SIXTH FRAMEWORK PROGRAMME

Information Society and Media

CHORIST project

5th TIEMS workshop - CROATIA 2008

Dealing with disasters: Any improvement ?

Zagreb, 28 & 29/10/08

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CHORIST project coordinator

EADS DEFENCE & SECURITY

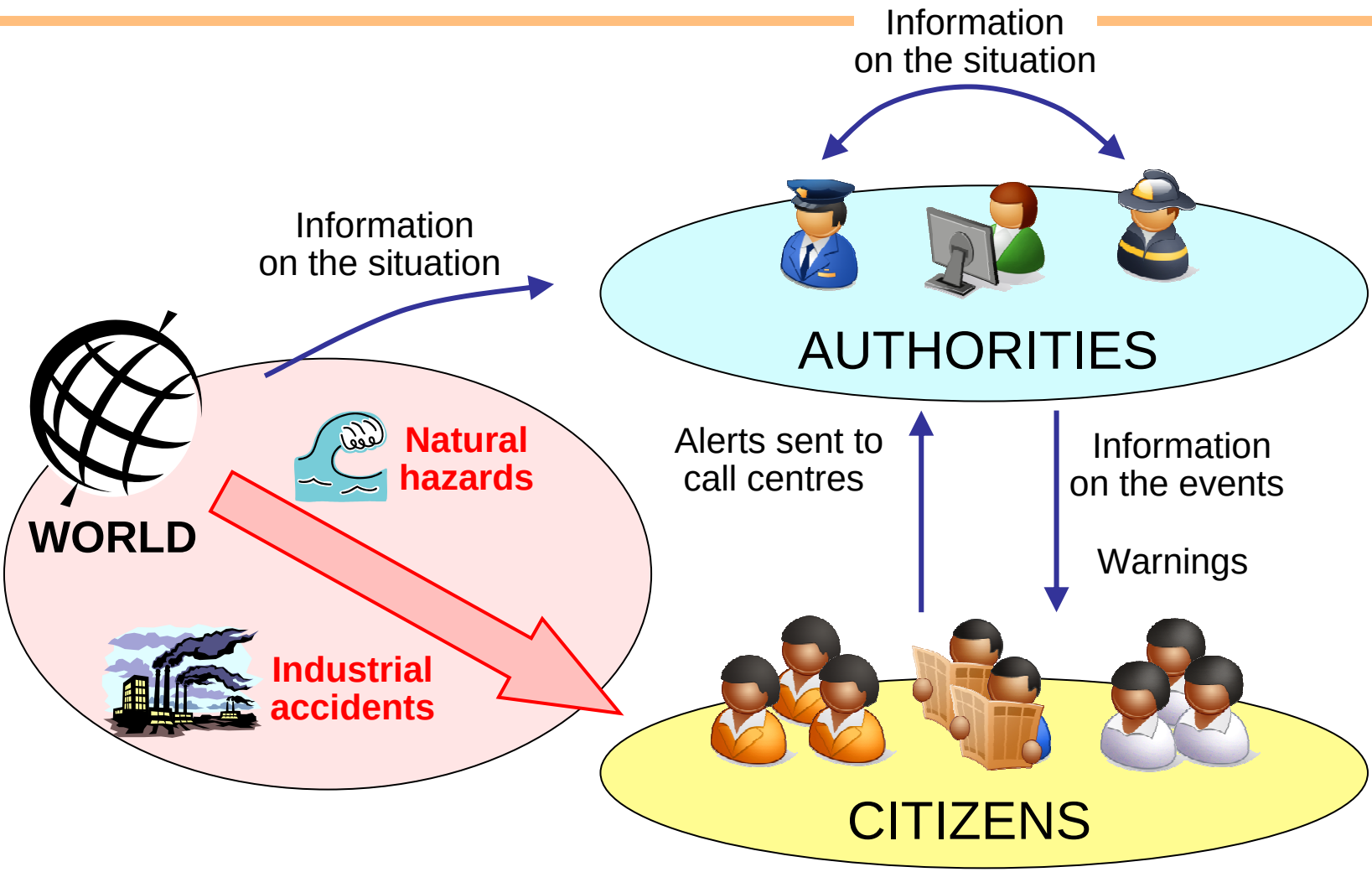
Scope

Present the solutions proposed by the CHORIST project in the domain of the early warning of natural hazards and industrial accidents.

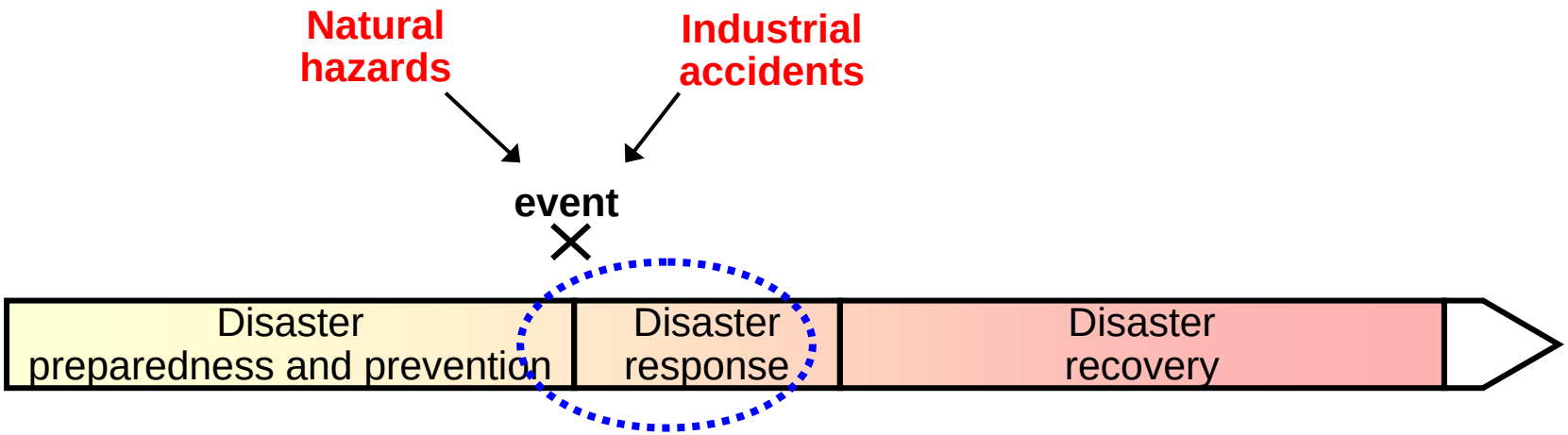
1. Context of the project

What is this all about ?

Information flow



The early warning



Scope of CHORIST =

EARLY WARNING

1. Authorities have to be aware of what's going on.

2. Citizens shall be informed of the situation and they shall **QUICKLY** told what to do by the Authorities.

The acronym

CHORIST =

integrating **C**ommunications for

en**H**anced envir**O**nmental **RIS**k management

and citizens safe**T**y

The project

- 3 years *(Jun. 06 / May 09)*
- *European Commission Framework Programme 6 (FP6)*
- 12.8 M€ *(incl. 7.1 M€ EC funding)*
- Cooperation by 17 partners, from 8 European countries

INDUSTRY

EADS DEFENCE & SECURITY

one2many
Reaching your audience

STICHTING PLATFORM MOBILE MESSAGING

avanti communications

THALES

ELSAG DATAMAT

Tradia

KOMCENTRA

vodafone

USERS

BRITISH PUBLIC BAPCO SAFETY

112.eu
european emergency number association

RESEARCH

EUROPEAN COMMISSION
DIRECTORATE GENERAL
Joint Research Centre

TU Delft
Delft University of Technology

TKK

EURECOM

2. The whole system

A system made of 3 subsystems

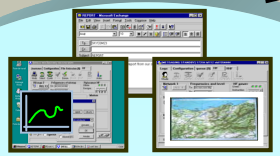
The three CHORIST subsystems

Authorities
(local, national…)

- Common Operational Picture
(real-time situation picture)
- Alerts

Command and
control of rescue teams

Warning messages
to citizens



Risk assessment
report system

Situation
description


Rapidly deployable
systems

Communication
to citizens

Events &
Situation
(current+forecast)

Alerts &
Situation
description

- WiMAX techno.
- TETRA TEDS

Warning message
distribution through:
- Digital Audio Broadcasting
- Digital Video Broadcasting
- GSM cell broadcast
- Sirens
- . . .

Legacy
monitoring
and warning
agencies

112
call centers



on-field
rescue teams



Citizens

Sensors
(raw data)

Citizens
calls

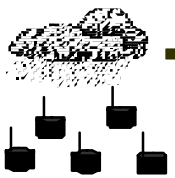
CRISIS AREA

3. The CHORIST subsystems

a. The risk assessment report subsystem
b. The warning subsystem
c. The rapidly deployable communication subsystems:
    i. Wideband subsystem
    ii. Broadband subsystem

The risk assessment report subsystem: Actors, functions & flows

112 call centers



Sensors networks

Industry and environment monitoring agencies

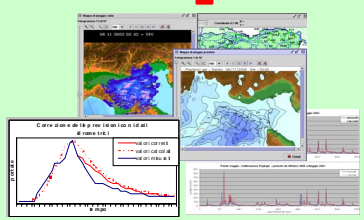
CHORIST risk assessment report subsystem

Risk Awareness module

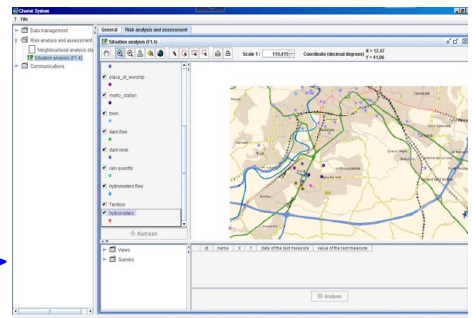
- Alert data merger and correlation
- Alert data archiving
- Message dispatch for alert trigger

Risk Assessment module

- Situation analysis
- Threat assessment and risk definition
- Alert elaboration



Models for forecast *(meterological, hydrological...)*



Common Operational Picture & **Alerts**

Authorities *(local, regional, national)*

The risk assessment report subsystem: Main features

- Assists authorities by providing a Common Operational Picture and Alerts:
  - to assess natural hazards and industrial accidents
  - to take decisions

- Useable at different levels *(Local/Regional/National)*, depending on the scale of the disaster and according to different roles *(e.g. Civil Protection Organisations, police, fire brigades…)*
  → one information system with different views on it.

- Built on top of existing monitoring agencies. Merges information from different sources.

3. The CHORIST subsystems

a. The risk assessment report subsystem
b. The warning subsystem
c. The rapidly deployable communication subsystems:
    i. Wideband subsystem
    ii. Broadband subsystem

The warning subsystem: Actors, functions & flows

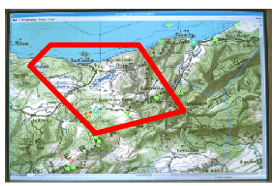
National, Regional or Local authorities

1 *Decide*

Warning messages to broadcast:

```
"Chemical plant
leakage -
Stay home"
```

Area where to broadcast the message:



Schedule of the broadcast

CHORIST warning subsystem

2 *Select*

Warning messages dispatcher

3 *Broadcast*

Natural hazard / industrial accident area

Sirens / Loudspeakers

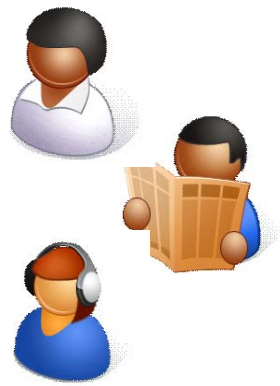
Radios

TV

Mobile phone

Many other means:
- fixed phones
- satellites
- road signs , etc.

Population



4 *Receive*

5 *Act as needed*

The warning subsystem: Main features

- Allows authorities to send warning message to the maximum number of people in a given area in the minimum of time.

- Useable at different levels *(Local/Regional/National)*

- Message design *(through templates)*:
  - Alarm level *('alarm', 'warning', or 'information')*
  - Location *(polygon on a map)*
  - Information *(e.g. 'Fire in …')*
  - Action *(e.g. 'Go…', 'Gather at…')* → several languages
  - More info *(e.g. 'Turn radio to 108.3 MHz for more info')*
  - Timestamp

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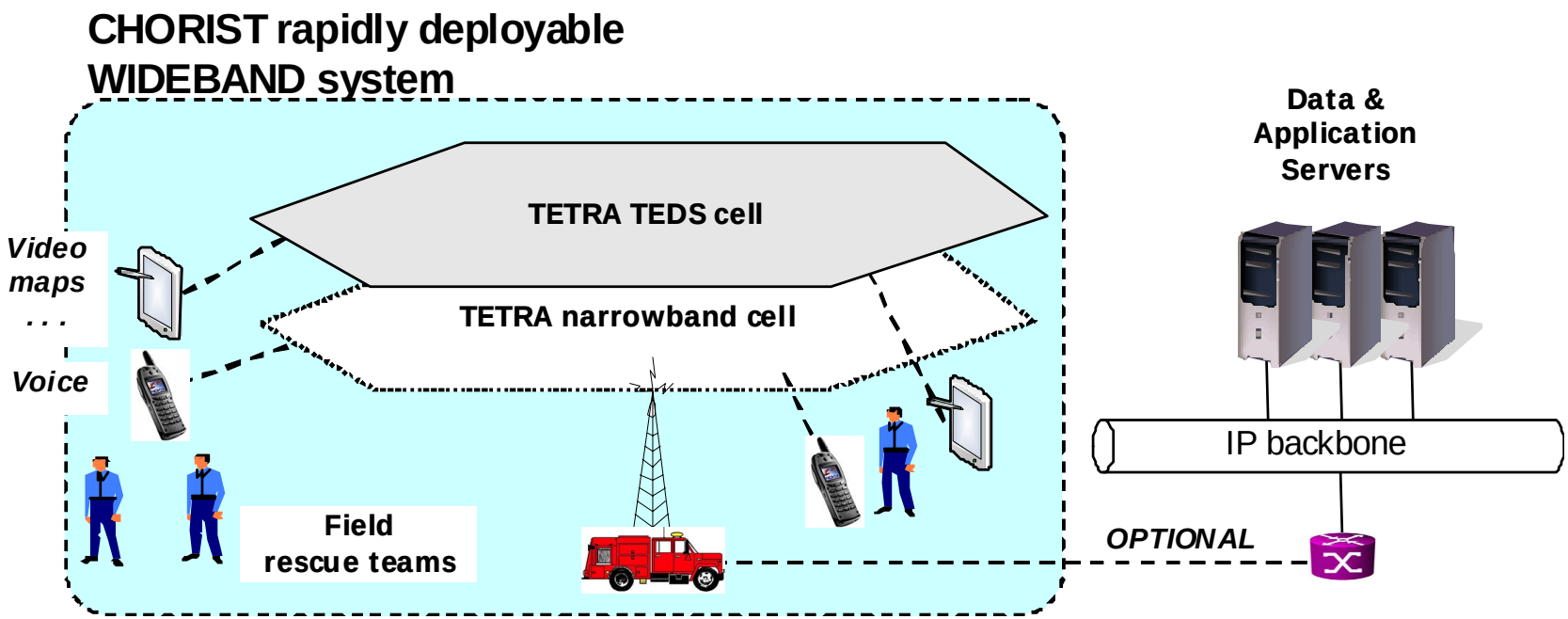
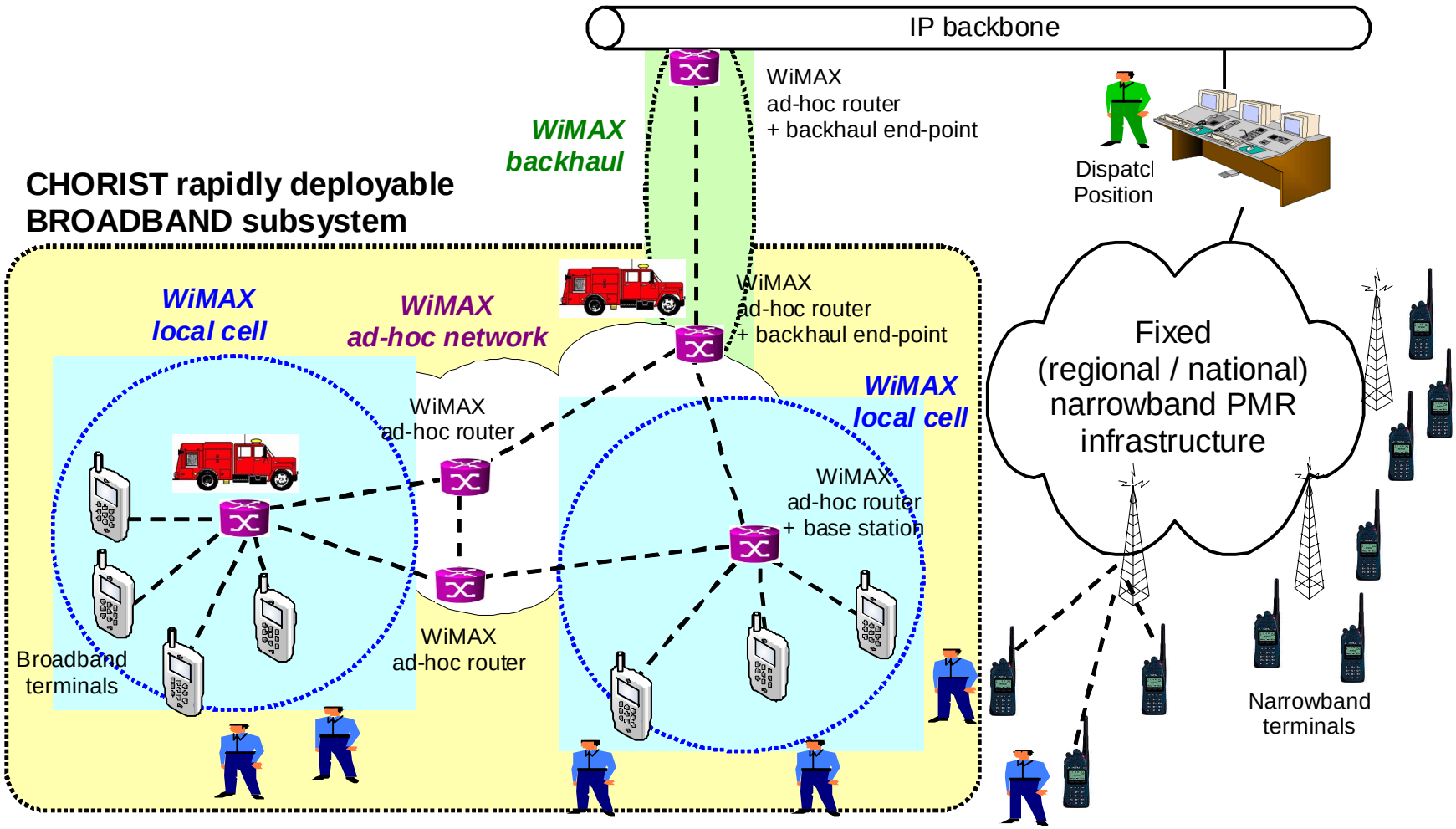
The rapidly deployable communication WIDEBAND subsystem: Actors, functions & flows



The rapidly deployable communication WIDEBAND subsystem: Main features

- Overlay of TEDS *(standard: TETRA Enhanced Data Service)* with TETRA narrowband
- Data services only
- 100 kbps per TRX
- Standalone or connected to external networks

The rapidly deployable communication BROADBAND subsystem: Actors, functions & flows



The rapidly deployable communication BROADBAND subsystem: Main features

- Innovative self-forming inter-vehicular IPv6 mobile broadband wireless core network
- Voice and data services
- VoIP group communication application developed.
- Several Mbps in the network
- Standalone or connected to external networks

For more information:

Visit CHORIST web site at:
http://www.chorist.eu/

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