



Driving Innovation in Crisis Management
for European Resilience



TRIAL #1

MASSIVE RELEASE OF CHEMICAL AGENT

Warsaw, Poland - May 2018

Research Operational needs
Lessons learned
Shared Understanding
Trials Guidance Methodology
Knowledge base
Reference implementation Tools Pragmatic
European Test-bed
Crisis Virtually connected facilities
Unpredictability
Management
Challenges Innovative solutions
Cooperation Experience
Innovation Disasters
Crisis Labs
Analysis Trial-driven development
Portfolio of Solutions
Practitioners

DRIVER+

IN A NUTSHELL

WHAT IS DRIVER+?

A EUROPEAN PROJECT TO DRIVE INNOVATION IN CRISIS MANAGEMENT

The scale and pace of crises pose enormous challenges for the Crisis Management (CM) sector, with new threats emerging all the time. An already complex field must also strive to integrate new technologies and methods, cope with a rapidly changing infrastructure, understand evolving risks, be effective across cultural, administrative and national boundaries and engage with populations to enhance their resilience. Innovation is therefore critical but will only be successful if it is relevant and accessible to practitioners and operators. Many crises involve interfacing diverse CM systems and solutions. Major crises can also frequently involve more than one country or region, which may have differing CM infrastructures and cultures. It is also highly likely that this will necessitate interfacing different systems and combining different solutions. CM innovation must therefore be capable of meeting these multifaceted challenges and delivering solutions that are modular, flexible and adaptable.

These solutions must be tested and validated in realistic environments; they must be evaluated to assess their true benefits and for their overall suitability, before being adopted by end-users. Failure to meet these needs could result in less than perfect solutions being introduced or in the increased costs of CM capability development, due to the imperfect management of ever more complex crises.

In May 2014, dedicated practitioners' organisations, research institutes, industries and SMEs teamed up to support the European Union to tackle this issue. Until April 2020 the broad aim of the DRIVER+ project, funded under the European Union's 7th Framework Programme, will be to improve the way capability development and innovation management are addressed, by assessing and delivering solutions that can be used, and combined, to address different types of large-scale crises.



A pan-European Test-bed

To develop a pan-European Test-bed for Crisis Management capability development enabling practitioners to create a space in which stakeholders can collaborate in testing and evaluating tools, processes or organisational solutions.



A Portfolio of Solutions

To set up a Portfolio of Solutions in the form of a database-driven website documenting several Crisis Management solutions, open to any external organisations willing to share data and experiences of solutions.



A shared understanding

To foster a shared understanding in Crisis Management across Europe, through the enhancement of the cooperation framework.

WHAT IS IN THIS BOOKLET?

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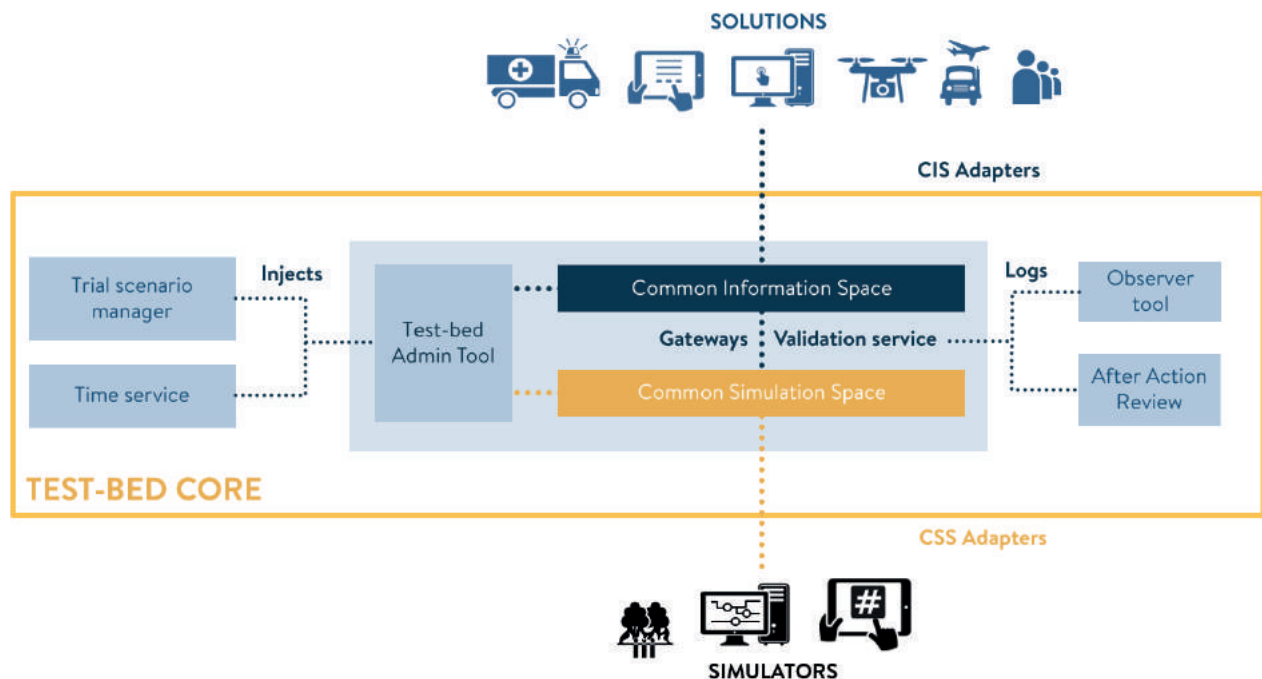
TEST-BED

A PAN-EUROPEAN INFRASTRUCTURE

WHY A TEST-BED? TO CREATE A SPACE FOR TRIALLING

For DRIVER+, an approach based on Trials is a prerequisite for making improvements and avoiding potentially dangerous mistakes in Crisis Management innovation. This approach itself is a very difficult activity. It requires significant resources and becomes more effective the stronger that the experience and knowledge base it builds upon is. DRIVER+ will create a unique opportunity for a transformative change in this regard, developing a coherent infrastructure for trialling. This will open up the pooling and sharing of resources across Europe, allowing experience from trialling in different contexts to cross-fertilise: the DRIVER+ pan-European Test-bed.

The Test-bed will provide an arena of virtually connected facilities and crisis labs. It will deliver a pragmatic step-by-step guidance to conducting trials, a reference implementation for all DRIVER+ Trials and general guidance and technical infrastructure to support the Trials. It will also offer a demonstration infrastructure, where stakeholders can collaborate in trialling and evaluating new tools, processes or organisational solutions. It will also provide the technological infrastructure, the necessary supporting methodology, adequate support tools and last but not least, strong communities needed for effective and successful trial-driven development.



Overview of the technical components of the Test-bed

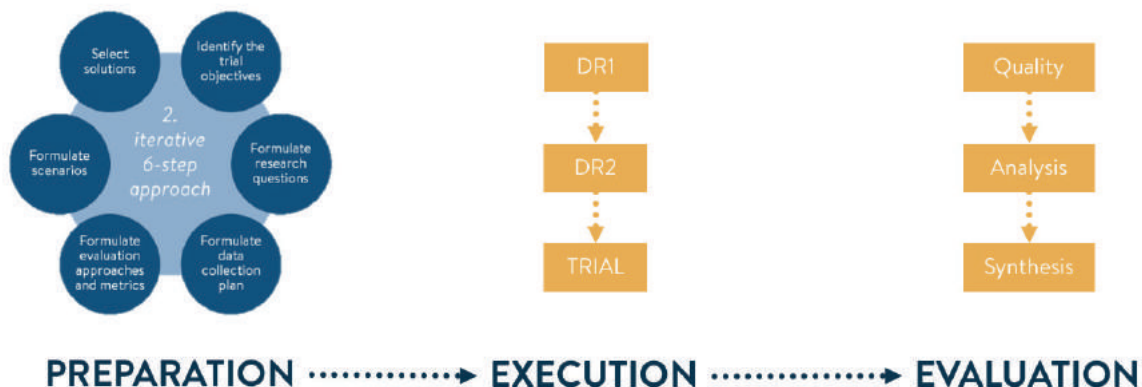
TRIAL GUIDANCE METHODOLOGY

A SET OF GUIDELINES AND BEST PRACTICES TO SUPPORT PRACTITIONERS

The Trial Guidance Methodology (TGM) is designed for high-level crisis managers as it facilitates the investigation of innovative capabilities, leading to improved crisis management operations. It focuses on a step-by-step approach to carrying out Trials in a pragmatic, yet sound and ethical, way. It addresses the nature of the operational context and optimum ways of working. Integrating the perspectives and expertise from different types of stakeholders in the design of a Trial is essential to stimulating innovation and true capability development within the Crisis Management domain.

The methodology consists of three phases: preparation, execution and evaluation. The preparation phase results in a Trial design with multiple elements that are captured in the Trial Action Plan.

The main outcome – the design of the Trial methodology – will be applied and executed in the second phase. The Trial committee ensures the feasibility of realising all the decisions taken in the first phase. Three main elements of each Trial are: the specific adaption of the Test-bed in accordance with the Trial design; the finalisation and simulation of the identified scenario within the DRIVER+ Test-bed; the ability to run the evaluation approach covering the three DRIVER+ performance measurement dimensions (CM, Trial, solutions). The last step of the execution phase is the actual Trial run: the defined scenario is simulated; the potential innovative solutions are applied and the relevant data is collected. In addition to the data collected during the Trial, additional feedback from external stakeholders (participating actively as Trial actors or passively as observers) is gathered after the main event.



Overview of the Trial Guidance Methodology: Phases, Tasks and Results

PORTFOLIO OF SOLUTIONS

SHARING INFORMATION ABOUT INNOVATION

WHAT ARE WE LOOKING FOR?

CRISIS MANAGEMENT SOLUTIONS

A solution is a building block that contributes to a Crisis Management function. Solutions can be technologies, tools, methods, concepts, or recommendations that regard potential technical, organisational, procedural, legal, policy, societal, or ethical improvements to the European Crisis Management legacy. It may be a new piece of software or training approach, a new item of equipment or a new way of collaborating.

In the context of the DRIVER+ Portfolio of Solution, a solution is presented as a coherent set of tools and methods to use them which can be used “as is” in the trials and which addresses specific needs of the stakeholders by providing matching functionality.



WHY A PORTFOLIO OF SOLUTIONS?

THE RATIONALE

The scale and pace of crises pose enormous challenges for the Crisis Management sector, with new threats emerging all the time. An already complex field must also strive to integrate new technologies and methods, cope with a rapidly changing infrastructure, understand evolving risks, be effective across cultural, administrative and national boundaries and engage with populations to enhance their resilience. Innovation will be successful if it is relevant and accessible to practitioners and operators. Many crises involve interfacing diverse Crisis Management systems and solutions. Major crises can also frequently involve more than one country or region, which may have differing Crisis Management infrastructures and cultures.

It is also highly likely that this will necessitate interfacing different systems and combining different solutions. Crisis Management innovation must therefore be capable of meeting these multifaceted challenges and delivering solutions that are modular, flexible and adaptable.

Practitioners need to know that any new solution has been tried and tested and proven to be valuable in a realistic and challenging environment. These solutions must be tested, validated and evaluated to assess their true benefits and for their overall suitability, before being adopted by end-users.

HOW IS THE PORTFOLIO OF SOLUTIONS ORGANISED?

A DATABASE-DRIVEN WEBSITE TO DOCUMENT CRISIS MANAGEMENT SOLUTIONS

The Portfolio of Solutions (PoS) is a database driven website describing the capabilities of all the available DRIVER+ solutions. It includes information on the experiences with a solution (i.e. results and outcomes of Trials), but also the needs it addresses, the type of practitioner organisations that have used it, the regulatory conditions that apply, the societal impact considerations, a glossary, and the design of the trials. It will be extended with third-party solutions when required by the Trials, allowing for the introduction of solutions already used by practitioners or relevant to the Crisis Management field. Ultimately, it will be opened up for any external organisation to share data and experiences on solutions, which should in turn ease the successful implementation and usage of solutions by other practitioners.

In the DRIVER+ context, a PoS has distinctive meanings:

It includes a set of building blocks (DRIVER+ Solutions) that can be used in trials and beyond. These solutions are adapted to the DRIVER+ Test-bed and the Trials. This includes the integration of the tools in the Test-bed, the integration testing, resolving of the technical issues and the documentation of the solutions in a trial-independent manner.

The PoS is a database driven website aiming at documenting all the available DRIVER+ Solutions. It will contain many of the information that is being gathered while applying the Trial Guidance Methodology.

The results of the assessment of the solutions and outcomes of the Trials will be stored and made accessible via the PoS database, downloadable in PDF format.



TRIALS

TOWARDS INNOVATIVE SOLUTIONS

WHY ORGANISE TRIALS?

ASSESSING AND EVALUATING SOLUTIONS IN REALISTIC ENVIRONMENTS

The DRIVER+ approach takes as a starting point the fact that there is a strong innovation momentum present in the Crisis Management community. At the same time, there is inertia to change, which can prevent this momentum from resulting in sustainable improvement. This points to the need for a better evidence base for Crisis Management capability investment decisions.



Innovation is critical but will only be successful if it is relevant and accessible to practitioners and operators. Many crises involve interfacing diverse Crisis Management systems and solutions. Major crises can also frequently involve more than one country or region, which may have differing Crisis Management infrastructures and cultures. It is also highly likely that this will necessitate interfacing different systems and combining different solutions.

Crisis Management innovation must therefore be capable of meeting these multifaceted challenges and delivering solutions that are modular, flexible and adaptable.



These solutions must be tested and validated in realistic environments; they must be evaluated to assess their true benefits and for their overall suitability, before being adopted by end-users.

A series of four Trials and a Final Demonstration will be conducted. The aim is to investigate innovative solutions under simulated crisis conditions, by gradually adapting them to operational constraints, as well as creating acceptance among users through their active involvement and by providing evidence to decision makers that they are cost-effective.



IDENTIFYING THE GAPS TO BE BRIDGED

ASSESSING AND IMPROVING

DRIVER+ seeks to improve the way capability development and innovation management are tackled, by testing and evaluating solutions that address the operational needs of practitioners dealing with Crisis Management (CM). Therefore, it is of utmost importance for the project to start by understanding what are the main problems that CM practitioners are currently facing and build upcoming DRIVER+ activities on this basis, to ensure that the project results corresponds to the practitioners needs.



In January 2018, DRIVER+ has drawn a list of 21 CM gaps organised in five CM functional domains: decision support; information sharing and coordination; engaging the population; resource planning and logistics, casualty management. Starting first by identifying and describing the CM capability gaps faced by the end-users involved in the project, this initial set of gaps was then challenged and enriched through an in-depth analysis of the available literature in this field and during an assessment and validation workshop involving the wider CM community.

The four Trials to be conducted during the project duration will therefore focus on these capability gaps, i.e. “the difference between a current capability and the capability considered necessary for the adequate performance of one or more disaster management tasks”, as identified by the CM practitioners.

HOW DO WE PICK THE SOLUTIONS TO BE TESTED?

DRIVER+ CALLS FOR APPLICATION

For each of the Trials, a Call for Application is launched to identify innovative solutions that address the identified gaps and which will help the emergency services manage major crisis more effectively and more efficiently. Thereby, both internal and external applicants interested to submit an application are invited to answer the same set of questions, which subsequently ensures a fair and equitable comparison. On the basis of these answers, the solutions to be tested are selected.

| | |
|--------------------|---|
| Mission | How does the solution contribute to crisis management? |
| Integration | How is it integrated into the existing crisis management operations? |
| Readiness | How mature is the solution and has it been tested or proved? |
| Motivation | How does the solution address the problems of practitioners? |
| References | Which references on the provider's experience and solution application exist? |
| Resources | Which resources are needed to operate the solution? |
| Know-How | What expertise is needed to operate the solution? |
| Platform | On which platforms (e.g. technical/organizational) is the solution available? |
| Technique | On which technique (or technology if applicable) is the solution based on? |
| Investment | Which investments are necessary to deploy the solution? |

Trials selection criteria

IN A NUTSHELL

WHAT? WHY?

DRIVER+ Trial 1 sets out to demonstrate the potential interest of a more integrated high-level Crisis Management system in the European Union, in terms of improved situation assessment & awareness, coordination, resource pooling & sharing and cross-border cooperation. The Trial itself provides a practical demonstration of the potential of a Common Operational Picture (COP) approach at the European level.

The aim of this Trial is to simulate coordinated actions at local, regional, national and international level, with the purpose of counteracting the effects of a major crisis and testing the selected CM solutions in a realistic environment. It will also evaluate the DRIVER+ Test-bed and methodology that has been developed. The event will be held over four days and will cover various exercises.

ORGANISATION

WHO? WHERE?

Trial #1 is organised at the Polish Main School of Fire Service (SGSP), which is a state services' national technical university, supervised by the Minister of Interior and Administration. SGSP educates crises and risk managers, security experts, fire engineers, environment protection experts, as well as fire officers at Bachelor/Engineer, Master and PhD level. Besides being a university, it is also an operational unit of the State Fire Service, which runs its own professional fire station and forms national rescue reserves ready to be deployed countrywide by General Director for Civil Protection in the case of a major disaster.



The Trial is organised around both tabletop and field exercises, which will be held both at the SGSP headquarters and SGSP's Field Training and Rescue Innovation Base.

Gap 1: Limitations in the ability to model real-time (response phase) or pre-event (preparedness phase) dynamics of the chemical and radiological threat and visualisation of obtained results in a form that can be used directly by the Head of the Rescue Operations.

Gap 2: Lack of a Common Operational Picture (COP) environment to integrate data sources and calculation of results from different models crucial for decision-making process from the perspective of Head of Rescue Operation.

Gap 3: Limitations in the cross vulnerabilities (people, property, environment) assessment to optimise task prioritisation and decision-making.

Gap 4: Insufficiencies in terms of resource management (human resources, hardware, etc.) during multi-stakeholder long-term rescue operations.

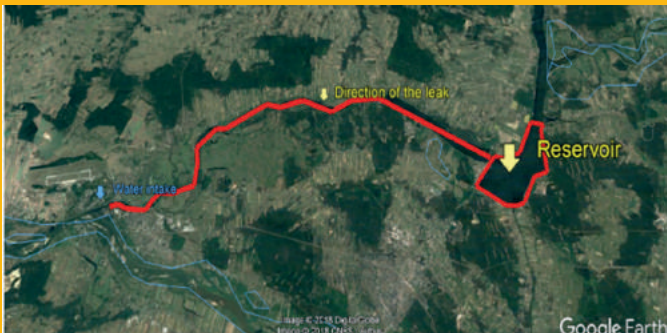
Gap 5: Lack of effective public warning system with the ability to verify whether the information has reached the recipient.

List of selected and validated gaps

TRIAL SCENARIO

MASSIVE RELEASE OF CHEMICAL AGENT

A maintenance error causes a massive release of a chemical agent. A turncock failure results in the pump, disposing chemical waste into the reservoir, cannot be switched off. Consequently, there is a rapid inflow of a significant amount of a liquid, mud-like, toxic chemical into the retention reservoir. The reservoir's dikes are weakened after prolonged rainfall and, under great pressure, they break.



This releases approximately 2,500,000 cubic metres of toxic fluid as a massive wave that floods the surrounding area in a matter of minutes. Several village and towns are in the path of the spill – initially 15 people die and 200 people suffer from severe toxic injuries. The eventual 30 square kilometres of affected land includes a river that crosses the border into neighbouring countries.



This river is used as a water intake for various industries, agriculture and fresh water companies, resulting in destroyed crops, toxic injuries to livestock, a disturbance in the water supply, resulting in immediate water shortage.

The incident requires the deployment of evacuation forces with a large number of people injured by the toxic chemical.



Volume of the retention reservoir:
50,000,000 m³

Content of the reservoir before the leakage:
30,000,000 m³

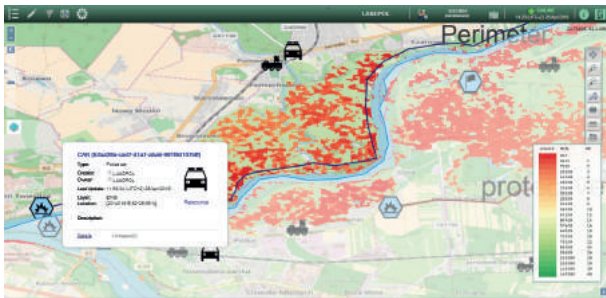
Chemical substance:

“Red sludge” - a dangerous, very corrosive waste containing mainly Silica residues, oxides and hydroxides: iron (hence the red colour), calcium, magnesium, and other compounds contained in bauxite (e.g. titanium compounds)

In total 25 solutions have been received to the Call for Applications for Trial #1. The consolidation of reviews led to a scoring of the solutions regarding their general Crisis Management support and their applicability in the Trial scenario. 13 solutions have been pre-selected and presented during a Workshop held in Warsaw on 26th and 27th February 2018. Three solutions have been selected to be tested in Trial #1, they are presented hereafter.

ABOUT THE SOLUTION IN A NUTSHELL

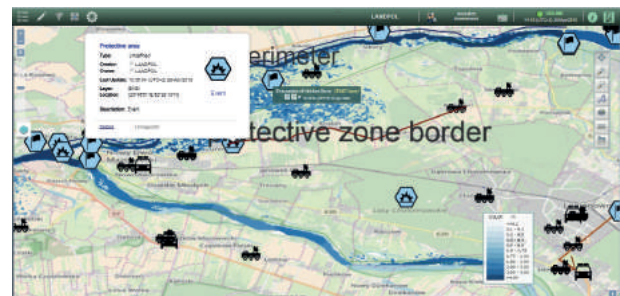
SOCRATES Operation Center (OC) sets up a Crisis Management network whose objective is twofold. It aims to improve the shared situation awareness amongst the different bodies involved in the management of a crisis events, and to help the practitioners to make well-informed decision by providing and supporting the real time exchange of information about the operational situation.



It provides a web-based tool for generating a Common Operating Picture (COP) in Crisis Management, presenting functions of monitoring assets, allocating tasks and requests for support assets and a shared situational awareness solution, which enabling the reporting and tracking of events and inter-organisational tasking and resource management.

It brings support to both vertical (local, regional, national and/or international levels of command) and horizontal (inter-agency and cross-border) coordination and cooperation. Information on events and their associated missions are displayed in a GIS (Geographic Information System).

The solution allows crisis managers to determine the magnitude of the event, assessing its impact and potential consequences as well as evaluating the needs. They are also able to access real-time information about the availability and location of resources. SOCRATES OC also provides snapshots to operational commanders of what is being taken and by/with which resources. This enables for them to establish action plans and determine further operational needs.



ABOUT THE PROVIDER WHO ARE THEY?



GMV (Spain) is a privately-owned technology business group founded in 1984. Trading on a worldwide scale in the following sectors: Aerospace, Defence and Security, Transport, Telecommunications and IT, GMV has a revenue of more than 130 million Euros and more than 1,500 employees. The company's growth strategy is based on continual innovation; 10% of its turnover is ploughed back into R&D. GMV has achieved the level 5 of the CMMI (Capability Maturity Model Integration), the world's most prestigious business-process improvement model and holds several international patents and is currently the world's top supplier of Ground Control System for commercial telecommunication operators.

GAPS ADDRESSED

WHAT DOES THE SOLUTION BRIDGE?

- Limitations in the cross vulnerabilities (people, property, environment) assessment to optimise task prioritisation and decision making.
- Lack of a «common operational picture» environment to integrate data sources and calculation results from different models, crucial for the decision-making process from the perspective of the incident commander.
- Insufficiencies in terms of resource management (humans, resources, hardware, etc.) during multi-stakeholder long-term response operations.

CRISIS MANAGEMENT FUNCTIONS

WHAT DOES IT ADDRESS?

- Conduct coordinated tasking and resource management: The solution allows the incident commander to register existing resources, update their status and position, assign resources to missions, assign tasks to other nodes or request details of their available resources. This information can then be shared with all nodes in the Crisis Management network.
- Maintain shared situational awareness: The solution is able to gather (collect), store (sustain) and share (disseminate) operational information about the crisis situation (regarding crisis events, missions and resources) and exchange it with other nodes in the Crisis Management network.
- Support C3 decision making: The solution supports crisis managers and commanders in decision making by sustaining and sharing the COP with relevant information about crisis events, on-going missions, available (and in use) resources, etc.

PLANNED ACTIVITIES

DURING THE TRIAL

- Conducting refresher training for practitioners
- Setting up and integrating the solution with the DRIVER+ Test-bed
- Physically handling the solution based on practitioners' decisions/orders
- Supporting practitioners and other solution owners in their interaction with Socrates OC
- Providing feedback to the DRIVER+ Test-bed
- Evaluating solution

TECHNOLOGY READINESS LEVEL

SOLUTION TECHNOLOGY MATURITY

- TRL 8 - Navigation, Maritime and Border Surveillance domain
- TRL 6 - Crisis Management domain

ULTIMATE GOAL

SOLUTION MAIN OBJECTIVE

The aim is to have SOCRATES OC as a focal point for other solutions and to display their information in COP. This allows SOCRATES OC operators to create events and missions and to assign and/or request resources needed to perform Crisis Management tasking and track their activities.

ABOUT THE SOLUTION IN A NUTSHELL

3Di is a cloud-based versatile water management instrument that enables flood forecasting and risk mapping. 3Di models are fast, accurate and visual. 3Di results present flooding locations, water depths, arrival times and damages in high detail. Moreover, flood mitigation measures can be modelled for their effectiveness. Experts and decision-makers can interact with the model to simulate dike breaches, rain events and storm surges. The fact that users can create different scenario's in combination with mitigation measures makes it the go-to instrument for hydrology experts, crisis managers and policy makers working for water authorities and cities around the world.



3Di waterbeheer

What does 3Di provide?

The solution offers a complete package to model, simulate and analyse floods. The use-cases are: Flood risk assessments on a detail of 0.5m2; Flood early warning based on real-time measurements; Testing effectiveness of flood mitigation measures; Cost-benefit analysis supporting flood resilient strategies.



In practice, 3Di provides a cloud-based, interactive modelling on touch table, iPad and PC as well as an online documentation and training with fast computation times and a user-friendly interface which is ready-to-use. Request a demo on www.3di.nu

ABOUT THE PROVIDER WHO ARE THEY?

Nelen & Schuurmans is a water management consultancy & IT company. Founded in 1998 the company has grown to be a multidisciplinary team of over 70 highly educated water management and programming experts. Nelen & Schuurmans operates in the private as well as public sectors across the globe.

Nelen & Schuurmans



GAPS ADDRESSED

WHAT DOES THE SOLUTION BRIDGE?

- Lack of knowledge on area for potential flood hazard/chemical spill sites (preparedness phase), limitations on forecasting of flood location and depth (response phase) and water travel time identification.
- Lack of knowledge on routes available for normal and emergency vehicles at specified times after start of flood event (not addressed directly, only after postprocessing).

CRISIS MANAGEMENT FUNCTIONS

WHAT DOES IT ADDRESS?

- Mitigation of effects through identification of vulnerabilities: The model can predict the extent and depth of the flooding/chemical spill, and thus with some postprocessing also the vulnerable roads (i.e. inaccessible to normal and/or calamity traffic), also across borders, and thereby sites with high priority for evacuation.
- Raise awareness and anticipate to support decision makers with protection and response measures: 3Di combines 'current operational status' with consequence analysis to build a real-time geospatial framework in support of effective and timely decision-making.
- Communication between stakeholders for shared situational awareness: 3Di provides an intuitive and interactive framework which shows the extent of the flooding/chemical spill, including water depths and arrival times, which can assist in clear communication between stakeholders.
- Support C3 decision making: The solution supports communication among stakeholders because of the interactive and intuitive model that helps visualise extent of hazard and provides support in decision making for evacuation sites and routes.

PLANNED ACTIVITIES

DURING THE TRIAL

- Using a realistic, ready-to-use and tailor-made 3Di-model
- Calculating different flood scenarios
- Providing training for use of 3Di-model and results
- Integrating with DRIVER+ Test bed
- Adapting 3Di-model with latest information
- Assisting with the setup of flood scenarios

TECHNOLOGY READINESS LEVEL

SOLUTION TECHNOLOGY MATURITY

- TRL 9 – Water management domain

ULTIMATE GOAL

SOLUTION MAIN OBJECTIVE

The goal of 3Di in this Trial is to inform Crisis Managers about the forecasted flood situation to simulate possible consequences and allow adequate responses.

DRONE RAPID MAPPING

HEXAGON

ABOUT THE SOLUTION IN A NUTSHELL

Drone Rapid Mapping enables an incident or a crisis area to be mapped quickly using cloud computing. A drone operator conducts a flight over an area of interest and acquires imagery (using the on-board camera) in line with the standard operational procedures. Data is uploaded into the cloud and automatically processed.

What does Drone Rapid Mapping provide?

A very fast generation of ortophotomaps based on imagery acquired by any drone (RPAS) available to rescue or crisis management actors. The resulting maps can be viewed and analysed in the dedicated geoportal or any GIS environment already used by Crisis Management institutions.

A 3D terrain model, that can be viewed in any standard programme. It provides the practitioners with a better and more intuitive understanding of the area of interest.



The efficiency of rapid mapping requires an Internet access with sufficient bandwidth. The mapping of 10ha with 2cm pixel and LTE Internet access requires 26 minutes. This period covers all activities: mission request (crisis manager's briefing for a drone operator), flight preparation, conduct of the flight, landing, data retrieval and upload, all calculations, preparation of geoportal content. The generation of the high-quality 3D model requires additional 20+ minutes.

ABOUT THE PROVIDER WHO ARE THEY?

Hexagon Safety & Infrastructure provides mission-critical and business-critical solutions to governments and service providers. A global leader, proven innovator, and trusted partner, our software and industry expertise help improve the lives of millions of people through safer communities, better public services, and more reliable infrastructure. Visit hexagonsafetyinfrastructure.com. Hexagon Safety & Infrastructure is part of Hexagon (Nasdaq Stockholm: HEXAB; hexagon.com) a leading global provider of information technologies that drive quality and productivity improvements across geospatial and industrial enterprise applications.



GAPS ADDRESSED

WHAT DOES THE SOLUTION BRIDGE?

- Limitations in the ability to model real-time (response phase) or pre-event (preparedness phase) dynamics of the chemical and radiological threat and visualization of obtained results in a form that can be used directly by the incident commander).
- Lack of a Common Operational Picture environment integration of data sources and calculation of results from different models, which are crucial for the decision-making process from the perspective of the incident commander.
- Insufficiencies in terms of resource management (humans, resources, hardware, etc.) during multi-stakeholder long-term response operations.

CRISIS MANAGEMENT FUNCTIONS

WHAT DOES IT ADDRESS?

- Conduct flights to collect information & assess damage, needs and Maintain a shared situational awareness: The solution provides an up-to-date mosaic of hi-resolution (1pix=1cm) imagery in less than 30 minutes from drone start, available for every level of Crisis Management and accessible everywhere.
- Manage environmental recovery: The solution compares already existing maps and ad hoc generated orthophoto and detailed 3D model of the terrain. This facilitates the planning of decontamination and clean-up actions eye-witnessing the affected area from the safe distance of the Command Post.
- Monitor area & Provide situational awareness: The solution updates any COPs and geoportals anywhere on the world easily and quickly.
- Provide information to media, decision makers and public: Drone Rapid Mapping provides key information in a clear and easily understood way by displaying online 3D models of affected areas (including displaying the Response actions).

PLANNED ACTIVITIES

DURING THE TRIAL

- Providing some instruction materials for UAV operators in Polish
- Conducting refresher training and demonstration for practitioners in two hours
- Conducting flight missions
- Processing the data into: map layers and 3D model
- Providing feedback to the DRIVER+ Test-bed
- Evaluating solution

TECHNOLOGY READINESS LEVEL

SOLUTION TECHNOLOGY MATURITY

- TRL 7 - Initial piloting

ULTIMATE GOAL

SOLUTION MAIN OBJECTIVE

Provide ortophoto products, which can be easily viewed on a geoportal as a Web Map Services. Giving users a better understanding of the situation in the field and providing the required measurements, 3D models allow users to provide extra viewshed analysis so that they can better plan the locations of teams and assets. To sum up, Drone Rapid Mapping significantly supports the decision-making process.

FUTURE

WHAT WILL HAPPEN AFTER TRIAL #1?

Trial #1 will be the kick-off to a series of further Trials and various events. Three more Trials will be organised to operationalise and test Crisis Management solutions. They will all incorporate the lessons learnt and outcomes of Trial #1.

Trial #2

The second DRIVER+ Trial will be organised on October 2018 in Valabre, France. The objective of this Trial is to improve cooperation and coordination between different organisations, or agencies within and across different countries using innovative solutions for large scale and complex crisis. The scenario includes multiple incidents with cross-border dimension occurring on several sites. The solutions to be operationalised and tested have already been selected.

Trial #3

It will be organised on May 2019 in The Netherlands. Its main objective is to find solutions for shortcomings in managing and planning large scale evacuation of the population in urban areas and to find solutions in managing the side effects.

Trial #4

The forth DRIVER+ Trial will be held on September 2019 in Austria. It will evaluate a selection of tools contributing to international or national Crisis Management processes, especially in the fields of: volunteer management; standardisation for representation of information; flexibility and ability to interoperate; and improvement of the vertical workflow (up and down) of information.

Call for application for Trial #3: Mark your agenda!

The third Call for application will be launched in June. If you would like to share your innovations with the Crisis Management community and are developing and deploying socio-technical solutions for first responders, consult our website regularly to take part in this call.



The 3rd edition of the Innovation for Crisis Management (I4CM) event

The next edition of the I4CM will be held on 3rd-4th September 2018 in Warsaw, Poland. This event will contribute towards building a shared understanding in Crisis Management across Europe. With the focus on key Crisis Management topics, I4CM will address issues of common interest, develop synergies between initiatives, and to discuss the research roadmap for Horizon 2020 and beyond. This event will also be the occasion to present the results of Trial #1. More information about this event can be found on DRIVER+ website. www.driver-project.eu/events-2/i4cm/

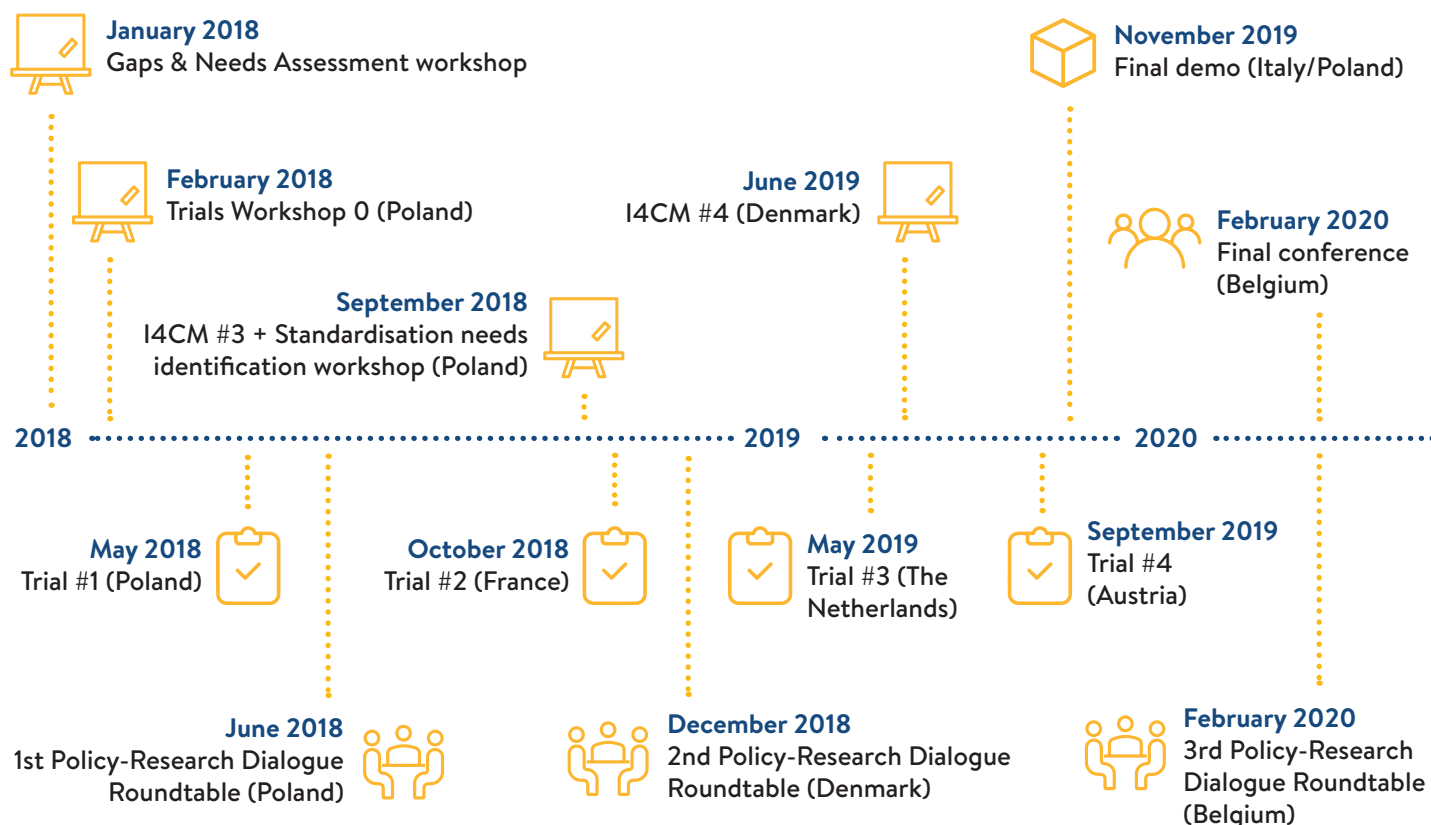
DRIVER+ External cooperation platforms

DRIVER+ follows an open and inclusive approach and invests significant efforts for involving external stakeholders in the project's activities through concrete external cooperation actions. The consortium seeks to closely work with innovative solution providers, interested and concerned practitioners that may benefit from the results of the project. To this end, two external cooperation platforms have been created: DRIVER+ External cooperation platform for Practitioners and DRIVER+ External cooperation platform for Solutions Providers. These platforms are supported by an online tool: the Community Management Tool (CMT). This is the online meeting place for the platform members to interact and share information, experiences and best practices. You will find more information on DRIVER+ website. www.driver-project.eu/collaborate-with-us/external-cooperation-platforms/

LET US HEAR YOUR VOICE

CONTRIBUTE TO INNOVATION IN CRISIS MANAGEMENT

Are you a Crisis Management practitioner or solution provider? Are you a policy-maker impacted by Crisis Management issues? Are you involved in a related project or initiative? Your participation in DRIVER+ activities is important to us and will help us to align with and to follow-up on relevant policies, challenges, gaps and community needs faced within the wide spectrum of thematic areas dealing with Crisis Management. To ensure that our activities are conducted taking into account your expertise and the technological state-of-the-art, we warmly invite you to take part in DRIVER+.



CONTACT US NOW!
DRIVER-PROJECT.EU

More information about the project - coordination@projectdriver.eu
Interested in collaborating with us? - cooperation@projectdriver.eu
Communication and media contact - communication@projectdriver.eu



Research Operational needs
Lessons learned
Shared Understanding
Trials Guidance Methodology
Knowledge base
Reference implementation Tools Pragmatic
European Test-bed
Crisis Virtually connected facilities
Unpredictability
Management
Challenges Innovative solutions
Cooperation Experience
Innovation Disasters
Crisis Labs
Analysis Trial-driven development
Portfolio of Solutions
Practitioners

