



Project acronym: FORTRESS

Project title: Foresight Tools for Responding to cascading effects in a crisis

Call identifier: FP7-SEC-2013-1

Contract type: Capability Project

Start date of project: 01 April 2014

Duration: 36 months

Website: www.fortress-project.eu

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 607579.

Deliverable D5.4:

Report on managing cascading effects

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Dissemination level: Public

Deliverable type: Report

Version: 01

Submission date: 30.06.2016

CHANGE RECORDS

Issue	Date	Description	Author (Company)
01	20.6.2016	Internal Review	Maurice Said (TRI), Piet Sellke (DIA)
02	28.6.2016	Chapters revised	Piet Sellke (DIA), Maurice Said (TRI)
03	29.6.2016	Partners' review	Robert Pelzer (TUB)
04	30.6.2016	Final copy	Piet Sellke (DIA), Maurice Said (TRI)

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EXECUTIVE SUMMARY

This deliverable specifically targets key communication gaps in the management of cascading effects in crises. Specifically, this deliverable identifies and categorises key communication issues in the three time periods characterising a crisis scenario: pre-crisis, during a crisis and following a crisis. It draws on work conducted in previous WPs, from the analysis of key communication problems and unanticipated decisions taken during past crisis case studies in WP3, to the systematic analysis of mutually dependent infrastructure systems involved in each of the four scenario case studies in WP4. This approach benefits from combining past crisis case scenarios and the communication issues identified, with scenario case studies carried out as part of the FORTRESS project. In other words, an analysis of key communication issues in past crises together with contemporary scenarios, allowed for the identification of persistent communication challenges in the management of cascading effects in crises. How is communication affected by the perceived level of criticality across different time periods characterising a crisis? Do current crisis management and cross-border communication policies facilitate the mitigation of the underlined challenges? With the latter in mind, this deliverable sets out the key questions and issues categorising each time period in order to identify policy gaps and the drafting of policy recommendations in D5.5.

1 INTRODUCTION

This deliverable constructs a typology of communication challenges in respect to potential cascading effects that helps the project understand the challenges and nuances associated with cross-border and inter-organisational communication. In this respect, the deliverable categorises specific information and communication needs in the three critical time periods characterising a crisis: pre-crisis, during a crisis and following a crisis scenario. The deliverable will allow for the generation of a further systematisation of requirements and functionalities for the tool, the inter-organisational and cross-border communication among responders, decision makers, the media and members of the public. The communication demands are intended to serve three main objectives for reducing vulnerability:

- 1.) Guarantee the functional continuity of the services provided by a certain infrastructure
- 2.) To limit the magnitude of losses and impacts
- 3.) To ensure a fast recovery

The three selected time periods have been selected to ensure continuity in the communication needs being identified from the pre to post crisis phase. The current deliverable (D5.4) directly complements D5.5 ‘Cross-border policy recommendations’ that outlines the current European crisis management and cross-border communication policies, what gaps exist and how the FORTRESS tools address these gaps. In other words, how is the FORTRESS project translating key communication deficiencies across all stakeholder groups into actionable policies that facilitate the management and mitigation of future crises? Thus, the current deliverable, in conjunction with D5.5, will identify key communication gaps and provide policy recommendations that will go some way in guaranteeing the applicability of the FORTRESS tools (FSB and FIET) as communication aids between various stakeholders in each phase characterising a crisis scenario.

2 TYPOLOGY OF COMMUNICATION CHALLENGES

The typology of communication challenges is the summary and re-organization of empirical data. The input for the following tables was collected through several workshops with risk managers, journalists, and the public.

	Pre-crisis	During crisis	Post-crisis
General Crisis Information	<ul style="list-style-type: none"> - When is the decision to be evacuated to be expected in the scenario? - How many citizens would be affected? - How many immobile / vulnerable citizens? - How many animals? - Cultural heritage to be protected? - Which water / aerial vehicles are available for operations? 	<ul style="list-style-type: none"> - Affected area - Time frame of crisis development - When is the decision to be evacuated to be expected in the situation? - How many citizens are affected? - Are there special events taking place? - Which water / aerial vehicles are available for operations? - What do we know about the cause of the situation? 	<ul style="list-style-type: none"> - How many casualties? - How many citizens suffered damage? - Will it be possible to revitalize the areas? - What provisions do we need to establish in the meantime?
Specific crisis information			
Information on critical infrastructures and critical sectors	<ul style="list-style-type: none"> - What critical infrastructures / sectors are in which area? - What effect is to be expected regarding the base-infrastructure of the waterboards? - What effect is to be expected National water infrastructure? - What is the impact of the scenario on the wastewater treatment? - What effect is to be expected regarding the infrastructure of gas/heating/electricity? - What effect is to be expected regarding the infrastructure of drinking water? - What effect is to be expected regarding the Telecom infrastructure? 	<ul style="list-style-type: none"> - What critical infrastructures / sectors are in the affected area? - What roads are usable and what roads are not? - What extra danger is to be expected regarding any form of transportation? 	<ul style="list-style-type: none"> - What are the damages on critical infrastructures? - What are lessons learned in the management of critical infrastructures?

	Pre-crisis	During crisis	Post-crisis
	<ul style="list-style-type: none"> - What effect is to be expected regarding the financial infrastructure? - What effect is to be expected regarding the rail road infrastructure? - What effect is to be expected upon Air Transport? - What effect is to be expected regarding nuclear plants and cooling systems? 		
Information on critical zones	<ul style="list-style-type: none"> - Can the area be divided into safety zones of different character: what is going to be submerged and what is not? - In what area is a cascading effect to be expected? - What is the use of the area (industry/living/recreation, etc)? 	<ul style="list-style-type: none"> - Can the area be divided into safety zones of different character: what is going to be submerged and what is not? - In what area is a cascading effect to be expected? - What is the use of the area (industry/living/recreation, etc)? 	<ul style="list-style-type: none"> - How long will it take to restore the area?
Information on crisis management	<ul style="list-style-type: none"> - Responsibility for providing information - Agreements or procedures required given the scenario? - In what way are orders to the public given? - How much time will citizens and critical infrastructure providers have to react /evacuate? - Are there secure/safe areas in the neighborhood? - What evacuation routes are organised? - Where will the shelters be installed (in our out of which zone)? - Is there a traffic management plan available? 	<ul style="list-style-type: none"> - Responsibility for providing information - Agreements or procedures required given the <i>situation</i>? - Where will the shelters be installed (in our out of which zone)? 	<ul style="list-style-type: none"> - Responsibility for providing information - Agreements or procedures required looking back at the scenario?
Information on public's information needs	<ul style="list-style-type: none"> - How are information to the public given? - How will social media be analyzed? - How much time will we have to warn/inform the public in an area? 	<ul style="list-style-type: none"> - Indications of state of mind of the public through social media? - Which health related information is available? 	<ul style="list-style-type: none"> - How to organize preparedness for future events? - How to evaluate the incidents to prepare the preparation?

	Pre-crisis	During crisis	Post-crisis
	<ul style="list-style-type: none"> - What will be the evacuation strategy? - What does the public know about the envisioned risk? - Did similar events happen before? - Is the event a man-made or natural disaster? 	<ul style="list-style-type: none"> - Which security related information is available? 	<ul style="list-style-type: none"> - How to change communication tools, if necessary?
Information on media’s information needs	<ul style="list-style-type: none"> - Information on preparedness measures - Information on emergency planning - Information on specific information sources / organisations in case of emergency 	<ul style="list-style-type: none"> - Information on current threats - Information on uncertainties - Information on future measures 	<ul style="list-style-type: none"> - Information on evaluation measures - Information on mitigation measures - Lessons learned
Information on stakeholders’ information needs	<ul style="list-style-type: none"> - Assessing stakeholders’ vulnerabilities - Assessing stakeholders’ resilience 	<ul style="list-style-type: none"> - Information on current threats - Information on uncertainties - Information on future measures 	<ul style="list-style-type: none"> - Information on evaluation measures - Information on mitigation measures - Lessons learned

Table 1: Typology of communication challenges

3 SUMMARY

Objective of this deliverable has been to summarize and categorize the work undertaken in the tasks in Workpackage 5 before into a coherent categorization. Categorizations by nature simplify reality, which is their advantage and disadvantage at the same time. As an advantage, categorizations enable to draw inferences and to conclude (in this specific case) policy recommendations to manage cascading effects. The disadvantage is that categorizations simplify reality. However, the detailed information on all points in this deliverable is available in the deliverables of Workpackage 5 before.

The categorization into three simple time-categories enables to formalize the response to these distinct crisis phases. The three phases can be further defined into smaller categories, however the importance of this categorization is in the strong emphasis it puts on preparedness and post-crisis management.