CROWDSOURCING
WITH MOBILE TECHNIQUES
FOR CRISIS SUPPORT

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Mobile Application for Emergency Response and Support

Crowd source and location-based system for on-site report

FREDERIKSSUND-HALSNAES FIRE & RESCUE SERVICE

module MAPPERS-C

- Huge area with powerful storms
- Limits in prevention and support
- Lack of real-time info for flood crisis management
- Scarse people’s awareness

- Citizens kit with training for safety measures and geo-located data required by rescue service. Tool for long-term awareness and distributed vigilance.
Mobile Application for Emergency Response and Support

Crowd source and location-based system for on-site report

HELSINKI CITY RESCUE DEPARTMENT

module MAPPERS-V

- Complex multi-risk management
- Context-specific real cases
- Lack of resources management and volunteers roles
- Scarce prioritization

- Volunteers kit for rescue crew, to collect and organize real-time and standardized information during crisis
✓ Android App (Android 4.0+)
✓ PHP Webserver (PHP 5.3+)
✓ MySQL DB (MySQL 5.1+)
✓ Google Cloud Messaging (GCM)
✓ Sensors
✓ WebGIS
Classified geo-location

- Proper status update by users
- Classification by algorithm (status)
- Multi-users geo-location by GPS
- Multi-users visibility for tracking (active mobiles)
- Dashboard visibility for tracking (PC)
Personal kit

- Mark choice by profile
- Upload on profile and dashboard by crowdsourcing
- “Previous” or “Next” for immediate upload
- Comparison in continuous between profiles
- Comparison on specific profile by timeline
Geo-located upload

- Registry office upgrade
- GeoDB by crowdsourcing
- Export by dashboard (QGIS layers)
Measurements

- Water height (or sensor data)
- Mark with photo (image size)
- Define resolution
- Sending for upload
- Queue for no bandwidth
- Guideline by crowdsourcing
- Upload on dashboard by crowdsourcing
Value upload

- Upload text by users
- Enrich a menu list
- Filtering for dashboard authority
- Not automatic within new list

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<thead>
<tr>
<th>Login Email Address</th>
<th>Typology</th>
<th>Number</th>
<th>Type Of Building</th>
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<td>new type test</td>
<td></td>
<td>Buildings</td>
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<tr>
<td><a href="mailto:tarmo.kull@sisekaitse.ee">tarmo.kull@sisekaitse.ee</a></td>
<td>Vehicle</td>
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<td>Apartment</td>
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<td>Building</td>
<td>2</td>
<td>Apartment</td>
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</tbody>
</table>
Emergency message

- Prepared and saved text
- Automatically user’s coordinates (by GPS)
- Sending to multiple users
- Retrieving phonebook contacts
- Form emergency requirements
Dashboard functions

- Synchronised with users profiles
- Crowdsourcing DB gathering
- DB functions (print pages, advanced search, export results, search, details)
- Dynamic graph for water level
- Multi-users visibility for tracking (PC)
Mobile technologies and a dashboard usability

MP-C dataset highlights records on infrastructural damages. The update of dataset on preparedness measures appears constantly

MP-V embraces a fast data crowd during crisis. Surveys of the threats of life appears abundant.

✔ User-friendly and quick data gathering
✔ Advantage of user feedback
✔ Piloting for bug-fixing and crowd training
✓ Geo-located field data. Dynamic update and dissemination
✓ Data for GIS analysis
✓ Open source API (set of routines, protocols, and tools for building software and applications)
✓ Technology by sensors-mobile (market of development)
✓ Data control and classification algorithm. Photo, measure, accurate dot
✓ Queue for data upload without bandwidth
✓ User-friendly interface and dashboard for data management
✓ Citizen-observer environmental data
✓ Human-sensors as crowdsourcing tool
✓ WebGIS collecting human-sensors dataset (dynamic and continuous).