Alert4All
Towards a pan-European Effective Alerting Concept

Cristina Párraga Niebla

Institute of Communications and Navigation, DLR

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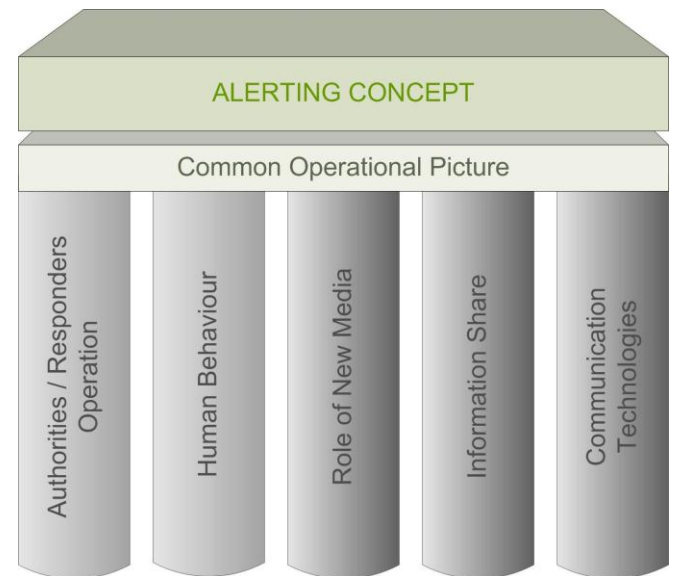
The Potential of Effective Alerting Systems

➤ An effective alert system has the potential to reduce injuries and losses to life and property from existing hazards

   ➤ by providing reliable and accurate information

   ➤ before, during and after a crisis situation

   ➤ to the maximum possible of affected citizens

➤ Alert system:

   ➤ set of strategies, crisis management processes and technologies to support them and to disseminate alerts to the population

   ➤ influenced by social-driven and commercial factors

      ➤ level of interoperability and common awareness between authorities involved

      ➤ the perception of social crowds receiving the alerts

      ➤ the level of acceptance/familiarity and penetration of applied communications technologies in the population

Alert4All Overall Goal

In the near term, it aims at improving effectiveness of alerting systems in the EU

*In the long term, it aims at laying the foundations for a pan European alerting system*

- ↗ by aligning strategies, crisis management processes and ICT technologies involved with
    - ↗ available and emerging technologies
    - ↗ emerging context-awareness information sources
    - ↗ trends in social behaviour
- ↗ to cope with contemporary crisis

- ↗ The Alert4All concept will be built on a Common Operational Picture (COP), which lies on five major investigation areas (pillars)

ALERTING CONCEPT

Common Operational Picture

Authorities / Responders Operation

Human Behaviour

Role of New Media

Information Share

Communication Technologies

The Alert4All Concept

The five Alert4All research pillars will cover different aspects of the overall concept:

- ↗ Information & Communications Technologies
    - ↗ Developing a communications system architecture
        - ↗ Dissemination of messages over different commercial mass market communications technologies, including satcom, satnav
    - ↗ Developing portal for information management (share) that supports the coordination and common situational awareness of involved authorities and first responders

- ↗ Situational awareness
    - ↗ Investigating human behavior
        - ↗ Modeling
        - ↗ Decision making support tool
    - ↗ Investigating the role of emerging social networks
        - ↗ Involved risks and potential benefits
        - ↗ Developing tools to monitor social media

- ↗ Operational concepts (and training material) for crisis management
    - ↗ Best practices
    - ↗ Align to availability of the above concepts

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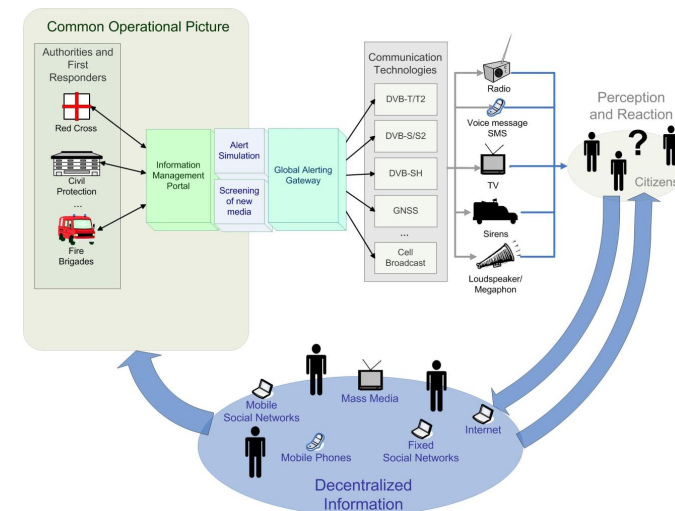
The Alert4All Concept
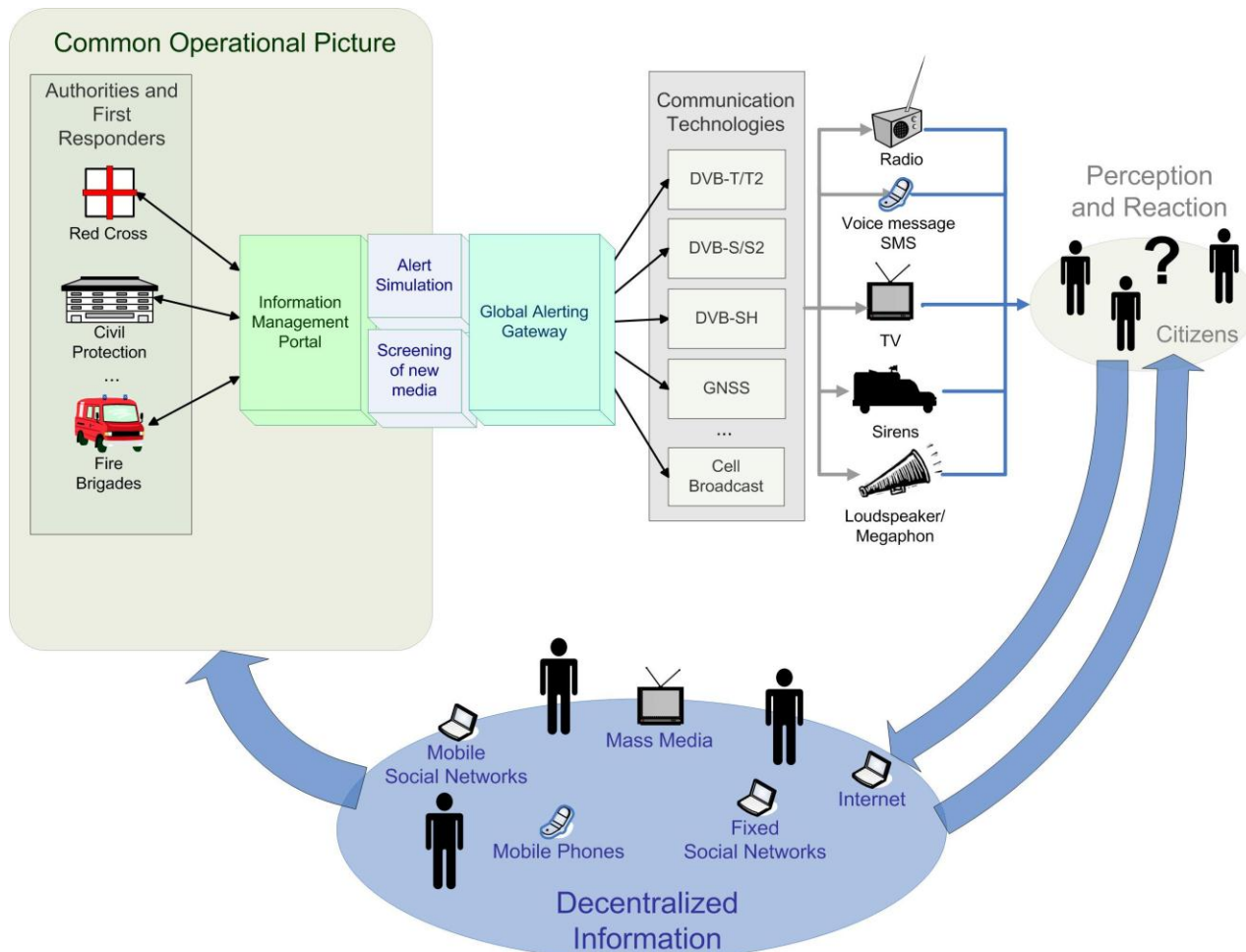
Alert4All Approach - ICT

Communications technologies

> Development of a scalable alert message dispatcher that connects several communications technologies (terrestrial and satellite): resilience, diversity, redundancy

> Design of suitable communications protocols to allow required features

> Major innovation

>> Integration of the satellite (satcom + satnav) component and social media as alerting channels

>> Protocols for secure, reliable and cost-effective transport

Information management

> Development of an information share portal that allows gathering, classifying, filtering and sharing information from different sources to build a COP

> Simple interfaces with existing emergency management systems

> Integrate with situational awareness and communications

> Major innovation

>> Integration: to broaden the scope of emergency management systems to integrate situational awareness from social media
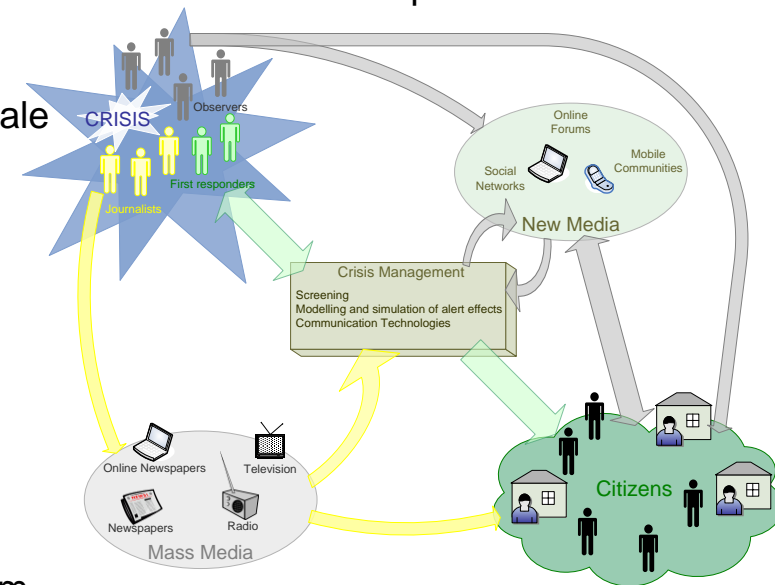
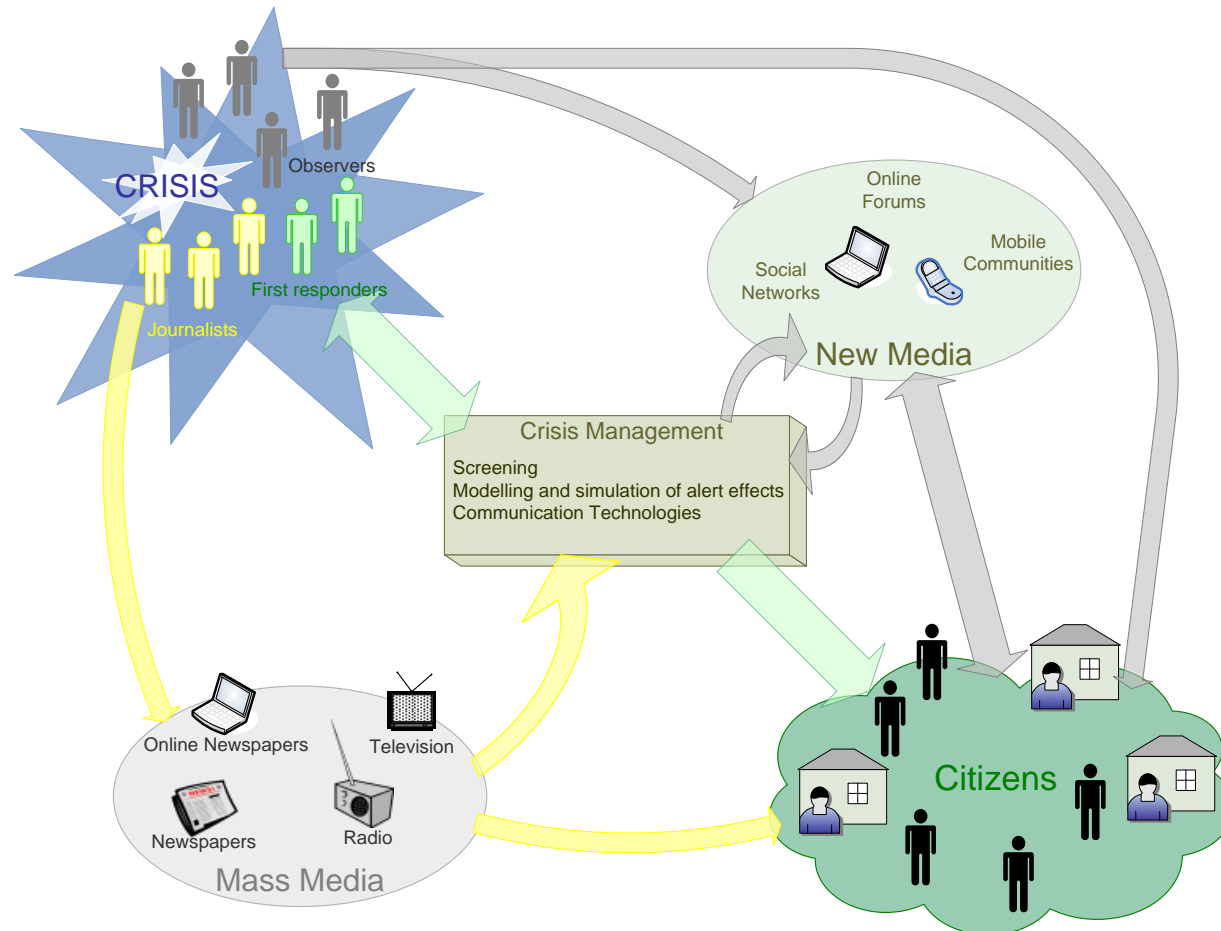# Alert4All Approach – Awareness on Influencing Factors

Human behaviour

↗ Creation of a model of public response to alerts identifying and quantifying influencing factors

    ↗ Social crowds, information form, redundancy…

↗ Development of a decision making support tool to establish communication plans

↗ Major innovation

    ↗ Development and testing of new alert communications strategies using a large scale alerting model and simulation tool

    ↗ Integration in a larger emergency response system

Role of new media

↗ Investigation on the role of (new) media in crises within overall context

↗ Investigation / development on solutions to gather, sort and filter information from social media

↗ Major innovation

    ↗ Use of aggregated real-time information from open social networks resources to enhance operational picture

    ↗ Algorithms for optimised aggregation, sorting and filtering of information

Alert4All Approach – Awareness on Influencing Factors

CRISIS

Observers

First responders

Journalists

Online Forums

Social Networks

Mobile Communities

New Media

Crisis Management

Screening
Modelling and simulation of alert effects
Communication Technologies

Online Newspapers

Television

Newspapers

Radio

Mass Media

Citizens

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Alert4All Approach – Operational and Business Aspects

Operational aspects

↗ Analysis of current practices on crises response operations in selected scenarios

↗ Definition of optimised operative concepts integrating Alert4All ICT and situational awareness features

↗ Major innovation

    ↗ Improvement of best practices counting on the experience of end-users

    ↗ Integration of Alert4All features in the definition of operational concepts

    ↗ Training material → end user experience and acceptance

Business and institutional aspects

↗ Investigate on the key areas of organisational, institutional and funding aspects related to the deployment of the A4A concept and features

↗ Major innovation

    ↗ Development of a framework and roadmap for the creation of a collaborative European alerting infrastructure involving key stakeholders

    ↗ Addessing institutional needs for shorter term regional approaches

Expected Impact

↗ Alert4All will improve effectiveness of alert communications towards the population in crisis

↗ In the area of strategies and crisis management
  ↗ it will contribute to significantly enhancing the operational picture by enhanced awareness of the citizens perception of the situation
  ↗ allow improvements in planning efficiency by effective information management and means to develop and test strategies to alert citizens in crisis situations

↗ In the communications domain
  ↗ it will improve the effectiveness of alert and communications plans, increasing significantly the penetration and impact of alert messages by using diverse communications means
  ↗ especially by adding the satellite component to consumer devices
    ↗ covering also remote areas and providing resilience during disasters that damage terrestrial links

Summary

⌐ Alert4All is a multi-disciplinary concept that encompasses the key enablers to improve the effectiveness of *Alert and communication towards the population in crisis management*

⌐ The Alert4All approach consists on aligning alert and communications strategies, crisis management processes and ICT technologies involved with

   ⌐ available and emerging technologies,

   ⌐ emerging context-awareness information sources and

   ⌐ trends in social behaviour

   to cope with contemporary crisis

⌐ To achieve this challenge, Alert4All develops its research pillars covering the different aspects of the overall concept:

   ⌐ Investigating behavior models and developing a a decision making support tool

   ⌐ Investigating and exploiting the role of emerging social networks in crises

   ⌐ Developing suitable information management tools that interface the rest of Alert4All facilities

   ⌐ Developing a resilient and ubiquitous communications system architecture to disseminate alert messages

   ⌐ Developing enhanced operational concepts (and training) that integrate these features

⌐ Completing the picture by investigating business and institutional aspects

The Alert4All Team

- *Research Centres*
  - **The German Aerospace Center (DLR) → Coordinator**
  - Swedish Defence Research Agency (FOI)
  - Institut für Rundfunktechnik GmbH (IRT)
- *End Users*
  - The German Red Cross (DRK)
  - The German Civil Protection Agency (BBK)
- *SMEs*
  - Avanti Communications Limited
  - British Association of Public Safety Communications Officers (BAPCO)
  - Tecnosylva S.L.
  - Tecnalia-Robotiker
- *Industry*
  - EDISOFT – Empresa de Serviços e Desenvolvimento de Software, S.A.
  - Eutelsat
- *University*
  - University of Stuttgart

Thank you very much for your attention!!

Contact:

Cristina Párraga Niebla

email: cristina.parraga@dlr.de

Telf.: **+49 8153 282824**

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für Luft- und Raumfahrt e.V.
in der Helmholtz-Gemeinschaft