

ACRIMAS

Aftermath-Crisis-Management System-of-Systems, Phase I



Project overview & preliminary results



Merle Missoweit

ACRIMAS Co-Coordinator

Fraunhofer Institute for Technological Trend Analysis
(INT), Euskirchen, Germany

*PSCE Forum Conference, 01 December 2011,
Warsaw*

What is ACRIMAS about?



Aim of the European Commission (EC-DG ENTR):

- **To call for a large demonstration project (Phase II, funding > 20 M€) in EU security R&D on aftermath crisis management in mid 2012**
 - **Response to & recovery from large-scale disasters (man-made or natural) inside & outside Europe**

Tasks of ACRIMAS (Phase I):

- **To help to prepare for the call (and the demo project) by proposing relevant topics to be executed in Phase II, sequenced in a roadmap**
- **To raise awareness among the stakeholder community in crisis management (users, academia, industry, public) about the upcoming Phase II and opportunities for participation**
- **To disseminate the demo project and ACRIMAS findings**

Phase I projects on aftermath crisis mgt



ACRIMAS (*coordinator: Fraunhofer, DE*):

Aftermath Crisis Management System-of-systems Demonstration, Phase I

www.acrimas.eu

CRISYS (*coordinator: EOS, BE*):

Critical Response in Security and Safety Emergencies

www.crisys-project.eu

HELP (*coordinator: Universitat Politècnica de Catalunya, ES*):

Enhanced Communications in Emergencies by Creating and Exploiting Synergies in Composite Radio Systems

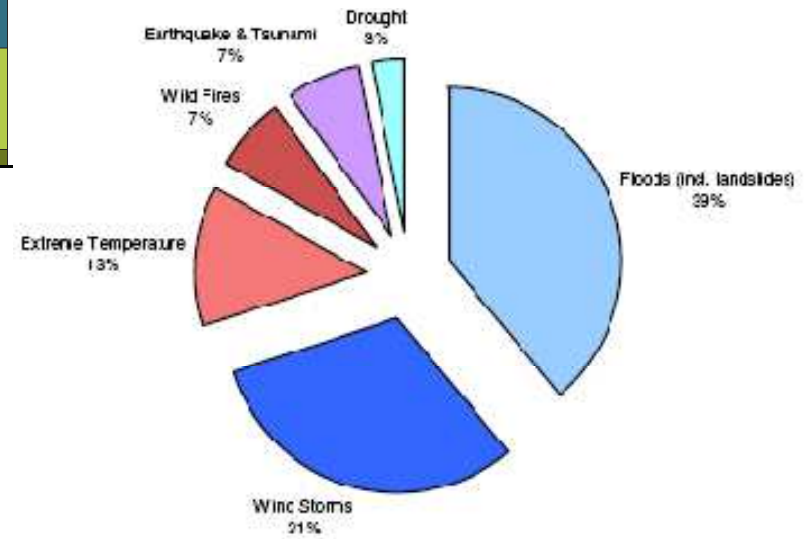
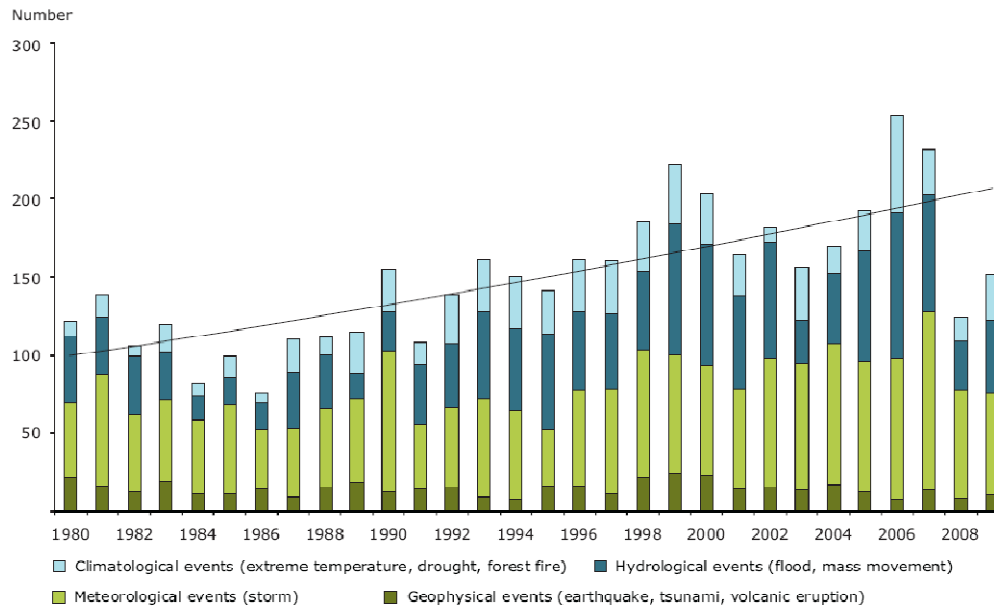
<http://www.fp7-sec-help.eu/>

Why such an EU project?



Source: EEA, Mapping the impacts of natural hazards and technical accidents in Europe, 2010

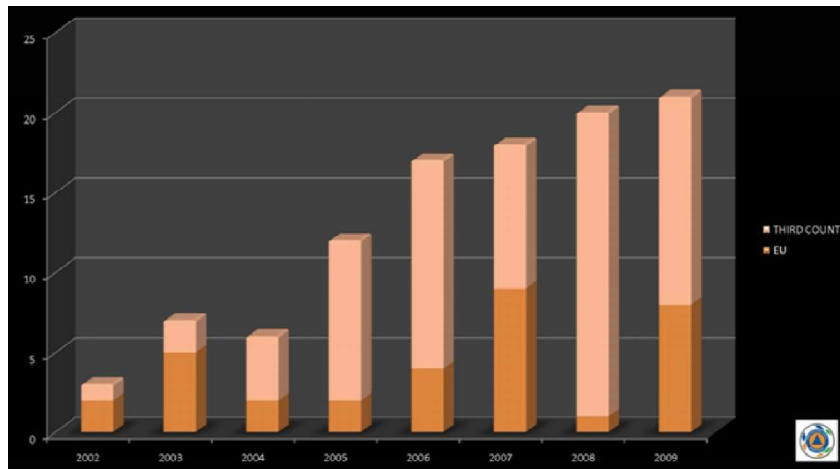
Number & magnitude of natural disasters increase



Why such an EU project? (II)



Source: EC-DG ECHO, MIC, 2009



Activations of the EU Civil Protection Mechanism 2002 – 2009

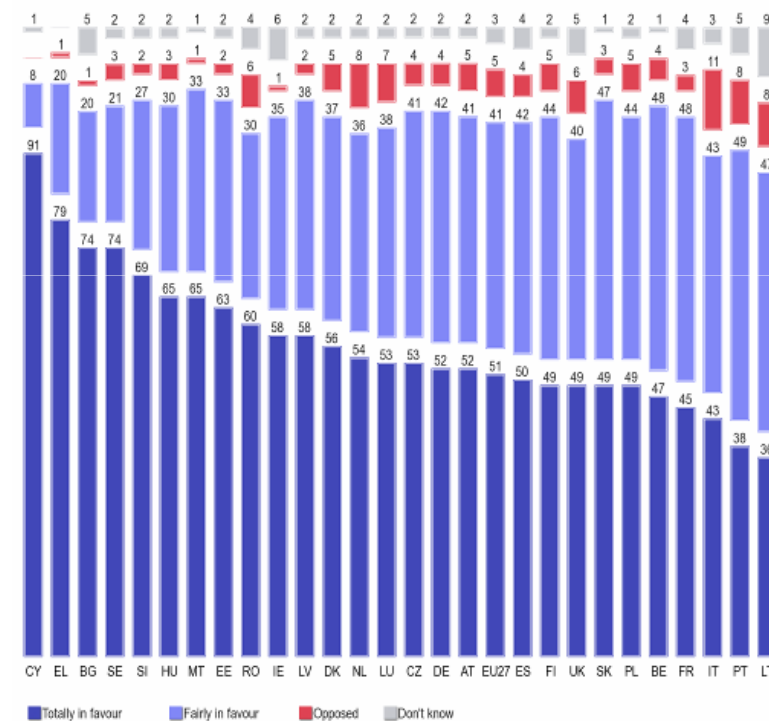
Increase in

- requests of ‘European solidarity’
- coordination & cooperation needs inside & outside Europe (e.g. Haiti)
- [...]

Source: Eurobarometer, Civil Protection, 2009

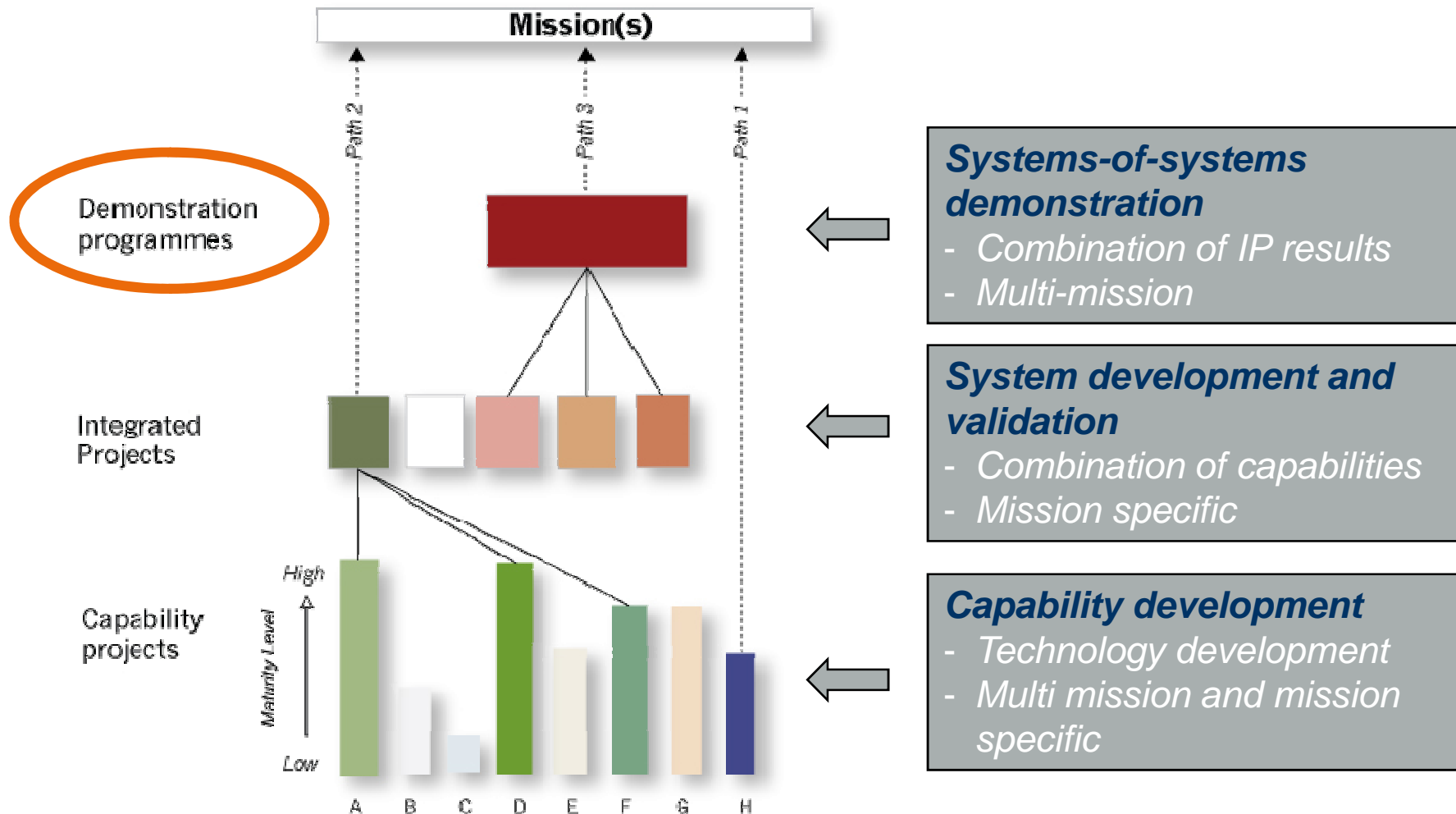
QE4.3. Are you totally in favour, fairly in favour, fairly opposed or totally opposed to the European Union to do more to support (OUR COUNTRY) ...?

For response to disasters (sending experts and equipment to disaster areas)



**Public opinion:
the EU should do more...**

Building blocks of EC security theme



What is a demonstration programme?



- **Top complexity level (system-of-systems) in FP7 project hierarchy**
- **This means it should do research with:**
 - Real environments, realistic scenarios, people-in-the-loop, legacy systems integrated
- **It aims at:**
 - **Gaining knowledge** on phenomena and constraints that emerge in such realistic settings
 - **Gaining knowledge** on how to implement new solutions – combining systems, procedures, organisation and people
- **A key instrument to do this is *experiments*.**
 - Put a new solution into context, and test how it works
 - **Is not just an exercise**, because training is not the key goal. A failed experiment is a success – a failed exercise is not!
- **Therefore, a demonstration programme should:**
 - **Use previously developed solutions** (systems, doctrine, knowledge...), that have a quite high degree of maturity
 - Possibly put some effort into finalizing some **enabling solutions**
 - Develop **infrastructure** for system-of-systems experiments
 - Prepare, carry out and evaluate **experiments**

ACRIMAS objectives at a glance



Aim: To prepare the subsequent Demonstration Project on Aftermath CM

Objectives:

- i. Identifying current and future **missions and challenges in large scale disasters** for European CM **inside and outside Europe**,
- ii. **Identifying weaknesses or vulnerabilities in the current 'CM System' in Europe**, corresponding development needs, & relevant projects,
- iii. Identifying and mapping **current and upcoming approaches or solutions in relevant areas** (policy, legal, technology, standards etc.) for identified needs,
- iv. Identifying **central CM topics** and assessing which of them should be demonstrated in the Phase II Demo Programme and which need further R&D,
- v. Providing guidance for the planning, execution, evaluation and exploitation of a demonstration programme (i.e. elaborating a **demonstration concept**),
- vi. Ensure wide **awareness and dissemination** of these preparations among the relevant stakeholders (supply & user side),
- vii. Indicate cooperation with **non-EU country participants**.

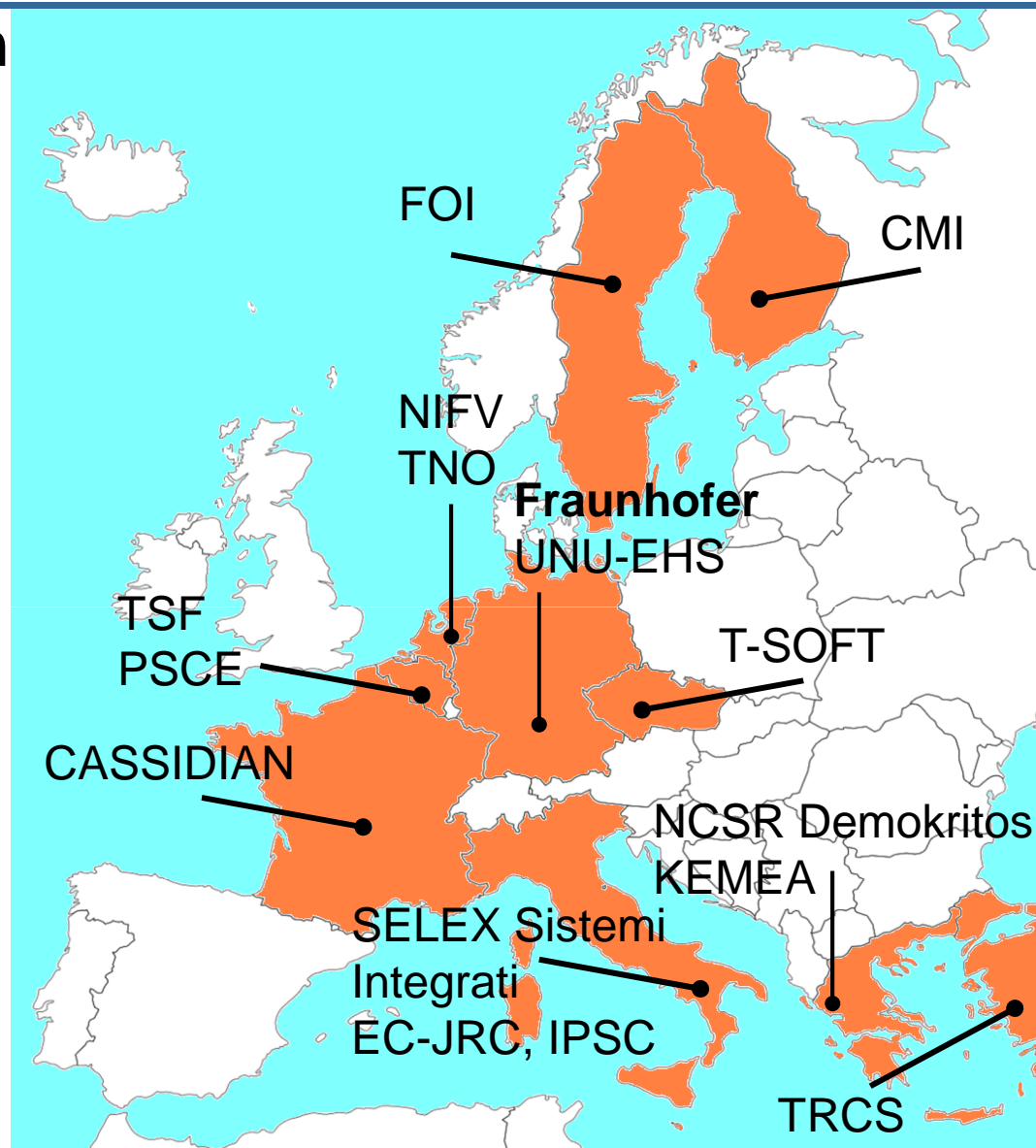
ACRIMAS expected main results



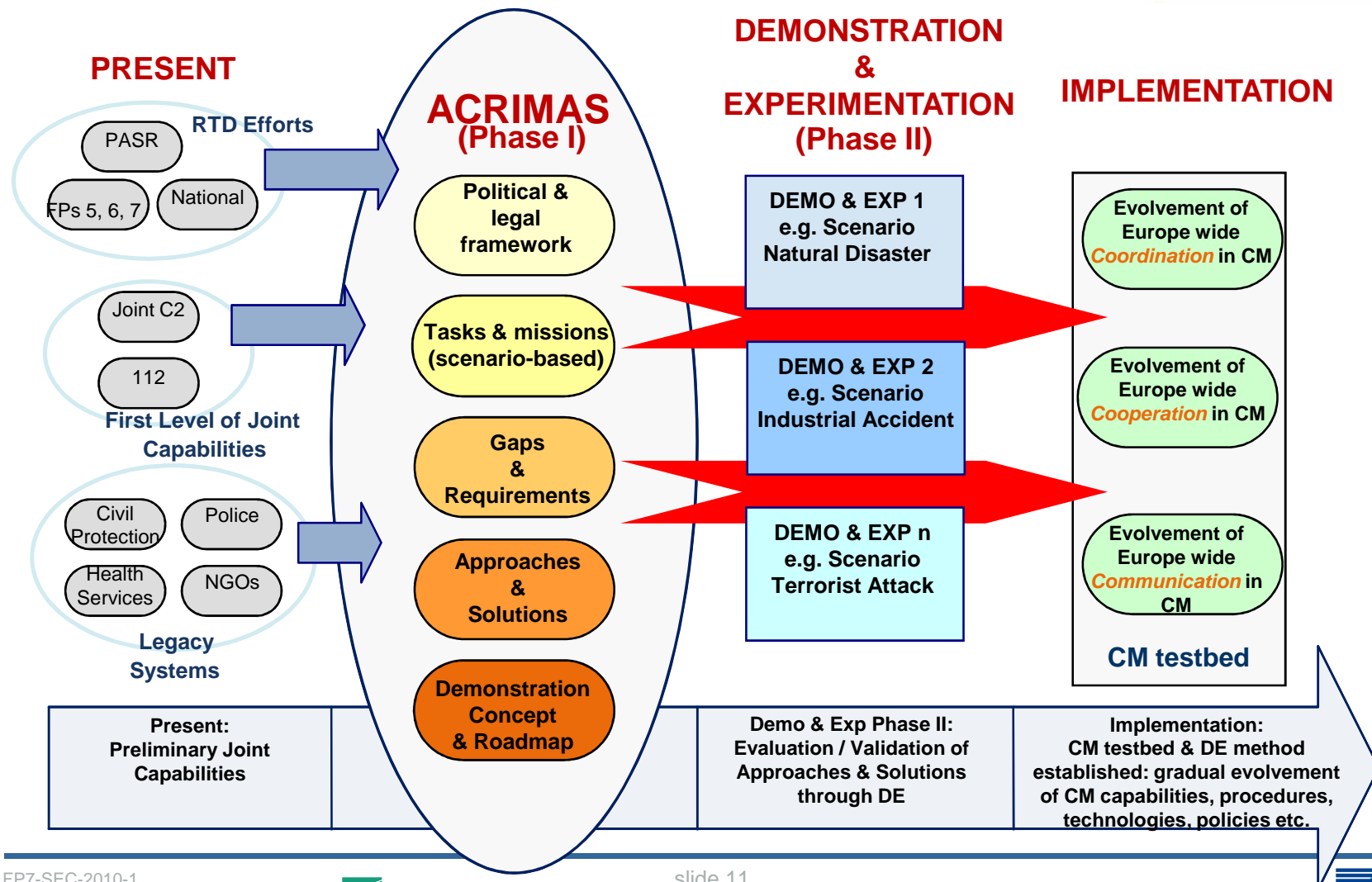
1. Deliver the **roadmap** of what to do in the Phase II Demonstration Programme (in terms of sequenced demonstration & experimentation topics), including further R&D needs
2. Elaborate the **demonstration concept**
3. Assure EU wide **awareness and dissemination** of the preparation of the Phase II Demonstration Programme

ACRIMAS consortium

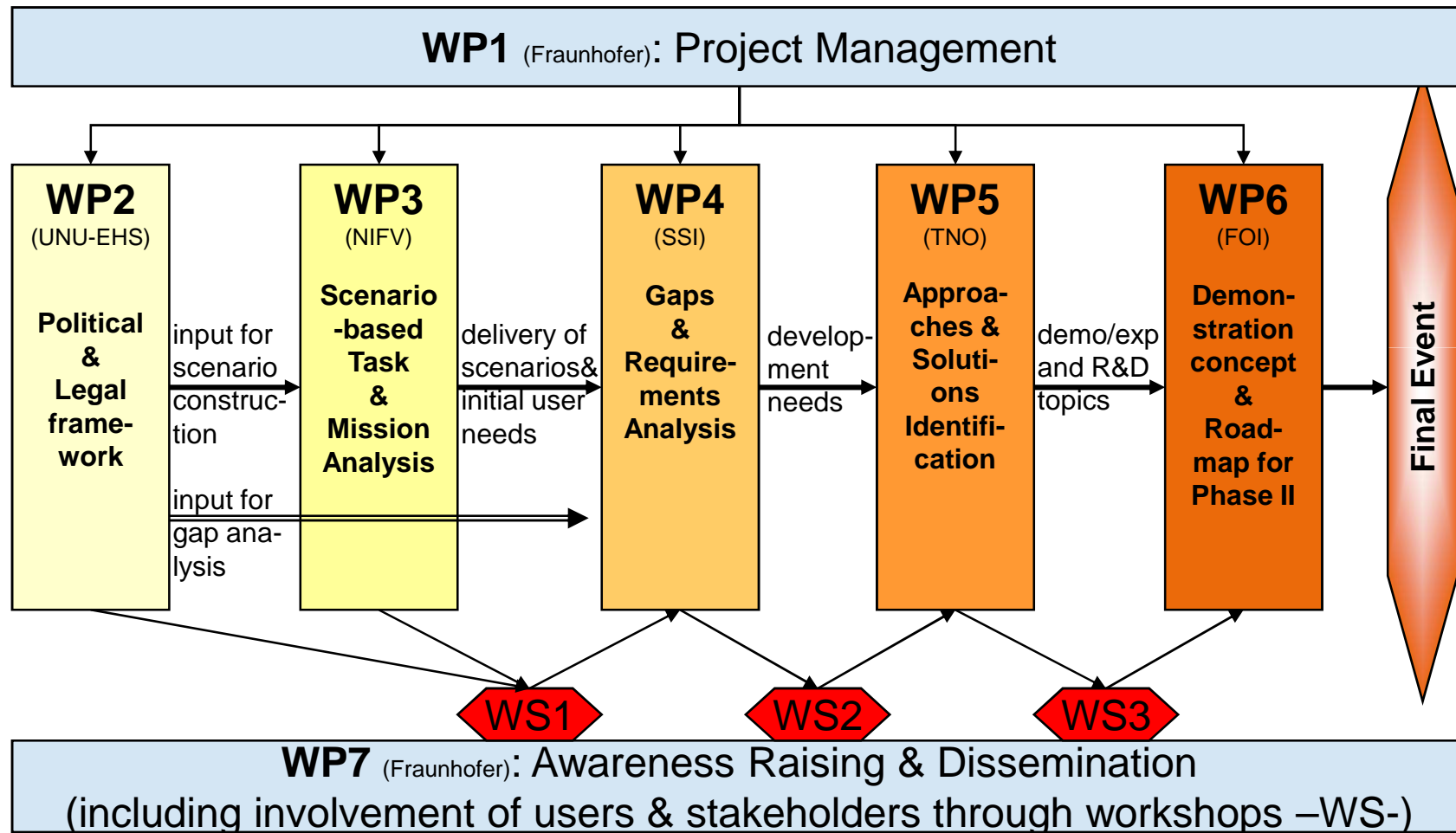
- 15 partners
- 9 EU MS plus Turkey
- Budget ~ 1.1 M€
- Duration 15 months
- project start: 1st Feb 2011
- Partners include:
 - 4 RTOs
 - 4 Users*
 - 2 Industries
 - 1 SME
 - 3 NGOs, Think Tanks*
 - 1 EC & 1 UN org.



Scope & vision of ACRIMAS



ACRIMAS work plan Pas8



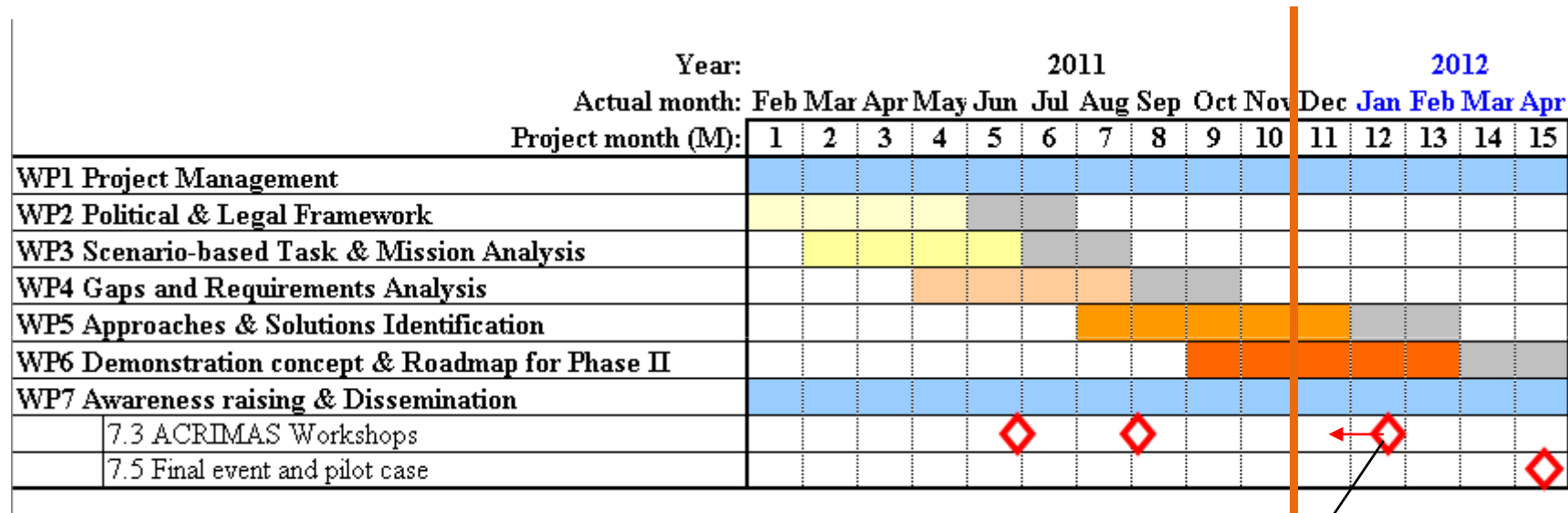
Slide 12

Pas8

Folien 11 - 17 können m.E. ersatzlos gestrichen werden - Kriegsgeschichte oder jetzt nicht mehr wirklich interessant.

Hans-Martin Pastuszka, 14/11/2011

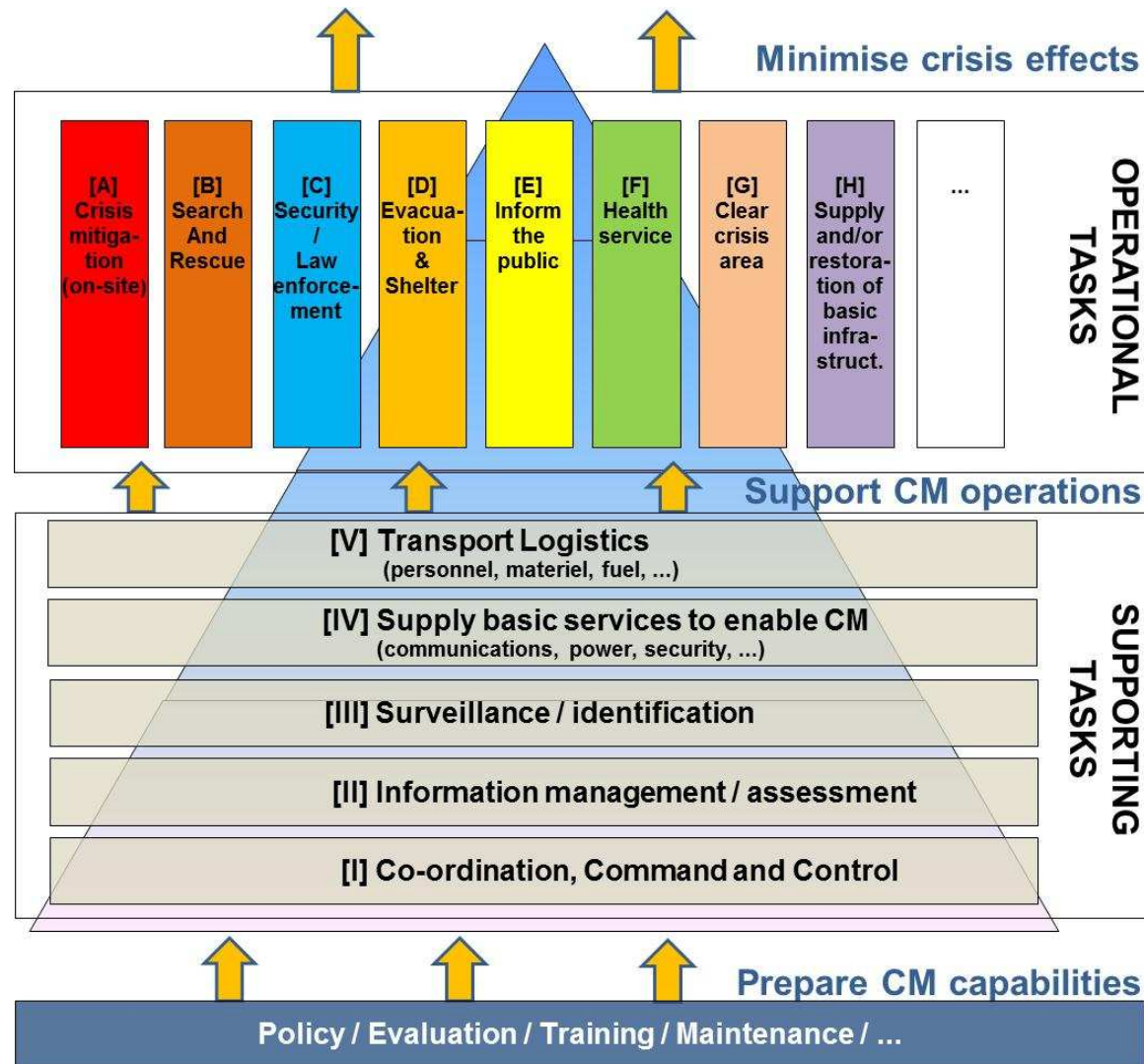
ACRIMAS time planning



we are here

**EU Commission
workshop on phase II:
Crisis Workshop, 25 Jan
2012**

Conceptual model – CM Tasks



Work done



Analysis of the political & legal framework of CM in Europe:

- **EU level** (EC/MIC, Council/CCA, EEAS/CSDP)
 - Including relation to and role of **UN & NATO** (EADRCC)
- Member State (MS) level (four exemplary case studies: **DE, IT, SE, EL**)
- **Societal aspects** (demographic change, role of stakeholders, ...)

Analysis of relevant scenarios and related missions & tasks of CM in Europe:

Natural disasters				Major technical incidents							Terrorism & Crime	External inter	Other							
Geophysical		Meteorological/Climatological		Hydrological	Biological	Industrial accidents			Miscellaneous				Transport		Complex emergencies					
Earthquake																				
Vulcano																				
Mass movement (dry)																				
Storm																				
Extreme temperature																				
Drought																				
Wildfire																				
Extreme rainfall																				
Flood																				
Mass movement (wet)																				
Epidemic																				
Insect infestation																				
Animal stampede																				
Chemical incident with combustible or explosive materials - E																				
Chemical incident with toxic materials - C																				
Nuclear incident - R/N																				
Poisoning																				
Tunnel or mining incident																				
Large building fire																				
Collapse of buildings																				
Critical infrastructure failure: drinking water, food supply, sanitation																				
Critical infrastructure failure: energy, telecom, ICT																				
Critical infrastructure failure: transport																				
Air crash																				
Accident on water																				
Rail accident																				
Traffic accident																				
Terrorist action - CBRN																				
Terrorist action - E																				
Cyber attack / cyber crime																				
Organised crime																				
Warfare																				
Civil disturbance																				
Large-scale movements of people																				
Incident abroad with EU citizens																				
Economic failure																				

- All-hazard view
- Scenarios & CM missions and tasks; capabilities & tasks and service providers; scenarios & incident characteristics

ACRIMAS work done: Identified Needs

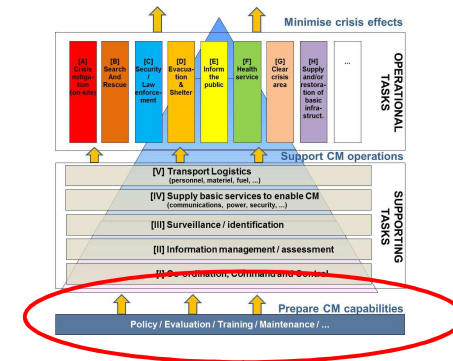
Overarching: The big 5



- 1) Informed decision-making about capacity building**
- 2) Clear roles and responsibilities**
- 3) Building trust and understanding**
- 4) Harmonization of practices**
- 5) Common or coherent planning**

ACRIMAS work done : Identified Needs I

Preparatory Efforts



- **Policy and capacity building:**
 - Analytic support to capacity building (High)
 - Capability and capacity mapping (Medium)
 - Better ability of donors to assess the impact of their funds (High)
- **Training and exercises**
 - Joint and harmonized training (High)
 - Effective exercises (High)
- **Evaluation and development**
 - Strategic evaluation and performance assessment (High)
 - Sharing and implementing lessons and best practices (High)

ACRIMAS work done: Identified Needs I

Preparatory Efforts



■ Civil-military interaction

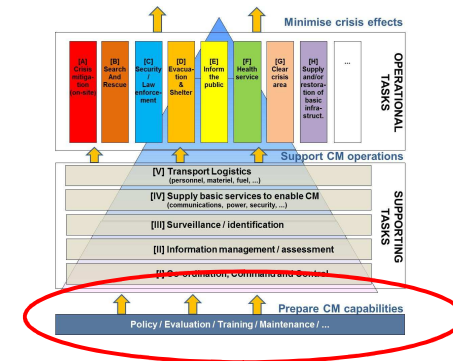
- Agreed interaction procedures with military organisations (Low)

■ Doctrine and procedures

- Certification and vetting of skills and competencies (Medium)
- Harmonization of language and terminology (High)

■ Community awareness raising

- Better understanding of disaster relief among the public (Medium)

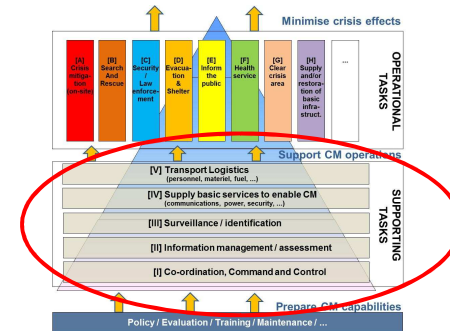


ACRIMAS work done: Identified Needs II

Supporting activities



- **Coordination, command and control**
 - Efficient tools for tasking and resource management (Low)
 - Volunteer management (Medium)
- **Situation assessment and sense-making**
 - Early warning capabilities (Low)
 - Understanding specific crisis dynamics (Low)
 - Understanding the relief effort as a whole (High)
 - Tools for predicting demand at the outset of a disaster- include use of the local population (Medium)
- **Information management**
 - Inter-agency information sharing (Medium)
 - Retention and warehousing of information (High)



ACRIMAS work done: Identified Needs II

Supporting activities



Information gathering

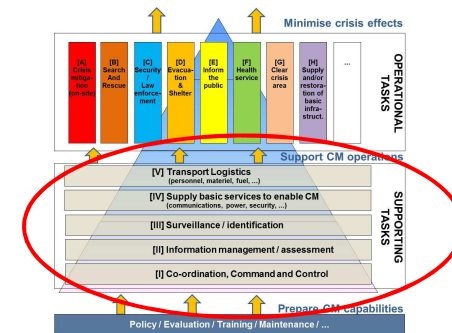
- Acquisition of information from external sources (Medium)
- Efficient ways to gather data from responders (Medium)

Logistics

- Procurement and stockpiling strategy (Medium)
- Access to strategic transport (Medium)

Infrastructure

- Responder communications in remote areas (Low)
- Provision of energy to responder activities (Low)

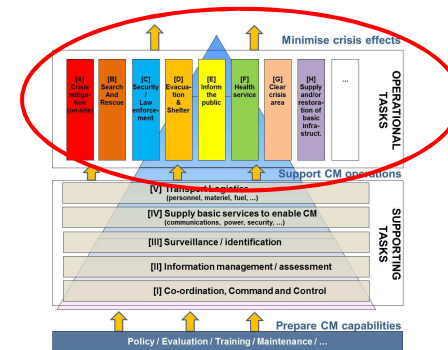


ACRIMAS work done: Identified Needs III

Task-level activities



- Evolved management of information to the media and the public (Medium)



Schedule of main events



1st Workshop	Key missions and tasks in CM	30 Jun'11, Bonn, DE
2nd Workshop	Misfits and gaps in CM	07 Sep'11, Prague, CZ
Final Event	Roadmap & Demonstration Concept for Phase II	19 Apr'12, Brussels, BE

ACRIMAS

- ~ July 2012 **EC call for proposals for Phase II**
(check <http://ec.europa.eu/research/participants/portal/page/calls>) EC
- ~ end of Nov'12 **Deadline for submission of proposals for Phase II**

Stay in contact!



www.acrimas.eu



ACRIMAS kick-off, 1st February 2011, UNU-EHS, Bonn, Germany

Project Coordinator:

Hans-Martin Pastuszka

Fraunhofer Institute for Technological
Trend Analysis (INT)

Appelsgarten 2

53879 Euskirchen, Germany

Phone +49 2251 18 298

email

hans-martin.pastuszka@int.fraunhofer.de

merle.missoweit@int.fraunhofer.de

Back-up Slides



ACRIMAS terms & definitions



crisis*:

incident affecting a society with the potential to causes loss or damage to persons, property or the environment **which requires extraordinary coordination, resources, and skills in response**

crisis management*:

process of planning and implementing measures aimed at **preventing, reducing, responding and recovering from a crisis**

disaster*:

situation where [...] losses have occurred which **exceeded the ability of the affected organization, community or society to cope** using its own resources

(disaster) response & recovery*:

measures taken during or immediately after a disaster to meet the immediate needs of the affected and minimising the impact on the incident **& activities designed to return conditions to an equivalent level acceptable to society**

“aftermath crisis management”:

the response to & recovery from large-scale disasters (man-made or natural) inside and outside Europe**