



A complete communication framework for public alert: the Alert4All approach

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The Alert4All Project

- Alert4All is a EU-funded project (REA, Security): March 2011 – December 2013
- Focused on conceiving an extensive and interdisciplinary framework, covering the key enablers to improve the effectiveness of alert and communications to the population in contemporary crises

- With a team of 12 European partners with a balanced mixture of competences and profiles

- Cooperating with
 - Euralarm



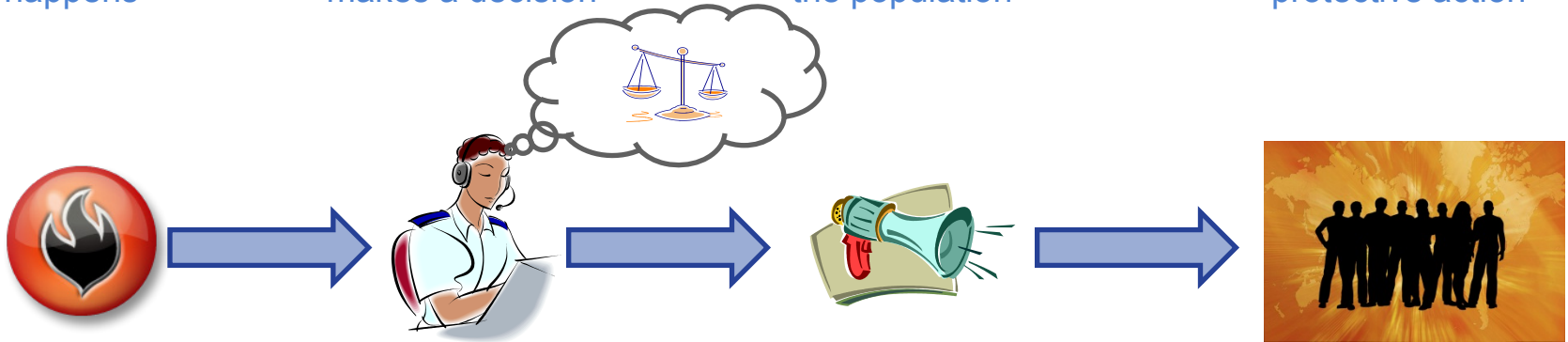
Alerting the Population: an Easy Principle....

Something happens

Authority notices and makes a decision

Authority alerts/informs the population

The population applies protective action



Increasing threats

Increasing number of events

Who? → it depends!

Type of hazard

Jurisdiction / Governance

Local / Regional / National / European?

Plans → Preparedness?

Different approaches



Reach 99.99%?

Timely

Communication habits

Understand

Trust

Risk perception

Preparedness

Making Alerting Effective: The Enablers

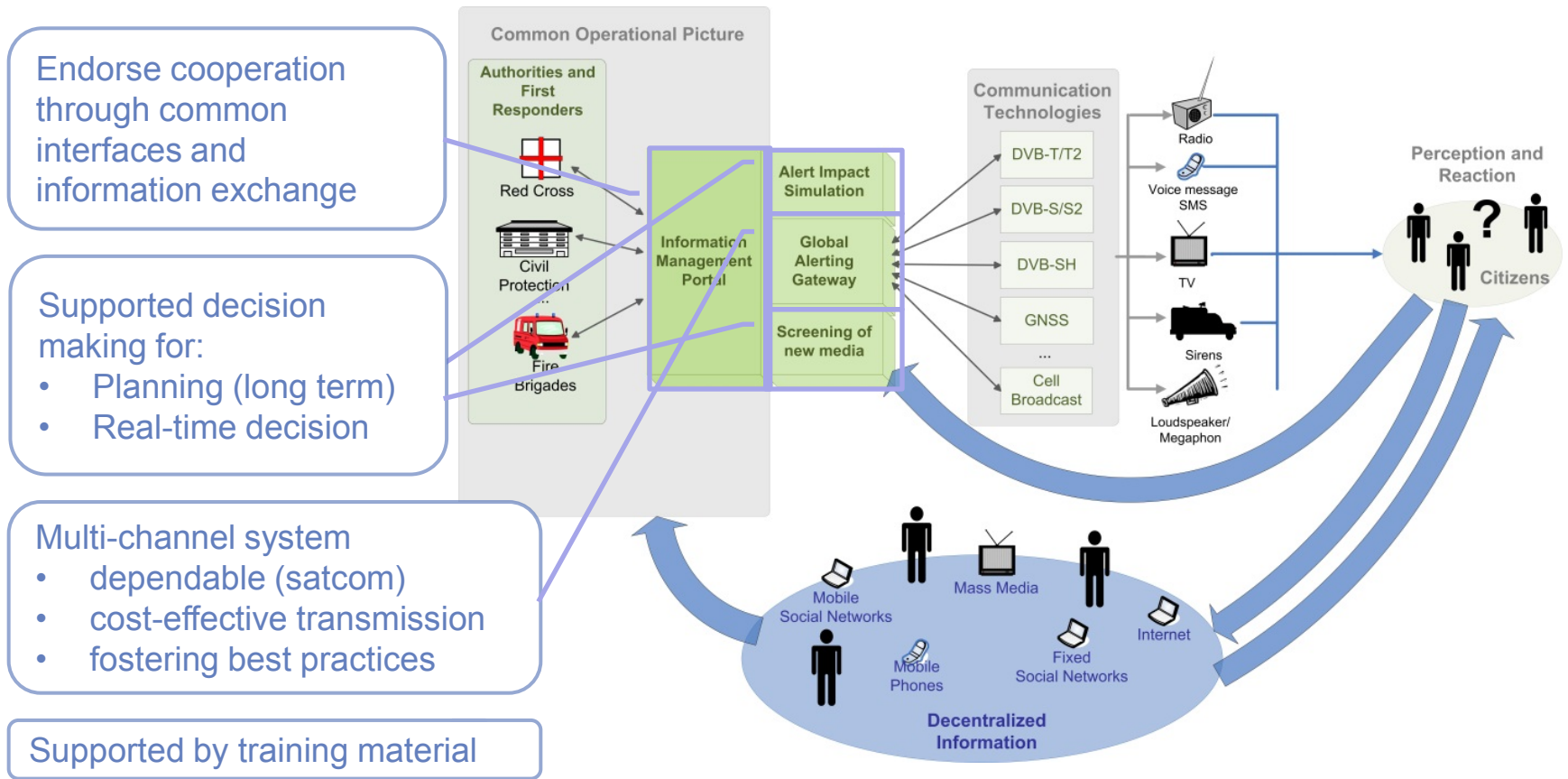
- Maximise affected people reached timely
- Knowledge and use of best practices
- Familiarity at both ends
- Supported decision making

- Avoid sources of ambiguity
- Consistent, clear, simple but sufficient
- No contradicting messages from different authorities!
- Harmonised style

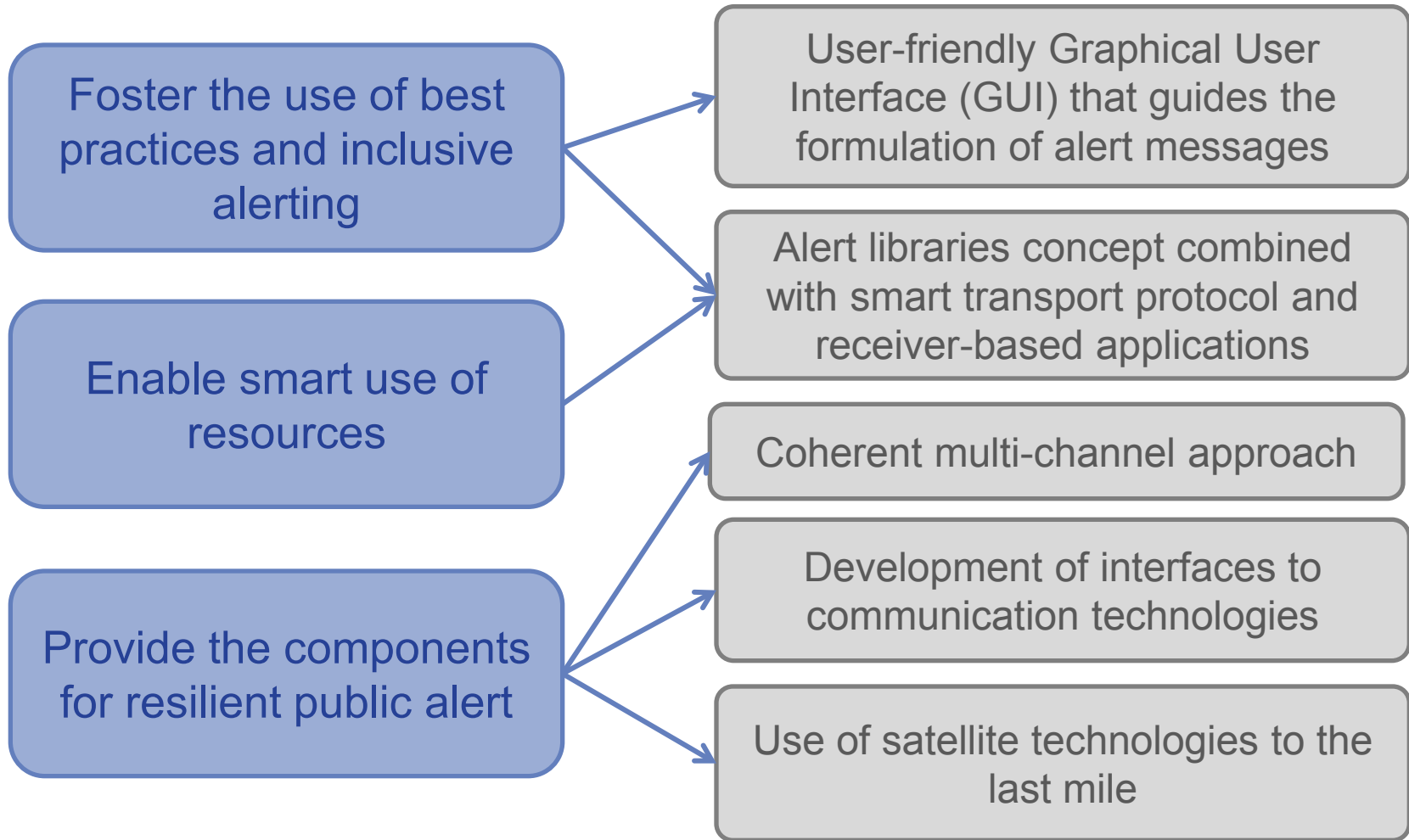


The Alert4All Concept

Integrated, modular and scalable multi-hazard alerting system encompassing identified enablers

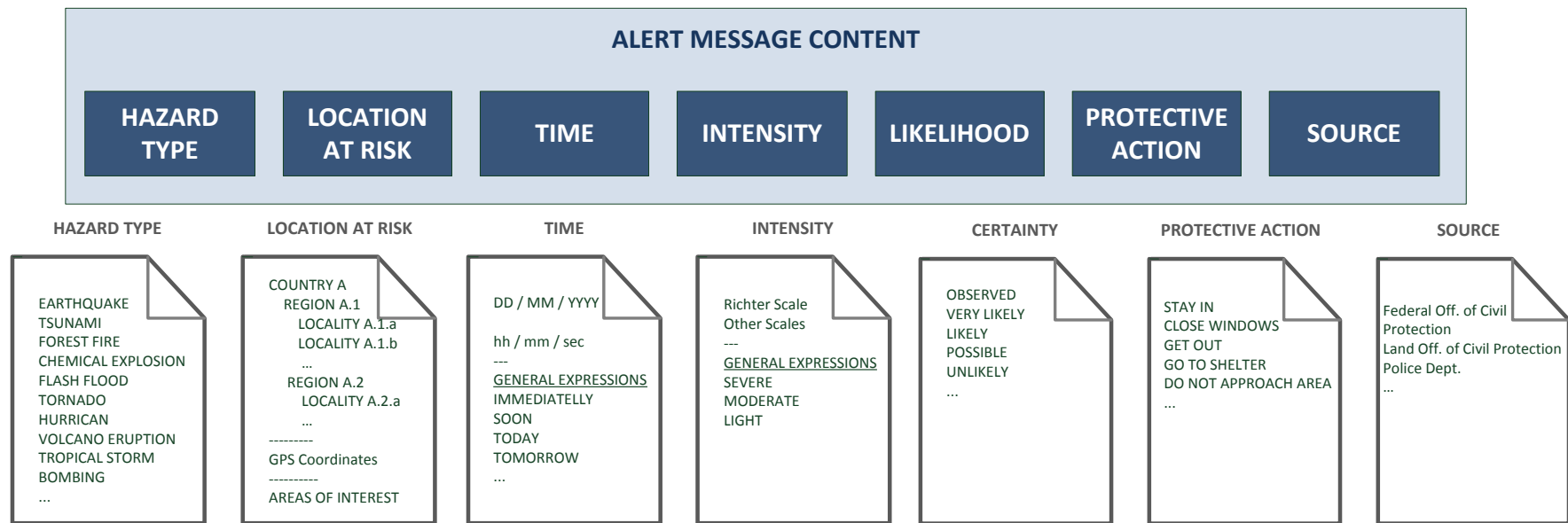


The Alert4All Communications Framework



Alert Libraries Based on Best Practice Alerting

- Best practices collected in literature state that alert messages should be kept simple but contain specific information



- These can be seen as configurable building blocks that can be easily encoded
 - Harmonised alert message format
 - Avoid: jargon, errors, missing information

Guided Graphical User Interface

alert4all
OPERATIONAL MODE
Logout

Home Incidents Alerting Plans A-COP Management System Admin
IMP SCREENING MEDIA SIMULATION

Main Incident Incident Area Alerting Area
Select Move Maps Draw Area Delete Area
Search

Kartendaten © 2013 Google, basados en BCN IGN España

Send message to citizens
 Send message to first responders

Hazard Timing Action Resources

1. Hazard Type*

Hazard List

other

2. Expected severity*

Severity List

other

3. Certainty*

Certainty List

other

Send

Channels

Reset page

Reset all

Next →

Message

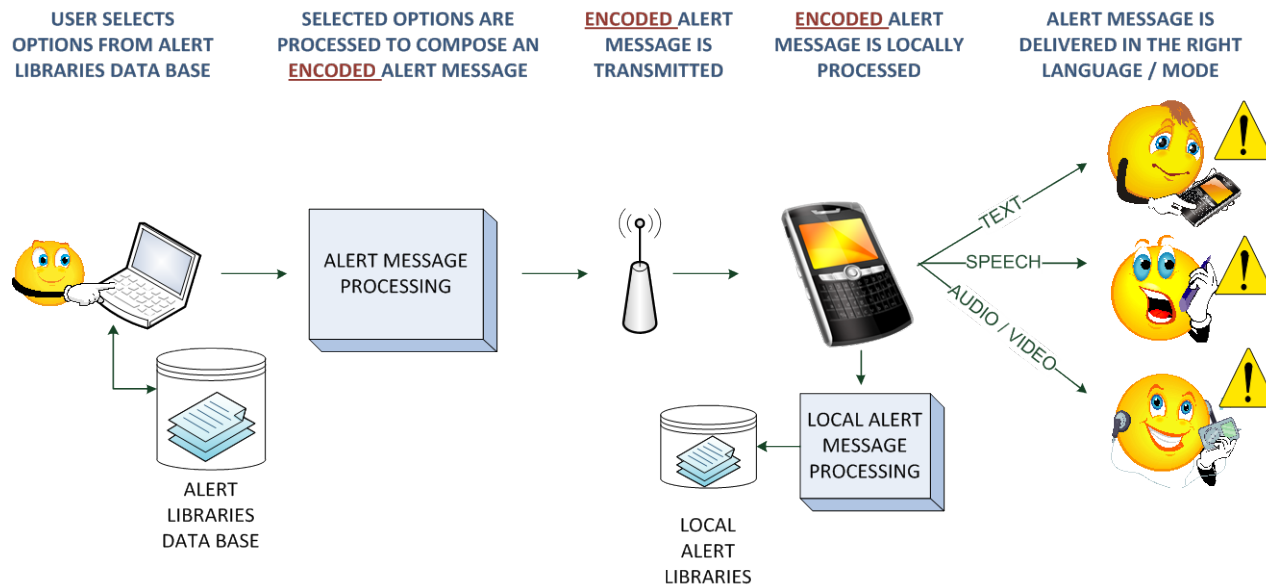
Incident Events (Dbclick -> center)

Name	Description	Declared Date	Declared Time	Occurrence Date	Occurrence Time	Timestamp

Combining Alert Libraries, Smart Protocol and Client-Based Applications

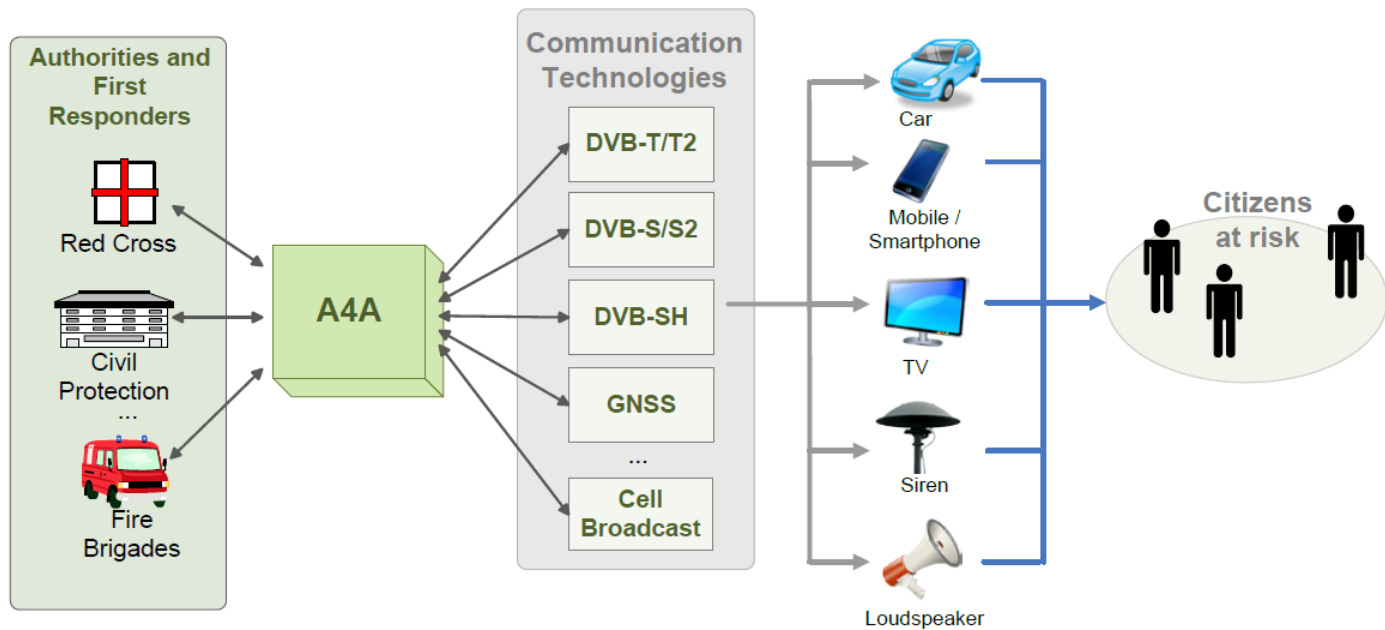
By applying alert libraries and a smart protocol, alert messages can be encoded into a few bytes and decoded at the receiver side using client-based applications

- The client application decodes the alert message in the desired language and
- presents the message in the best suited format (text/speech, etc.) to match the specific user need



Multi-Channel Approach Including Novel Alert Channels

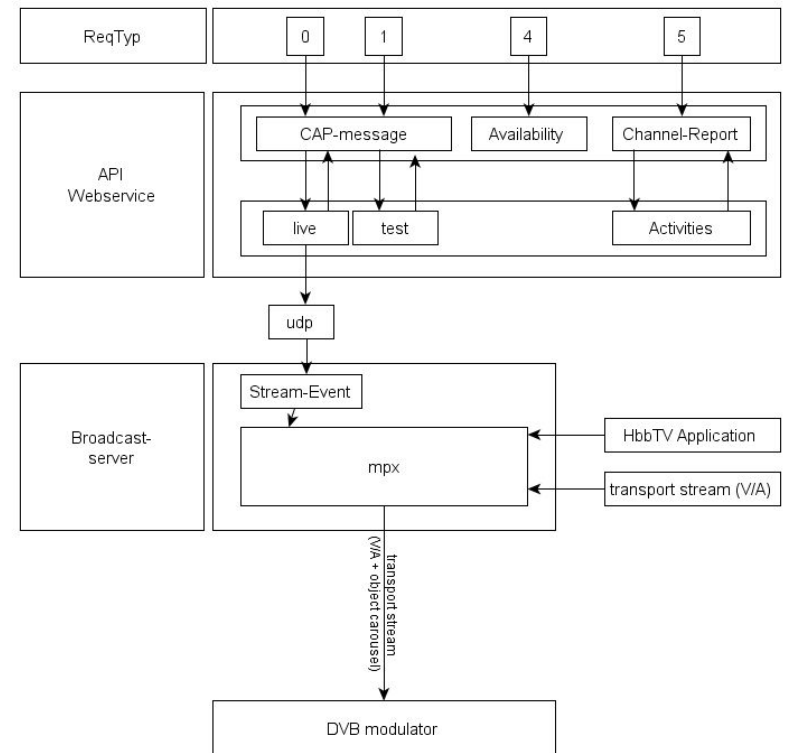
- Alert message injection direct to TV through satellite and terrestrial digital TV with two solutions (receiver application and HbbTV)
- Satellite mobile services to handheld and mobile sirens (DVB-SH)
- Satellite-based navigation augmentation services (EGNOS)



Injection of Alert Messages Direct to TV (I)

The Hybrid Broadcast Broadband TV solution

- Hybrid Broadcast Broadband TV (HbbTV), is a major new pan-European initiative aimed at harmonising the broadcast and broadband delivery of entertainment to the end consumer through connected TVs / set-top boxes.
- The Alert message injected by the A4A alert gateway in CAP format is inserted the HbbTV data carousel and distributed with other broadcast content
- This is possible over terrestrial and satellite digital video broadcasting
- The Alert message is displayed at the receiver regardless of the TV channel we are looking at!



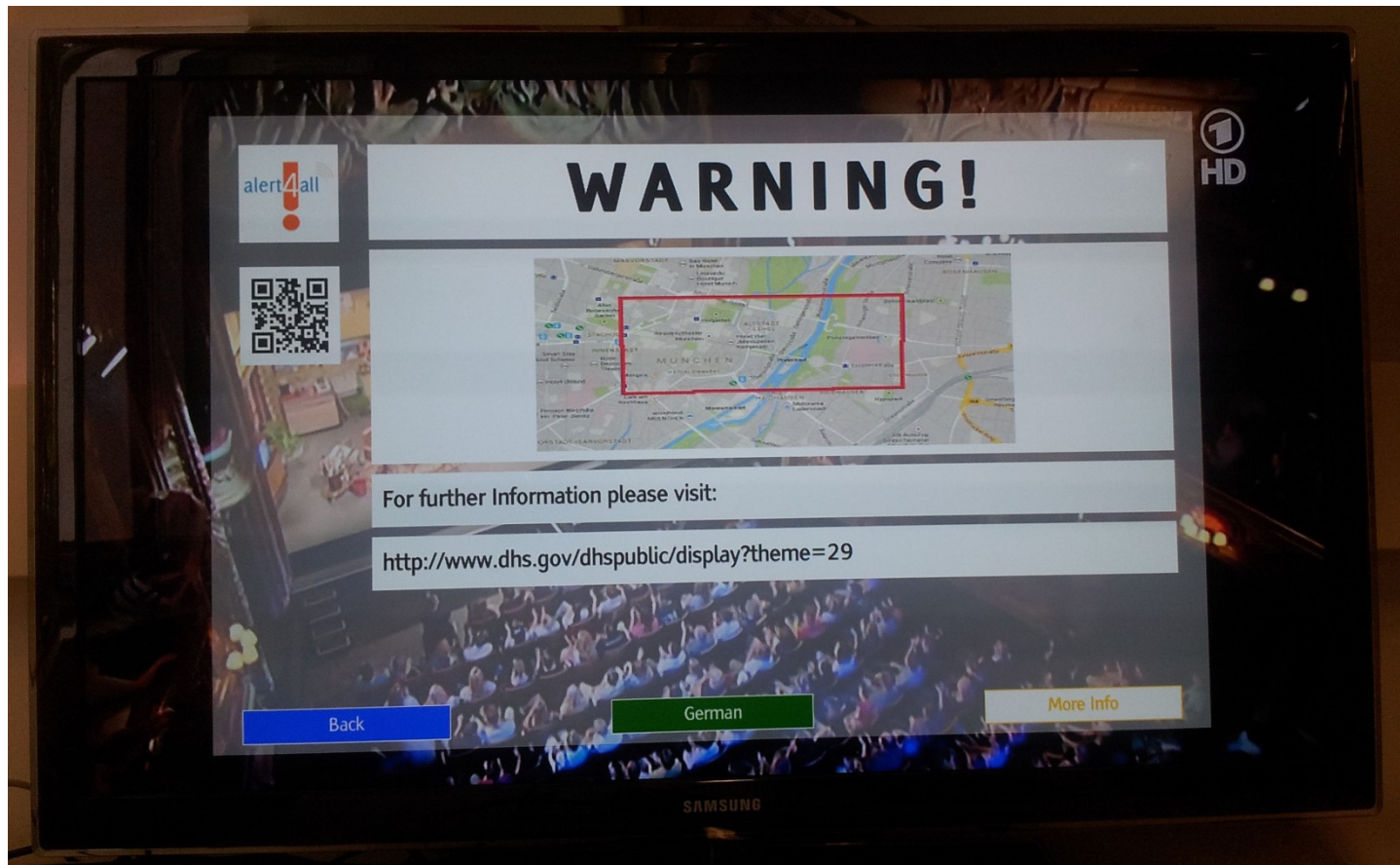
Injection of Alert Messages Direct to TV (II)

The Alert Message



Injection of Alert Messages Direct to TV (III)

The Alert Message – More Information Site



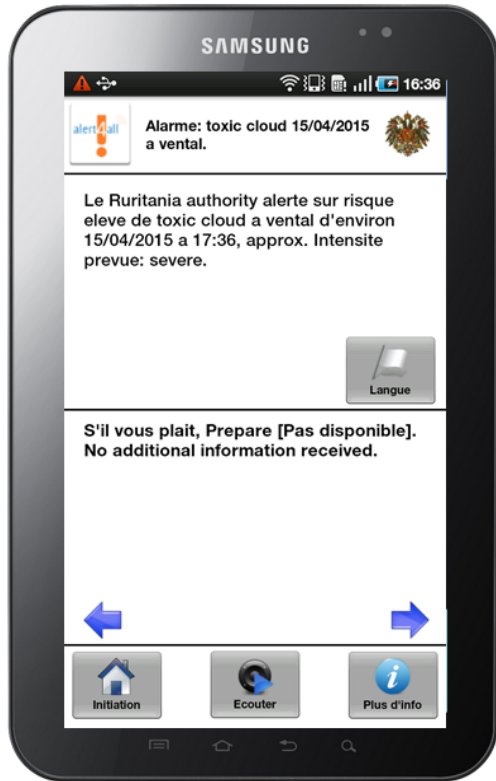
Alert4All Protocol and Client Application

- The CAP protocol is the de-facto standard to share alert messages
 - XML-based → creates huge amounts of data unnecessarily

- The Alert4All protocol is fully CAP compliant and „translates“ the CAP-based messages into a light-weight encoded message with flexible length, adding resilience and security features where required
 - Supports alert libraries
 - make the alert message *‘language and mode independent‘* by applying the A4A client application
 - Allows reduction in the capacity required to transmit alert message
 - Timely transmission made feasible for low rate systems

Developed Systems Supporting A4A Protocol

- Digital Video Broadcast Receiver (DVB-T2)
- Emulated navigation (EGNOS) device



- Mobile satellite services to Handheld (DVB-SH)

Conclusion

The Alert4All project proposes a complete communication framework to reach this vision composed of the following elements:

- a methodology to easily formulate alert messages - derived from a best practice pre-study - that can be applied to harmonizing public alerting methodologies in Europe;
- a guided user interface that fosters the use of best practices;
- a multi-channel approach based to match the communications habits of the people at risk, increase the alert penetration and exploit the complementary capabilities of different channels;
- a communications transport protocol that matches the capacity capabilities of each communication channel to deliver the alert message;
- user device applications to achieve multi-modal delivery of alerts, addressing multi-language issues and people with special needs.