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# FP7-SEC project ACRIMAS

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



Overview and state of play of the project

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# 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 research & development on aftermath crisis management (CM) in mid 2012
  - **Management of 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 and a project concept for Phase II

# Phase I projects on „aftermath crisis management“

**ACRIMAS** (*coordinator: Fraunhofer, DE*):



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

[www.acrimas.eu](http://www.acrimas.eu)

**CRISYS** (*coordinator: EOS, BE*):



Critical Response in Security and Safety Emergencies

[www.crisys-project.eu](http://www.crisys-project.eu)

**HELP** (*coordinator: UP de Catalunya, ES*):

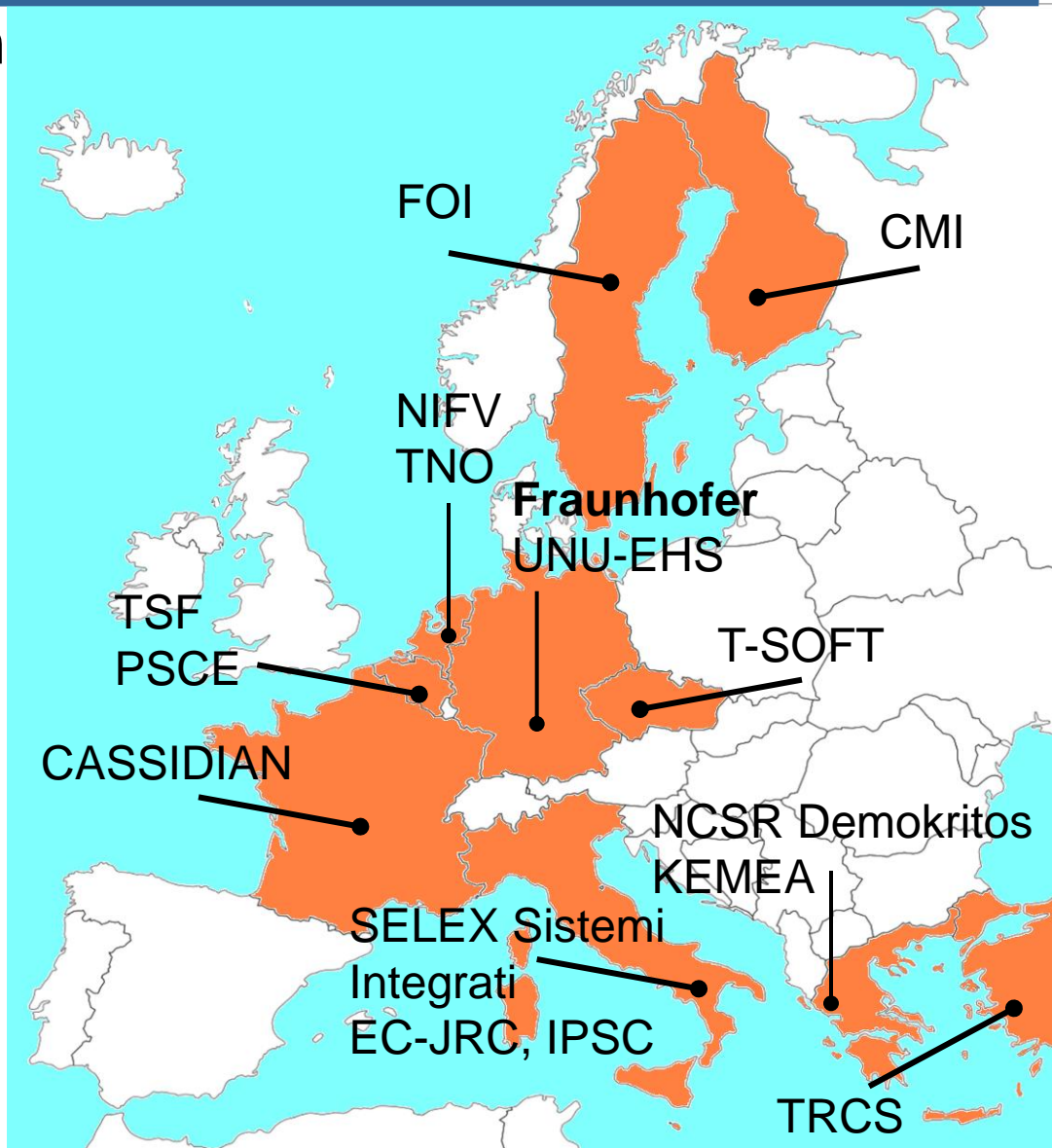
Enhanced Communications in Emergencies by Creating and Exploiting Synergies in Composite Radio Systems



[www.fp7-sec-help.eu](http://www.fp7-sec-help.eu)

# 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.



# ACRIMAS expected outcome



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**
  - **The present pilot should support this!**
3. Assure EU wide **awareness and dissemination** of the preparation of the Phase II Demonstration Programme

# Understanding the context



## 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 interv		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

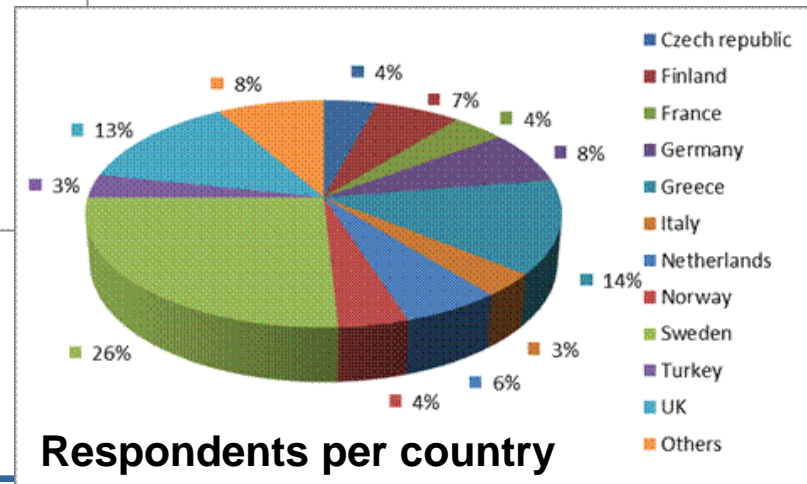
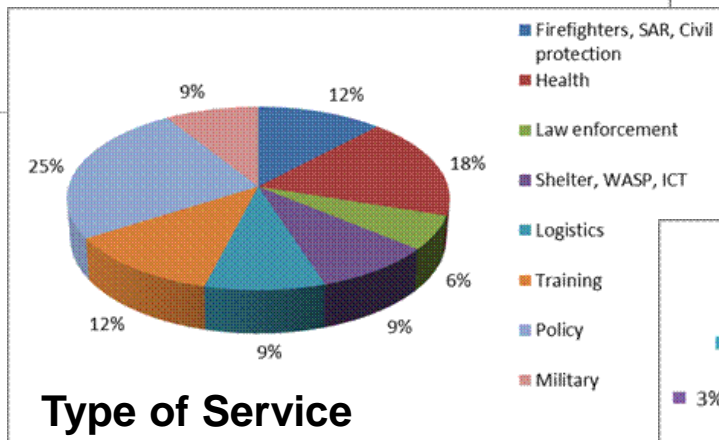
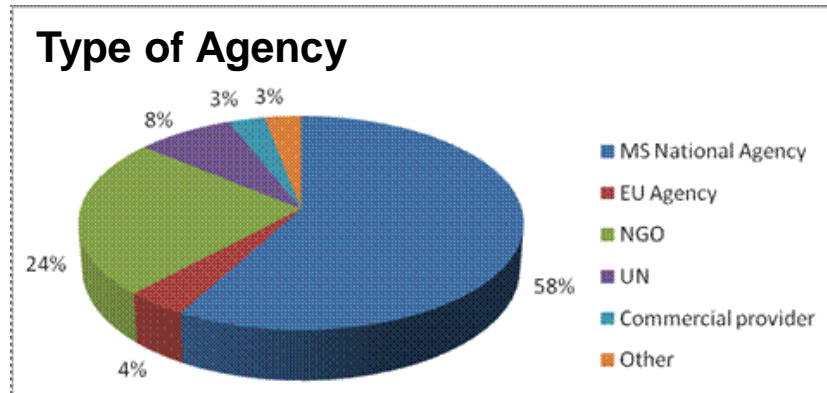
- All-hazard view
- Scenarios & CM missions and tasks; capabilities & tasks and service providers; scenarios & incident characteristics

# „Gap analysis“ – the effort

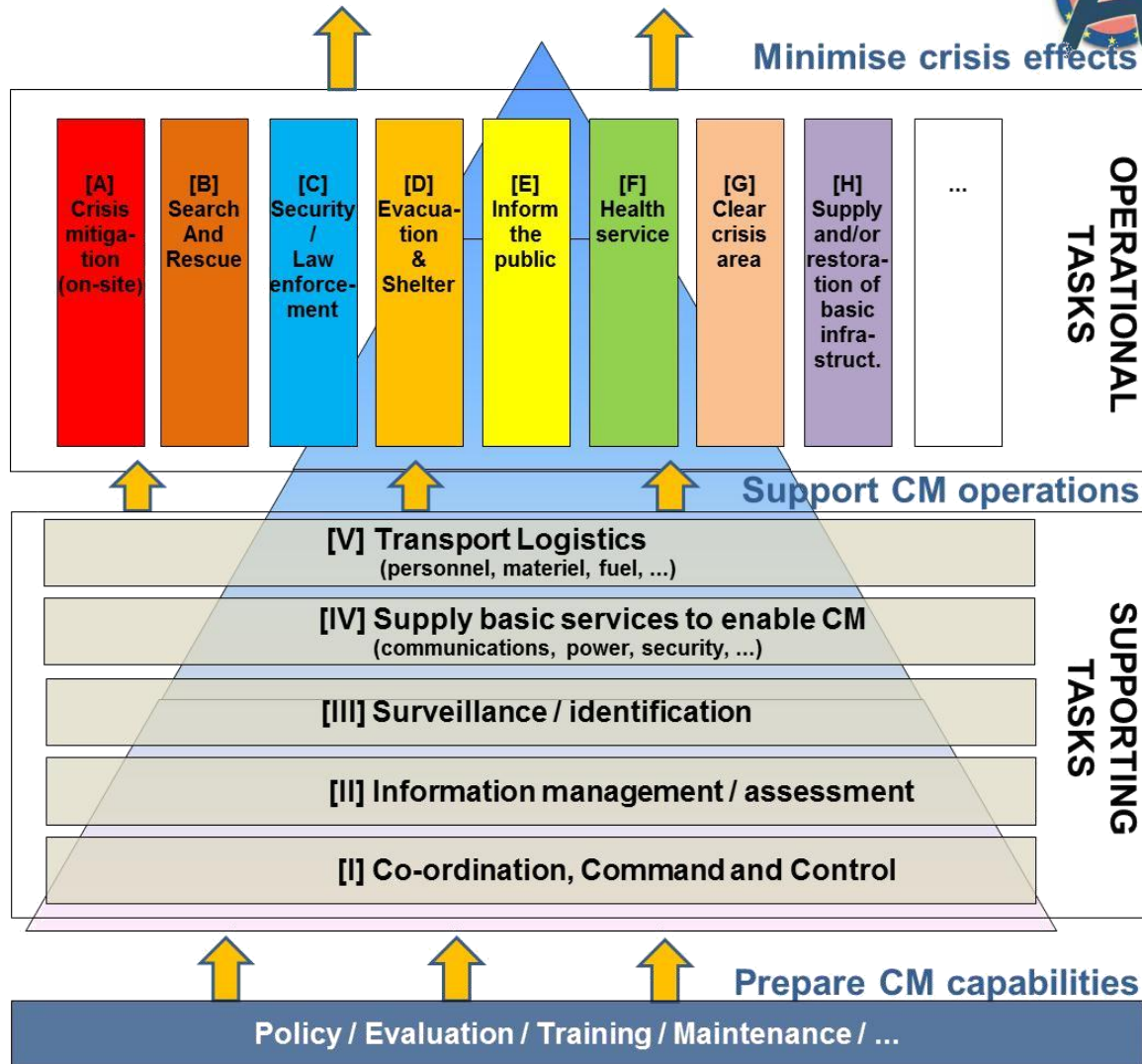


**Means:**  
Initiating workshop,  
questionnaires, interviews

- Participants:**
- 150 in total
  - ~ 120 ‘operational’
  - 46 questionnaires
  - 35 interviews

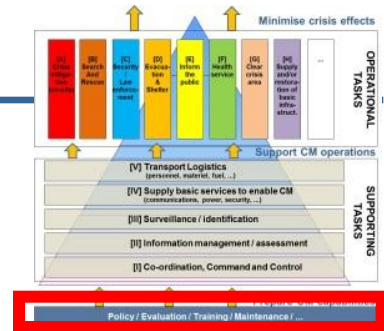


# Conceptual model



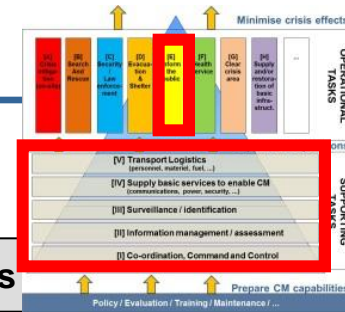


# Improvement needs – overview



Group	Category	Identified and validated needs
Preparatory efforts	Policy making and Capacity building	Analytic support to capacity building
		Capability and capacity mapping
		Better ability of donors to assess the impact of their funds
	Training and Exercises	Joint and harmonized training
		Effective exercises
	Evaluation	Strategic evaluation and performance assessment
		Sharing and implementing lessons and best practices
	Prepare civil-military co-operation	Agreed interaction procedures with military organisations
	Doctrine/ Procedures development	Certification and vetting of skills and competencies
		Harmonization of language and terminology
	Community awareness raising	Better understanding of disaster relief among the public

# Improvement needs – overview II



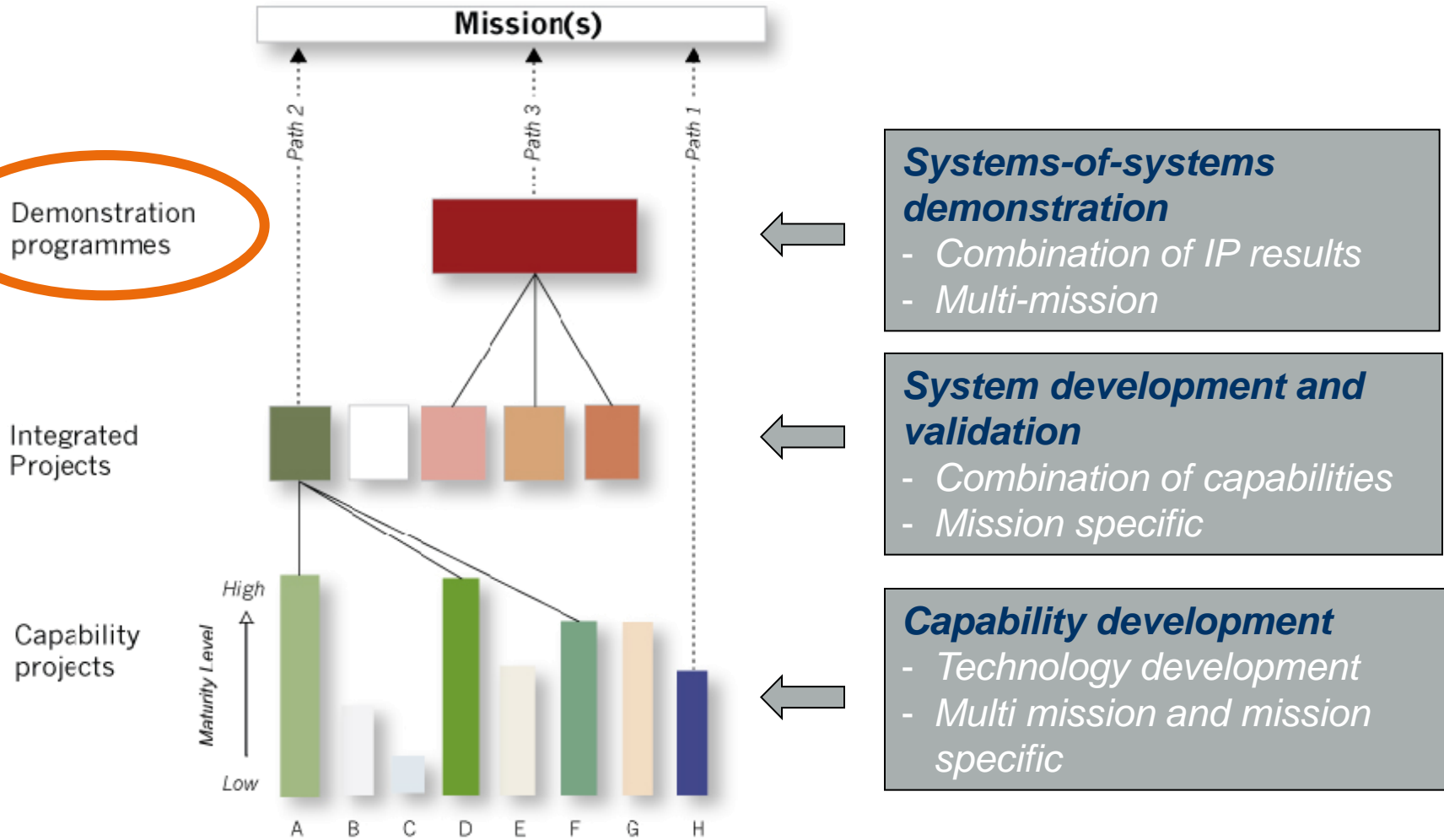
Group	Category	Identified & validated needs	Support
Supporting activities	I) Coordination, Command and Control	Efficient tools for tasking and resource management	
		Volunteer management	
	II) Situation assessment	Early warning capabilities	
		Understanding specific crisis dynamics	
		Understanding the relief effort as a whole	
		Tools for predicting demand at the outset of a disaster - include use of the local population	
	III) Information management	Inter-agency information sharing	
		Retention and warehousing of information	
	IV) Monitoring/ Information gathering	Acquisition of information from external sources	
		Efficient ways to gather data from responders	
VI) Logistics	Procurement and stockpiling strategy		
	Access to strategic transport		
V) Supply basic services to enable CM	Responder communications in remote areas		
	Provision of energy to responder activities		
Task-level activities	E) Inform and Involve public	Evolved management of information to the media and the public & better understanding of CM among the public	

## ACRIMAS Step 4 – Identification of promising solutions and approaches



- **Mapping available research and development efforts to identify promising candidates to contribute to improvement needs**
- **Identification of solutions and approaches for the Phase II**
- **And for future research**
- **This step is currently being finalized**

# Project “hierarchy” in FP7 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**

# The role of the demonstration programme



We do not know how the **crisis environment will change**  
– we need **to improve the adaptivity** of systems and concepts

## The good way – DPs as innovation

- The DP should create **space for experimentation**, allowing for
  - **Operationalization** of promising solutions towards more adaptability
  - **Exploring innovative concepts** and approaches

## The bad ways – DPs as validation

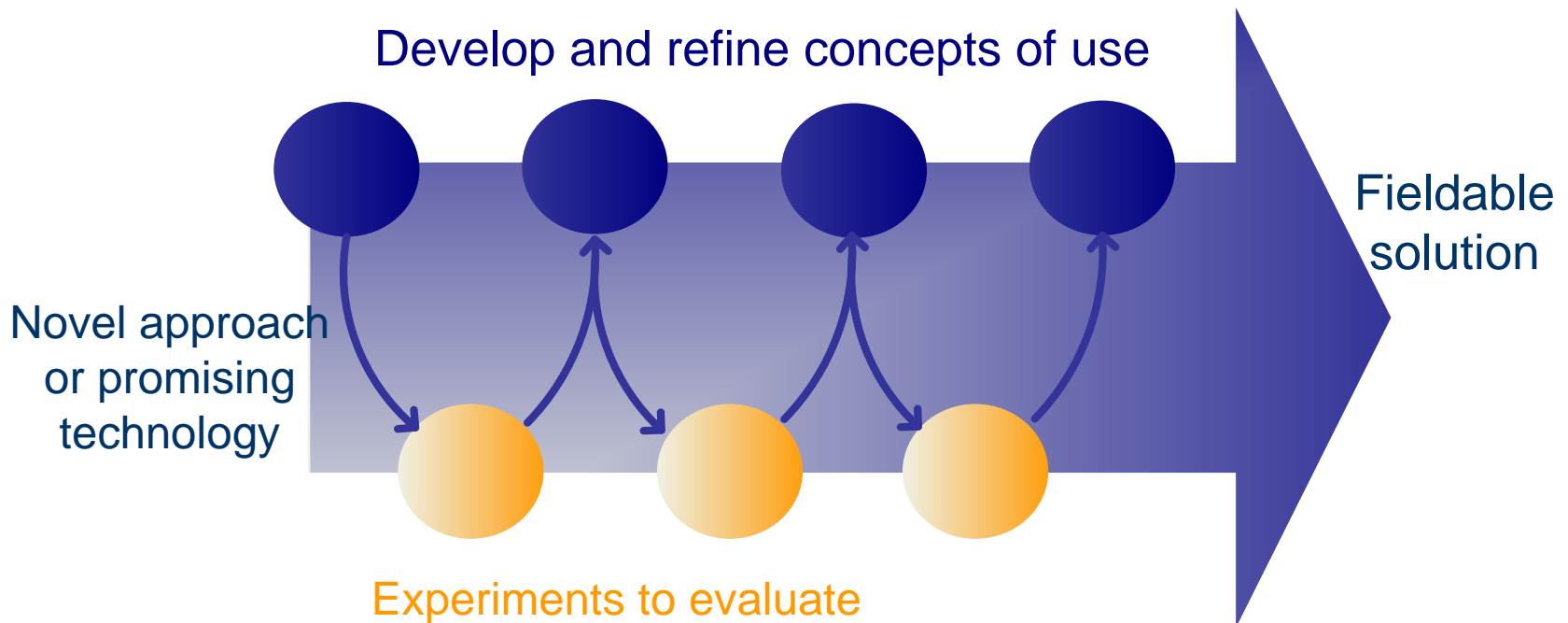
- A DP just to prove that solutions from previous projects are functioning
- A DP to integrate one monolithic technical system
- A DP just as an exercise

DP: demonstration programme

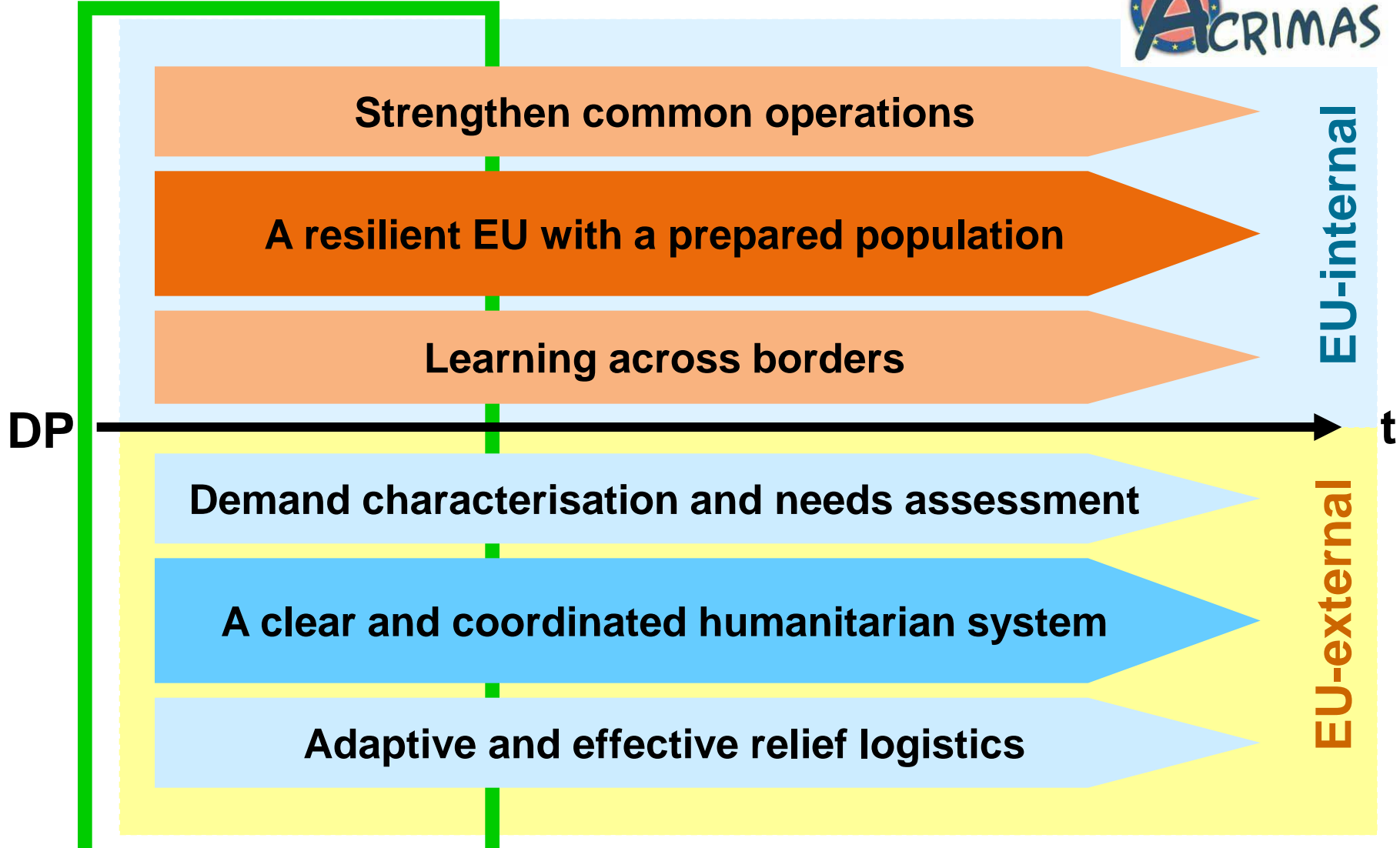
# A DP in support of adaptivity ...



... provides a test-bed for an **iterative development and integration** of novel approaches and promising technologies into fieldable concepts:



# Recommended demonstration strands





## ACRIMAS Final Event: 19 April 2012, Brussels



[www.acrimas.eu](http://www.acrimas.eu)



ACRIMAS 1st workshop, 30 June 2011, Bonn, Germany

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# Main needs for action in the DP



preparedness

response

infra

## EU-internal

### Improving societal resilience

- Understanding of DM among public
- Understanding specific crisis dynamics
- Strategic evaluation & performance assessment
- Management of information to public & media
- Volunteer management
- Early warning capabilities

### Learning across borders

- Analytic support to capacity building
- Sharing & implementing LL & best practices
- Cross-border & harmonised training
- Effective exercises

## EU-external

### Improving coordination

- Inter-agency information sharing
- Harmonisation of language & terminology
- Certification & vetting of skills & competences
- Agreed interaction procedures with military
- PPDR communications in remote areas
- Donor impact assessment

### Needs assessment

- Relief demand & needs assessment
- Inter-agency information sharing
- Efficient ways to gather data from PPDR
- Early warning capabilities

### Logistics

- Logistics strategy
- Access to strategic transport
- Provision of energy to PPDR activities

### Strengthen common operations

- Inter-agency information sharing
- Harmonisation of language & terminology
- Understanding the DM effort as a whole
- Tools for tasking & resource management
- Capability & capacity mapping

### Tools & infrastructure for the DP

- Capability & capacity mapping
- Analytic support to capacity building
- Strategic evaluation & performance assessment
- Effective exercises



# Main improvement needs – ‘preparing’



## Policy and capacity building

- Analytic support to capacity building
  - Knowledge, methods & tools to better analyse future requirements on the crisis management system in Europe
- Better ability of donors to assess the impact of their funds
  - Methods to allow donors to pre-screen, track and evaluate the impact of their donations

## Training and exercises

- Joint and harmonized training
  - Creation of communities of interest & transfer of good practices
- Effective exercises
  - Support tools for EX management, data gathering & evaluation

# Main improvement needs – ‘preparing’ (cont’d)



## Evaluation and doctrine/procedures development

- Strategic evaluation and performance assessment
  - Methods, procedures & tools for community-level operations evaluation & performance assessment
- Sharing and implementing lessons and best practices
  - Mechanisms and support tools for identifying, analysing, disseminating and implementing lessons & best practices from operations & exercises
- Harmonization of language and terminology
  - Identification of critical needs for common terminology

# Main improvement needs – ‘supporting’



## Situation assessment and sense-making

- Understanding the relief effort as a whole
  - Tools allowing of an updated situation picture of what response is carried out where, what is being planned and by whom (including volunteers from the public)

## Information management

- Retention and warehousing of information
  - Tools to allow for easy access to data across agencies, while respecting security & privacy needs, to support DM preparation, response and evaluation