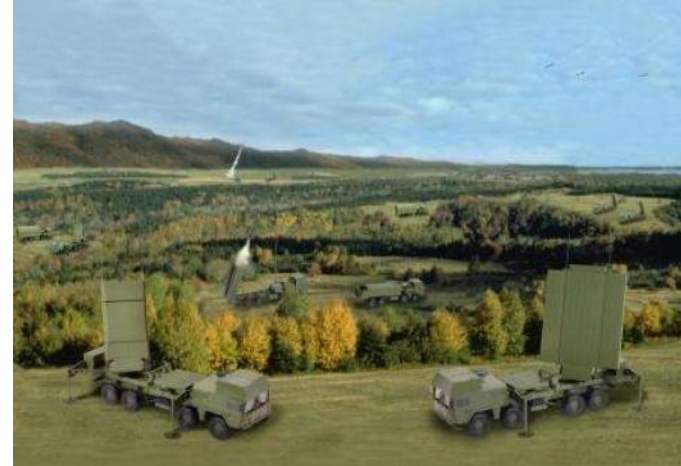


* 50% of MEADS International

MBDA Germany – MEADS

MEADS – medium-range air defence system (surface-to-air)

- Air defence system of the future (out-of-area missions, national and alliance defence)
- Use against all aerial targets, especially tactical ballistic rockets and cruise missiles with mass destruction potential
- Less hardware and less manpower to protect a large area
- Major contribution by Germany to NATO's future integrated air defence
- Transatlantic development programme (U.S., Germany and Italy)



Technical features

- Open system architecture with plug & fight capability, flexible configuration
- 360 degree protection
- Long range through PAC-3 MSE
- Air-transportable in A400M

Current contract status

- Development based on equal partnership and joint requirements until 2014
- Reshaping of program goals
- Luftwaffe intends to group around an “Air Defence 2020” Concept

MBDA Germany – PATRIOT

PATRIOT – ground-based air defence system (surface-to-air)

- Use against aerial targets at low and high altitudes
- Part of ground-based integrated NATO air defence
- Introduced by the German Luftwaffe since 1989
- Effectiveness enhanced by combat upgrade (e.g. introduction of PAC-3 CRI)



Technical features

- Multifunctional radar, phase-controlled antenna with sector mode
- High resistance to jamming
- Automated identification and target classification

Current contract status

- By 2010 second combat upgrade for 12 of 24 German fire units
- 2010 – 2025 technical system support and maintenance
- Partner of Raytheon in several PATRIOT derivatives

MBDA Germany – RAM

RAM – ship-based air defence system (ship-to-air)

- Self-defence system for seaborne marine units
- Highly effective against anti-ship missiles, helicopters, close and very close aircraft (success rate over 97%)
- System consists of firing post with electronic control unit and 21 missiles
- German-American development and production



Technical features

- Fire-and-forget missile
- All-weather capability
- Fast reaction
- High fire power
- Dual-mode seeker

Current contract status

- RAM Block 1 in series production
- RAM Block 2 under development
- Contract holder RAM-System GmbH (50% LFK GmbH / 50% Diehl/DBD) and Raytheon

RAM Block 2

- Customer:
 - Bundeswehr, US Navy
- Business Partners:
 - Raytheon and RAMSYS
- Status:
 - Cooperative development started in 2006 (industry prefinancing)
 - LFK is responsible for ERF development and the CAS prototype manufacturing
 - Development contract signed in Mai 2007
 - ERF PDR successfully conducted June 2007
 - System PDR (together with Raytheon) conducted Dec. 2007
 - ERF CDR conducted Dec. 2008, last CDR finished mid 2009
 - First Hardware development models delivered and under test

MBDA Germany – ESSM

ESSM – medium-range ship-based anti-aircraft missile (ship-to-air)

- Use for defence against supersonic missiles and aircraft
- Compatible with different start systems
- Used on class 124 frigates of the German Navy
- Further development of the Seasparrow missile by a multinational programme of 13 countries



Technical features

- High agility
- Use in all weather conditions
- Navigation by semi-active radar steering or command steering
- Change of target possible during flight

Current contract status

- Ongoing production of approx. 300 transition sections per annum
- Export orders for various countries

SHORAD (Fla) – High Level Requirements

- Amongst the whole diversity of targets from ‘classic’ to ‘asymmetric’ threats the most urgent and short term need is probably to fight rockets of all calibers, i.e. to fight the RAM (Rocket, Artillery, Mortar) threat.
- Whilst smaller calibers can be effectively destroyed by a canon in short range, bigger calibers need to be destroyed in larger distance to ensure full safety of the object to be protected.

Therefore a mix of effectors is necessary for effective protection against all kind of threats.



LFK NG - The New Generation SHORAD Missile

The LFK NG is a joint venture between Diehl BGT Defence and LFK-Lenkflugkörpersysteme GmbH

- lock-on-before-launch AND lock-on-after-launch capability (data link integrated)
- highly effective against rockets (RAM)
- high lethality against all other required targets (including UAV, cruise missiles, etc.)
- dual pulse rocket motor for maximum agility during endgame combined with maximum range of engagement
- high resolution IR-seeker
- vertical take-off capability (360° protection)
- salvo firing capability



Mass:	28 kg
Length:	1,8 m
Range:	10 km
Velocity:	up to 2,2 mach



source: WTD 91/ Meppen

LFK NG – Crewpad Version

- Lightweight Configuration for rapid deployment (“Early Entry”) and (pre-) protection of assets like airfields, etc.
- Stand alone system (e.g. in early entry or short term protection scenarios) or
- Integration in different Airdefence-/ Campmanagement-/ BMC⁴I-Systems possible (in this case other available sensor information can be used as well)



Weapon Computer



Crewpad with Missile



Datalink Transmitter



FIRST (IR-Sensor)

Any Questions?

Thanks for your attention!

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MBDA Germany – SysFla

SysFla – short-range air defence system

- Defence of stationary objects (military camps, installations)
- Direct, escorting protection of highly mobile forces
- Intended as part of active air defence in the lower interception layer
- Basic configuration: NBS C-RAM, LFK NG with launcher, 360° IR sensor (FIRST), central command/fire control



Technical features

- Combination of effectors (LFK NG/NBS C-RAM)
- 360° radar/IR/electro-optical reconnaissance and fire control sensor capability
- Identification friend-or-foe
- Modular with growth potential

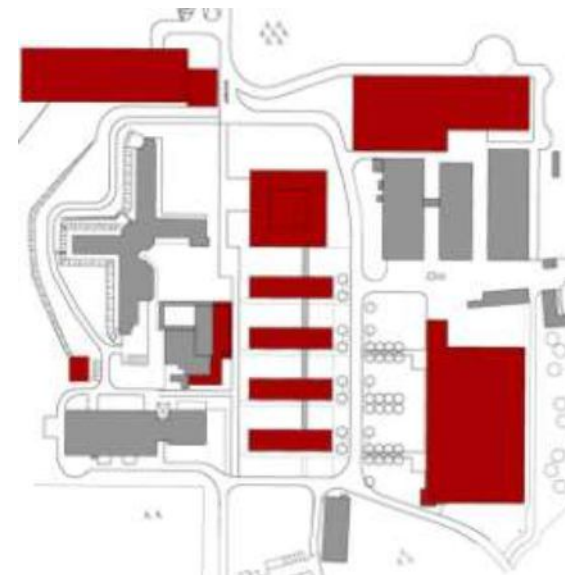
Current contract status

- Technical and commercial contract papers harmonised with BWB
- Budget approval
- Main contractor: LFK-Lenkflugkörper-systeme GmbH and Rheinmetall Defence Electronics (50% each)

MBDA Germany – Expansion of Schrobenhausen Site

Major milestones

- 2006: Purchase of site
- 2007: Relocation of headquarters
- 2007: Move of 120 colleagues from Unterschleissheim
- By 2011: Move of another 550 employees
- 2008 thru 2011: € 60 million investment in development of new site for more than 1,000 employees
- More efficient and cost-effective operations



MBDA Germany – Sites and Offices

Employees: **approx. 1,300**

Sales in 2010: **approx. €500 Million**

Office Bonn
(Michael Raadts)

Office Koblenz
(Mirko Niederkofler)

Schrobenhausen
650 employees

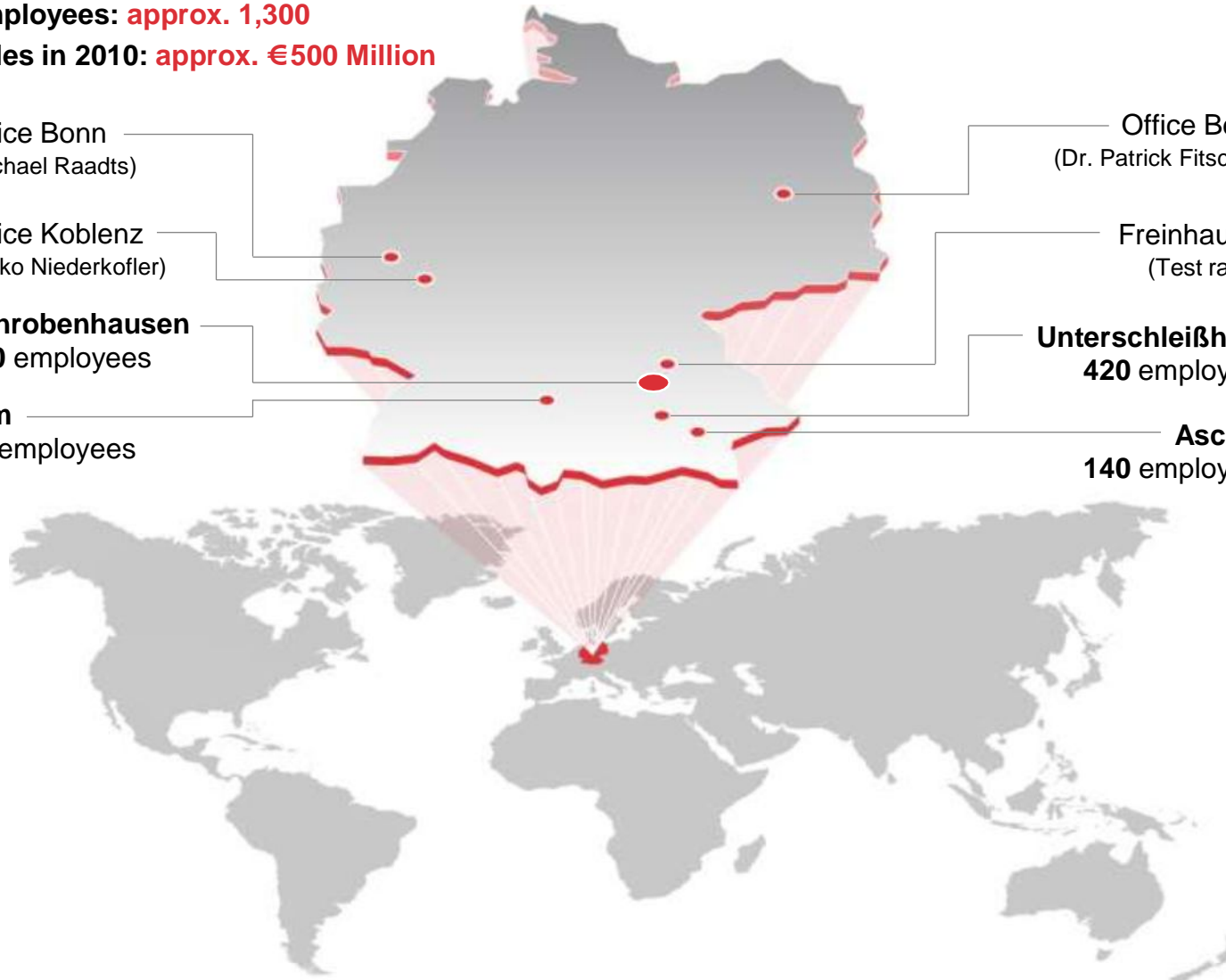
Ulm
70 employees

Office Berlin
(Dr. Patrick Fitschen)

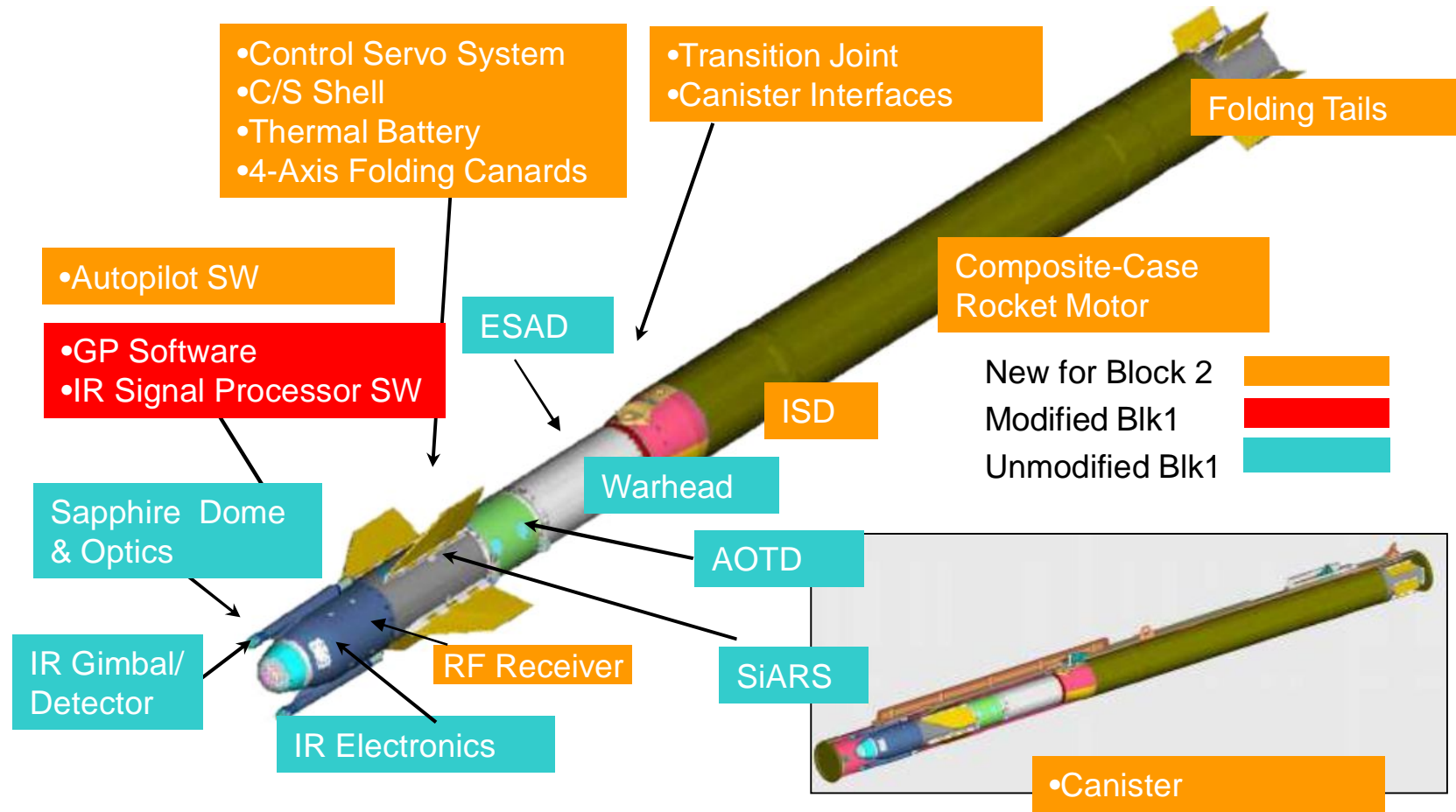
Freinhausen
(Test range)

Unterschleißheim
420 employees

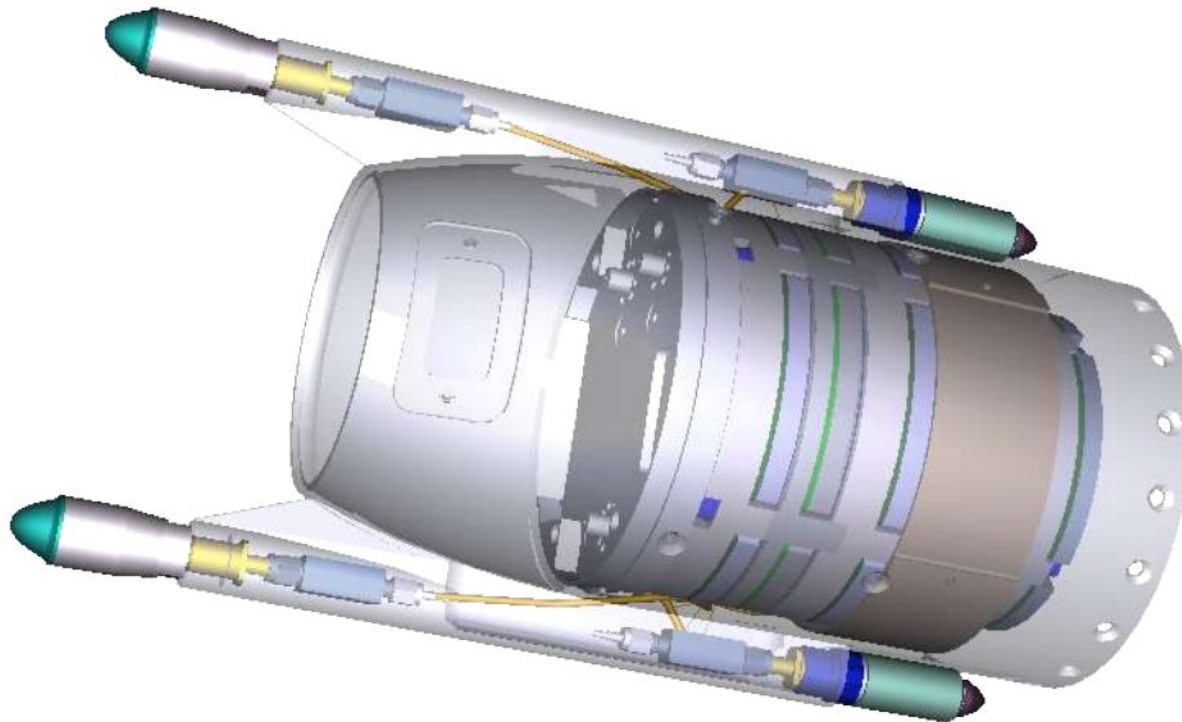
Aschau
140 employees



RAM Block 2 Configuration/Modifications



RAM Block 2 ERF



- LFK is the design authority and responsible for the ERF Seeker development
- The development is conducted together with EADS Ulm and was started in 2006 and will end 2012