

# **DISASTER ALERTING IN MOBILE4D**

USING CAP IN A CROWDSOURCED DISASTER  
ALERTING AND REPORTING SYSTEM

**LUTZ FROMMBERGER**

# THE CAPACITY LAB

- Research Cooperation U Bremen - UNU IIST Macau
- Founded in 2012
- ICT Solution for Capacity Building in Developing Countries
- Focus: mobile and geo-spatial application



# WHY YET ANOTHER DISASTER SYSTEM?



# WHAT IS MOBILE4D?

- Smartphone based disaster alerting and reporting
- Carried out as a student project
- Development with Ministry of Agriculture and Forestry, Laos



# MOBILE4D - STATUS

- Start in late 2012
- Functionality field test in Laos (2013)
- Pilot installation upcoming (Fall 2014)
- Funding for cooperation with NUoL until 2016



# MOBILE4D COMPONENTS



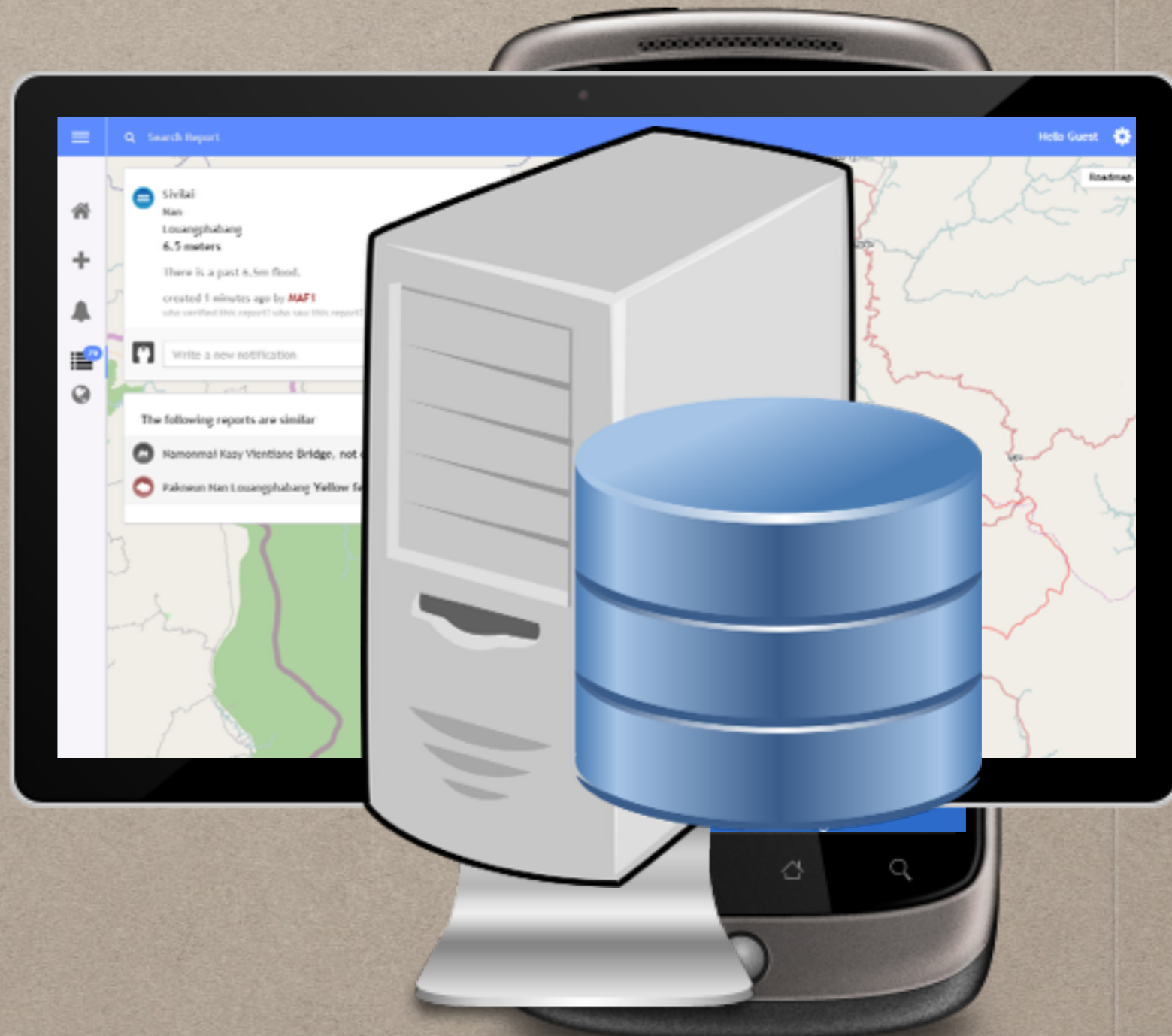
Smartphone:  
local reports



Web frontend:  
administration



Server:  
notification

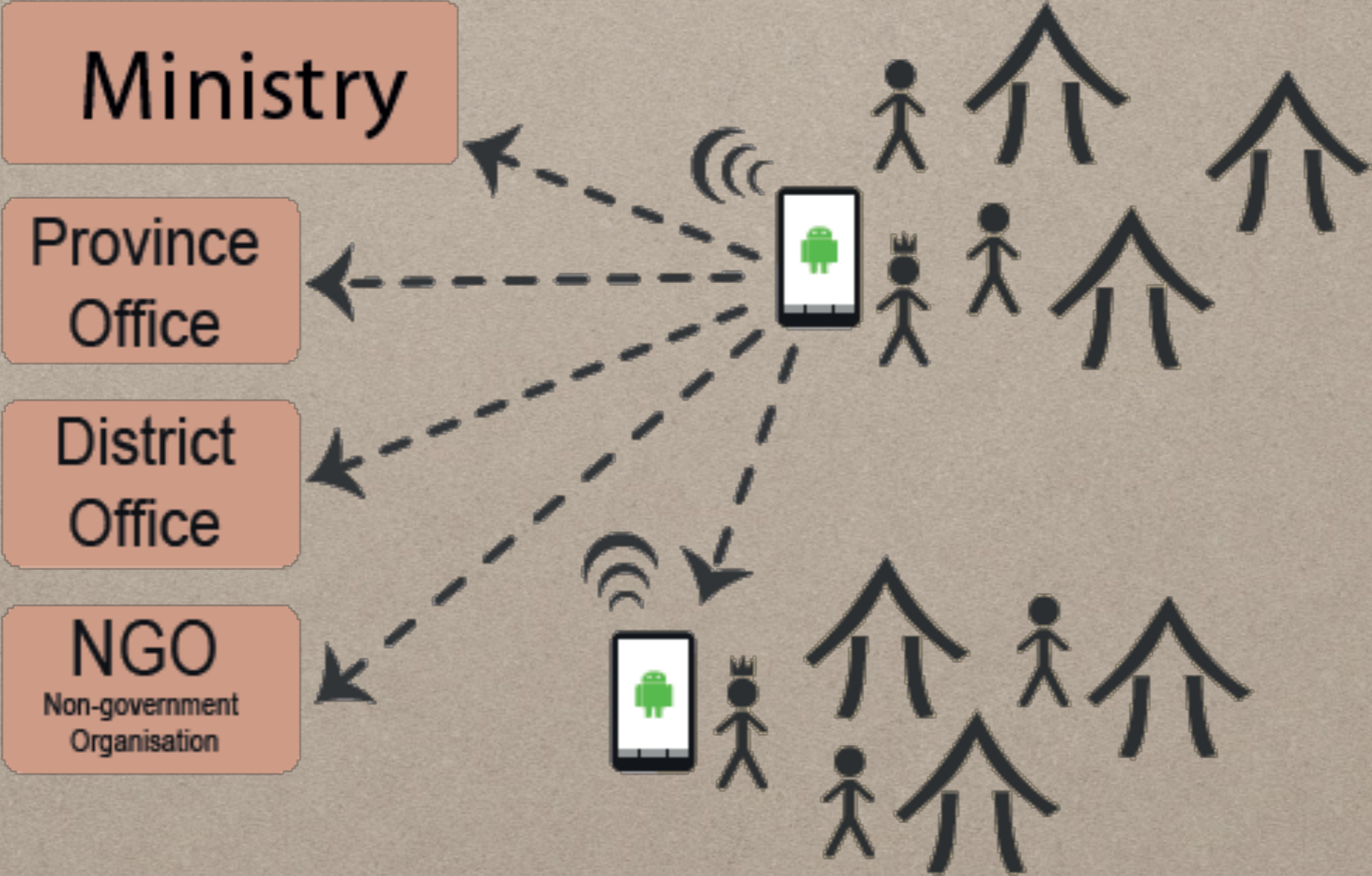


# CROWDSOURCED DISASTER REPORTING

- Crowdsourced data collection on smartphones
- Location-based
- Focus: smaller-scale disasters



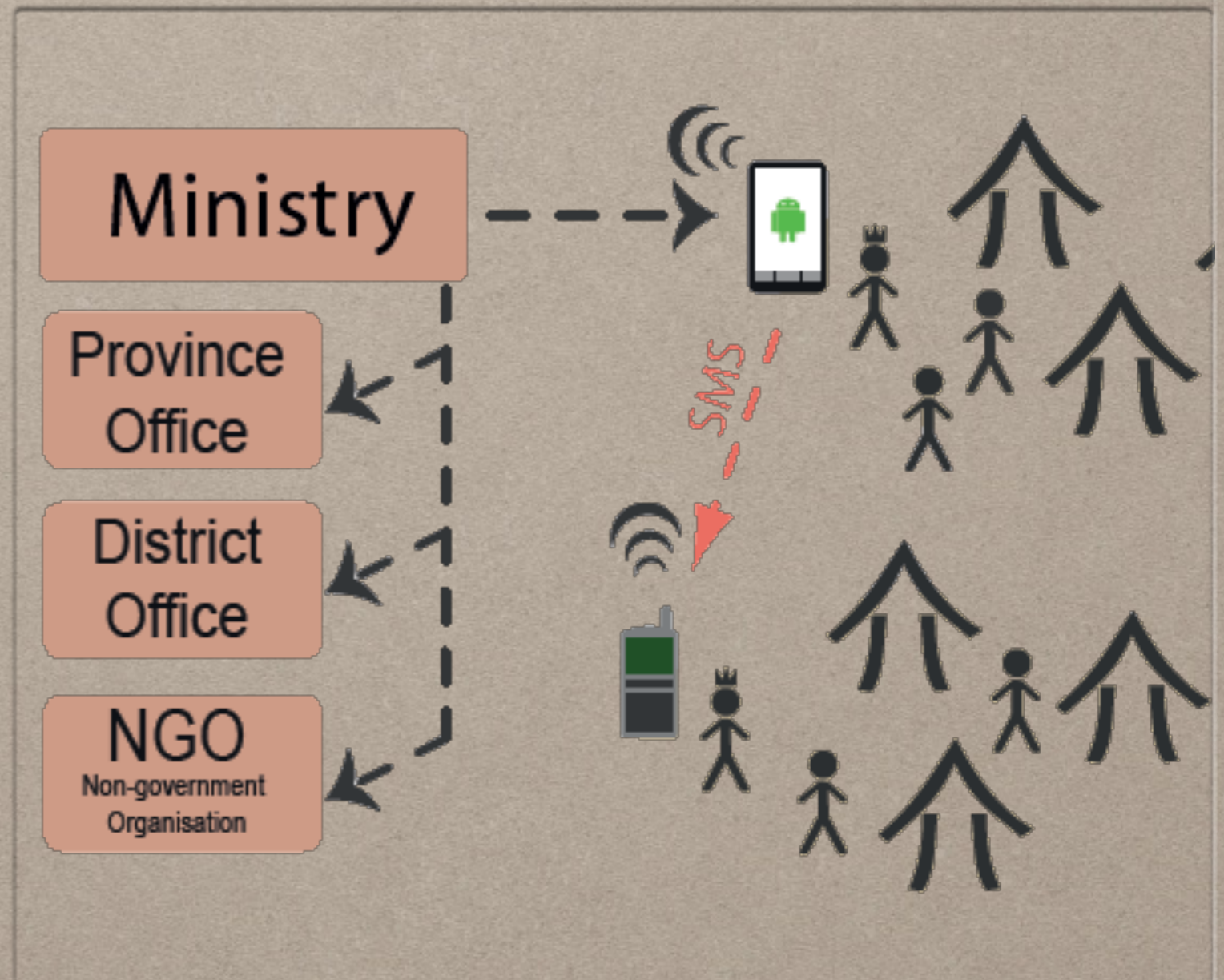
# NOTIFYING THE RIGHT PEOPLE





# INFORMATION DISSEMINATION




- Send alerts
- Update information
- Contact reporter
- Verify reports
- Distribute tutorials
- Health information
- ...





Guide   

 **ການປະສົມພັນປາຫັງ**   
available





 **ສູນອົບຮົມຮ່ວມພັດທະນາ PADETC**   
  
downloading

 **ຊະນິດພັນປາພືນເມືອງ ຂອງອ່າງນ້ຳງືມ, ສປປ ລາວ**   
download required

 **ເຕັກນິກການຄ້ວາຄົວທົດລອງດ້ານປາໄມ້**   
download required

 **ຄູ່ມື ຜະລິດຝຸນຊີວະພາບດ້ວຍການລ້ຽງເທວະດິນ**   
download required

 **Drugstorelist**



# Dashboard



Create Report



What's new



Reports

79



Map

Sett

## My districts



Saiyabury

4



Kasy

2



La



Ngoi

3

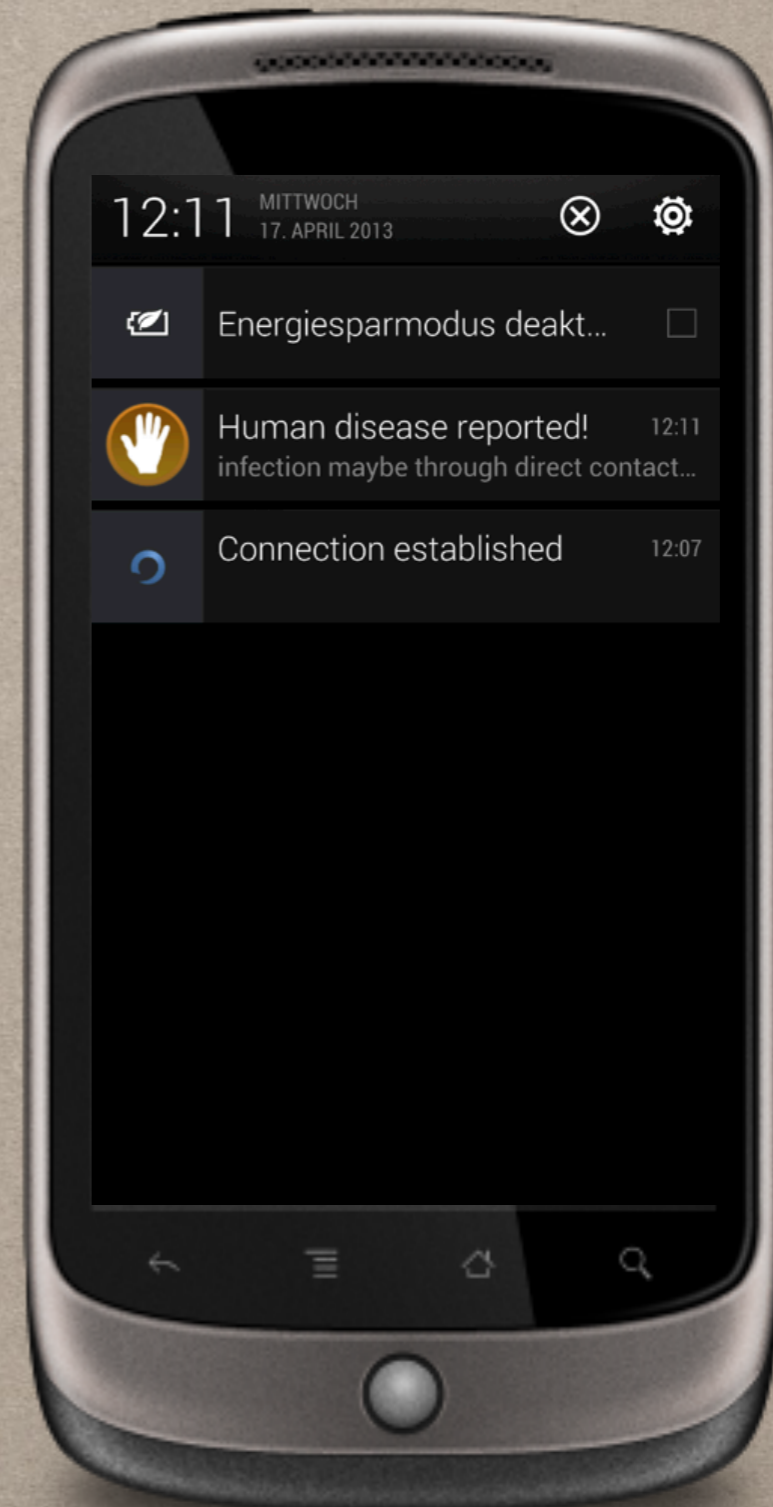


Ph



# NOTIFICATION CHANNELS

- Push message to phone
- SMS
- Email
- Twitter / Facebook
- RSS /GeoRSS
- CAP Atom Feed



# WHY CAP?

- One tool for one purpose
  - Plug in other systems (e.g. for response)
- Exploiting as many sources and alert channels as possible:
  - Dissemination of Mobile4D reports
  - Dissemination through Mobile4D

# MOBILE4D AND CAP

## Data exchange format

- Import and export of reports in CAP
- CAP Atom Feed
- CAP Feed Imports

## Supports:

- Polygons if available
- Specific info in <parameter> field

## Mobile4D Atom CAP Feed

[A Infrastructural Problem in Nathang in District Saiyabury Province Xaignabouly](#)

3 Dec 2013 16:00

[A Fire in Phongnaeng in District Bolikhan - Province Bolik](#)

3 Dec 2013 16:00

[A Infrastructural Problem in Pakpo in District Vangvieng -](#)

3 Dec 2013 16:00

[A Human Disease in Phonkham in District Phoukhoun - P](#)

3 Dec 2013 16:00

[A Flood in Nongfadaet in District Pakxeng - Province Lou](#)

3 Dec 2013 16:00

[A Infrastructural Problem in Nathang in District Saiyabury Province Xaignabouly](#)

3 Dec 2013 16:00

[A Infrastructural Problem in Nathang in District Saiyabury Province Xaignabouly](#)

3 Dec 2013 16:00

[A Human Disease in Phonsak in District Phieng - Province](#)

3 Dec 2013 16:00

[A Human Disease in Longchaeng in District Saysomboun -](#)

# ISSUES AND CHALLENGES

- Strict vs. relaxed specification
  - What is mandatory?
  - Where to put system-specific information?
- Syntax vs. semantics
  - Valid  $\neq$  reasonable
  - How will it really look like in the end?

```
▼ <alert xmlns="urn:oasis:names:tc:emergency"
  <identifier>9369</identifier>
  <sender>9182@mobile4d.capacitylab.org</sender>
  <sent>2013-12-03T05:30:52-05:00</sent>
  <status>Test</status>
  <msgType>Alert</msgType>
  <source>Mobile4D-Alert-System</source>
  <scope>Public</scope>
▼ <info>
  <language>en-US</language>
  <category>Infra</category>
▼ <event>
  A Infrastructural Problem in Nathang
  Province Xaignabouly
  </event>
  <responseType>None</responseType>
  <urgency>Past</urgency>
  <severity>Unknown</severity>
  <certainty>Observed</certainty>
  <onset>2013-12-03T05:45:44-05:00</onset>
  <expires>2014-06-01T05:45:44-05:00</expires>
  <senderName>Mock Mock</senderName>
▼ <description>
  The Powerplant is maybe currently blo
  </description>
```



**THANK YOU**

[MOBILE4D.CAPACITYLAB.ORG](http://MOBILE4D.CAPACITYLAB.ORG)

[WWW.CAPACITYLAB.ORG](http://WWW.CAPACITYLAB.ORG)