



Anders Lönnermark

Erika Hjelm

David Lange

Project Leaflet

Deliverable Number: D6.3

Date Sept 29, 2014

Due Date (according to Dow) Sept 30, 2014

Dissemination level PU

Grant Agreement No: 607665

Coordinator: Anders Lönnermark at SP Sveriges Tekniska
Forskningsinstitut (SP Technical Research Institute of Sweden)

Project acronym: CascEff

Project title: Modelling of dependencies and cascading effects for
emergency management in crisis situations

Table of Content

Executive Summary	2
1 Introduction	2
2 Information sheet	2
3 Conclusions	5

Executive Summary

The CascEff project started on April 1, 2014 and runs for 36 months. The project concerns modelling of dependencies and cascading effects for emergency management in crisis situations. The project aims to significantly improve the ability of Incident Commanders to manage complex incidents by improving our understanding of initiators, dependencies and key decision points through the use of the proposed Incident Evolution Tool.

The CascEff consortium consists of eleven beneficiaries, of which SP Sveriges Tekniska Forskningsinstitut AB (SP) is the lead beneficiary. Contributing beneficiaries are Lunds universitet (ULUND), Sweden; Myndigheten för samhällsskydd och beredskap (MSB), Sweden; Universiteit Gent (UGent) Belgium; Institut National de l'Environnement et des Risques (INERIS), France; Service Public Federal Interieur (KCCE), Belgium; Safety Centre Europe BVBA (SCE), Belgium; Université de Lorraine (UL), France; University of Leicester (ULEIC), United Kingdom; Northamptonshire County Council (NFRS), United Kingdom, and; E-Semble BV (ESM), Netherlands.

The CascEff project is divided into seven Work Packages (WPs). This is the third deliverable of WP6 (D6.3) and describes the information sheet or project leaflet, which is part of the continuing dissemination activities (Task 6.3) of the project. The content of the information sheet is presented in this deliverable report, but is also available as a pdf document at www.casceff.eu. The information and marketing material, including the information sheet presented in this report, will be updated and developed throughout the project.

1 Introduction

The project information material will be developed throughout the project to contain valid and interesting information. As of today the information material is an information sheet on the reasons for performing the CascEff project, the main objectives, the methodologies to be used, expected results and impacts, and a description of the consortium.

2 Information sheet

The information sheet in the format of a pdf document can be found at the CascEff web site: www.casceff.eu. The content of the information sheet is shown in Figure 1.1 (front page) and Figure 1.2 (back page).





The challenge

Modern socio-technical systems are increasingly characterised by high degrees of interdependencies. Whereas these interdependencies generally make systems more efficient under normal operations, they contribute to cascading effects in times of crises. Therefore, challenges for emergency preparedness and response are growing significantly - challenges which are more and more relevant to both natural and man-made emergencies and are reinforced by the risks for cascading effects in complex emergency management environments. In particular complex environments which lack adequate resilience to certain initiators will be prone to cascading effects. An escalating incident in such an environment can lead to severe cascading effects and quickly become extremely difficult for emergency services to handle. The incident can ultimately have enormous consequences with respect to life, property and the environment and for both infrastructure and the general public. These consequences can in many situations have both direct and indirect effects, not only in the immediate surrounding geographical area but also across very large areas, potentially extending across borders.

Project Objectives

1. Better understanding of the cascading effect in crisis situations.
2. Develop an Incident Evolution Tool for predicting past, present and future crisis evolution leading to cascading effects.
3. Identification of human activities in the crisis.
4. Improved incident management for present and future threats.

Methodology

CascEff will improve our understanding of cascading effects in crisis situations through the identification of initiators, dependencies and key decision points. These will be developed in the methodological framework of an Incident Evolution Tool which will enable improved decision support, contributing to the reduction of collateral damages and other unfortunate consequences associated with large crises. Use of the Incident Evolution Tool will be validated through its implementation into different incident management and training platforms representing different end users in the project (e.g. NoKeos, iCrisis, RIB, WIS and XVR). A roadmap for similar implementation in other incident management and training platforms throughout Europe will be defined to allow broad acceptance of the Incident Evolution Tool.



SP Technical Research Institute of Sweden

SP Fire Research
Box 857, SE-501 15 Borås, Sweden
Telephone: +4610 516 50 00, Telefax: +46 33 13 55 02
E-mail: casceff@sp.se, www.casceff.eu



Figure 1.1 Front page of the info sheet.

Expected Results

The project will produce models of dependencies and effects in crisis situations (of both physical and human components) causing a cascading effect. It will also provide a methodology to create this model for future threats, and tools to foresee the evolution of an incident, based on the physical properties, properties of critical infrastructures and risks, human behaviour, the decisions taken and their timing. These tool(s) will be available on a real time basis as well as for planning and training purposes, in particular in cross border crisis situations.

The proposed models of dependencies and effects in crisis situations will elaborate on the extent of the risk for crisis situations. Impact will be felt not only to natural, but also to man-made emergencies where the risks for cascading effects in particular in complex emergency management environments is high.

Ultimately, this will lead to reduced consequences, both direct and indirect. This will:

- Reduce the extent of crisis scenarios subject to cascading effects
- Reduce the risk for cross border scenarios
- Highlight the need for cross border collaboration in response to specific originators
- Promote new response strategies and structures and methodologies
- Help identify roles and responsibilities of the various stakeholders

Additional impacts are

- Improved understanding of cascading effects
- Development of a cloud monitoring system for multi-hazard events
- Improved understanding of evacuation of large areas in crisis situations
- Improved understanding of the use and role of the media in crisis situations
- Development of an open source tool which may be used to model crisis and emergency requirements in the future for improved safety of European citizens when, for example, planning infrastructure investment.



Participants at the CascEff kick-off meeting at SP.

Project Partners

SP Technical Research Institute of Sweden, Sweden
Lund University, Sweden
Swedish Civil Contingencies Agency (MSB), Sweden
Ghent University, Belgium
INERIS, France
Ministry of internal affairs (KCCE), Belgium
Safety Centre Europe (SCE), Belgium
University of Lorraine, France
University of Leicester, UK
Northamptonshire Fire and Rescue Service, UK
E-SEMBLE

At a glance

Title

Modelling of dependencies and cascading effects for emergency management in crisis situations

Instrument

FP7 – Collaborative project
SEC-2013.4.1-2

Total Budget

4,626,904.00 €

EC Contribution

3,594,937.80 €

Duration

36 months

Start Date

1 April 2014

Consortium

11 partners from 5 countries

Project Coordinator

Prof. Anders Lönnermark, SP Technical Research Institute of Sweden

Project Web Site

www.casceff.eu

Key Words

Cascading effects, incident management, incident evolution, rescue services, foresight tools, preparedness, response, simulation of physical effects, role of media in crises, first responder tactics.



Figure 1.2 Back page of the info sheet.



3 Conclusions

Dissemination is an important part of the Casceff project, as with all research projects. This deliverable (D6.3) describes the information sheet or project leaflet, which is part of the continuing dissemination activities (Task 6.3) of the project. The content of the information sheet is presented in this deliverable report, but is also available as a pdf document at www.casceff.eu. The information and marketing material, including the information sheet presented in this report, will be updated and developed throughout the project.

