From *EuroDefense* to *EuroSecurity*

Prof. Dr. Holger H. Mey
Head, Advanced Concepts
Defence & Security, EADS

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Advanced Concepts: Mission Statement

- Missions
  - Thinking (about) the Future
  - Conceptual Context
- Roles
  - External: Pathfinder and Dialog Partner
  - Internal: Advisor, Red Team Player, and Supporter

"If I had asked my customers what they wanted, they would have said faster horses".

Henry Ford

AC Global Outlook: Some Illustrations (1)

- Global Outlook: Analysis of Trends and Parameters
  - Hedging against Uncertainty
  - Limited Budgets
  - Manpower Constraints
  - Shift of Economic Power
  - Shift of Military Power (incl. Proliferation)
  - Adaptability of Opponent, Tactical Response Options
  - No/Low Collateral Damage
  - Not-Going-It-Alone Approach, Coalition Operations and Cooperative Security
  - In-Between Scenarios, Internal/External Security, Post-Conflict Engagements, Nation-Building
  - Overlapping Defense and Security / Mission Convergence
  - Mass Data Gathering
  - Cyber Space Security and Warfare
  - Threat from Within

AC Global Outlook: Some Illustrations (2)

- Deduction Process
  - Customer Challenges
  - Security Capability Requirements
  - Industrial Capability Requirements
  - System Requirements
  - Services/Products/Technologies
- Here: Only First Two Steps for Illustration

Translating Evolving Demands into Future Capability Requirements (1)

• Hedging Against Change, Uncertainty	• Flexibility, Versatility, Multi-Role/ Multi-Purpose/Multi-Use, Modularity, Adaptability, Scalability, Growth Potential, Spiral Development
• Limited Budgets	• Affordability, 80/60 Solutions, COTS, Plug 'n Play Solutions, New Financing Models, PPP, LSI, Provider Solutions, Outsourcing, Spiral Development, Modularity, Growth Potential, Upgradability
• Manpower Constraints	• Reduced Manning Requirements (e.g., Auto-mated Surveillance), Cooperative Recruitment Models, Joint Teams (e.g., SUZ), Outsourcing, PPP, Services, LSI, Provider Solutions
• Shift of Economic Power	• Providing Competitive Systems; Maintaining Technology and Innovation Base; Partnering
• Shift of Military Power *(incl. Proliferation of WMD, Dissemination of Hi Tech)*	• Robustness, Hardening, Redundancies, Autonomy, Fail-Safe Procedures, Resilience, Immunization, Absorbability, Disaster/Consequence Management, Counter-Countermeasures

Translating Evolving Demands into Future Capability Requirements (2)

- Adaptability, Tactical Response Options
- No/Low Collateral Damage
- Not-Going-It-Alone Approach, Coalitions
- In-Between Scenarios
- Post-Conflict Engagements, Nation-Building
- Overlapping Defense and Security / Mission Convergence
- Mass Data Gathering
- Threat from Within

- Ability to Go Against Concealed and Intermingled Targets, Urban Security Missions, Precision, ISR
- Accurate Intelligence, Continuous Surveillance, Exact Target Acquisition, Precision Engagement/Strike, Scaled Effects
- Interoperability, Plug 'n Play / Plug 'n Fight Solutions
- Interoperability, Civil-Military Cooperation
- Sustainability, Endurance, Logistic Support, Maintainability, Reliability, CIMIC, Scaled Effects, Surveillance, Behavior Prediction / Crowd Control
- Interoperability, CIMIC, Robust Security Equipment, Infrastructure Protection
- Automated Evaluation, Assessment Support
- Behavior Checks, Plausibility Tests

Planning for the Unknown

- In General: Hedging
  - Base Line: Risk-Orientation, Not Just Probability
  - Planning Against Strategic Disruption
- Insensitivity Against Huge Assumption-Variations
  - Flexibility, Versatility, Multi-Role/Multi-Purpose/Multi-Use, Modularity, Adaptability, Scalability, Growth Potential, Spiral Development
  - Robustness, Hardening, Redundancy, Maintainability, Reparability, Autonomy, Resilience, Absorbability, Immunization
  - Fail-Safe Procedures, Emergency Procedures Ensuring Minimum Functioning, Reconfigurability
  - Disaster/Consequence Management, Training & Exercises, Decision-Making Tools (incl. Data Fusion / Data Assessment/ Evaluation Tools, Simulation Tools)
- Base-Line
  - Continuum between Guerrilla-like and Conventional-style Warfare
  - Difficult Dilemmas for Defense Planners

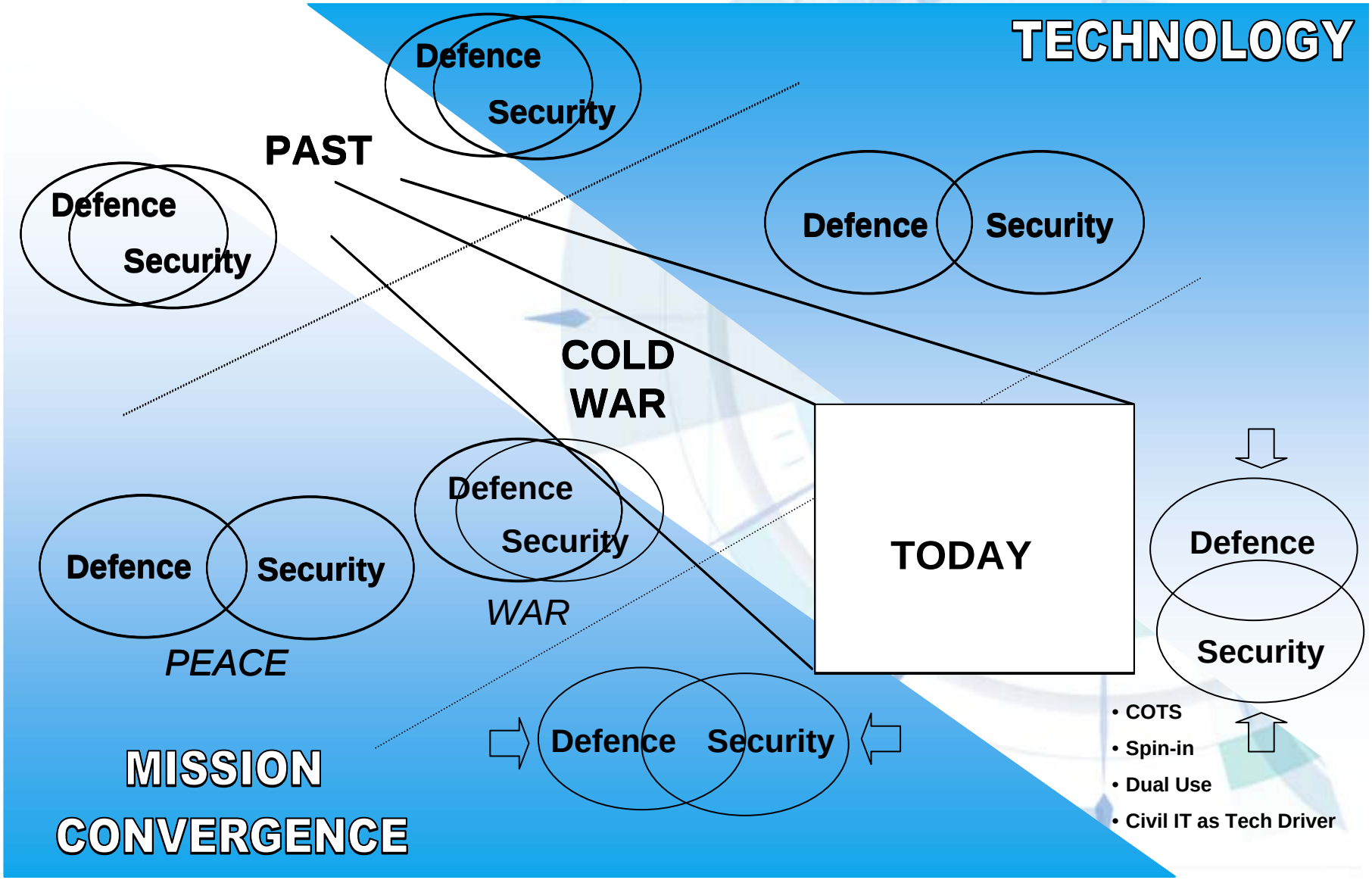
Defense and Security: What Does It Mean?

- Attacks: Who Is in Charge?
  - Bio-Terror Attack in Home Country: Local Fire Brigade
  - Hacker Attack: Ministry of the Interior
  - Attack against Galileo: EU Ministry of Transportation
  - Hostile Take-Over of Key Companies: Ministry of Economics
- Hard to Distinguish: Source of Attack
  - Domestic: Terror Organization, Crazy Individuals, Riots, Organized Crime, Social Unrest, Ethnic Tensions, etc.
  - External: Asymmetric Warfare, Terror Organizations, Organized Crime, Refugee Movements, etc.
- Mission Profile (Tasks) for Both Armed Forces and Security Forces Similar/Overlapping in Some Areas

Defense and Security: Requirement Spectrum

- Forms of Attack / Security Challenges
  - 2,000 Tanks or 2 Hackers?
  - 500 Aircraft or 5 Microbiologist?
- Defense Requirements
  - 500 Tank Drivers or 5 Computer Security Specialists?
  - 500 Pilots or 500,000 Nurses, Medical Doctors, Tropical Disease Specialists, Pharmaceutical Experts, etc.
- Full Spectrum: From Armed Forces to Security Personnel
- Comprehensive, Coherent, Interoperable (Joint, Combined, Inter-Service) Approach

Defence and Security: Convergence

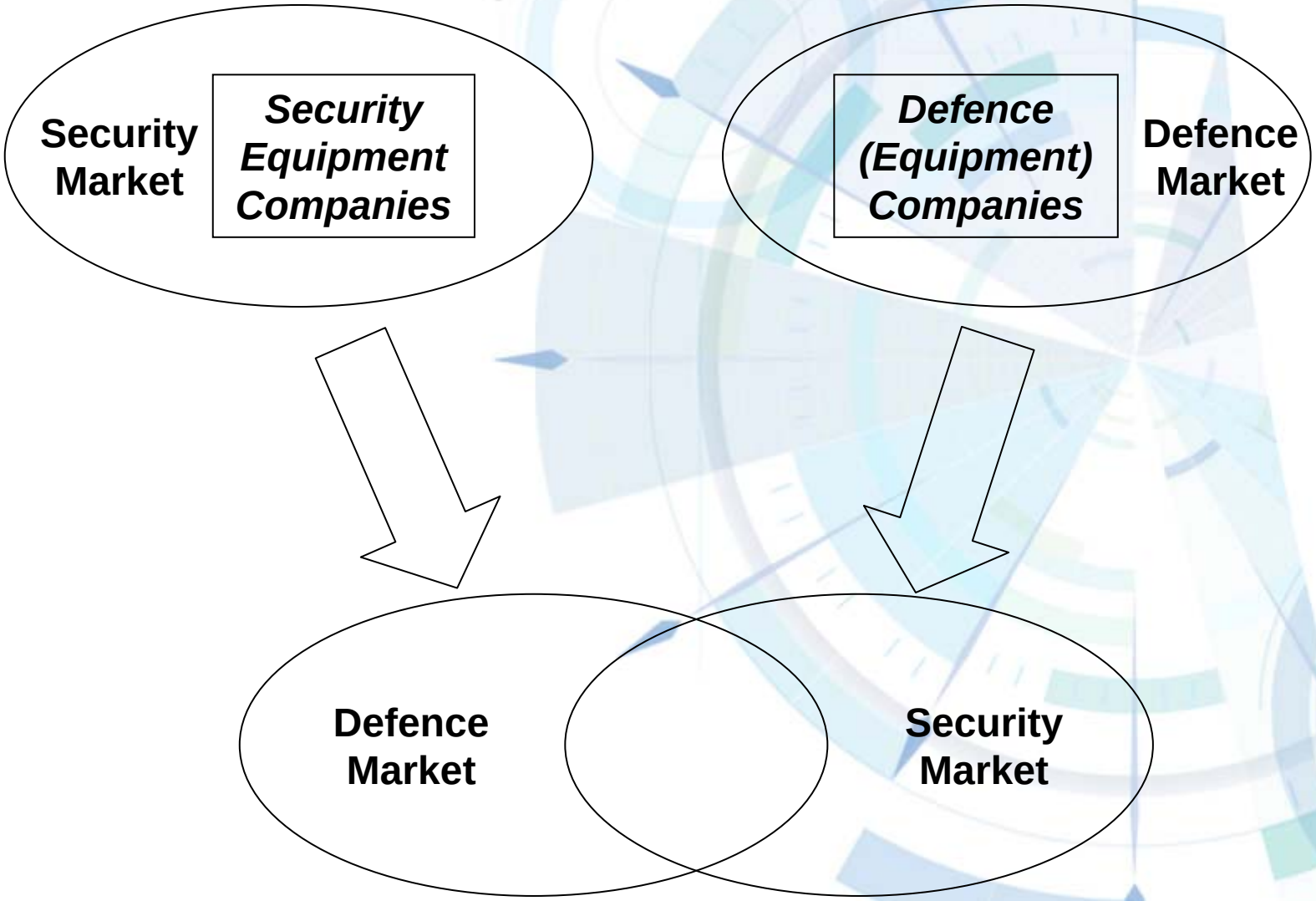


Security: The Forgotten Dimension?

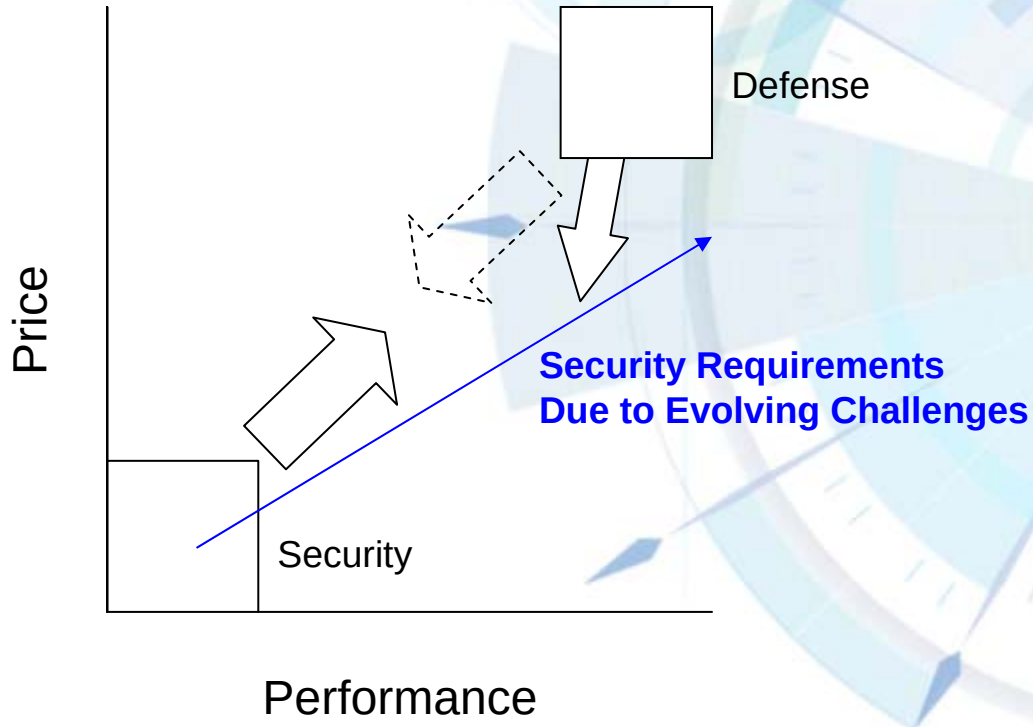
- Costs 🡻
- Efficiency 🡹
- Centralization, Harmonization, Standardization
- Outsourcing

And What About Security?

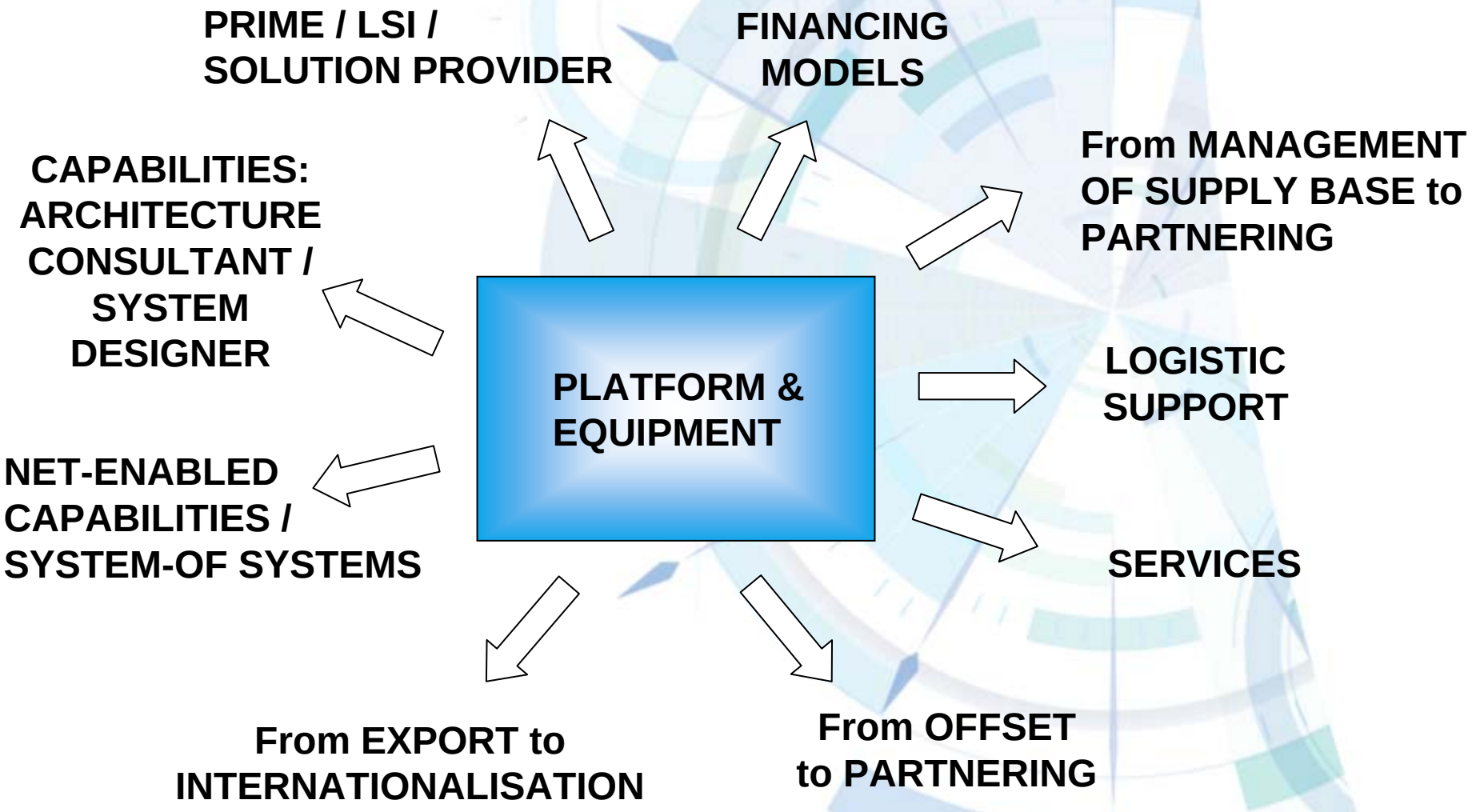
Defence and Security Supplier/Provider



Defence and Security Characteristics



From Platform/Equipment to ...



Characteristics of Urban Operations and Urban Security Missions (1)

- Civilian Environment
  - Target Acquisition Difficult, if Target Is a Human Being
  - Preventing Collateral Damage / Casualties Difficult
  - Supply of Own Forces Is Vulnerable to Attack
- Urban Operations Are Manpower Intensive
  - In any Case: Skilled Personnel Required
  - Not Only Quality, but also Quantity
- Multi-Dimensional Problem
  - Three Space Dimensions plus Time
  - Defense and Security; Different Legal Frameworks
  - Changing Missions and ROEs; "War by Committee"

Characteristics of Urban Operations and Urban Security Missions (2)

- Existing Technology and ConOps: Optimized for Urban Environment?
- Lack of Transparency; Limited Understanding of Enemy Behavior; Strong Element of Surprise
- Like in Almost all Operations: No Clear Front-Lines
- Combat Activities While Supporting Civil Population at the Same Time
- Level of Cooperation
  - Jointness, Combinedness
  - CIMIC
- Density of Media Presence/Coverage

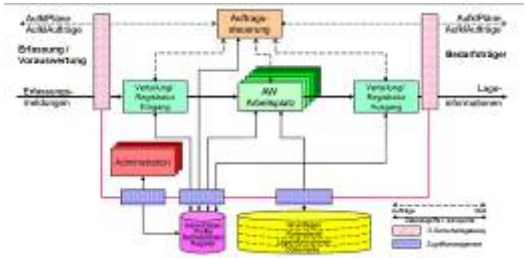
Air-Ground Partnership

- Resource Limitation
  - ⇨ Multi-Purpose Technologies
  - ⇨ Best Use of all Available Capabilities
- Air Support for Ground Forces
  - – ISR
  - – Fire Support
  - – Tactical Mobility
- Technological Challenges
  - – Real Time Mission Management
  - – Interoperability (Joint & Combined)
  - – Precision
  - – Minimizing Operational Risks
- Results
  - – Force Multiplier
  - – Protection

Networking

- Flexible and Open Architectures
- Cyber Security and Cyber Warfare
- Turning Mass Data into Knowledge
- Store and Use Experience

Communication Infrastructure



ISR Data Management and Evaluation

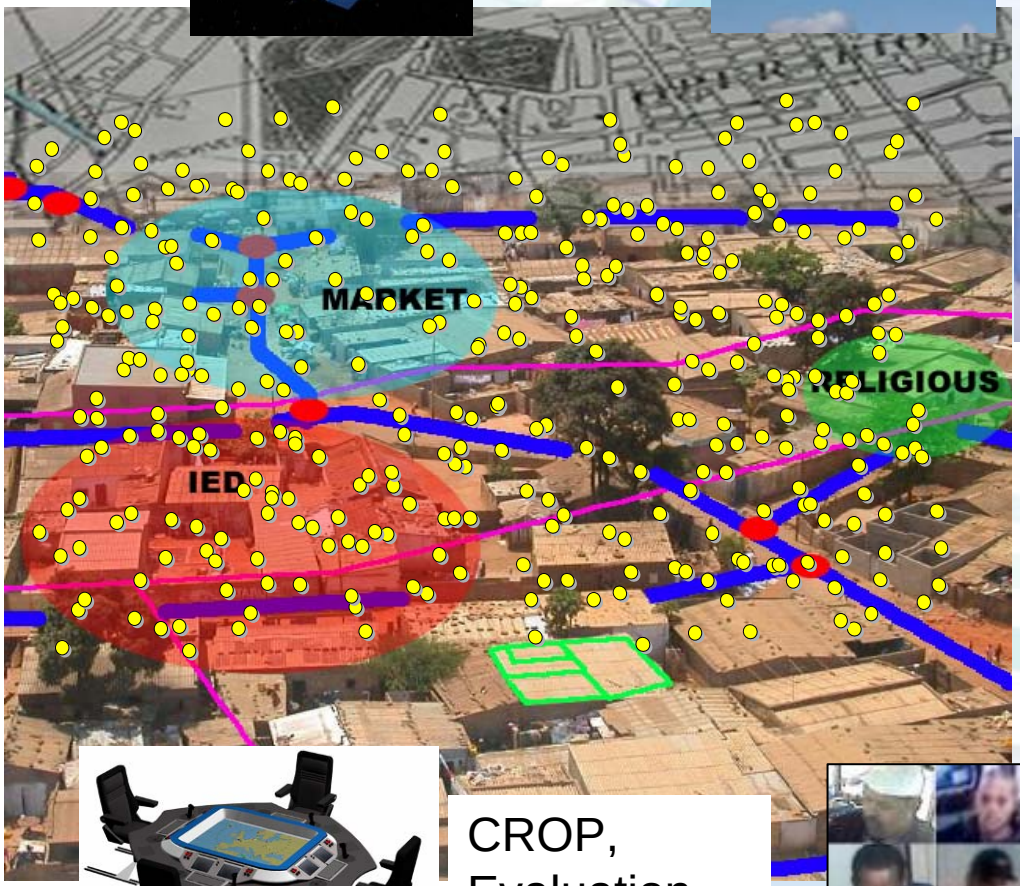
Command & Control e.g., FüInfoSys Heer

Urban Operations: ISR Capabilities

Space
(Radar, Optronics)

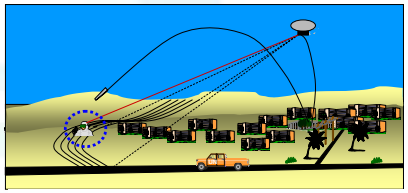
HALE

MALE

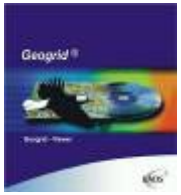


Tactical UAV

VTOL UAV

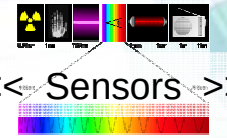


Lighter Than Air



Digital Maps

CROP,
Evaluation,
Networking

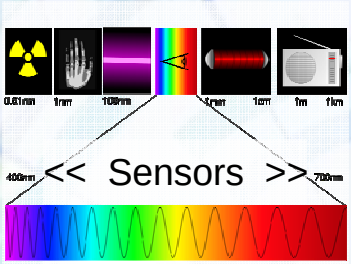


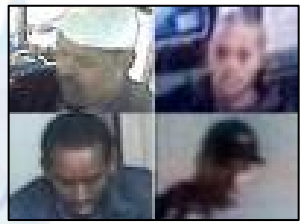
<< Sensors >>

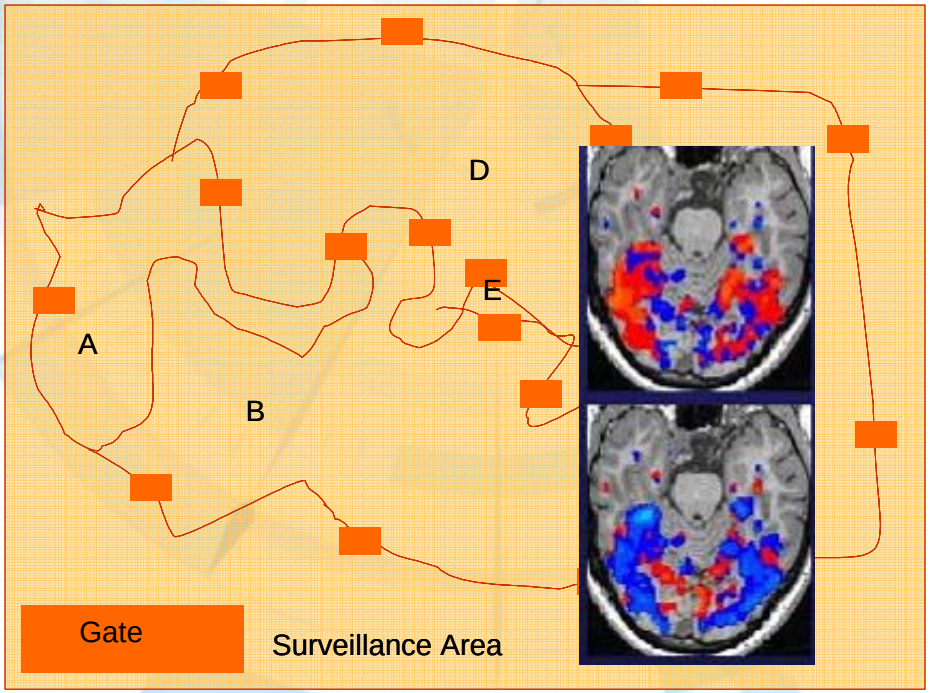
Unattended Ground Sensors

Urban Operations:
From Mass Data to Knowledge

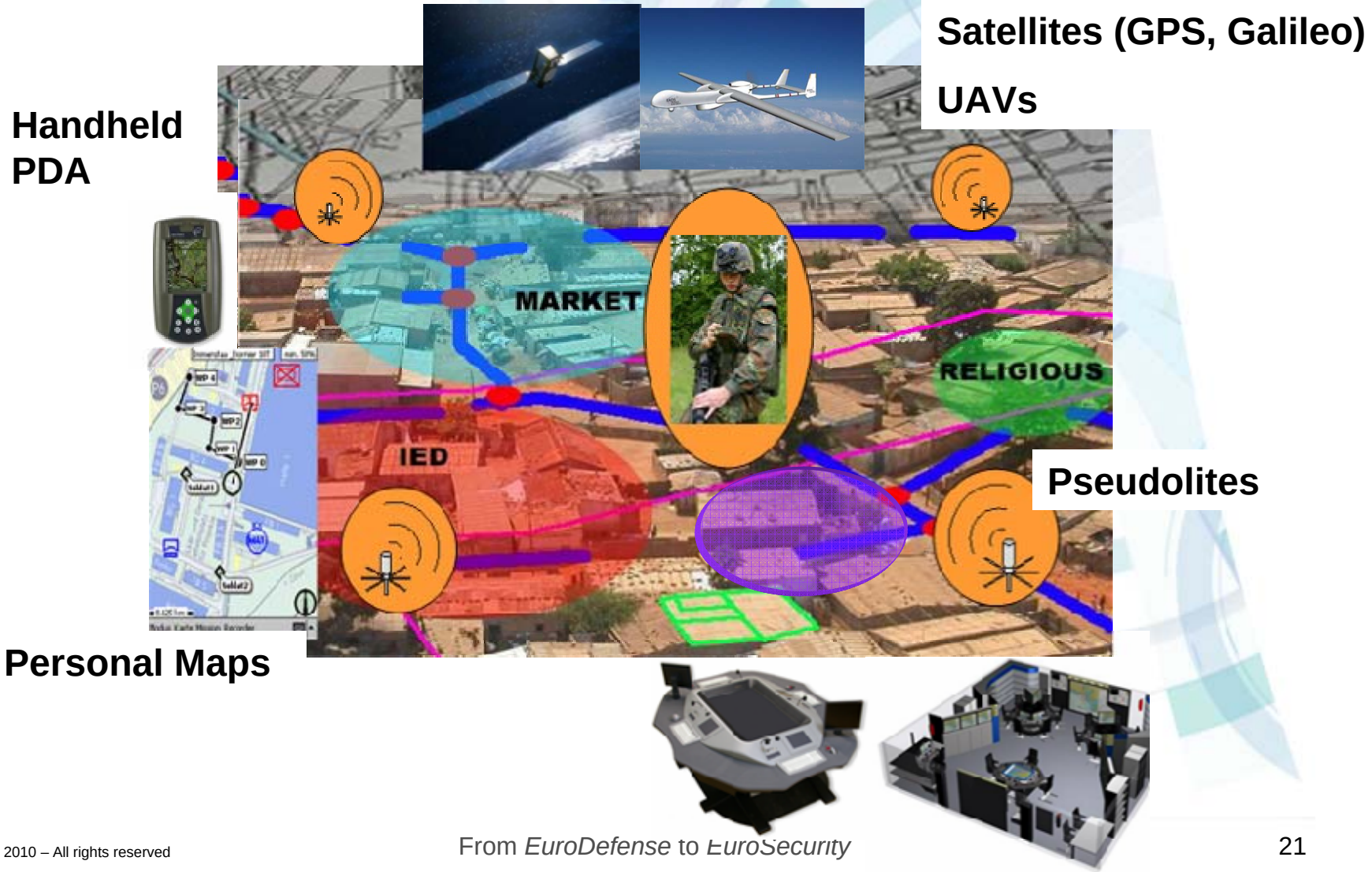
- Sensor Networking
- Classification
- Identification
- Tracking
- Behaviour Analysis
- Detection of Dangerous Materials
- Measurement of Physiological Parameters
- Experience Storage and Handling







Urban Operations: Communication and Localization

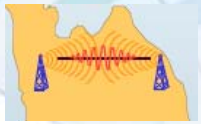


Camp Protection:
Sensors & Information Management (Example)

Unibox
Laser, Dome

Radar
aktiv/passiv

IdZ



ESM

UAV

Sniper
Detection

Missile/
Laser Warner

C4ISR

Effects,
e.g.,
Jammer

LIMS

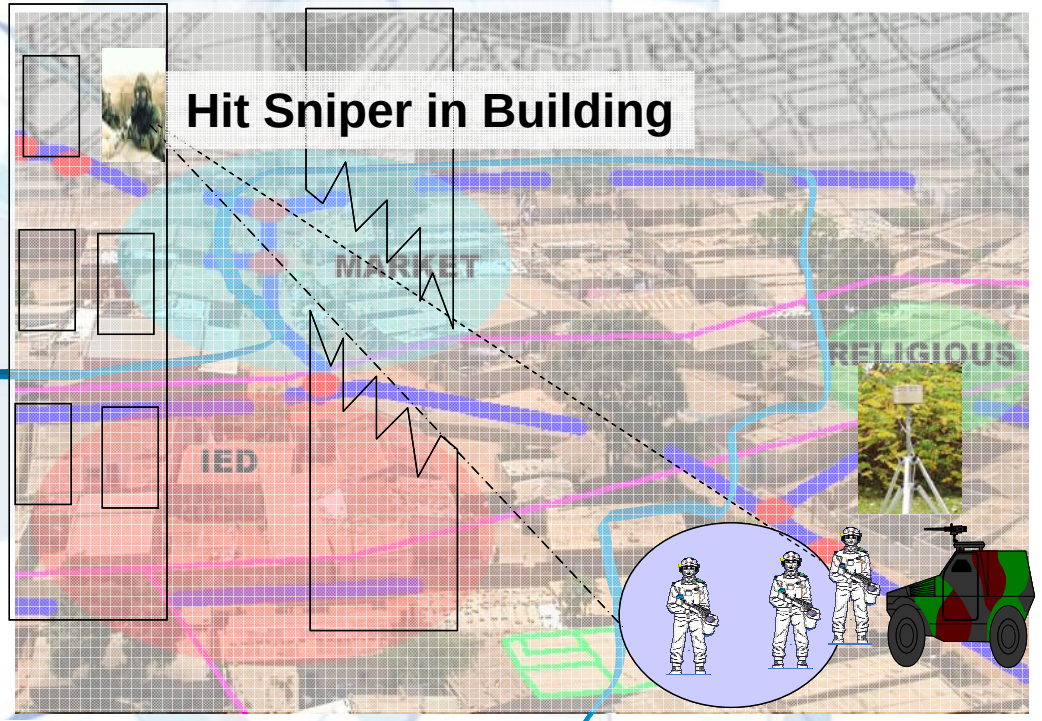
Explosives,
Drugs

ULIS

Convoy Protection

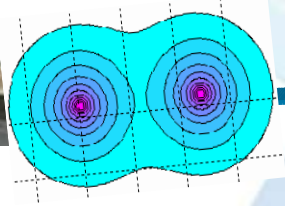
Close Air Support

Missile Warner



Headquarter

Convoy



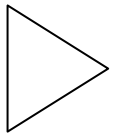
IED Jamming

Mini Missile

IED Detection

Systems in Context – A Few Illustrations (1)

- Mobility and the Virtual Reality Behind It
  - Vectorized Geo Data
  - Navigation Systems
  - Open Commercial Standards in Development
  - Geospatial Intelligence Integrated with Sensor Webs
  - Creating the "Matrix"
  - Cyber Space as an "Regular" Operational Environment (like Land, Sea, Air, Space)
  - Information Warfare: Offense and Defense
  - Customer Will Require Authenticity, Reliability, Confidence, etc.
  - ➢ **Role of Defense Prime as Trusted Partner Through Effective Partnerships**



3-D-Maps: MS, Google?

Systems in Context – A Few Illustrations (2)

- Firefighter of the Future
  - Bio Terror Attack: First Responder
  - Protective Suites, Masks, Filters
  - Sensors and Navigation both Outdoor and Indoor
  - Mobile Laboratories *(Quick Agent, Wind Pattern, Weather Analysis)*
  - Networks I (Data Exchange with Laboratories)
  - Networks II (Laboratories, C^2 Centers, Pharmaceutical Industries, Mayors of Cities and Villages, Health Services, Alert Systems and Procedures, Decision-Making Tools)
  - Command and Control Centers; Situational Awareness
  - Exercises, Training, Education, Simulation
  - Interoperability with Security Services and Military

➢ **Firefighter of the Future Illustrates Overlap Between Defense and Security Capabilities Central to the Evolving Customer Base**

Systems in Context – A Few Illustrations (3)

- Police
  - Unfamiliar with Robust Requirements;
    Just Prepared for "Good Weather"
    - Jamming
    - Denial of Access Attacks
    - EMP Strikes
    - Deadly Environment
  - See: Firefighter
  - ➢ **Key: How to Deal with Disruption as Fact of Life?**

Translating Customer Requirements into Future Prime Positioning

- Partner for Customer
  - Dialog Partner about Future Developments
  - Trusted Architecture Consultant (incl. System Design)
  - Affordable Solution Provider, Financing Partner
  - Providing Expertise/Competence
  - Partnering with Firms Preferred by Customer
  - Offering Ways Ahead (Spiral Development, Upgrades, …)
- Providing Leverage / Unique Selling Points
  - Understanding Extremely Complex and Demanding Requirements
  - Providing Highly Competent Skill-Sets
  - Ability to Manage Large Non-Single Platform Focused Projects; Providing Opportunities for SMEs

From *EuroDefense* to *EuroSecurity*

- Paper Reflects Emerging Reality
- Paper Leads toward the Future
- Paper Outlines Practical Steps Leading to a Common European Approach toward Security
- Content
  - The Convergence of External and Internal Security
  - The Convergence of Defense and Security
  - A Prerequisite for any Solution: A Competitive and Innovative Technological and Industrial Base
  - The Example of Urban Security
  - Recommendations
- *EuroDefense:* In Defense of European Security