Organisation sponsors:

Karen Neville
S-HELP Project Coordinator
Managing Director | Centre for Security & Emergency Management
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Supporting Cross Border Emergency Management Decision Making
The S-HELP Project

- Creating and delivering a **holistic framed approach** to healthcare preparedness, response, and recovery
- Defining and applying an **interoperability standard** for multiple agencies jointly responding to a disaster
- Developing a user-centred **Decision Support (DS) tool and training system** for multi-agency decision making
Emergency Management Challenges

- Volatile events
- Large scale
- High risk

Disasters
- Natural/Planned
Emergency Management Challenges

Disasters
Natural/Planned

- Volatile events
- Large scale
- High risk

Multi-agency coordination and collaboration
Emergency Management Challenges

Disasters
Natural/Planned

Volatile events
Large scale
High risk

Multi-agency coordination and collaboration

Agencies who don’t normally interact must: coordinate and share information & resources

Complexity
Trust issues
No shared vocabulary
Implementing S-HELP
Implementing S-HELP

WP2
Holistic S-HELP DSS Framework
Implementing S-HELP

WP2
Holistic S-HELP DSS Framework

WP3
End User Requirements and Analysis
Implementing S-HELP

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Holistic S-HELP DSS Framework

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WP2
Holistic S-HELP DSS Framework

WP3
End User Requirements and Analysis

WP4
Decision Support (DS) Tools and Integration of Tool-Set
Implementing S-HELP

WP2
Holistic S-HELP DSS Framework

WP3
End User Requirements and Analysis

WP4
Decision Support (DS) Tools and Integration of Tool-Set

WP5
Healthcare Responder Training
Implementing S-HELP

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Holistic S-HELP DSS Framework

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End User Requirements and Analysis

WP4
Decision Support (DS) Tools and Integration of Tool-Set

WP5
Healthcare Responder Training

WP6
Scenario Dev. Evaluation and Review Process

Scenarios
A Mass Flooding
B Biological Hazard
C Chemical Explosion
Implementing S-HELP

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Scenarios:
A Mass Flooding
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Decision Support (DS) Tools and Integration of Tool-Set

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Healthcare Responder Training

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Scenarios:
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Implementing S-HELP

WP2 Holistic S-HELP DSS Framework

WP3 End User Requirements and Analysis

WP4 Decision Support (DS) Tools and Integration of Tool-Set

WP6 Scenario Dev. Evaluation and Review Process

WP5 Healthcare Responder Training

WP7 Dissemination and Exploitation

Scenarios
A Mass Flooding
B Biological Hazard
C Chemical Explosion
Implementing S-HELP

WP1
Management and Coordination

WP2
Holistic S-HELP DSS Framework

WP3
End User Requirements and Analysis

WP4
Decision Support (DS) Tools and Integration of Tool-Set

WP5
Healthcare Responder Training

WP6
Scenario Dev. Evaluation and Review Process

WP7
Dissemination and Exploitation

Scenarios:
A Mass Flooding
B Biological Hazard
C Chemical Explosion
Vendor solutions fall short in meeting challenges of EM across multi-agencies

S-HELP DSS Solution to Support Decision-Making
Holistic Framed Approach
Holistic Framed Approach
Holistic Framed Approach
Holistic Framed Approach

Requirements Analysis
Brainstorming

Applied Learning

Risk Communication

Cognitive Needs

Interoperability Standards

Agile JAD

WP6

WP5

WP3

WP4

Recovery
Mitigation
Preparation
Response

AFTER THE EVENT

BEFORE THE EVENT

IMPACT

S-HELP
Holistic Framed Approach

Requirements Analysis
Brainstorming

Requirements
Analysis

Brainstorming

Design
Prototyping

Developments
Feedback

Iterations

Applied Learning

Risk
Communication

Cognitive Needs

Interoperability Standards

Agile JAD

WP3

WP4

WP5

WP6
Holistic Framed Approach

- Requirements Analysis
- Brainstorming
- Design
- Prototyping
- Development & Feedback
- Iterations
- Quality Assurance
- Defects/Bugs
- Agile JAD
- Interoperability Standards
- Cognitive Needs
- Communication
- Risk
- Applied Learning
- WP6
- WP5
- WP3
- WP4
Holistic Framed Approach

- Requirements Analysis
  - Brainstorming
- Test, Validate & Evaluate
  - Exercises
- Quality Assurance
  - Defects/Bugs
- Development & Feedback
  - Iterations
- Design
  - Prototyping
- Iterations
- Interoperability Standards
- Cognitive Needs
- Communication
- Risk
- Applied Learning
- WP6
- WP5
- WP4
- WP3

- Before the Event
  - Preparation
  - Response
  - Recovery
- After the Event
  - Mitigation
  - Impact

Agile JAD
The S-HELP Solution

S-HELP Decision Support System

DSS Tool-box

- Learning
- Threat Analysis
- Post Evaluation
- Reporting
- Logistics

Before Incident
- Planning
- Preparedness Simulations
- Training Tutor Tool

During Incident
- Response
- Real-time DSS, Monitoring & Tracking (GPS)
- Operational Tutor while you work

Just After Incident
- Recovery
- Sub-group Before & After Awareness Vulnerable Groups

Post Incident
- Post Evaluation
- Debriefs & Incident Upload as a Scenario

Preparing & Informing Public
- Risk Communication Mechanisms
- Public Information

S-HELP Interoperability Standard
Translating Roles, Materials, Skills levels across countries

- LMS Scenario Emulator
- Knowledge base
  - Scenarios
  - Modelling
- Situation Awareness DSS Server
- Historical Data (Archive)
The Solution

S-HELP Decision Support System

DSS Tool-box
- Learning
- Threat Analysis
- Post Evaluation
- Reporting
- Logistics

Before Incident
- Planning Preparedness: Simulations | Training Tutor Tool

During Incident
- Response: Real-time DSS, Monitoring & Tracking (GPS) Operational Tutor while you work

Just After Incident
- Recovery Sub-group Before & After Awareness Vulnerable Groups

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- Post Evaluation: Debriefs & Incident Upload as a Scenario

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S-HELP Decision Support System

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- Knowledge - base Scenarios Modelling
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Spatial Database – Mapping
Spatial Database – Mapping
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Spatial Database – Mapping
S-HELP DSS: Integration of the modules
Twitter Cloud

Aggregate measures of sentiment in large scale emergency situation

Geolocated tweets

Tweets plotted to map of emergency area

S-HELP mobile app integration

Early prototype stage

Earthquake

S-HELP Twitter Analysis

Keyword: earthquake  Go  Stop
Mobile App and Smartwatch

Mobile App
- Risk communication
- Notifications to citizens, EMTs...
- GPS tracking of selected handsets
- Role-based notification & tracking systems
- Geo targeted notifications
- Prototype under development

Smartwatch
- Notification to users when access to handset is a problem
- Preprogrammed responses if needed
- Smartband to follow for enhanced situational awareness
- Prototype under development
Multi-agency Interoperability

Glossary of terms and definitions & common grounds and standards for interoperability
Strategic Disaster Management Wiki
Multi-agency Interoperability

Glossary of terms and definitions & common grounds and standards for interoperability

Strategic Disaster Management Wiki

Draft skills taxonomy template
- Emergency interventions/tasks
- Related emergency responders/skills
- Required equipment/materials
Multi-agency Interoperability

Glossary of terms and definitions & common grounds and standards for interoperability

Strategic Disaster Management Wiki

Draft skills taxonomy template
- Emergency interventions/tasks
- Related emergency responders/skills
- Required equipment/materials

Draft of the S-HELP interoperability

Interoperability

- Organizational
- Semantic
- Technical
User Interface Design
The UI is based on psychological foundation and studies

- Functional Requirements
- Psychological Framework
- System Functionalities
- Design Principles
- User Interface Design
- S-HELP System
- Evaluation Studies (WP6)

Psychological Studies
Design Principles Game

To which emergency service does Sam Smith belong?

Select the correct answer:
- Ambulance
- Emergency Managers
- Police
- Fire Brigade

Remaining Time: 4 Seconds

Demonstration
Scenarios to Evaluate and Test S-HELP DSS

Chemical Explosion
- International border SDMS
- Complex pre-incident issues
- Knowledge management required
- Threat assessment and “what if” issues

Mass Flooding
- Major city on a major scale
- SDMS & mobile app
- Interoperability with mapping systems
- Can be any time of year

Biological Hazard
- Outbreak with international impact
- No early detection, slow rise event
- Requires links to WHO/ECDC systems
- Requires rapid and accurate transfer of data
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THE COBACORE PROJECT –
A COMMUNITY-BASED APPROACH
TO DISASTER RECOVERY

Martijn Neef
Netherlands Organisation for Applied Scientific Research TNO
Technical coordinator COBACORE project

Organisation sponsors:
The COBACORE project

Community-Based Comprehensive Recovery

An EU funded project that aims to:

• close collaboration gaps between communities that play a role during disaster recovery
• make it easier to match needs with capacities
• help affected communities to voice their needs and find communities that can help
The disaster recovery challenge: bring a disaster-stricken area back into a stable, self-sustainable state
The disaster recovery challenge: bring a disaster-stricken area back into a stable, self-sustainable state.
The approach

Develop a **vision** on how communities can work together to recover faster from disaster

Build a demonstration **platform** that shows how current technologies can make that happen

Create a network of **supporters** that can adopt the COBACORE outcomes and bring it into practice
Many communities have many needs and many capacities.
Many communities, municipalities, military organisations, volunteers, social groups, donors and advocacy groups, NGOs, civilian communities, national governments, professional care organisations, businesses, media, online technical volunteers, organisations sponsors:
Many communities

many needs

many capacities

municipalities

military organisations

NGO’s

social groups

civilian communities

businesses

media

online technical volunteers

donor and advocacy groups

professional care organisations

volunteers

national governments

civilian communities

media

NGO’s

civilian communities

Organisation sponsors:

Many municipalities

military organisations

volunteers

social groups

professional care organisations

donors and advocacy groups

businesses

national governments

civilian communities

media

NGO’s

civilian communities

donor and advocacy groups

professional care organisations

volunteers

municipalities

military organisations

NGO’s

social groups

civilian communities

businesses

media

online technical volunteers

donor and advocacy groups

professional care organisations

volunteers

municipalities

military organisations

NGO’s

social groups

civilian communities

businesses

media

online technical volunteers

donor and advocacy groups

professional care organisations

volunteers

disaster recovery is a whole of community matter
(and should be approached that way in R&D)
Many collaboration gaps

- international
- national
- regional
- local

affected

supporting

recovery process

organisation awareness

decision making

resource sharing

coordination

information sharing
Organisation sponsors:

Public participation

Social engagement

Social media

Crowdsourcing technologies
The COBACORE communities

- Responding Professionals
- Affected Community
- Responding Community

Organisation sponsors:

[NSAI logo]
[saadian logo]
[FutureAnalytics logo]
[UNINOVA logo]
[TFC logo]
[q-validus logo]
[NEN logo]
The COBACORE communities

Organisation sponsors:

1. NSAI
2. saadian
3. FutureAnalytics
4. UNINOVA
5. TFC
6. q-Validus
7. NEN
The COBACORE communities

Organisation sponsors:

[Logos of NSAI, saadian, FutureAnalytics, UNINOVA, TC, q-validus, NEN]
The COBACORE communities

Organisation sponsors:
The COBACORE communities

Organisation sponsors:
The COBACORE platform

Organisation sponsors:
The COBACORE platform

for affected & responding communities

- voice needs and offer help
- make matches and join recovery activities
- share information
- get help and instructions from professional

for professionals

- overview of needs, capacities, actors and activities
- link operational- with community-generated data
- give targeted information to communities
- join community-started activities
The COBACORE platform

for affected & responding communities
- voice needs and offer help
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for professionals
- overview of needs, capacities, actors and activities
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Evaluation

Intermediary
June 2014
COBAGame

Final
October 2015
Cross-border
Operational

GAME SCENARIO

On Sunday May 24, 2015 in Kristiansand, Norway a major earthquake occurred with a magnitude of 7.2 on the Richter scale.

It was one of the worst earthquakes ever in this area.

The epicentre of the quake was in Strai and the depth of the epicentre was 11 km.

The earthquake has caused major damage in Kristiansand and other villages around it.

Buildings have collapsed or are significantly damaged and the affected areas are difficult to reach.
Partial Evaluations
Berlin, Seville, Dublin, Cork,
Belfast, Zilina
Concept evaluation

Intermediate Evaluation
June 2014, Rotterdam, NL
COBAGame, first evaluation

Intermediate Evaluation II
April 2015, Ahrweiler, Germany
Cross-border NL-GER

Final Evaluation
October 2015, Ahrweiler, Germany
Cross-border NL-GER
Operational, mobile, large scale
Project SAMENREDZAAM

- Do not confuse a good concept with a ready solution
Project SAMENREDZAAM

- Do not confuse a good concept with a ready solution
- Co-creation: work with stakeholders to build practical local variations from the core material
Project SAMENREDZAAM

- Do not confuse a good concept with a ready solution
- Co-creation: work with stakeholders to build practical local variations from the core material
Coordinator: TNO (NL)
General: Paul Tilanus (paul.tilanus@tno.nl)
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EU FP7 Grant: 313308
Duration: 1 April 2013 – 31 March 2016

Get in touch and join us!

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