

Experiences with CAP at the German Aerospace Center (DLR)

**CAP Implementation Workshop 2017
Rome**

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and Navigation



Knowledge for Tomorrow



Content

- Introduction
- The Alerting Approach
- Lessons learnt
- Outlook



CAP in Research Projects of DLR



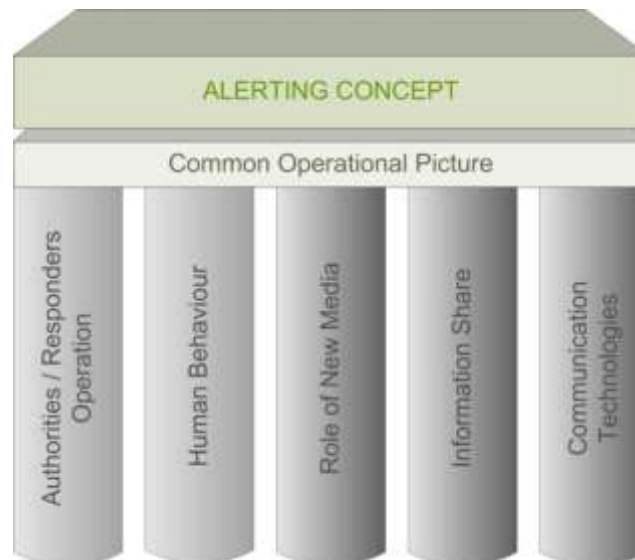
- The German Aerospace Center (DLR) coordinator of several EU-Research projects dealing with public warning
- Close interaction with practitioners and responsible authorities



Alert4All



- Overall Objectives:
 - In the near term, improving effectiveness of alerting systems in the EU
 - In the long term, laying the foundations for a pan European alerting system
- Development of the alerting approach together with practitioners



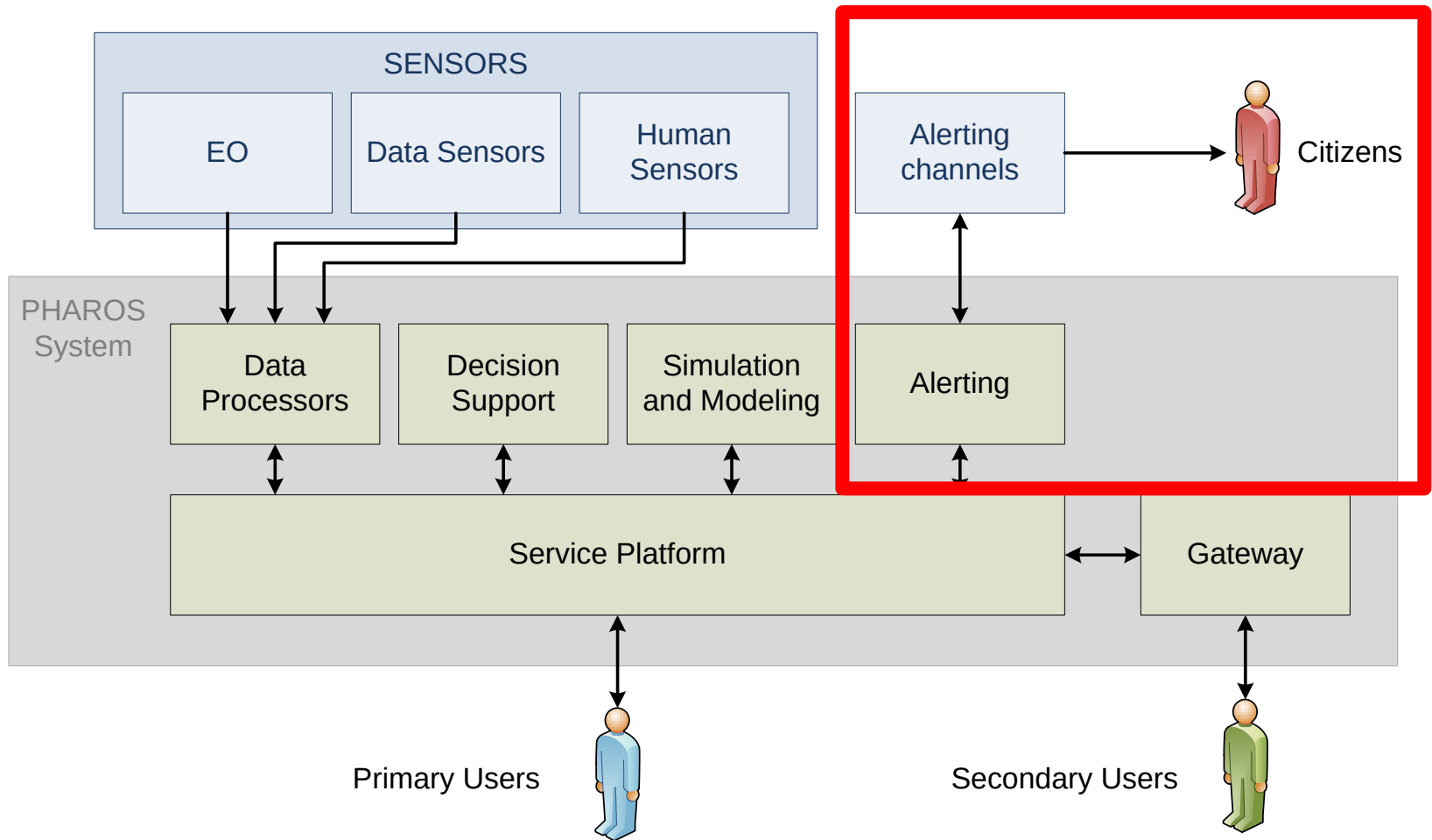
PHAROS



- Integration of the alerting approach in a platform for disaster managers
- Multi-hazard open service platform
- Complete emergency management cycle



PHAROS System



PHAROS Demonstration



HEIMDALL



Medical Emergency Units

Civil Protection Units



Police & Firefighting Units



Command and Control Centers



Multi-Hazard



Cooperative Management
Tool

for
Data Exchange, Response
Planning
and
Scenario Building



Command and
Control Centers



First responders
in the field



Population
and Society



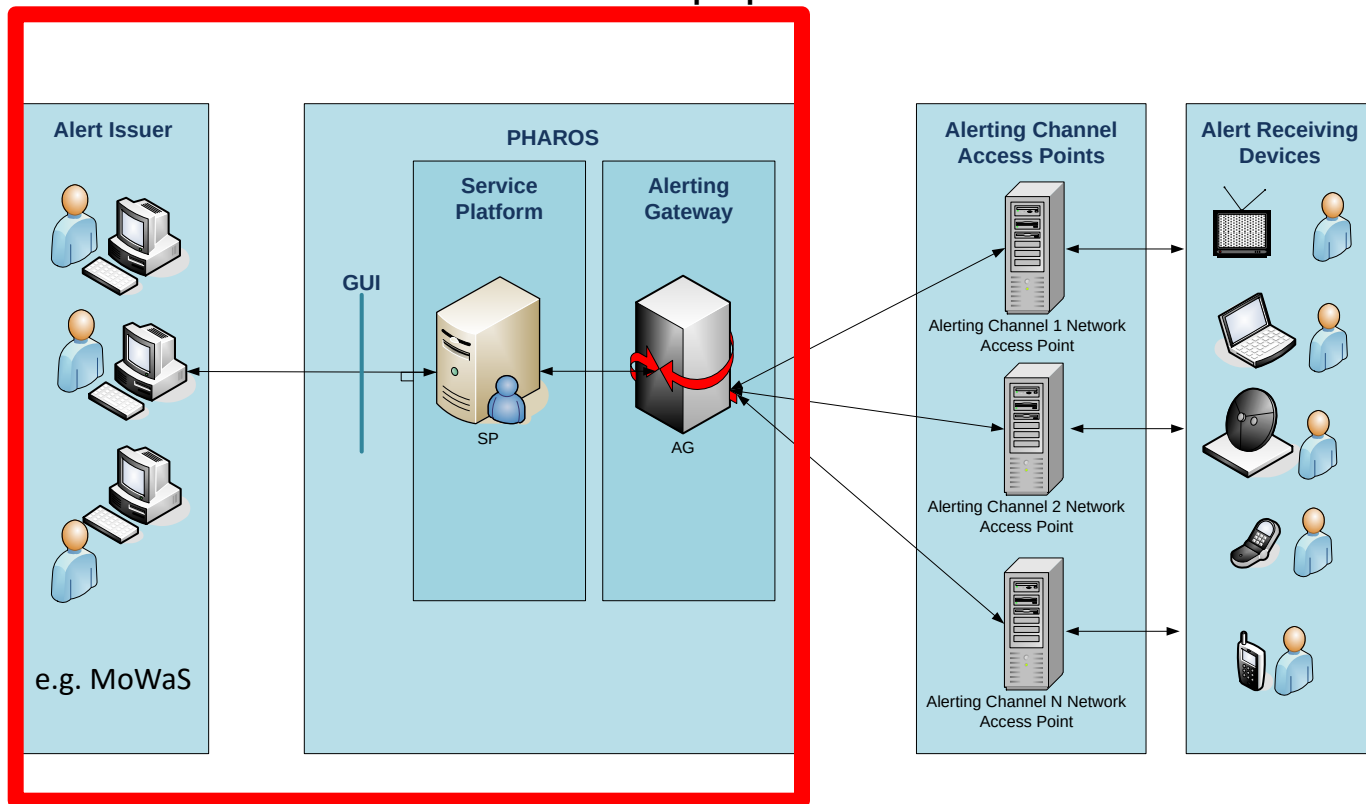
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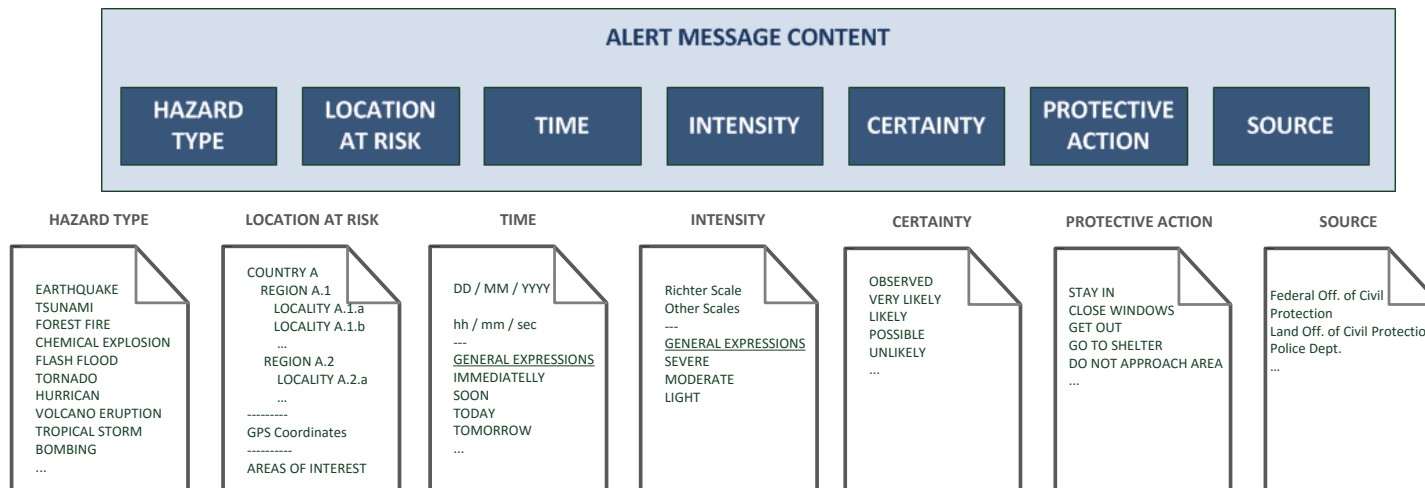
Alerting Approach

- Multi-Channels
- Alerting Gateway dispatches alert messages to the service providers/networks operators that will forward them to the population



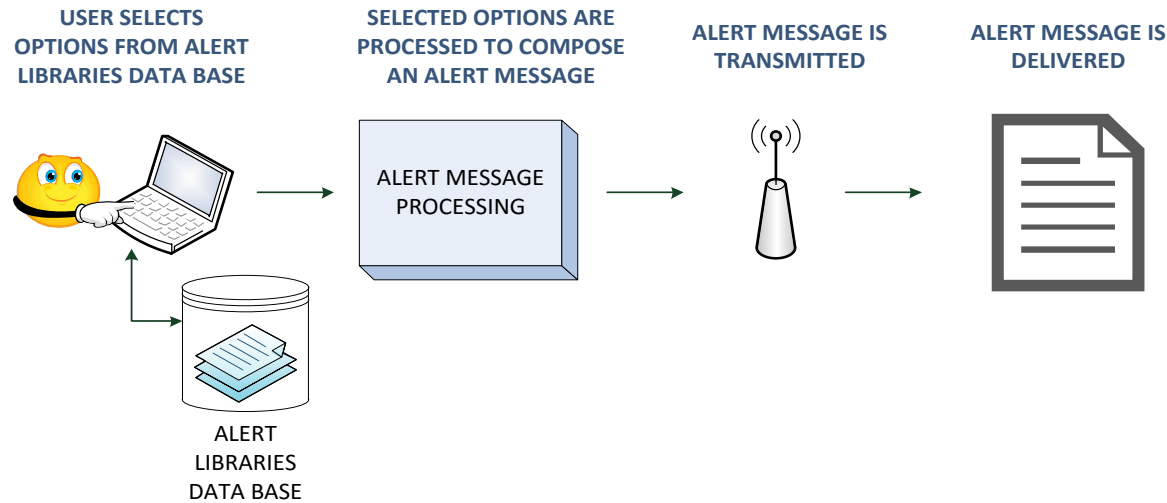
Message Composition

- Messages can be composed by common building blocks:
- Alert message libraries: “composition” vs. “writing”
- Avoid jargon, typing errors, ambiguities
- Harmonised alert messages all over Europe
- Multi-lingual/multi-modal presentation



Message Composition

- Use of alerting libraries:



Expected flash flood at
around 15:00 in <Area>

Expected flash flood at
around 15:00 in Rivendell

Alerting libraries + Encoding:

A4A Encoding

Expected flash flood at
around 15:00 in Rivendell

00150024

Expected flash flood at
around 15:00 in Rivendell
Inundación prevista en
Rivendell a las 15:00 aprox.



Creating Alerts using a GUI

Home / Alert

Message to be sent is not complete. Following fields are missing: scope, urgency, responseType, onsetTiming.

Alert Incident:_zero_ Proposal:215f6360-aac7-4879-bf13-73701c490905

Status

1.Area

2.Channels

3.Hazard

4.Timing

5.Action

(5.c)Resources

6.Check/Send

1. Hazard Type

Forest Fire

Forest Fire

3. Certainty

Likely

Likely

Fire level

1 Extreme

PREV.

Alarm: Forest fire dd/mm/yyyy in La Baronia de Rialb.

The Bomberos de la Generalidad de Catalunya alerts about high risk of forest fire in La Baronia de Rialb from dd/mm/yyyy at hh:mm, approximately. Expected intensity: extreme. Please, <Action> .

More information at www.pharos-fp7.eu/



CAP Version

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <alert xmlns="urn:oasis:names:tc:emergency:cap:1.2">
3   <identifier>AG-20161009165335</identifier>
4   <sender>PHAROS</sender>
5   <sent>2016-10-09T04:10:35+01:00</sent>
6   <status>Actual</status>
7   <msgType>Alert</msgType>
8   <scope>Public</scope>
9   <code>Standard</code>
10  <incidents>_zero_</incidents>
11  <info>
12    <language>en-GB</language>
13    <category>Fire</category>
14    <event>Forest Fire</event>
15    <responseType>Execute</responseType>
16    <urgency>Expected</urgency>
17    <severity>Extreme</severity>
18    <certainty>Possible</certainty>
19    <onset>2016-10-09T15:51:00+01:00</onset>
20    <senderName>Bombers de la Generalitat de Catalunya</senderName>
21    <headline>Alarm: Forest fire 09/10/2016 in Tortosa.</headline>
22    <description>The Bombers de la Generalitat de Catalunya alerts about medium risk of
    forest fire in Tortosa from today (09/10/2016) at 15:51, approximately. Expected intensity:
    extreme.</description>
23    <instruction>Please, follow instructions within next hour. More information at http://
    www.pharos-fp7.eu</instruction>
24    <web>http://www.pharos-fp7.eu</web>
25    <area>
26      <areaDesc>Tortosa</areaDesc>
27      <polygon>40.744157789099,0.55167703620139 40.744142701014,0.55141171206184

```



Alert Reception

 **New Alert** 

Alarm: Explosion 22/02/2016 in Castellet i la Gornal.

The Bomberos de la Generalidad de Catalunya alerts about high risk of explosion in Castellet i la Gornal from today (22/02/2016) at 14:42, approximately. Expected intensity: extreme.

Please, get prepared immediately. More information at www.pharos-fp7.eu/

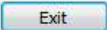


Alarm: Forest fire 09 / 10 / 2016 in Tortosa.

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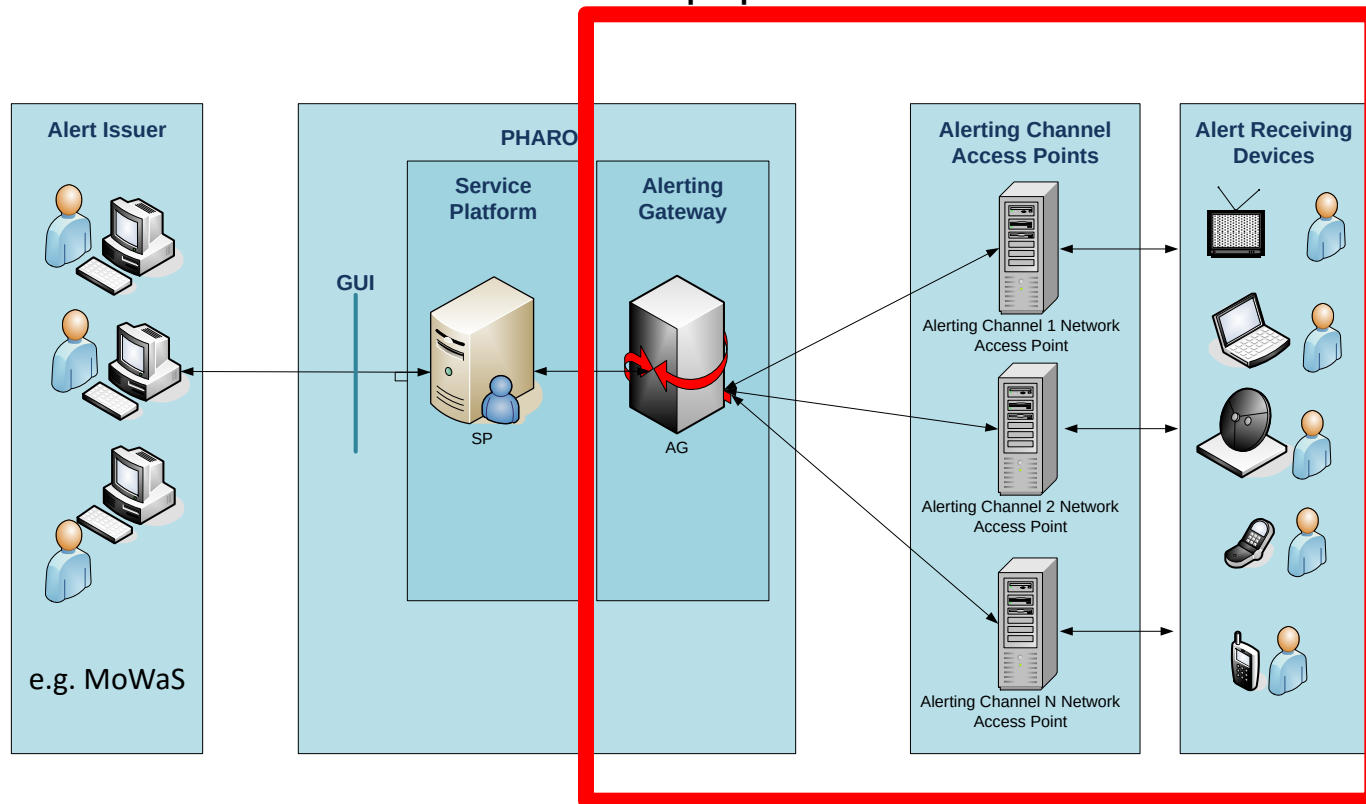
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Alerting Approach

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Alerting Channels

Alert4All

- DVB-SH

- DVB-T2

- DVB-S/S2

- Internet

- EGNOS (Emulated channel)

- DVB-T

Receiver

Sirens

HbbTV

HbbTV

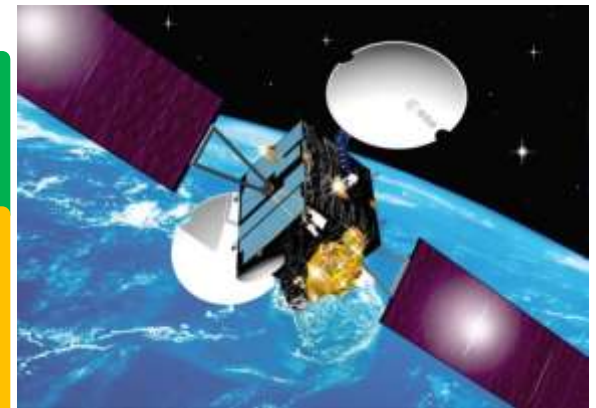
Euralarm

Prototype at PC

Prototype at PC

CAP-Compliant

A4A Encoded



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Translations

- Sometimes building blocks are not sufficient → no automatic translation possible
- Free text messages need to be translated manually
- Code field is used to distinguish messages (standard or free text)
- In case of free text multiple language fields need to be transmitted within a single CAP → multiple info fields

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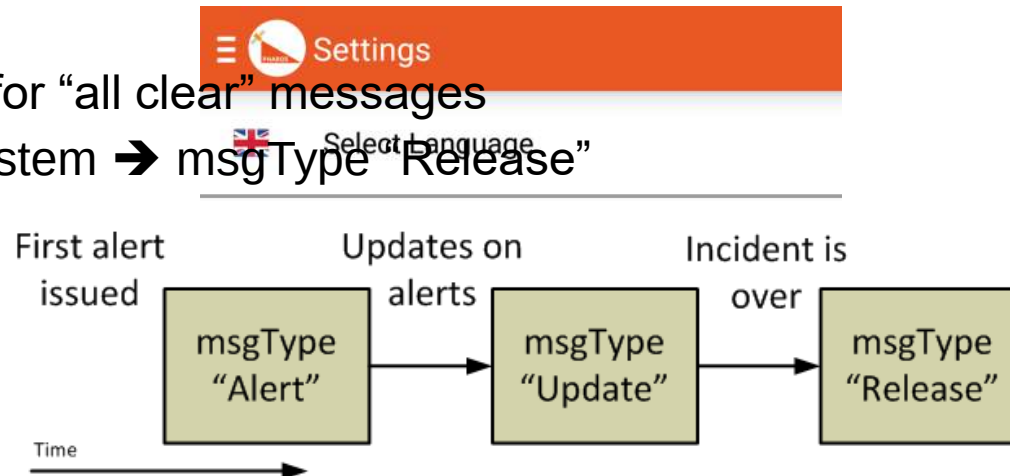
Further Issues

Area Field:

- Geo-fencing requires the area to alert → CAP area field
- To generate the message the incident area is required → CAP area field
- Classification for the area is required
- Area to alert = incident area

Message Type:

- Requirement for “all clear” messages
- Automated system → msgType “Release”



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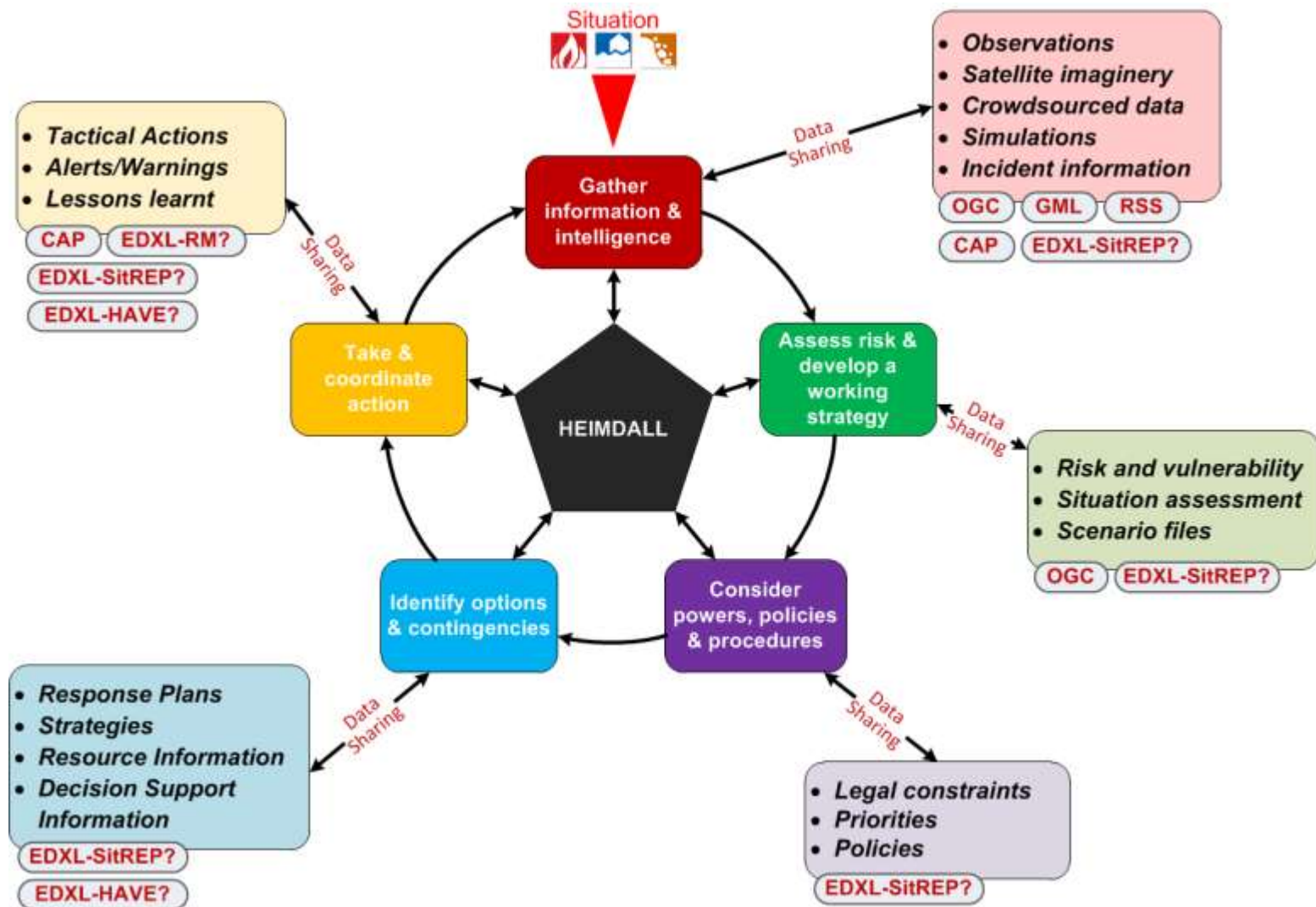


Further Investigation of Alerting Channels

- Prototype for Alerting over EGNOS
- Galileo



CAP and other standards in HEIMDALL



Summary

- Overview of the research projects at the German Aerospace Center (DLR)
- Outlook of HEIMDALL
- CAP for a Pan-European warning system



Thank you for your attention!

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