



Lower the impact of aggravating factors in crisis situations
thanks to adaptive foresight and decision-support tools

D4.3 : Data collection – Manual inputs

For the attention of the Research Executive Agency

Organization INEO

Author Louis JALLET

Due date 31/08/2015

Issue date 31/08/2015



*This project has received funding from the
European Union's Seventh Framework Programme
for research, technological development and
demonstration under grant agreement no 606742*



Document information

Document title	D4.3 : Data collection – Manual inputs
Document file name	D4.3 - Data collection – Manual inputs
Revision number	A
Issued by	Louis JALLET
Issue date	31/08/2015
Status	First version

Nature of the deliverable

R	Report	
P	Prototype	X
D	Demonstrator	
O	Other	

Dissemination Level

PU	Public	X
PP	Restricted to other program participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Document Approval

Name	Role in the project

Document Review

Date	Version	Reviewers



Acknowledgement

This report forms part of the deliverables from a project called "Snowball" which has received funding from the European Union's Seventh Framework Program FP7/2007-2013 under grant agreement n° 606742. The Community is not responsible for any use that might be made of the content of this publication.

Snowball aims at lowering the impact of aggravating factors in crisis situations thanks to adaptive foresight and decision-support tools.

The project runs from March 2014 to February 2017, it involves 11 partners and is coordinated by Gedicom.

More information on the project will soon be found at <http://www.snowball-project.eu>.

Abstract

Snowball aims to develop a software solution for crisis management. Basically, it consists in collecting data, store data within a database, display data and simulation results and provides IT systems in order to better manage the crisis. Data collection is based on Twitter data stream, meteorological and seismic data sources, and it also relies on manual inputs. In fact first-responders and grid operators provide consistent and reliable data from the field. The web portal for data collection allows any stakeholders to authenticate and to declare an event through out a web form.



Executive summary

The web portal for manual inputs allows any stakeholder to report a crisis event or to bring additional information to a crisis event. The 'Event web form' has been designed in order to optimize the user response in a crisis situation. It is possible to define the event area on a map, to fill comments, upload a picture, etc. About more quantitative indicators, it was thought that it is hard to evaluate damages and costs during a crisis. Then in many cases, it is proposed to use a simplified scale of value from zero to five or zero to ten.

The web portal is also a secured platform that allows users to manage their own account. In order to define access rights to the portal, it was necessary to correctly apprehend crisis organization in European countries. A crisis organization model has been defined in order share the same platform whatever would be the simulation country (Greece, Finland, Poland or Hungary).



Table of content

Abbreviations	9
Definitions	9
Introduction.....	10
1 Organization	11
2 User instance	13
2.1 Description	13
2.2 User profiles	15
2.2.1 Administrator	15
2.2.2 Crisis cell operator.....	15
2.2.3 Crisis cell manager.....	15
2.2.4 Authority L1-L2-L3	15
2.2.5 Agency manager	16
2.2.6 Agency operator	16
2.3 Graphical user interface	16
3 Site instance	18
3.1 Description	18
3.2 Graphical user interface	18
4 Crisis instance	20
4.1 Description	20
4.2 Graphical user interface	20
5 Event instance	22
5.1 Description	22
5.2 Graphical user interface	23
5.2.1 Focus on human report	24
5.2.2 Focus on grid report	24



5.2.3	Focus on weather report	25
5.2.4	Focus on storm parameters	25
5.2.5	Focus on flooding parameters.....	26
5.2.6	Focus on volcanic eruption parameters	26
6	Conclusion	27





List of Figures

Figure 1: Crisis organization	11
Figure 2: Severity and geographical scales.....	12
Figure 3: Use case diagram for Administrator profile	13
Figure 4: Use case diagram for stakeholders	14
Figure 5: List of users.....	16
Figure 6: Create a new user.....	17
Figure 7: Authentication.....	17
Figure 8: List of sites	18
Figure 9: Create a new site.....	19
Figure 10: List of crisis	21
Figure 11: Create a new crisis.....	21
Figure 12: Focus on human report	24
Figure 13: Focus on grid report	24
Figure 14: Focus on weather report.....	25
Figure 15: Focus storm parameters	25
Figure 16: Focus on flooding parameters.....	26
Figure 17: Focus on seismic activity and volcanism	26



List of Tables

Table 1: Event description fields 23



ABBREVIATIONS

API	Application Programming Interface
DSS	Decision Support System
ELDB	Event Log DataBase
ESB	Enterprise Service Bus
ETL	Extract, Transform and Load
FTP	File Transfer Protocol
GML	Geography Mark-up Language
GUI	Graphical User Interface
HDFS	Hadoop Distributed File System
HMI	Human Machine Interface
JSON	JavaScript Object Notation
LDAP	Lightweight Directory Access Protocol
URL	Uniform Resource Locator
WKT	Well-Known Text

DEFINITIONS

First Responder:	A first responder is an employee of an emergency service who is likely to be among the first people to arrive at and assist at the scene of an emergency, such as an accident, natural disaster, or terrorist attack.
Grid Operator:	A grid operator is an entity that oversees the delivery of a resource (energy, water, telecom service).



INTRODUCTION

This document describes the prototype of the web portal that allows first responders, grid operators and emergency planners to report events and feed the ELDB.

The software prototype is developed in Java J2EE and deployed on Apache web server. It implements the following frameworks:

- Spring security: to easily manage access rights to the web pages,
- Spring internationalization: for a multi-languages portal. Basically, only the English version has been implemented.

In order to manage user authentication, a LDAP server has been deployed.

As described in the abstract, the first chapter of this document is dedicated to the crisis organization. Then the following chapters are dedicated to:

- Administration: deals with user and site management on the web portal.
- Data collection: consists in a web form that will fit to any crisis event.



1 ORGANIZATION

A good organization and well defined roles for stakeholders are the first step to tend to a quick crisis resolution. It is very important that the information system would fit to the local emergency organization. The need analysis that has been written in close collaboration with end-users has made possible to extrapolate a common crisis organization for European countries.

The following schema represents the various actors of the crisis. It is distinguished three main categories of actors:

- **Emergency planner:** His role is to manage crisis resolution from the crisis center by obtaining validation from authorities and by coordinating agencies on the field. The crisis manager and the crisis operator are two different roles. Only the crisis manager can declare an occurring "crisis" on the web portal.
- **Agency:** Any governmental or non-governmental entity that participates in crisis. It regroups first-responders, as well as grid operators. Two user profiles are available within an agency: manager and operator.
- **Authority:** Official representative that is in position to validate an emergency plan to secure people or to solve a crisis situation. Three responsibility levels are defined in order to adapt to the severity and the geographical scale of the crisis.

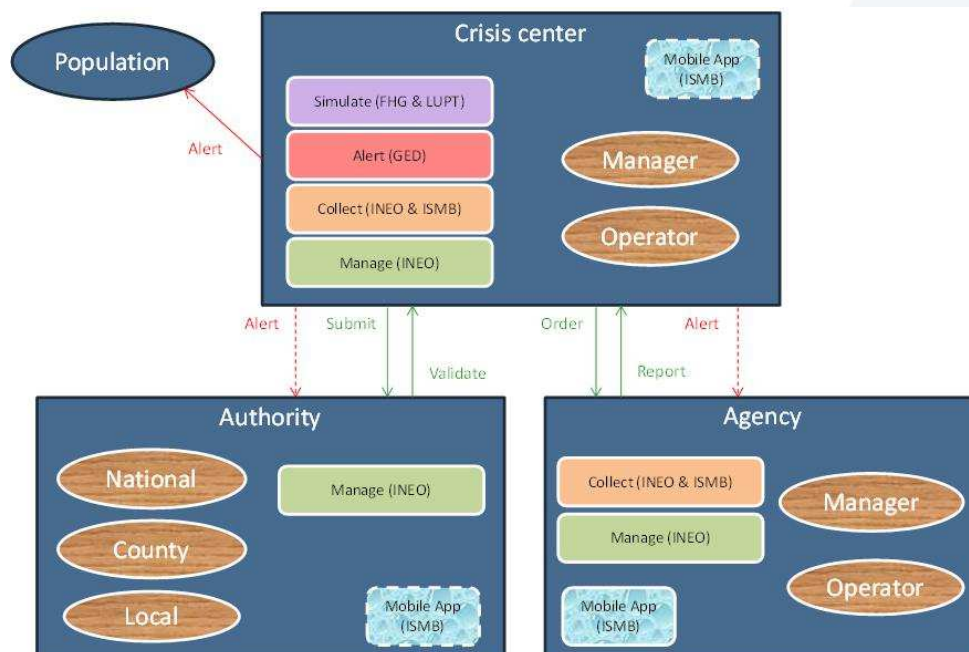


Figure 1: Crisis organization



The schema below aims to define the authority in charge of a crisis according to the crisis severity and the geographical scale. It also lists the various organizations that could contribute to the crisis resolution.

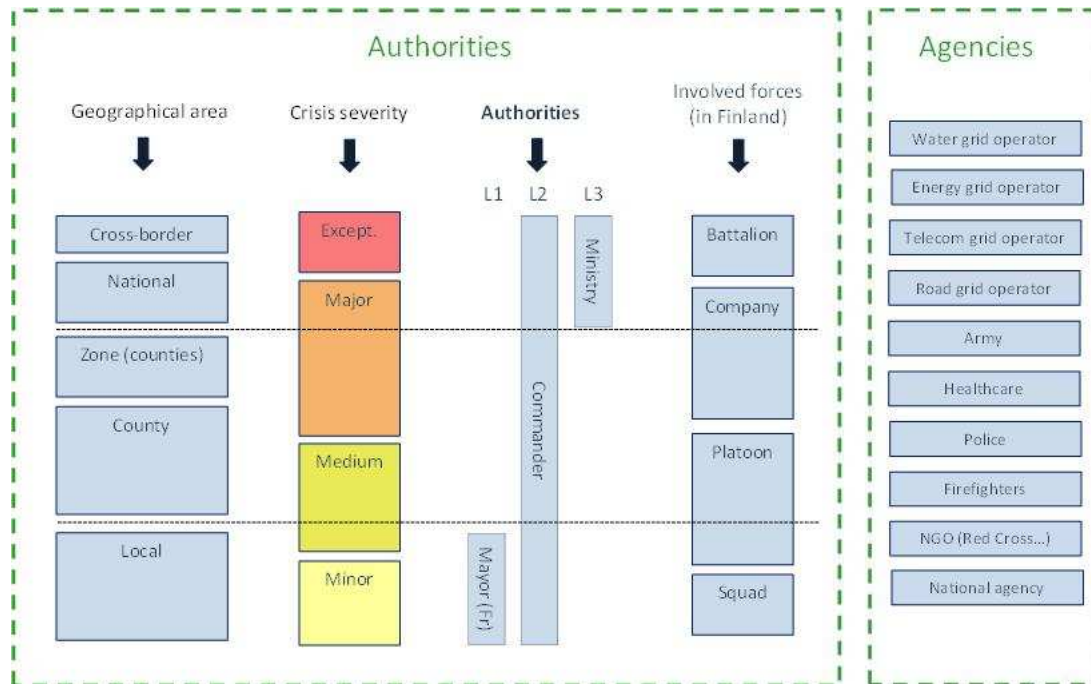


Figure 2: Severity and geographical scales

An internal study with end-users reveals that the mayor's implication in the crisis resolution process is a French particularity. It also looks as if the implication of the ministry desk would be a very rare event. It could for example occur in case of a cross-border crisis. Most of crisis events are under control of the commander, equivalent of the prefect in France. In order to manage complex action workflows, and different level of responsibility, three authority levels have been defined.



2 USER INSTANCE

The administrator of the web platform has to configure and administrate all the end-users of the solution.

2.1 Description

A user instance is a way to authenticate stakeholders and to manage rights on the Dashboard. In fact, as it is described below, there are several user profiles.

Here below are listed the different fields that will allow administrators to define a user:

- First-name,
- Name,
- Email,
- Mobile phone number,
- Phone number,
- Organization,
- Role,
- Country,
- Postal code,
- City,
- Address,
- Predefined user profile in the Dashboard.

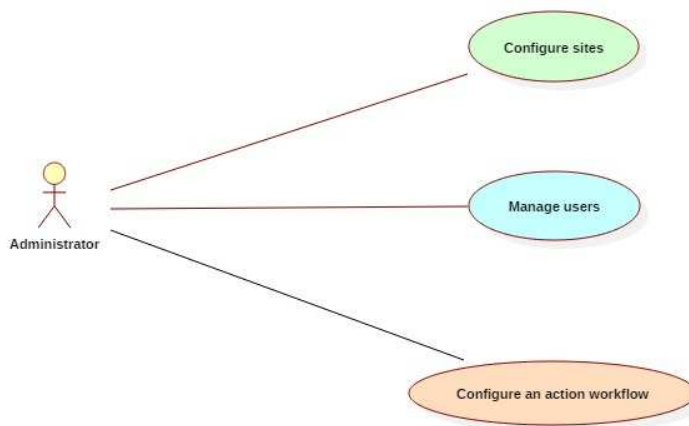


Figure 3: Use case diagram for Administrator profile