Driving Innovation in **Cri**sis Management for **E**uropean **R**esilience

D540. 1 - Method and tool for training decision-making process

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List of Acronyms

Abbreviation / acronym	Description
CBRN	Chemical, Biologic, Radioactive, Nuclear
CDC	Centres for Disease Control and prevention
CM	Crisis Management
DRIVER	Driving Innovation in Crisis Management for European Resilience
EMS	Emergency Medical Services
JE	Joint Experiment
NDM	Naturalistic Decision Making
RPD	Recognition Primed Decision
SA	Situational Awareness
SOTA	State Of The Art
SP	Sub-Project
WHO	World Health Organization
WP	Work Package

Project Description

DRIVER evaluates solutions in three key areas: civil society resilience, responder coordination as well as training and learning.

These solutions are evaluated using the DRIVER test-bed. Besides cost-effectiveness, DRIVER also considers societal impact and related regulatory frameworks and procedures. Evaluation results will be summarised in a roadmap for innovation in crisis management and societal resilience.

Finally, looking forward beyond the lifetime of the project, the benefits of DRIVER will materialize in enhanced crisis management practices, efficiency and through the DRIVER-promoted connection of existing networks.

DRIVER Step #1: Evaluation Framework

- Developing test-bed infrastructure and methodology to test and evaluate novel solutions, during the project and beyond. It provides guidelines on how to plan and perform experiments, as well as a framework for evaluation.
- Analysing regulatory frameworks and procedures relevant for the implementation of DRIVER-tested solutions including standardisation.
- Developing methodology for fostering societal values and avoiding negative side-effects to society as a whole from crisis management and societal resilience solutions.

DRIVER Step #2: Compiling and evaluating solutions

- Strengthening crisis communication and facilitating community engagement and self-organisation.
- Evaluating solutions for professional responders with a focus on improving the coordination of the response effort.
- Benefiting professionals across borders by sharing learning solutions, lessons learned and competencies.

DRIVER Step #3: Large scale experiments and demonstration

- Execution of large-scale experiments to integrate and evaluate crisis management solutions.
- Demonstrating improvements in enhanced crisis management practices and resilience through the DRIVER experiments.

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Executive Summary

A new training programme for high-level decision-makers has been developed within DRIVER project. As came up from data being collected in literature reviews and from meetings, interviews and workshops, for most of the emergency organizations and agencies in Europe, a training process for the strategic level does not exist, or refers only to the logistics of "how to work during an incident".

Therefore, the main core of the new training programme is the decision making module, which aims at the internal processes of thinking when making decisions. This module is based on the Effective Command tool, originally developed in the UK, for the evaluation of firefighting officers in training in order to teach and evaluate their decision making capacity. This tool is being developed further for services that are not fire and rescue and for services outside the UK. In the scope of DRIVER, this tool is being developed further to allow high-level decision-makers to be able to reflect on their decision making process. The emphasis of the tool is on the fact that during an incident, a decision maker cannot wait for the results of his or her decision to see if he/she made the right decision, but rather has to use the right thinking process in order to reach to best decision. One can and should review his or her process of decision making, since for high-level decision-makers there is commonly nobody else to review their decision making process.

In addition to the decision making module, the new training programme developed in DRIVER project also addresses other aspects of crisis management, including, for example, the legal framework in which the high-level decision-makers are required to work.

The future steps for the new training programme will include a test of the new training programme and the Effective Command tool in the JE2 experiment during 2017. In the experiment, high level decision makers from different organizations and countries will be trained with the new training programme and the Effective Command tool, and then will use the gained knowledge to make decisions during the JE. After the experiment the high level decision makers will evaluate the new training programme and the Effective Command tool.

1 Introduction

The purpose of WP54 is to find solutions regarding training programmes for high-level decision-makers in crisis situations. In this deliverable we will present the DRIVER high level decision making programme, the rationale behind it and the innovative tools developed to support the programme.

In emergency organizations, it is common to find three levels of command: the strategic level, the tactical level and the operational level (respectively "gold", "silver" and "bronze" levels in the UK). The strategic-level decision makers are at the top of the hierarchy, where they are responsible for the large scale and critical decisions, with high levels of importance (College of Policing, 2016). The high-level decision makers make strategic decisions, which are important in terms of the actions taken, the resources committed or the precedents set. Those decisions critically affect health and survival in emergency situations (Eisenhardt, Kathleen M., and Zbaracki, 1992).

Decision makers in emergency services are often forced to make decisions based on their experience, training, professional knowledge, consultants' advice and the information available to them. For tactical and operational levels of decision makers there are training programmes and tools that give the decision makers the opportunity to learn, train and practice on his or her level of command. For most of the organizations we reviewed, there are obligatory qualifying courses and training that are needed in order to achieve higher levels of command or decision making, again at the operational and tactical levels. The strategic high level of decision making, for most of the organizations we reviewed, however, does not include any specific training or qualification, but is more of a promotion due to satisfying performance in previous positions. There is an underlying assumption that a well-experienced, successful operational commander will have a good "long –term" / strategic view" of the issue at hand, and make the "right decision".

Based on the decision making literature, we make a distinction between internal and external factors. Internal factors are those that involve processes of decision making influenced by the decision maker's thinking processes only. The internal processes of decision making takes place inside the decision maker's mind, and includes his or her way of analysing data, reactions to stress, seeing the "bigger picture" or not, and other similar issues. Alternatively, external factors involve decision making processes influenced by contextual frameworks and structures that guide the decision makers. External factors include for example goals, strategic destinations, and obligations to consult specific experts. The external factors could be given by the country or the organizational higher level of management. The legal framework is an example of an external factor. The decision maker is guided in what he or she can and cannot do, who is in charge of what incident, when and who are the experts to consult and so on. The decision maker makes decisions while considering the limitations and obligations dictated by the external factors.

Today, there are few high-level decision making training programmes, and the ones that do exist focus on the external factors of the decision making process. There should to be a programme that focusses on internal factors because these factors have an influence on the final decision, and if one

is not aware of the existence of his or her individual internal factors it might alter the decision making process.

To address the task of creating new comprehensive high-level training programme we used a three step methodology:

1. First, we explored existing training programmes and identified missing or un-necessary elements. We contacted several organizations and agencies from several countries in Europe, dealing with crisis situations.Based on the work done in the first stage we designed a new, innovative, training programme. This training programme includes the most relevant and essential aspects of the decision making process for high-level decision makers. We then added a unique training tool called the Effective Command Tool, which focuses on the internal processes of the decision making. This tool was tested before for fire services in the UK.

2. Finally, the effectiveness of the new programme was tested in a workshop. High-level decision-makers, training officers and other senior officers from various organizations from different countries were asked to evaluate the training programme and the Effective Command Tool and to asses their applicability and added value for their organizations.

In Chapter 2 of the document we review the background of decision making processes, starting with the definition of decision and decision making, and moving on to different theories of decision making. We assume that in order to understand the need for a new training programme, one should be aware of the cognitive decision making process. Then we show the connection between the new training programme and other WPs in the DRIVER project. We also review the few training programmes already available, and demonstrate the differences between those training programmes and the new training programme.

Chapter 3 contains the new training programme curriculum and its modules.

In Chapter 4 we present the curriculum of the high level training programme.

Chapter 5 describes the methodological considerations that shouldbe be addressedwhen planning a high-level training, and in Chapter 5 we present the work to be done in the future regarding the development, experimentation and evaluation of the training programme.

1.1   The training programme as a part of SP5 and DRIVER Project

SP5 is about learning in crisis situations, and besides the high-level training-programme (WP540), also deals with a competence framework for crisis management (WP520), lessons learned (WP530) and training professionals to collaborate with the general public (WP550).

The high level decision making training programme will use the results from the different activities in SP5 in the following manner:

- WP 520 The competence framework will be offered as the overarching tool, that organizations should use in order to match the skills offered in this training programme to their particular setting, reality and task.
- WP 530 will provide a "lessons learned" methodology and tools, which will be incorporated as a module into the training programme.
- WP 550 will provide the training programme; the research background on public behaviour during emergencies; the message that the public are the "first-first responders" at the community level, that they are resourceful and that their knowledge, will and resources should be utilized.

This module will be linked to the work of SP3 on volunteers and ad-hoc / spontaneous volunteer management during crisis situation, including the associated tools.

2 Decision Making

2.1 Definition of decision making

The word "decision" comes from the late middle English or Latin word **"decider"** meaning "determine" or "a cutting off" and can be defined as a conclusion or resolution reached after consideration. There are very few researchers who actually define what is meant by a decision (Eilon, 1969). Ofstad (1961) states that:

> "To say that a person has made a decision may mean (1) that he has started a series of behavioral reactions in favor of something, or it may mean (2) that he has made up his mind to do a certain action, which he has no doubts that he ought to do. But perhaps the most common use of the term is this: 'to make a decision' means (3) to make a judgment regarding what one ought to do in a certain situation after having deliberated on some alternative courses of action."

Drucker (1963) describes a decision as a "risk-taking judgement", with the initial step in the process requiring recognizing the problem as generic or "exceptional and unique". Harrison (1998), on the other hand, describes a decision as a "moment in an ongoing process of evaluating alternatives for meeting an objective, at which expectations about a particular course of action impel the decision maker to select that course of action most likely to result in attaining the objective".

Harrison (1999) also speaks about two basic types of decisions: Category I, which are routine and recurring with a fairly certain outcome, and Category II, which are non-routine and non-recurring with a lot of uncertainty inherent in the outcome. Similarly to that, Simon (1960) speaks of programmed and non-programmed decisions:

> "Decisions are programmed to the extent that they are repetitive and routine, to the extent that a definite procedure has been worked out for handling them. Decisions are non-programmed to the extent that they are novel, unstructured, and consequential."

This definition of what constitutes a decision leads to the realization that in order to formulate a decision, a process needs to occur. This is considered the decision making process.

Schrenk (1969), speaking about military and business settings, describes decision making as "situations characterized by fairly well-defined objectives, significant action alternatives, relatively high stakes, inconclusive information and limited time for decision". More fundamentally, decision making refers to the interaction between the decision maker (the person) and decision making (the task; Narayan & Corcoran-Perry, 1997; Orasanu & Connolly, 1993).

The dual process theory has been in existence since the 1970s (Wason & Evans, 1975) but in the last decade has been embraced by many theorists in decision making (Evans & Stanovich, 2013; Stanovich & West, 1997). The dual process theory of reasoning and decision making suggests that there are two systems potentially being used when decisions are being made. Type 1 process is often referred to as intuitive or heuristic. It is fast, autonomous and does not require working memory. Type 2, on the other hand, is reflective and analytical. It is slow and effortful, requiring careful

reasoning. Movement between both processes can occur during decision making and either can override the other. Type 2 needs to be actively engaged as the default status involves Type 1 process (Evans & Stanovich, 2013; Kahneman & Klein, 2009).

2.2 Theories of decision-making

Over the years, various different theories and approaches to the decision making process have emerged. A division of those theories and approaches into two groups is common: 1. the normative or analytical theories, and 2. the descriptive theories.

According to the normative model of decision making, given all the needed information, an unlimited amount of time and an unbounded capacity in order to evaluate all the possible options, the decision maker will rationally choose the optimal option. The model also assumes stability in all the factors that contribute to the decision (Nickerson & Feehrer, 1975). This theory can apply in mathematics and statistics, but is rarely valid for real-world decision making (Brehmer, 1987).

Human beings' memory and perception are limited, and so is their cognitive capacity. Furthermore, typically not all the information is available and indeed there may be inaccurate information.

The term "bounded rationality" was introduced by Herbert Simon (1960) in which he acknowledges the cognitive limitations of decision makers. Not only does the human mind have "cognitive limits" on assimilating and working through information, there is often insufficient information to make an optimal decision. Instead the decision maker will "satisfice", a term derived from the combination of "satisfy" and "suffice" (Simon, 1960). The first satisfactory alternative is chosen, rather than the best. Janis (1982) speaks about vigilant and hypervigilant decision making, the former being an example of analytical decision making whereby the decision maker "searches painstakingly for relevant information, assimilates information in an unbiased manner, and appraises alternatives carefully before making a choice" (as cited in Johnston, Driskell & Salas, 1997). Conversely, Janis (1982) also proposed that hypervigilant decision making consists of limited and rapid evaluation of data and alternatives with no extensive review of the chosen solution (as cited in Johnston, Driskell & Salas, 1997). The assumption that rapid decision making implies poor decision making was challenged by other researchers who argued that effective decisions can be made in certain circumstances, without the need for the analytical procedure, through the use of heuristics or mental shortcuts (Kaempf, Klein, Thordsen & Wolf, 1996; Klein & Crandell, 1996; Payne, Bettman & Johnson, 1988)

This approach has resulted in many studies and decision making theory expansion under the descriptive model that works with the concept of limited processing capacity. One of the most popular descriptive models is the naturalistic theory of decision making (NDM), also called automatic decision making. This theory emphasizes the role that personal experience, expertise and competence play in decision making. Naturalistic decisions typically involve the following factors (Department of Communities and Local Government, 2008):

-    Uncertainty and incomplete information
-    Competing goals
-    Dynamic situations

- Time pressure
- Experienced decision makers
- High stakes

Inherent in this decision making model is the person's experience and expertise in the area involved in the decision making process.

An important naturalistic theory to mention is the **Recognition Primed Decision (RPD;** see figure 1) theory for decision making as this is often quoted in fire services. It originated from observations of expert chess players by de Groot (1978; Chase & Simon, 1973, as cited in Kahneman & Klein, 2009). They noted that expert chess players could draw on their bank of knowledge to identify a good move without seeking various alternatives. From here Klein (1993) investigated decision making in firemen and realized that, rather than analyzing several alternatives, the commander went with the first option, and only thought of a second if the first proved unsuccessful. The first option often proved to be correct, based as it was on his experience and expertise.

The key aspects in the RPD model are situation assessment and mental simulation. In the process of RPD, serial options are generated and if the first chosen option is deemed suitable through the simulation step then no more are generated. This contrasts with normative models and other naturalistic models in which concurrent options are generated and assessed. The intuitive judgement of RPD, derived from experience and skill, makes use of Type 1 processing, mentioned in Section 2.1 – the automatic, involuntary and almost effortless thought process system.

Figure 1: RPD model as adapted from - Klein G. A., and Woods, D. D. (1993), the Effective Command website.

Klein notes, however, that there are limitations of the RPD model. For example, it is not applicable when the level of expertise is low, in tasks that need optimizing rather than satisficing, where multiple stakeholders are involved or where justification of choices is required (Klein & Crandell, 1996). In major emergencies, multiple stakeholders is the norm. Different skill sets and very different experiences and expertise are brought to the table. Justifying the choice and optimizing that choice is the goal.

Endsley (2000) mentions another model – the situational awareness (SA; see figure 2) model. This model describes the perception of environmental elements with respect to time or space, the comprehension of their meaning, and the projection of their status after some variables have changed, such as time or a predetermined event. It is also a field of study concerned with the understanding of the environment critical to decision-makers in complex, dynamic areas from aviation, military command and control, and emergency services such as fire-fighting and policing; to more ordinary but nevertheless complex tasks such as driving an automobile or riding a bicycle.

Situation awareness involves being aware of what is happening in the vicinity, in order to understand how information, events, and one's own actions will impact goals and objectives, both immediately and in the near future. One with an adept sense of situation awareness generally has a high degree of knowledge with respect to inputs and outputs of a system, i.e. an innate "feel" for situations, people, and events that play out due to variables the subject can control. Lacking or inadequate situation awareness has been identified as one of the primary factors in accidents attributed to human error. Thus, situation awareness is especially important in work domains where the information flow can be quite high and poor decisions may lead to serious consequences (e.g., piloting an airplane, functioning as a soldier, or treating critically ill or injured patients; Endsley, M. R. 2000).
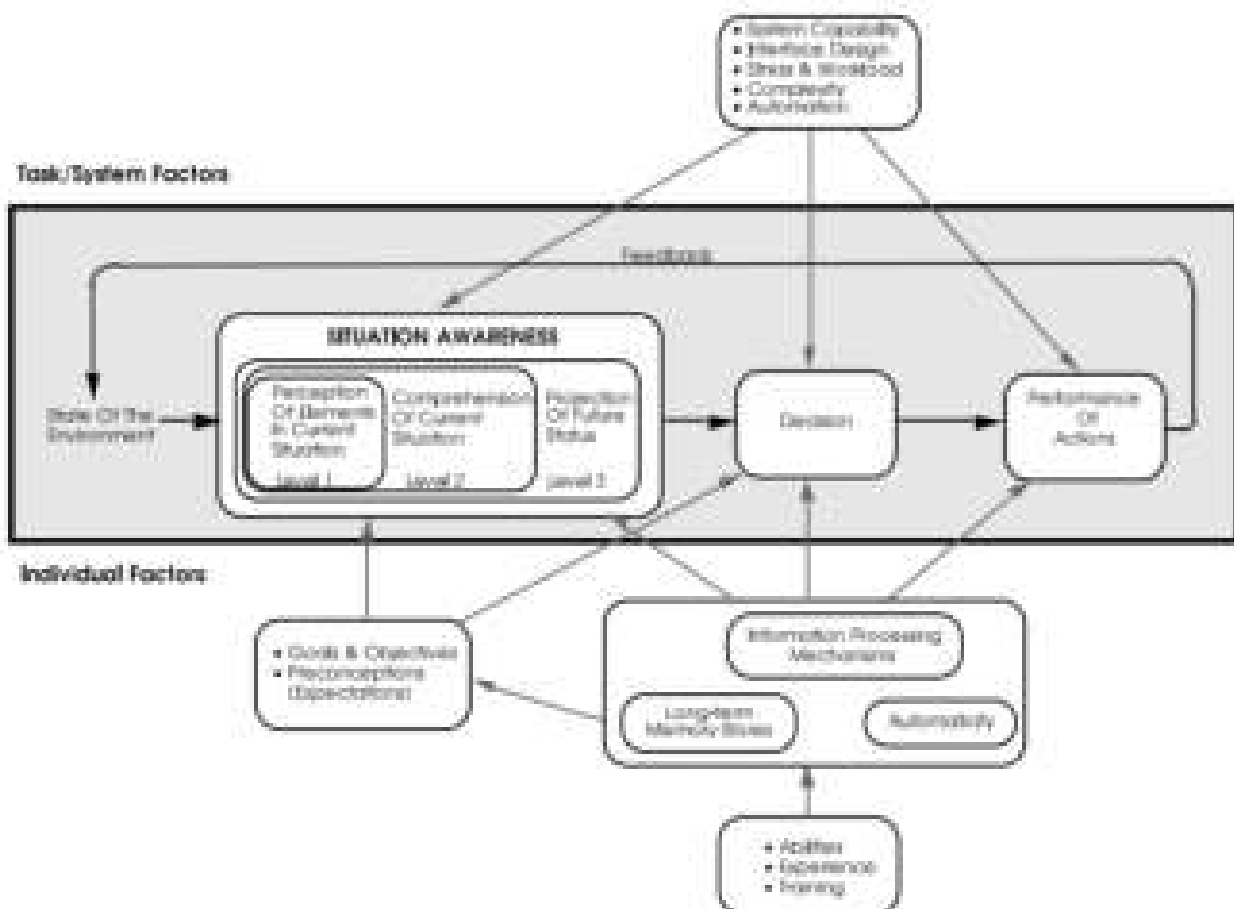
Figure 2: model of Situation Awareness in dynamic decision making (Endsley, 1995)

Another decision making model of note is the theory of heuristics and biases. Originally conceived in the 1950s and finding support since (Karelia & Hogarth, 2008; Goldberg, 1970) the theory posits the view that human beings, despite their "illusions of validity" (Kahneman & Klein, 2009), are inconsistent in the decisions they make and are prone to errors due to the use of heuristics. The theory of heuristics and biases is often viewed as conflicting with the naturalistic theory of decision making. However, Kahneman and Klein (2009) discuss the similarities that actually exist between the

two apparently opposing views on decision making. They acknowledge the differing original stances, namely that heuristics focus on the errors in decision making whereas the naturalistic theory of decision making focuses on the successful achievements of decision makers. Both acknowledge that neither of these assumptions can be applied universally, with some humans displaying excellent judgement and others poor judgement. Heuristics advocate the use of algorithms wherever possible, whereas the naturalistic theory of decision making is sceptical about the attempts to impose algorithms universally in real world settings. Heuristics argue that the use of algorithms with optimal linear combinations will yield optimal results whereas naturalistic theory of decision making methods rely on peer judgements to define the expertise level. While both schools agree on the dual process theory detailed in Section 2.1 and that Type 1 is active for intuition, the benefits of the use of this for skilled decision making is arguable.

Both camps agree that, in general, most intuitive judgements and decisions made using the Type 1 processes will turn out to be appropriate and successful. However naturalistic theory of decision making asserts as a matter of principle that with experienced professionals intuitive judgement arises from experience and skilled pattern recognition, whereas heuristics argue that intuitive judgement, while arising from operations of memory, is more likely to involve simplifying heuristics and biases and thus is more prone to errors and biases. This occurs, they claim, due to mixed grades of expertise on different topics that occur in all individuals, the so called *"fractionated expertise"* (Kahneman & Klein, 2009). People are often not even aware of these biases and heuristics occurring, and even if aware, do not check the intuition with Type 2 as this requires effort and can be difficult to do.

Both Klein and Kahneman recognize that two factors are required to develop expertise in a given area: 1) that adequate training is provided with relevant feedback and 2) that the environment for learning provides the appropriate context (Kahneman & Klein, 2009). Both these are taken into account in our new training programme concept.

Having those different decision making theories, it is seem essential to address the theories in a training programme that deals with decision making. The decision making model that is being used for each decision maker and in each crisis incident varies and is dependent on the time frame, the information available, the experience the decision maker has with this kind of incident, the support he or she gets from advisers and from other organizations, and the decision maker's personality or traits.

Apparently, NDM and RPD models are more in use when time pressure is high, and requires previous experience with the same kind of incident. In large incidents, time pressure can be high or low, depend on the phase of the crisis and the severity of the consequences of the decision. Also, incidents involving high level decision makers are quite rare and the experience level of the decision maker in the specific type of incident can be low. That is the reason why we find the training programme so important: using it can help the decision maker be better prepared for crisis situation, even if he or she has never dealt with that specific situation before. The training programme can help the decision maker by creating a structured decision making process that will support them when making decisions regarding the crisis situations they are handling.

2.3 The rationale for a training programme for high-level decision-makers

All over the world, different kinds of crises take place, often requiring the intervention of high-level decision-makers from different emergency organizations and agencies.

High level decision makers are expected to analyse the situation, attempt to foresee the evolvement and impact of the incident and make the "long term" decisions. In extreme situations, the high level decision makers will be required to make or approve a decision dealing with an acute situation, in which all the possible courses of action have important pitfalls or high risks. Those decision-makers must be well prepared in order to manage the incident successfully. It seems that for most of the emergency organizations or agencies, a training programme for the high-level decision-makers does not exist.

When looking in domains other than crisis management, bad decision-making is the cause of many of the fatal errors. For example, it is has been found that regarding errors in medical clinical decision making, up to 40% of post-mortems reveal a different diagnosis of the presumed disease (Croskerry, 2009). Also, it is estimated that almost 100,000 deaths occur every year in the USA due to medical errors (Kohn, Corrigan, & Donaldson, 1999). In aviation, it has been estimated that 70% of the accidents are related to human factor errors (Helmreich & Foushee, 2010).

When focusing on crisis situations, we can mention several incidents in which decision making was the cause of high numbers of casualties. One example is the Hillsborough football stadium incident in the U.K, which occurred due to inaccurate recognition of the problem, with the unfortunate result of 97 fatalities (Taylor, 1989, as cited in Crichtonn, Lauchen & Flin, 2005). Another example is the Costa Concordia ship that sank near the coast of Italy in 2012. Before and during this incident command mistakes took place, leading to 32 dead and dozens injured (Hollnagel & Baldauf, 2012).

Major emergencies are novel, unpredictable, complex events involving multiple players and time pressure, and require the mangers to make decisions based on information processing with the risk of cognitive overload.

Factors that might influence the high-level decision makers include uncertainty, a common factor in crisis situations; many opinions and conflicting suggestions; evaluation of the incident according to non-comprehensive information; the decision maker's personality and tendency to analyse situations in his or her way of thinking; the decision maker's perspective of the incident; and the decision maker's previous experience (Saaty, 1990).

In terms of a training programme to address the problem of human decision making error, for most of the organizations reviewed we could not find a training programme for the high-level decision-makers for crisis situations, and that is why we find it essential to create one that can be applicable for different organization in different countries. Existing training programmes for high level decision makers focus on only a few of the subjects the DRIVER training programme addresses, and to be more specific do not address the decision making thinking processes as does the new training programme.

2.4 Tools and programmes available

Several training programmes already exist, but their focus is mostly on the technical aspects of the collaboration and management in crises. These training programmes tend to lack the decision-making process at the level of the decision-maker him- or herself. This is the innovation in the proposed training programme. Here are a few of the available training programmes:

- MAGIC Course: Multi-Agency Gold Incident Command Course (College of Policing, UK). This programme was developed to provide appropriate learning and development for responders from the emergency services and partner agencies who would normally perform strategic (Gold) command for their organisation during a major incident/civil emergency. Delegates undertaking this learning programme may also include participants from local and central governments, the Ministry of Defence and other responders. The programme is designed to enhance leadership ability and strategic oversight on the part of Gold Commanders/Strategic Co-ordination Groups, both of which are key to successful planning for, and the overall response to, multi-agency major incidents (College of Policing, 2016).

- In Israel, the Civil Protection runs the "senior joint incident commanders" training that lasts six weeks, with representatives from police, fire, EMS, military, local authorities and respective governmental agencies. The training focuses on armed conflict-related scenarios. In parallel, the Israeli National Emergency Management Agency (NEMA) opened a multi-agency training programme that graduated the first class and was not resumed.

- Several universities in Europe offer a Master's degree programme in Crisis Management, these trainings are open to students regardless of their field experience. Some universities provide specific incentives to participants from emergency services and response organizations to attend these programmes.

- The BBK academy high level training: the BBK (Federal Office of Civil Protection and Disaster Assistance in Germany) academy runs a training programme that lasts several months for senior officers from the different services, who are to be promoted to the senior officers in their respective organizations (BBK, 2016).

- The Comprehensive Model: The Comprehensive Method (MSB, Sweden) is a practical way to deal with multi-actor and multi-goal responses to societal disruptions such as major accidents, crises and disasters. The Comprehensive Method consists of four steps which guide actors from sense making to influencing actions. Centring on common core societal values rather than mission objectives is what sets the Comprehensive Method apart from other methods.

- High Level Coordination Course (HLC) of the European Community Civil Protection Mechanism, is aimed at experts who have been selected as managers of a team deployed by the European Commission to facilitate coordination assistance in emergencies. The course focuses on emergencies outside the Community Mechanism's geographical area and how to work within a wider international framework. Since the course is aimed at managers, topics also focus on managerial and political aspects of civil protection assistance interventions such as mission management, negotiation, international coordination policy, and media relations (the European Community Civil Protection Mechanism Training programme, 2009).

Unlike the training programmes described, the Effective Command tool is aiming for the internal processes of decision making for high-level decision makers. This is a brief description of the tool, and it will be described later in this document:

- The Effective Command Tool: The Effective Command (Dr. Kathrine Lamb) training tool is aimed at training and assessing decision-making behaviours at operational, tactical and strategic management tiers. The Tool utilizes simulation-based experiences that simultaneously test response plans, business continuity arrangements and importantly, builds and assesses decision-making skills.

  This is a holistic and advanced crisis training and assessment methodology consistent with decision-making theory, which develops five key decision-making behaviours, and can be used to assess competence standards. Since this is a simulation based training, the effective command tool is safe, reproducible, controllable, measureable, and has limitless scope of incident size and type.

  Effective Command is supported by a range of web-based tools, such as an online assessment tool for use during training or competence assessment. The data automatically populates a database hosted on a secure server, enabling the user to form a portfolio of evidence for each commander, the data can then be used as a record of command competence, and for appraisals or promotions. The tool automatically creates a certificate of competence and a training needs analysis report if required.

  For services that complete incident monitoring or mentoring there is also an Effective Command app for use on the incident or training ground (Effective Command, 2015).

  The effective command tool was originally designed and tested for the fire and rescue services in the UK. It is currently being developed and tested for other emergency services (namely police, EMS and Civil Protection) as well as for services outside the UK.

  For DRIVER the tool is being further developed as a "personal checklist" that can be used by the commanders themselves for reflection on the decisions making process followed.

3 The Training Programme and the Effective Command tool

Managing a large-scale incident is a complex task that presents many challenges to decision makers in the emergency services. These types of incidents usually require close cooperation and data inputs from various players within the crisis management community and the evolvement of the incident depends on decisions made by the strategic level personnel, often located away from the scene.

In order to find the gaps and needs of the high-level decision-makers we reviewed the relevant literature, conducted interviews with experts in decision-making and in crisis management, conducted two workshops that include discussions with decision-makers and training officers, and reviewed feedback questionnaires from one workshop (for more information – see Section 4 the work process).

This new training programme aims to meet the needs that we found in the literature review and in the discussions during the workshops, such as a framework in which the emergency organization or agency is expected to function; the decision-making process in the high-level decision-maker's country; professional aspects specific for the high-level decision-maker's organization's scope; introduction to the threats that the high-level decision-maker's country faces; a decision-making module, including the Effective Command tool; media and press, and public behaviour during emergencies.

Even though there are some differences between countries and organizations in Europe, there is a lot in common. Because of this common ground, the training programme can be adapted and used in any country.

During this training course the high-level decision-makers learn and work together with their peers from other organizations or agencies. This dialog encourages knowledge sharing between the decision-makers from the different organizations. This is not just a by-product of the training programme. Getting to know other organizations and your peers from those organizations is a crucial part of the course: to serve as a platform for decision-makers to expose themselves to other organization with which they might work alongside in future incidents.

The training programme contains seven modules:

1. The legal framework and the system
2. Professional aspects
3. Understanding the threats that may affect specific countries
4. Decision-making module
5. Media and public behaviour
6. Cross border cooperation
7. Institutional learning

Each module starts with a description of its content and goals and then presents subjects for discussion, important dilemmas, and examples.

For the modules that are country-specific (Modules 1, 2, 3, 6), we provide information and examples from a few selected countries and organizations. Module 4, the decision-making module, is based on the Effective Command training methodology. Module 5, Media and public behaviour as well as Module 7, Institutional learning, is relevant for all countries.

The modules that need to be adjusted are those that are relevant for a specific organization or a specific country (professional aspects, legal framework etc.). These modules will be presented as an example of the content, while the content itself needs to be developed at the member state level.

This training programme is innovative in that it addresses the decision-makers' thinking processes, in addition to elements that are external to these process, such as laws and legal framework, media and press policies etc.

In the following sections, we explore each module of the programme individually.

In Chapter 4 we describe the curriculum of the high-level decision making training programme.

3.1   The legal framework and the system

The high-level decision-maker works within the laws and legislation of their country and organization. It is crucial for the decision-maker to fully understand the legal framework of the system in which he or she will need to make important decisions in case of an incident.

Legislation often compels a decision maker to act in a particular way. Where the words "shall" or "must" are used in legislation, there is usually no direction available to the decision-maker. For example, if the legislation states that an application must be received by a specific date, the decision-maker must refuse the application if it is not received by that date. However, the decision maker is given a discretionary power to deal with a matter and may decide for themselves if the information should be taken into account.

Before taking action or making a decision, the decision maker should check to ensure they have the power to take the action or make the decision and the limits of any discretion that can be exercised.

Besides the legal aspect, the high-level decision makers should be familiar with the emergency agencies working during the crisis incident; their mandate, roles, responsibilities, capacities and limitations. This module should address the structure, purpose and functions of each of the emergency agencies and organizations. The "second and third sector organizations" (private and volunteer organizations) should also be included here as a major stakeholder in any emergency planning, response and recovery operation.

Every incident or crisis that requires the intervention of the high-level decision-makers of the organization will also require the collaboration of more than one organization. In large scale forest fires, as an example, a collaboration of the fire services, police authorities and municipal leadership is essential, and if casualties are involved then medical services and hospitals will need to collaborate too. Each of the organizations' high-level decision makers must know the basic structure, function

and authorities of the other organization, so they all can have realistic and valid expectations and demands for the other organizations. Sharing knowledge is crucial for this to be executed. The challenge here is the scope of organizations to be covered: at the tactical and operational levels, commanders deal with other response organizations (police, fire and rescue, EMS), civil protection, military, local authority response units and utility providers. At the strategic levels, players like national authorities and agencies (e.g. public health, environmental protection), representation of large trade groups (e.g. hospital association, large supermarket chains), utilities providers (water, electricity, transportation communication) become major stakeholders and players, which the decision maker should be familiar with. In addition to knowledge sharing, it is also important to have shared decision making. A strategic decision in one organization has an influence on the other organization. For example, a decision made by one organization (i.e police), to evacuate a population requires shared decision making and planning with others to support and to execute the decision.

Finally, the high level decision makers will get to know how all the different organizations work together in the legal framework, what the emergency laws in the country are, and what the responsibilities and powers of the decision maker in his or her country and organization are.

Also, in this module the national strategies for crisis situations should be addressed, including policies for prevention and management of crisis incidents (also known as contingency plans).

It is possible to let the participants learn most of this module material by themselves, by reading or taking an e-learning tutorial. Yet there are crucial and difficult topics that require classroom lessons with experts who can raise the key points and answer questions. There must be an emphasis on the most important topics for the high-level decision maker.

This module was created based on the existing information regarding laws and (emergency) legislation from several different countries in Europe that has been reviewed in DRIVER project (DRIVER SP8 deliverables, DRIVER space, 2015-2016) [annex 2, 3, 4].

3.2 The professional aspect

The proposed training programme deals with the cross-organizational cooperation and management of a large scale incident. It is expected that the participants in this training, coming from different organizations, are familiar with the high level decisions they are expected to take in their area of expertise and have the relevant knowledge to do so. A senior decision maker should be able for example to set the priorities for the operation, allocate the relevant resources and understand what the implications are for other services / areas as a consequence of the decision (e.g. allocating more ambulances to an operation might imply that the ambulance service will cease all response to non-critical calls, or shift those calls to a private company including the associated financial implications. The high-level decision maker needs to understand the implications, know what her / his power is to make decisions and the arrangements / possibilities available to mitigate negative effects).

Each and every organization should have a training programme for its high-level decision makers so they are familiar with such issues. It is expected that the participants in an inter-organizational training will arrive at this training after they are certified within their organization.

In some cases, the threat is a new emerging threat (such as a pandemic), where most of the organizations lack the knowledge about the threat. In such a case, a joint induction session in which the threat is presented by the subject matter experts and discussed, is advised, and will serve to set the common grounds for all the organizations to have a common language and understanding.

This module should be developed by each organization based on their needs.

3.3   Threats that may affect specific countries

High-level decision makers need to make decisions in crises that might take place in their country. Some of the threats are region or even country specific and may be related to natural causes (floods, volcanos, tsunamis, earthquakes, tornados, forest fires, ice storms, etc.), accidents, armed conflicts (warzones, minefields, terrorist attacks, etc.), social and economic reasons (demonstrations, riots, etc.), CBRN incidents, cyberterrorism and so on (Solana 2003).

The decision making varies between normal-day decision making to extreme disaster event decision making, such as natural weather events or even man-made disasters. Decision making during disasters changes the dynamics involved with decision-making processes and, most of the time, are unique to the situation. For this reason decision makers must be flexible, responsive, and capable of reacting to the unexpected in a timely and effective manner.

All disasters impact people and communities, destroy or damages cities and critical infrastructure, and impact the environment. But each disaster is different, and the decisions have to suit the needs and requirements of the specifically affected country.

Understanding what threats the decision maker might face is highly important, and by doing so, the decision maker will be better prepared. This can save time and confusion in real time incidents.

In this module the participants should review the most likely or high impact threats, learn about the last times this threat was manifested (in their country or in another country); what challenges to expect; professional and scientific background; the threat's scale; prevention possibilities; preparedness at the strategic, operational and field levels; response to the threat; activities for the recovery phase; guidelines for the different levels of the incident. This module requires that the subject matter for each and every threat is discussed with the participants.

Knowing what the threats are, in addition to the professional aspect (see Module 2), is a key factor that connect the decision makers to the expected work of their organization.

3.4 Decision-making module

The high-level decision makers are required to make decisions. Since emergency organizations are involved, these decisions might be matters of life or death. It is crucial that the decision-maker will make the best decision, based on the right information, at the right time. The decision-maker must cross-check and verify information, identify risks, consider alternatives, and monitor the consequences of the decision.

The decision making process happens at two levels: the first is the external level, in which the decision maker is requested to consider all the aspects around them (e.g. public's needs; organizational abilities; legal framework). Some aspects are universal, for example the way in which people make decisions. Other aspects vary between countries, and depend on the culture, the governing structure, or the extent to which the armed forces are involved during response to emergency incident.

Countries differ in the governance of decisions. In the UK, as an example, it is the responsibility of the decision maker to check if he or she is allowed to make the decision in the legal, normative framework of the country (Joint Emergency Services Interoperability Training). In Sweden, among the top priorities of the decision maker is to keep the fundamental values intact (the Comprehensive Method). Those are two different thinking processes. The training must prepare the decision maker to use the process that is relevant in his or her country. The high-level decision maker needs to be very familiar with the "formal decision making processes" defined in one's country, as by the end of the processes the decision maker will be held accountable for the processes leading to the decision made.

The goal of this module is to ensure that the decision maker is familiar with the model used in her / his country, and is capable of implementing it, understanding the priorities set by the elected level, identifying the information needed and its sources. All these are only some of the required actions, common to all the decision making frameworks. The end result is a decision to be executed. Member states differ in the method used to reach this decision: is it by consensus or is it a decision to be taken by an agency with legal power (after a consultation or not).

The second level is the internal one, in which the decision maker needs to verify if he or she is making the best decision. This internal process of what is being processed in the decision maker's mind, what is being considered, is addressed in the Effective Command tool. The tool utilizes simulation-based experiences that simultaneously test response plans, business continuity arrangements and importantly, builds and assesses decision-making skills. Questions like "Did I consult the right person?", "Did we suffer from groupthink?", "Is there someone who played the devil's advocate role?", "Am I aware of the weakness in my own decision making thinking process?"

For the tactical or operational decision makers, there is often a higher-level supervision that gives them feedback for the decisions they make. But for the strategic decision makers such supervision rarely exists. Also, it is not possible to wait and see what the outcomes of the decision are, because by the time we know the results it might be too late to change course. For these reasons, it is important that the high-level decision makers have the tools to check for themselves if they do the right process of thinking in order to get to right decision. The Effective Command tool defines the

right process and key elements of the decision-making process, and the decision maker should work according to this process.

Using the Effective Command tool, this training programme aims to improve the process of decision making, and not the result of a decision. Understanding it is nearly impossible to predict if a decision is right or wrong or even evaluate a "high level" decision in retrospect (due to its many effects and possible causes, and because of the ambiguity of the incident), the training programme is designed in a way that allows the decision-maker to judge the process of their own decision-making, and by doing so, to know that they are closer to the "right" decision (the definition of the "right decision" being the decision taken by the right people, at the right time, for the right reasons targeting the right population).

3.5   Media and public behaviour

As well learned from the experience of recent years, the media and press have an important and significant role during and after crises. In an era in which social networks share information and news from anywhere, and when every mobile phone is a potential camera and broadcast station, the high-level decision makers must be able to handle the media aspect in the best way possible. Wrong actions regarding the media and press may cost the loss of public trust in the organization's activities, staff and abilities. On the other hand, good management of the media and press can be very beneficial during a crisis. It can be used to transmit instructions to the public, to gain publicity regarding the organization's activities, to calm the affected population and to get one's message across to the public, the media, donors, beneficiaries, governments and other decision-making bodies.

Coherent and powerful emergency communications are therefore vital in order to gain credibility, public and government support, and to mobilize resources, as well as advocating for affected and vulnerable people.

In many crises the media and press arrive before the emergency organizations are fully functioning, and can choose for themselves what to show and which messages to emphasize.

High-level decisions makers should have a dedicated media cell to handle media and information. But, in an ever changing media world, it is essential that the high-level decision makers have a good understanding of the "new media" and their roles, as the more traditional tools, such as "press releases" have lost some of their power and are no longer the main tool used to reach the public before and during an emergency.

Each country has its own procedures for crisis communication that are influenced by the popularity and influence of: social media; the few or multi channels of communication (television channels, radio channels, social websites, news websites, newspapers, etc.); and the government spokesperson policy (who is to communicate with the press- spokespersons, CEOs, or commanders in the field? Are there few who allow to communicate with the press or only one spokesperson?). The decision maker

must understand what the considerations of the media and press strategy are and how to manage them.

For this module it is suggested to bring experts from the media and press to demonstrate to the decision makers what the present perception of crisis communication in the country is. The decision maker should know what the characteristics of each media type are (written, social media, voice, and television), which media type is the most accessible for each population segment, are there any communicational difficulties due to cultural background, and what is the level of trust the public have of the media.

Besides the learning about the above aspects, an analysis of an incident will clarify and show the practical side of the crisis communication. It is advised to bring in a decision maker or communication manager who took part in a real incident, and together with the media and press expert, analyze the incident and discuss the communication strategy during the incident.

Understanding public behaviour during a crisis is key to decision making. In this module, an expert in public behaviour should discuss the following key aspects with the high-level decision makers:

1. Demystifying myths, such as "panic" or "looting" as immediate and frequent phenomena, which might result in an incorrect focus for the allocation of law enforcement scarce resources.
2. The power and resourcefulness of communities, and the fact that communities in many cases organize themselves before the authorities respond. How to mobilize communities in favour of the operation, and how to manage ad hoc / spontaneous volunteers. This is the main focus of WP550 and SP3.
3. Special needs and considerations regarding marginalized and vulnerable communities.

In this module it is advised that an expert in community engagement (from a local authority/ organization with a strong community outreach programme /Red Cross) will present a case study, and a discussion involving a community leader will be held.

3.6 Cross-border cooperation (based on EU Civil Protection Mechanism)

High-level decision makers might face an incident in which cross border assistance might be required. This might occur in three basic settings:

1. Cross border within a federative member state. Such cases, when applicable, should be a key component in Module 1: the legal and administrative framework for civil protection within the respective member state.
2. Cross border between member states based on bilateral agreements: in many cases in Europe, the next closest emergency response resources exist cross border. In such cases usually bilateral assistance agreements exist defining the details. Those cases should be discussed and presented in Module 1. It is very rare that a high-level decision maker will be involved in the execution of such agreements as this is a tactical / operational decision, in many cases on a daily basis. However, the high-level decision maker must be aware of such agreements, as they are part of the toolbox available for that region, since there are always

legal and financial implications attached. Furthermore, issues of interoperability may make cooperation difficult (such as lack of capacity to communicate by radio due to incompatibility of the systems used). These are all issues that the high-level decision maker must ensure are solved by the operational level.

3. A Civil Protection expert should discuss the third scenario with the participants: a large scale incident that requires the intervention of the EU Civil Protection Mechanism (EUPCM). Main topics to be discussed are:
   a. The role of the EUCPM, structure and capacities
   b. The Emergency Response Coordination Center (ERCC): role and functions
   c. The EUCPM modules
   d. Activation of the system at national and EU level
   e. Coordination in the field

3.7 Institutional learning

An organization that is incapable of learning from experience – be it its own or someone else's – is bound to repeat failure. This is true also for crisis management, in which the complexity of crisis and the diversity of the crisis management system make learning from past events vital. Therefore lessons learned and best practices need to be integral parts of any structures for evolved learning in crisis management.

Furthermore, crisis management is an area in which the inability to learn from experience may result in costs, not only in economic terms but potentially also in lives. The accountability of decision makers can further increase the interest in learning from experience. Inability to make use of available lessons could literally end careers.

Learning from rare, extraordinary events in these types of organisations is not necessarily about repetitive training; it is also about situation assessment, recognition, and sense making. Such learning is typically simulation-based, scenario-based or field-based and aimed specifically at increasing the learners' experience pool, for example through apprenticeship and observation of stereotypical events.

4 Curriculum for HLDM training programme

Objective: **By completing this training programme, the participant will acquire tools and knowledge** that will support one's capacity of making "high level decisions" during a major **crisis**.

["high level decisions" being the decisions **made by the most senior managers, with wide, long term impact** – "strategic decisions"].

The training is composed of different models, which can be composed in different sequences using different methodologies (see Chapter 5 – methodological considerations).

- Module 1: The legal framework and the system

Objective – by completing this unit the participant will be aware of the legal and administrative frameworks for high level decision making in one's system.

- o Disaster management structures, at the national, regional and local level (2 hours).
- o Decision making processes (1 hour).
- o Emergency laws of the country (remote)
- o Emergency organizations and agencies working during crisis incidents (their mandate, roles, responsibilities, capacities and limitations) (3 hours)
- o Second (private) and third (volunteer) sector organizations involvement in crisis management (concept and practical arrangements). (1 hour)

Many aspects of this module can be achieved as remote learning, thus participants know the theory. Though it is of outmost important that the following aspects are discussed in the group:

1. Limitations and restrictions imposed by the legal framework (1 hour).

2. Areas where the legislation calls for judgment of the decision makers (1 hour).

3. Experience from public enquiries and investigations on the legal requirements from crisis managers during a crisis (1 hour).

Total training time – 10 hours

Examples of content provided by SP8 (see annex 2)

- Module 2: Professional aspects – this is a pre requisite for the training. It is expected that each and every participant in the training is equipped with the relevant information allowing her / him to contribute to the overall crisis management, with the highest professional level in one's area of expertise (Law and order, Fire and Rescue, Emergency Medical Services). Each organization should set the appropriate training programme. In a setting of a large course, held as a continuous training programme (full days), this can be done in parallel classes for the different subject matters.

The following training modules are to be conducted as a multi-agency training, where participants benefit from the interaction between the participants (perception and experience) from different organizations.

- Module 3: Understanding the threats that may affect specific a country
  Objective: by completing this module the participant will understand the threat map of one's country.
    - How the threat analysis and prioritization is conducted? (1 hour)
    - What is the current risk mapping? (2 hours)
    - What are the risk and hazard trends in the country, what are the foreseen future risks and hazards (1 hour).
    - Total – 4 hours

  This module often requires a high level officer in charge of risk mapping to discuss this with the participants. Security clearance is key to allow full disclosure of information in this module.

- Module 4: Decision-making module
    - Effective Command tool training
      Effective Command aims at providing senior officers with a logic framework for high level decision makers to assess their decision making processes. Issues like the use of expert advice, clear identification of objectives, evaluation is this the right timing, do the decision makers have the authority and power to take the decision, are some of the questions the decision makers are trained to assess. This is a tool, external to the project that is introduced as a "close package" to the curriculum.
      Effective Command uses advanced simulation tools (XVR) to create a challenging environment for the decision makers to practice with.
      Total training time – 24 hours
- Module 5: Media and public behaviour
  Objective – by completing this module, the participant will be able to discuss media policy in large scale disasters, public behaviour in disasters (including involving the public in the response efforts) and how to effectively communicate with the public.

[The main topics are covered by this current version of the document. This will be augmented by information provided by SP 3, WP 550 in DRIVER].

5a   Public behaviour and public engagement -

- Public behaviour during crisis and emergencies – basic concepts and myths (2 hours) (content to be provided by WP 550)
- Ad hoc (spontaneous) volunteers management and challenges, best practices (2 hours) (content to be provided by SP3)

5b   Media and new media-

- Media policy and players in crisis situations (2 hours)
- The role of social media in crisis management (2 hours)
- Key components of an effective media policy (1 hour)

5c   Overarching-

- How to engage the public in preparedness and response (1 hour)

Total training time – 10 hours

In order to conduct this module effectively there will be need to combine senior media persons with senior spokes persons / media managers and researchers. Opportunities for active interactions with the reporters should be provided as an important learning opportunity (e.g. through simulated press conferences).

- Module 6: Cross border cooperation

Objective: by completing this module the participant will understand the cross border and EU level coordination mechanism

- EU Civil Protection Mechanism - role, responsibilities, structure (2 hours)
- ERCC and other EU level entities involved in cross border response (2 hours)
- Cross border cooperation – How does this work (1 hour)
- Case study of cross border cooperation (e.g. – care for severely burned patients after the fire in Bucharest). (1 hour)

Total training time – 6 hours

- Module 7: Institutional learning

Objective: by completing this module the participant will understand a suggested processes for effectively identifying and implementing lessons from operations / exercises.

- Identifying lessons and implementing them – content to be provided by WP 530.

5 Methodological Considerations

As discussed during the Madrid workshop, the participants in such a training are senior, well experienced and busy individuals. This is why the following considerations should be taken into account while designing the specific class planning:

1. Most of the learning will be achieved through interpersonal interaction. The number and length of presentations should be very limited in number and time, and contain the essentials only. If the person is interested in more information documents for further reading should be provided.
2. Group discussions and case studies are perceived as the most effective learning tools.
3. Provide an evaluation-/ judgment free environment.
4. The most effective modality is a continuous education programme, in which participants meet every two months for two consecutive days. In this way a "regional senior crisis management forum" will be created and maintained and have the opportunity to discuss new emerging issues an incident.
5. On-line forums and tools should be considered, based on the group and the degree to which they use these tools on a regular basis. Our understanding is that most people at this level will prefer a face-to-face meeting.
6. The training faculty should be a combination of persons with strong knowledge of the subject matter (researchers, lawyers, and spokespersons) and senior crisis managers. They should be complementary one to the other. It is important that the participant will gain both from real life experience as well as from deep subject matter knowledge and analytical (academic) approach.

6. The work process

The data collection started with identifying the existing training programmes and tools by reviewing relevant literature. We searched on-line and approached several organizations for their training tools and programmes for high-level decision makers. We found only few training programmes, most of them dealing with the logistics and management of the organization. We find that the training programmes are not aimed at the internal processes of thinking.

Subsequently, in a workshop, which took place in Berlin during October 2014, we asked experts in crisis management and emergency trainings for their input for the new training programme: what should be included, what possible tools do they know of. We used this input to design the new training programme and to test the Effective Command tool.

In a second workshop we presented the training programme and the tool in Madrid on December 2015, aiming to receive feedback regarding the applicability of the programme and the tool in different countries and organizations. The participants who attended the training and evaluation came from seven countries and from different types of organizations. The workshop was composed of three parts:

1. The Effective Command tool presentation and training: the participants practiced on flood scenarios in urban and rural areas, playing the role of the high-level decision makers for a day and a half;

2. The new training programme: in discussion groups, the participants discussed the components, design, and general structure of the new training programme; and

3. At the end of this training, the participants were asked to complete an anonymous feedback questionnaire on the tool and the programme. The overall impression was that the tool and the programme bring something new to most of the organization, and that most of the participants believe it is applicable for their organizations [Annex 1- the workshop summary].

In continuation of this work and the testing and evaluation of the training programme and tools, a training of high-level decision-makers from different organizations from different countries in Europe will take place during 2017. This training will include the Effective Command tool, and a review of the entire training programme. The participants will evaluate the tool and the training programme, to consider if it can be useful and applicable for their organization and their country. Shortly after the training, during the Joint Experiment 2 (JE2) of the DRIVER project, these trained decision makers will participate in the JE2, and at the end of the JE, will evaluate the usefulness and the added value the tool and the training programme, and how these helped them cope during the JE2. This experiment, for the first time in DRIVER project, will allow participants to use the knowledge they have gained during the training and to use the Effective Command tool in an exercise that requires decision making. The feedback we will collect from them will be based on an actual experience and not only on an impression, as happened in the previous workshops.

Work ahead in WP540:

1. Incorporating an annex based on the work in WP 520: how this training programme should be viewed in the larger context of competence management for crisis management by an organization.
2. Incorporating the training material from WP 550 and SP3 on public behavior in crisis situations, and the management of spontaneous / ad hoc volunteers in the training programme.
3. Incorporating the information from WP 530 on lessons learned.
4. Validation of part of the modules used in JE2 and update of the document.

7. Conclusion

This document addresses the gap, which came up from discussions and focus groups during the workshops, with representatives from several organizations interviewed, regarding the lack of existing training programmes for high-level decision makers for crisis situations. The need that was indicated is for a comprehensive training programme that include modules that cover several different aspects important for the high level decision makers. Specifically, there was a lack of training tools for high level decision makers that address the internal thinking processes of decision making during crisis situations. The result is a training programme that can be adapted to the different needs of different organizations in different countries. The new training curriculum functions as a guideline for managers, training officers and others who are involved in the process of training and maintaining competences of high-level decision-makers

The training programme will be used and tested in the future steps of WP540 in DRIVER project.

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Annexes

Annex 1: Minutes of WP54 meeting held on 16-18.12.15 in Madrid

1. Attendants:

The following persons attended the meeting:

Name	Organization
Georgios Eftychidis	KEMEA Center for Security Studies, Greece
Eric Michelis	Alpes-Maritimes fire department, France
Wouter Jong	Dutch Association of Mayors, the Netherlands
Lukasz Kuziora	Tactics and Command Department, Main School of Fire Service, Poland
Angel Estebarenz Perez Jose	Municipal police commander, Madrid
Javier Quiroga Mellado	Head of unit of observation and quality assessment, SAMUR
Anna Maria Padillia	Assistant to the General Director of Emergency and Civil Protection City of Madrid
Ervigio Corral	SAMUR Head of training
Jose Luis Legido	Madrid Fire services
Paloma Rey Paterna	Head of division of Quality and Regulations, SAMUR
Moshe Vaaknin	Deputy Director Southern District MDA
Izhak Oz	Israel Fire and Rescue Services
Christian Wessman	National Swedish Police
Linda Kazmierczak	Department of contingency planning and crises management, Sweden
Lars-Erik Kron	Rescue Service, Sweden
Krister Arnell	Department of contingency planning and crises management, Sweden
Jaime Martin	ATOS
Fernando Kraus	ATOS
Itamar Laist	MDA
Katherine Lamb	Effective Command
Chaim Rafalowski	MDA

2. Discussions:

2.1 Effective Command:

The method was presented by the developer Dr. Katherine Lamb during the first two days. At the end of the second day the participants completed feedback questionnaires, followed by a discussion.

The statements and the scores were as followed:

No	statement	Average scores (1-disagree; 5- agree)	STD	n
1	We have a similar tool in my organization	2.5	1.20	15
2	The tool is an added value to commanders in my organization	3.8	0.83	15
3	Commanders in my organization should be comfortable using the tool	3.7	0.77	15
4	I understood the tool well	3.8	0.65	15
5	The tool is complicated to understand and complex to use	2.5	0.96	15
6	I would recommend training existing commanders in using the tool	3.8	0.75	15
7	I would recommend incorporating the tool in training for new commanders	3.9	0.85	15
8	The tool should fit easily with my organization's command procedures	3.5	0.88	15

The main comments that the participants wrote in the questionnaires are:

- The tool was described as simple; applying to many aspects of crisis management; focuses on strategic decisions; gathers information and is useful for review; clear and to the point; already being tested and used; good for evaluation for learning purposes; uses simulation-based scenarios; provides a useful checklist to be addressed when managing a crisis; supports evaluation of behavior; flexible for all crisis management.
- The participants disliked that the tool is not graphic enough; the tool does not seem to be helpful in the preparedness or response phase; a lot of items in the checklists; good for evaluation but not for training; fit to the UK system, not for all of the other countries; it is complicated to understand the tool.
- The adjustments that are needed to the tool are to make the tool fit for each country specifically (structure, legalization); language translation; long list of scenarios to choose from; the feedback from the tool to the decision maker should be private.

After filling in the questionnaires, the participants discussed the tool, and were asked what they like about the tool, what they did not like about the tool, and what can be improved. The main comments that came up during the discussion are:

- The general structure of the tool is useful, flexible, and can be used for different systems with different decision-making models; it is simple to understand the tool; can be used for assessment of decision makers; using the checklist is easy; using scenarios is a good way for training and assessing decision makers.
- The name of the tool implies that the tool is about helping make decisions, but that is not what the tool does; the checklist is too long; not sure if the tool can be used all over Europe because of differences between the countries;
- Should include interaction with peers at the same level of command; should be with shorter checklist.

Conclusions:

- **Main adaptations required to "Effective Command" –**
    - **Shorter checklists dealing with the key elements.**
    - Items that are specific to "a" system should be changed (e.g. the idea of "incident commander"). Possibly wording the issue in a more generic manner.
- Most probably the adaptation of "effective command" to the Swedish model will be the most complicated (due to the differences in the decision-making structures), thus it is advisable that other options for the JE (not the ice storm to be held at MSB) are considered easier with respect to the adaptation of the tool.
- Handouts to the participants need to be prepared.

2.2 The High-Level Decision Makers Training Programme:

The goal of the programme was presented by Chaim Rafalowski. Then, the participants were asked to suggest relevant modules that should be a part of the training programme. Next, the participants completed feedback questionnaires, followed by a discussion. The main comments that came up in the feedback are:

No	Statement	Average scores (1- disagree; 5- agree)	STD	n
1	We have a similar programme in my organization	3.2	1.41	13
2	The programme is an added value to commanders in my organization	3.6	1.00	13
3	I understood the programme well	3.5	1.08	13
4	It will be very difficult to implement the programme in my organization	2.3	1.26	13
5	I would recommend training existing commanders in the programme	3.9	0.83	13
6	I would recommend incorporating the programme in training for new commanders	4.0	0.78	13
7	The programme should fit easily with my organization's command procedures	3.6	0.92	13

The main comments that the participants wrote in the questionnaires are:

- The training programme was described as covering many aspects, relevant for strategic decision makers; important and necessary; multidisciplinary; creates common guidelines.
- The participants disliked that it might not be easy to implement the programme everywhere; it should be a more organized programme; there is no schedule of the activities within the programme; should use existing training programmes; should also include aspects of collaboration within the EU.

After filling in the questionnaires, the participants discussed the tool. The main comments that came up during the discussion are:

- The training programme should include the EU involvement in crisis management; should use e-learning for some of the modules; should be combined with lessons learned and competences required; should include techniques for "selling" your plan of action.
- The programme should be designed as "modules" that can be implemented in a modular manner.
- Case studies and lessons learned (nationally and internationally) are essential tools to be used.
- Time constrains of senior managers must be considered.
- A combination of a "training period" with periodic meetings of the "crisis management team" should be considered, as this serves also as a capacity-building exercise for the team and allows for discussing emerging threats.
- Any module should have a short theoretical component, and should be based on the idea of "learning by doing".

Annex 2: Overview of DRIVER D82.11+D83.11 Germany - Capabilities, Organisations, Policies, and Legislation (COPL) in crisis management and disaster response

Germany is a federal republic consisting of 16 constituent states (Bundesländer or Länder). States have their own government and parliament and possess a high degree of autonomy. Subsequent governmental levels are the administrative counties (Landkreise) or county boroughs (kreisfreie Städte) – combined in administrative districts –, and the municipalities (Kommunen). The principle of subsidiarity has to be applied wherever possible. As given in the German Basic Law (Grundgesetz, comparable to a constitution) and in the Treaty of Lisbon, the states play an active role in the decision making process regarding the German EU policy.

Main risks in the DRIVER context are seen in floods, heat waves, and storms.

Following the terrorist attacks on 11 September 2001, and the severe flood in Germany in 2002, a "New Strategy on Civil Protection" was enacted in 2002, updated in 2010, providing the new political-strategical framework programme in civil protection. Main goal is an optimized collaboration between the federal level and the states in preparation to and coping with disasters relevant on the national level.

The first authority in the event of a peacetime disaster is the cognisant rural district, county or municipality. In case a disaster exceeds capacities of the local government or affects several districts, the next highest hierarchical authority ensures coordination.

If needed, a state can call for the assistance of police forces of other states or of personnel and facilities of other administrative authorities, of the Federal Police or the Armed Forces. Also, the Federal Agency for Technical Relief (THW) may be called.

At the national level first of all the Federal Ministry of the Interior (BMI), assisted by the Federal Office of Civil Protection and Disaster Assistance (BBK) and the German Federal Agency for Technical Relief (THW) are the core institutions responsible for crisis management.

The Federal Foreign Office (AA) plays a role in case of crises abroad, which affect German nationals or German interests. The AA is also the national contact point for requests on assistance from third countries. Contact point for requests from the EU Civil Protection Mechanism is the BMI.

In general, Civil Protection and disaster management in Germany is to a large degree based on the availability of people with an honorary post.

Annex 3: Overview of DRIVER D82.11+D83.11 Spain - Capabilities, Organisations, Policies, and Legislation (COPL) in crisis management and disaster response

Spain has 17 autonomous regions: Andalusia, Aragon, Asturias, Balearic Islands, Canary Islands, Cantabria, Castilla-La Mancha, Castilla y Leon, Catalonia, Valencian Community, Extremadura, Galicia, La Rioja, Madrid, Murcia, Navarra and Basque Country; and two autonomous cities: Melilla and Ceuta.

In Spain, civil protection is defined as the physical protection of the population and goods in cases of severe risk, public calamity, or extraordinary catastrophes in which the lives and physical integrity of the people are endangered. The national civil protection authorities are responsible for the overall coordination of emergencies.

Under law 2 of 21 May 1985, civil protection is a public service requiring the participation of the citizens, as well as the cooperation of the different administrations at the local, regional (provinces and autonomous regions) and state levels. Civil protection is meant to take necessary action in order to avoid, reduce or repair the potential effects on people, property and the environment, of situations of disaster or major collective risks. The structure of the Central Administration of Civil Protection is in the 2/85 Law on Civil Protection

In 2006, the Military Emergencies Unit was created by the Real Decreto 416/2006 (Royal Decree 416/2006) on April 11, 2006. The Military Emergencies Unit (Unidad Militar de Emergencias, UME) is a branch of the Spanish Armed Forces responsible for providing disaster relief throughout Spain mainly and abroad if required.

National crisis management & disaster response concept:

The civil protection structure coincides with the administrative structure. The Spanish system consists of three main components:

1. The Delegate Commission of the Government for Crisis Situations (CDGSC or the Crisis Cabinet);
2. The National Civil Emergency Planning Committee (NCEPC), an inter-ministerial support body; and
3. The Department for Civil Defence.

The Delegate Commission of the Government for Crisis Situations was established in 1986. It consists of the Prime Minister and the Deputy Prime Ministers. The task of the Crisis Cabinet is to direct and coordinate all actions related to the prevention, control and management of crises. Decision-making responsibilities lie with the Prime Minister.

The National Civil Emergency Planning Committee (CNPCE), an inter-ministerial support function to the Crisis Cabinet, is mainly concerned with tasks related to the provision and implementation of resources in situations of crisis or emergency. The CNPCE has a coordinating role in Spanish Civil Protection and sits at the top of Civil Defence's organisational structure. The Committee is composed of the Crisis Cabinet Secretary (President), the Director General for Defence Policy (First Vice President), the Director General for Civil Protection and Emergencies (Second Vice President) and the Under Director for Civil Preparedness (Secretary). Some of the other members are the Director of the Crisis Staff Department and the Committee President's Advisor on Defence and Security.

The Civil Protection structure at the state level starts at the Directorate General of Civil Protection and Emergencies (Dirección General de Protección Civil y Emergencias -DGPC), under the Minister of the Interior. The DGPC is the State administrative unit in charge of the preparedness and response in case of natural and technological disasters.

At the National Civil Protection System, the Military Emergency Unit (UME) plays a key role as a joint force, organized on a permanent basis, whose mission is to intervene anywhere in the national territory in the event of serious risk, catastrophe or public calamity.

Spain has bilateral agreements with Portugal, France, Morocco, Tunisia, Argentina, Mexico, Uruguay, and Ecuador.

Annex 4: Overview of DRIVER D82.11+D83.11 UK - Capabilities, Organisations, Policies, and Legislation (COPL) in crisis management and disaster response

Crisis management in the UK has grown and matured considerably over the last fifteen years, galvanised in part by the 9/11 terrorist attacks and 7 July 2005 London bombings which served to catapult the field up the political agenda.

The UK's approach to crisis management is founded on Integrated Emergency Management (IEM), a holistic approach to preventing and managing emergencies that entails six key steps: anticipation; assessment; prevention; preparation; response; and recovery.

IEM advocates a bottom-up approach, with operations managed and decisions made at the lowest appropriate level. Preparation, response and recovery should be undertaken as an extension of a local responders' normal day-to-day activities.

This principle underpins the Civil Contingencies Act 2004, which overhauled existing legislation to provide a single framework for civil protection. It divides local responders involved in crisis management into two categories. Category 1 organisations are "first responders" (emergency services, local authorities, NHS bodies etc.) and have substantial civil protection responsibilities including risk assessment, emergency planning, and warning and informing the public. Category 2 organisations are "co-operating bodies" (transport providers, utility companies etc.) that are involved in planning for and responding to emergencies that affect their sector.

Most emergencies in the UK are dealt with at local level, but if necessary the government's central response framework would be initiated. Cabinet Office Briefing Rooms (COBR) - comprised of ministers and senior officials from relevant UK government departments and agencies - would be activated to provide overall strategic planning. Overall crisis management is typically supervised by one Lead Government Department (LGD) which works closely with the Cabinet Office's Civil Contingencies Secretariat, the principal governmental authority responsible for coordinating crisis management.

Crisis management in the UK is of a civilian nature with military involvement sought only in extreme cases. Volunteer organisations play an important role in augmenting capabilities and are involved in Category 1 responder training exercises. There is minimal evidence of significant private sector involvement in crisis management in the UK, with ad hoc agreements signed as necessary when emergencies occur.

It is difficult to calculate the amount of money allocated for crisis management in the UK because budget issues are not centrally managed by the government. Funding streams are often diverse and there is significant variation in resources between counties. What is clear is that funding has increased since the 7 July 2005 London bombings. Local authorities are generally responsible for financing emergency preparedness, though may apply to the government for financial support in bearing the costs of emergency response and recovery.

It is uncommon for the UK to cooperate bilaterally with other countries; instead the UK participates in intergovernmental organisations and a limited number of multilateral frames of cooperation in

crisis management, such as the EU Civil Protection Mechanism. The UK rarely seeks help from other countries to manage internal emergencies, but is at the forefront of political initiatives in the EU context and is active in EU and NATO training and expert exchange programmes.

The Foreign and Commonwealth Office is responsible for managing the UK's relationship with other countries through its network of embassies and High Commissions, as well as the UK's overall relationship with international organisations such as the UN, NATO and the EU. However, the Civil Contingencies Secretariat is responsible for liaising with the civil emergency response and mutual aid systems of the EU and NATO. Government departments can also have bilateral relationships with specific international or multilateral institutions that will be used when appropriate.

Annex 5: Minutes of WP54 meeting held on 15.10.14 in Berlin

1. **Attendants:**

The following persons attended the meeting:

Name	Organization
Dave Bull	NARU
Martijn Boosman	Esemble
Marie Norrby	MSB
Josine Van de Ven	TNO
katherine Lamb	Oxfordshire Fire
Bruria Adini	BG University
Chaim Rafalowski	MDA
Itamar Laist	MDA
Maurice Sammels	Esemble
Name	Organization
Dave Bull	NARU
Martijn Boosman	Esemble
Marie Norrby	MSB
Josine Van de Ven	TNO
katherine Lamb	Oxfordshire Fire
Bruria Adini	BG University
Chaim Rafalowski	MDA
Itamar Laist	MDA
Maurice Sammels	Esemble

2. <u>Discussions:</u>

<u>Strategic decisions:</u>

- Differences in the concept of what is a "strategic decision" and who is a "strategic decision maker" were identified. These definitions will be fixed for the work in WP54 in the State of the Art deliverable (D51.2) of WP51.2.
- It was agreed that - Strategic decisions are decisions that have large impact (with regards to the number of persons, the economic aspect, reputation, public opinion, political – national and international implications), deal with competing values, in many cases has also negative impacts, and usually has impacts that will have effects over the longer term (many hours – days and weeks). A final working definition is to be formulated.
- The "strategic decision maker" varies greatly between member states. In Sweden only the political level is considered to be taking "strategic decisions" and their content is general aim and objectives with the budget allocations. All the other decisions are considered

"operational". This is not the case for the other countries represented in the workshop where both elected officials as well as senior officers at the response organizations take strategic decisions. A definition will be fixed for the work in WP54 in the State of the Art deliverable (D51.2) of WP51.2.

The decision processes:

- As "strategic decisions" are multi factorial by nature and have cross cutting effects, it is impossible to assess if the "right or wrong" decision have been taken by evaluating the results of the decision (many other factors, besides the decision taken impact the outcomes).
- It was agreed to use the decision processes as the key factor to be analyzed as a training concept. The "right decision" is considered as – "the decision taken by the right persons (decision makers), for the right persons (affected), for the right reasons, using the right information on the right time".

Tools:

- Several tools were presented and discussed, along with their possible use.
- It is clear that in order to engage the participants, innovative tools should be used. One tool for evaluation of the performance of the target audience was identified. This tool ("Effective Command") is not owned by a DRIVER partner. It must be explored if this tool owner can become a DRIVER partner via the open calls available within the DRIVER project, under what conditions. This tool is also useful for SP2 both for training sessions, and (joint/final) experiments.

Other Issues:

- The partners agreed to the building block approach of the training programme on "strategic decision making". A modular approach will be taken in order to allow maximum flexibility in the local adaptation. Several existing training programmes, with the relevant theoretical background supporting them, were identified. These training programmes will be researched, their popularity with the target audience will be established. Possibility to use the trainings in other EU countries must be evaluated (Task 54.2)
- Time availability and the willingness to participate of the target audience in training are key considerations in the planning of the training modules, exercises for Task 54.2.
- Some of the experts that attended the SP5 workshop, stayed and attended the kick-off. Their information was very helpful in identifying useful trainings that are already available for high-level decision-makers. These programmes can be useful as building blocks for the work in WP54.