Learning from past Disasters to improve Crisis Management

Future Security 2016

Establish Pan-European Information Space to Enhance seCurity of Citizens

Funded from the European Community’s Seventh Framework Programme FP7/SEC 2013.5.1-1 under the grant agreement no. 607078 “EPISECC”.
Introduction

• Research part of the EC-funded EPISECC (Establish Pan-European Information Space to Enhance Security of Citizens) Project
• Main Objective: To Improve **efficient communication** and access to **critical information** in crisis/disaster management
• Development of a pan-European **inventory** of past critical events/disasters
• Evaluation of **Best/Bad Practices from past disasters** across Europe
• Preparation of **Common Information Space** and adequate Information Exchange
Methodology

- **Technical Approach**: Development process of EPISECC inventory

  - Stakeholder Consultation
  - Pre-Questioning
  - Online Questionnaire
  - Interviews with Stakeholders
Methodology

- Identification of key stakeholders for interviews which are experts in Crisis Management
- Stakeholders from Government ministries, Offices for Civil Protection, Police, Fire Brigade, Technical Relief Units and NGOs
- Interviews conducted usually in person or by phone
- Integration of information into the developed online questionnaire allowing quantitative and qualitative analysis
- Interview focusing on past events in Europe and specifically sub-aspects of disasters
- Focus on specific events including processes, measures, standards, data, etc.
Results – Distribution of Interview Partners
Results - Interviews

- EPISECC Inventory:
  - 49 Interviews conducted
  - 18 European countries
  - 16 EU countries
    - Austria, Italy, Croatia, Germany, Netherlands, United Kingdom, Slovakia, Slovenia, Spain, Poland, Denmark, Hungary, Sweden, France, Finland, Estonia
    - plus
    - Norway, Switzerland
    - and
    - Israel
  - 78% Governmental organisations
Results – Type of Event

- Flooding: 28%
- Fire: 14%
- Refugee Crisis: 14%
- Earthquake: 12%
- Snow/Ice: 7%
- Landslide: 9%
- Other: 16%
Results – Type of Organisation

- Civil Protection: 35%
- Federal Ministries: 18%
- Fire Service: 18%
- Emergency Medical Service: 12%
- Police: 8%
- Other: 8%
Results - Tools

- **Huge variety** of tools used in the management of disasters
- 47 tools used by **one** organisation each
- **Tailor-made** for a specific organisation
- Specialised tool for **local context**
- Regarding use of tools and common standards the degree of **harmonisation** seems to be **low in Europe**
Results – Expert Opinions

Improvements in past disasters

<table>
<thead>
<tr>
<th>Type of Requirements</th>
<th>Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>D Detection</td>
<td>0</td>
</tr>
<tr>
<td>HUP Human &amp; Psychological</td>
<td>0</td>
</tr>
<tr>
<td>INT Interoperability</td>
<td>25</td>
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<tr>
<td>O Other</td>
<td>10</td>
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<tr>
<td>Pr Prediction</td>
<td>5</td>
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<tr>
<td>R Resources</td>
<td>15</td>
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<td>Tr Training</td>
<td>0</td>
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<tr>
<td>Ts Technical Solution</td>
<td>10</td>
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<td>Sta Standardisation</td>
<td>15</td>
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</table>

In total 79 requests were expressed – Interoperability most important!
Key Results – Interoperability Indicator

A measure to quantify the quality of information exchange:

0 = very bad, no information exchange
1 = excellent, best possible

4 Parameters need to be assessed:
Key Results – Interoperability Indicator

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4 Parameters need to be assessed:

\[ KI_{Int} = \left[ 0.5 \cdot (1 - T_{suc}) + 0.5 \cdot (1 - T_c) \right] \cdot \frac{D_{Tr-is}}{D_{Tr-id}} \cdot \frac{D_{Us-is}}{D_{Us-id}} \]
Key Results – Interoperability Indicator

A measure to quantify the quality of information exchange:

0 = very bad, no information exchange
1 = excellent, best possible

4 Parameters need to be assessed:

\[ KI_{Int} = \text{Time to establish channel to communicate} + \text{Time to communicate} \cdot \text{Data exchanged} \cdot \text{Data understood} \]
Key Results – Interoperability Indicator

Information Exchange in a specific situation

Categories of Indicator Values

Frequency

Average $K_{I_{int}} = 0.79$
Key Results – Infrastructure

Transportation affected in over 90% of disasters
Outlook

- **Information Interoperability** as crucial factor for crisis management
- Additional research into **Critical Infrastructure** and Crisis Management
- Additional interviews and analysis of events related to **Migration of Refugees**
- Use of Inventory to analyse **large accidents**
- Other EU-funded projects interested in using the EPISECC approach on the inventory (**SecInCore, Concorde**)  
- Efforts to **maintain the Inventory** after the finalisation of EPISECC
Thank you for your attention!

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