IN-PREP

"An INtegrated next generation PREParedness programme for improving effective inter-organisational response capacity in complex environments of disasters and causes of crises"

D2.5 Workshop Proceedings

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Executive Summary

Europe has become increasingly vulnerable to transboundary crises and disasters. These crises propagate across the EU's complex systems and tightly integrated infrastructures and pose immense challenges to Member State authorities, which are forced to collaborate across regional and national borders, and across policy and system boundaries. Planning and preparedness for these large-scale disasters and complex crises are thus essential. This requires an intelligent, multi-faceted, systematic and coordinated approach, which is to be supported by state of the art technologies through the identification of all the core tasks and factors (decision making, coordination, communication, etc.), that facilitate a crisis response .

IN-PREP aims to develop an integrated programme, capitalising on integrating novel technology tools to support transboundary preparedness activities and to interlink a wide range of stakeholders for a truly transboundary and collaborative response. IN-PREP helps to improve transboundary response planning, offering a novel and holistic approach that makes extensive use of situation awareness, decision support, scenario–building, vulnerability assessment and inter-coordination capabilities.

This report presents a description of the IN-PREP End User Workshop #1 held in Leiden, the Netherlands, on the 23rd and 24th of November 2017, and of the End User Workshop #2 held in Berlin, Germany, on the 21st and 22nd of February 2018. These workshops were dedicated to identifying the End User Requirements (EURs), which will be reflected in *D2.6, entitled "User Requirements"*. The latter will remain a living document as it will be updated throughout the project and will form the base for the definition of IN-PREP technical specifications.

The first workshop focused mainly on early identification of End User Requirements. The main outcome was the identification of the six steps to be taken in training and response planning through the integrated platform. All the feedback obtained from the first workshop was discussed and validated in Workshop #2 towards the refinement of the end user requirements and the consolidation of the final version. Additionally, the second workshop was used for ethics and privacy impact assessment discussion, and for developing a set of risk criteria against which to assess, analyse, map and therefore minimise and avoid project risks.

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Glossary of terms and abbreviations used

Abbreviation / Term	Description
C2	Command and Control system
CPLAN	Crisisplan
CM	Crisis Management
CNVVF	Italian National Fire Corps
COP	Common Operational Picture
CPM	Civil Protection Mechanism
DCC	Department of Climate Change
DG ECHO	Directorate-General European Civil Protection and Humanitarians Aid Operations
EPIA	Ethical and Privacy Impact Assessment
EUR	End User Requirement
FhG	Fraunhofer International
GA	Grant Agreement
GHOR	Dutch ambulance services
GIS	Geographic information system
GPS	Global Positioning System
IA	Innovation Action
IT	Information Technology
JESIP	Joint Emergency Services Interoperability Principles
LCMS	National Crisis Management System of the Netherlands
LEAs	Law Enforcement Agencies
MRPP	Mixed-Reality Preparedness Platform
NETGSS	A simulator for crisis training developed in Sweden
SOP	Standard Operating Procedures
TETRA	Terrestrial Trunked Radio
TRI	Trilateral Research
USAR	Urban Search and Rescue team
VESZ	Smart phone app with warning alerts

1 Introduction

1.1 Addressing the IN-PREP Description of Action

IN-PREP Grant Agreement (GA) requirements	Section(s) of present deliverable addressing IN-PREP GA	Description
Task 2.2: "During the interactive workshop (organised within T2.4) results will be discussed with the consortium and end users to develop a set of risk criteria against which to assess, analyse and map and therefore minimise / avoid project risks"	Chapter 6 and 7, together with Annex IV.	In Workshop #2, criteria for assessing project risks were discussed. Brief outcomes can be found within these chapters. The methodology and results of these discussions will be published in D2.2 "Legal, ethical and privacy impact assessment report".
Task 2.4: "Two workshops will be held (…) to identify user requirements: the former will aim to establish a draft list of requirements, validated in the latter workshop"	Chapter 3, 4 and 6 describe the workshops' goals and organisation.	The workshops were held according to the aims of task 2.4. The way that workshops were organized to achieve this can be read in these chapters. All user requirements identified following workshop #1 were shared and validated with participants in workshop #2 by means of a plenary discussion accompanied by a presentation listing the End User Requirements (EURs).
Task 2.4: "The feedback obtained at the second user workshop will be employed to refine the user requirements and consolidate a final version."	Chapter 7.1 and 7.2 describe the initial EURs validation process	In D2.6 a full description and list of all identified EURs will be presented.
D2.5: "The two user workshops as well as participants' feedback will be reported (…) This input will be documented so as to inform the final version of user requirements."	Entire deliverable D2.5	This deliverable is dedicated to documenting the workshop proceedings. A deeper analysis of workshop outcomes and the resulting EURs will be presented in D2.6, and used as the basis for the system design and system specifications (WP3).

Table 1: Deliverable's adherence to IN-PREP objectives and Work Plan

1.2 Summary

This deliverable presents the proceedings of the IN-PREP End User Workshop #1 in Leiden, the Netherlands, and End User Workshop #2 in Berlin, Germany. These workshops were dedicated to exploiting the expertise of internal and a

range of associated external end users in order to identify user requirements and ensure the alignment of user needs and IN-PREP technology innovations and products.

The first workshop was designed to gather information from end users about current practices, current collaborations and potential areas for improvement. The goal was to define the initial End User Requirements, which could then be further refined and validated during the second user workshop as input to D2.6 User Requirements.

1.3 Document outline

Chapter 2 deals with the ethical aspects of the workshop organization. It describes how ethics were accounted for by using the Statement of Informed Consent handed to all workshop participants, and introduces project partner TRI, which is responsible for ethical guidelines.

Chapter 3 includes the agendas of Workshop 1, and also provides an overview of the participating project partners and external end users. The introduction of the IN-PREP project that was held for participants of the first workshop is provided in **chapter 4**. Furthermore, this chapter is dedicated to the methods that were used during the first workshop. In the subsequent **chapter 5** the outcomes of workshop 1 are presented and further elaborated on.

The agenda and participants of Workshop 2 are described in **chapter 6**. The methods for verifying the initial requirements, identified in the first workshop, and to discuss ethical and privacy issues, are presented in **chapter 7**. The following **chapter 8** presents the outcomes of the second workshop. Both the user feedback on the initial requirements (7.2), as an impact assessment for ethics and privacy (7.3) are included.

Finally, this deliverable ends with concluding remarks on both workshop proceedings, presented in **chapter 9**.

2 Ethics

During the workshops, participants signed a Statement of Informed Consent (Annex I). The Statement of Informed Consent discusses the aim of research done within IN-PREP, what it involves, and various rights and obligations. It also outlines the ways in which the stakeholder community can contribute to the project. By signing this form, participants agreed to voluntarily take part in the IN-PREP project and stated that they were informed of the purpose and objectives of the project.

Furthermore, the statement informs users that notes, photographs and videos will be made during the meetings which might be used in reports or other written documents, or on social media feeds. Participants are told their names would not appear in IN-PREP reports, only the names of their organization, unless they indicate on the form that they do not wish for the organization to be identified. They have the right to reject to answer a question in regard to his/her personal or professional views. Furthermore, participants of meetings are eligible to withdraw their contributions from the research prior to publication.

Trilateral Research (TRI) is the IN-PREP partner responsible for ethics matters, and more specifically, for creating the Statement of Informed Consent. A representative from TRI was present, and participants were introduced and informed that they could approach her at any time with questions related to data collection and data privacy or any other concerns about the Statement of Informed Consent.

3 Organization Workshop #1

The first workshop took place in M3, and the second in M6. The timing of the workshops was meant to allow for an early definition of the initial End User Requirements (EURs), to be ready in M7. This allows the project's technical partners to work more purposefully toward meeting user needs from an early point in the project. The final EURs will be delivered in M10, as a living document (D2.6) that is continuously checked with the end user community.

The End User Workshop #1, hosted by Crisisplan, was held at Sociëteit De Burcht in Leiden, the Netherlands on 23-24 November, 2017. Potential end users were identified by CPLAN in collaboration with other project partners. They were invited to the workshop through email and asked to share their needs and current practices in line with three urgent challenges that the IN-PREP project addresses: shared response planning across agencies and borders, improved sharing of accurate and relevant information in real time, and improved coordination of critical and scarce resources and assets. The invitation is included in Annex II.

Representatives from the entirety of IN-PREP end users community were present in the Leiden workshop. In addition, external end users also participated in order to bring to the project their experience in their respective domains of expertise (systems, equipment and critical processes incorporated within their organisation). Day 1 was also attended by invited guests. The guests were contacts of CPLAN, SRIJ, and CNVVF. The breakdown of attendees is as follows:

- Number in attendance: **48**
- IN-PREP project partners: **26**, out of which were end users
- Invited end user guests in attendance: **22**
- Total number of end users from inside and outside of the project: **40**

3.1 Day 1 Agenda – 23 November 2017

Below, in Table 2, is the Day 1 agenda for the Leiden workshop.

	Activity	Participants
9^{00} – 10^{15}	IN-PREP introduction, technical solutions, ethics	Lead: CPLAN, ICCS, STWS Participants: End Users
10^{15} – 10^{30}	*Coffee break*	
10^{30} – 12^{00}	3 scenario carousels (30' each)	Lead: CPLAN / ICCS Participants: End Users
12^{00} - 13^{00}	*Lunch*	
13^{00} – 15^{00}	Plenary discussion and scenario	Lead: CPLAN Participants: All
15^{00} – 15^{15}	*Coffee break*	
15^{15} – 16^{00}	Q&A	Lead: CPLAN Participants: All
16^{00}	*End of the day*	

Table 2: Agenda, Day 1, Leiden Workshop

3.2 Day 1 Participants

Below is a breakdown of the Day 1 participants. More specifically, Table 3 lists IN-PREP project partners while Table 4 lists the external end users.

	Country	Name	Organization	Role	End user domain / Expertise
1	The Netherlands	Boin, Arjen	Crisisplan	End user	Crisis Management
2	The Netherlands	Overdijk, Werner	Crisisplan	End user	Crisis Management
3	The Netherlands	Iftikhar, Naveed	Crisisplan	End user	Crisis Management
4	The Netherlands	Weller, Maureen	Crisisplan	End user	Crisis Management
5	The Netherlands	Cadar, Lavinia	Crisisplan	End user	Crisis Management
6	The Netherlands	Gille, Hans	Crisisplan	End user	Crisis Management
7	The Netherlands	Broek, Adinda van den	Crisisplan	End user	Crisis Management
8	The Netherlands	Brakel, Ulrike van	Crisisplan	End user	Crisis Management
9	The Netherlands	Veneman, Rozemarijn	Safety Region IJsselland	End user	Civil protection
10	The Netherlands	Roelink, Sandra Oude	Safety Region IJsselland	End user	Civil protection
11	Germany	Nottebaum, Pia	DHPol (German Police University)	End user	Police
12	Ireland	McAllister, Mannix	Health Service Executive	End user	Medical
13	Ireland	O'Brien, Cian	Health Service Executive	End user	Medical
14	Italy	Marzoli, Marcello	Ministry of Internal Affairs (CNVVF)	End user	Government
15	Italy	Micillo, Gianfilippo	Ministry of Internal Affairs (CNVVF)	End user	Government
16	Greece	Argyris, ILias	Municipality of Rhodes	End user	Civil protection
17	Northern Ireland	Roberts, Mark	Police Services of Northern Ireland	End user	Police
18	France	BenoÎt, Vivien	SAMU	End user	Medical
19	Ireland	Varghese, Johanna	CARR Communications	Communications	-
20	France	Charbit, Romain	Diginext	Technical partner	-
21	Germany	Sendrowski, Philip	Fraunhofer INT	Research institute	-
22	Germany	Berchtold, Claudia	Fraunhofer INT	Research institute	-
23	UK	Petersen, Katrina	Trilteral Research	Ethics partner	-
24	France	Chrobocinski, Philippe	Airbus DS	Technical partner	-

25	Greece	Sdongos, Evangelos	ICCS	Technical partner / Project coordinator	-
26	Greece	Kostaridis, Antonis	SATWAYS Ltd.	Technical partner	-

Table 3: IN-PREP project participants; Day 1, Leiden Workshop

Table 4 shows invited end user guests, with information about the country in which they work, the organization they represent and their domain of expertise. As shown in the table below, the external invited end users spanned across all levels of civil protection aid, namely fire brigades, medical emergency services, civil protection authorities and law enforcement agencies.

	Country	Organization	Domain / Expertise
1	Denmark	EU and Emergency Management Expert	Civil protection
2	Italy	European Air Crane	Fire brigade
3	Italy	European Air Crane	Fire brigade
4	The Netherlands	DCC Economic affairs & Climate	Government
5	The Netherlands	Gasunie Transport Services	Corporate/institutes
6	The Netherlands	GHOR (Dutch ambulance services)	Medical
7	The Netherlands	Leiden, NL Police	Police
8	The Netherlands	Ministry of Defence	Government
9	The Netherlands	Ministry of Education, Culture & Science	Government
10	The Netherlands	Ministry of Infrastructure & Water Management	Government
11	The Netherlands	Ministry of Justice & Security	Government
12	The Netherlands	National Cyber Security Centre	Government
13	The Netherlands	National Coordinator for Security and Counterterrorism	Government
14	The Netherlands	Police Academy	Police
15	The Netherlands	Police East Netherlands	Police
16	The Netherlands	Safety Region Utrecht	Civil protection
17	The Netherlands	Safety Region Utrecht	Civil protection
18	The Netherlands	Safety Region Utrecht	Civil protection
19	The Netherlands	Schiphol Fire Brigade & Safety Training	Fire brigade
20	The Netherlands	Security expert	Civil protection
21	The Netherlands	USAR.NL (Urban Search and Rescue team)	Civil protection
22	The Netherlands	Water Board Drents Overijsselse Delta	Civil protection

Table 4: Attending non-project end users, Day 1, Leiden Workshop

Figure 1: Workshop #1 Participants

3.3 Day 2 Agenda – 24 November 2017

Day 2 of the workshop was for project partners only, dedicated to discussing the outcomes of Day 1 to arrive at a common understanding for the End User Requirements framework. The latter is further discussed in Section 5.1.

Day 2 offered an important opportunity to project partners to share their impressions of end user feedback received so far, and to discuss their understanding of how the project will move forward to answer to the challenges of transboundary crises raised on Day 1. The agenda is presented below in **Error! Reference source not found.**.

	Activity	Participants
$9^{00} - 9^{30}$	*Arrival, coffee*	
$9^{30} - 10^{15}$	Agenda setting for day 2, looking back on day 1, Coordination, Command & Control systems	Lead: CPLAN, ICCS, STWS Participants: Project partners
$11^{15} - 10^{30}$	*Coffee break*	
$10^{30} - 12^{00}$	Plenary discussion on content, planning and existing systems	Lead: CPLAN / ICCS Participants: Project partners
$12^{30} - 13^{30}$	*Lunch*	
$13^{30} - 16^{00}$	Plenary discussion on Situational Awareness systems, EURs and future steps	Lead: CPLAN Participants: Project partners
16^{00}	*End of the day*	

Table 5: Agenda Day 2, Leiden Workshop

3.4 Day 2 Participants

Day 2 participants, all from within the IN-PREP consortium, are shown below in **Error! Reference source not found.**.

	Country	Name	Organization	Role	End user domain / Expertise
1	The Netherlands	Boin, Arjen	Crisisplan	End user	Crisis Management
2	The Netherlands	Iftikhar, Naveed	Crisisplan	End user	Crisis Management
3	The Netherlands	Weller, Maureen	Crisisplan	End user	Crisis Management
4	The Netherlands	Cadar, Lavinia	Crisisplan	End user	Crisis Management
5	The Netherlands	Gille, Hans	Crisisplan	End user	Crisis Management
6	The Netherlands	Veneman, Rozemarijn	Safety Region IJsselland	End user	Civil protection
7	The Netherlands	Roelink, Sandra Oude	Safety Region IJsselland	End user	Civil protection
8	Germany	Nottebaum, Pia	DHPol (German Police University)	End user	Police
9	Ireland	McAllister, Mannix	Health Service Executive	End user	Medical
10	Ireland	O'Brien, Cian	Health Service Executive	End user	Medical
11	Italy	Marzoli, Marcello	Ministry of Internal Affairs (CNVVF)	End user	Government
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13	Greece	Argyris, ILias	Municipality of Rhodes	End user	Civil protection
14	Northern Ireland	Roberts, Mark	Police Services of Northern Ireland	End user	Police
15	Ireland	Varghese, Johanna	CARR Communications	Communications	-
16	France	Charbit, Romain	Diginext	Technical partner	-
17	Germany	Grigoleit, Sonja	Fraunhofer INT	Research institute	
18	Germany	Sendrowski, Philip	Fraunhofer INT	Research institute	-
19	Germany	Berchtold, Claudia	Fraunhofer INT	Research institute	-
20	UK	Petersen, Katrina	Trilteral Research	Ethics partner	-
21	France	Chrobocinski, Philippe	Airbus DS	Technical partner	-
22	Greece	Sdongos, Evangelos	ICCS	Technical partner / Project coordinator	-
23	Greece	Kostaridis, Antonis	SATWAYS Ltd.	Technical partner	-

Table 6: IN-PREP project participants; Day 2, Leiden Workshop

4 Methodology and topics of Workshop #1

The workshop in Leiden was designed to be very interactive, and to encourage discussions among all participants. The participants were all high-level crisis management experts with various backgrounds: police, fire services, medical response services, industry, critical infrastructure operators, the EU, governmental ministries, national emergency management agencies. The outcomes of IN-PREP were relevant to all of them, and they all offered an unique perspective and years of experience. Our objective was to create an environment in which to get them thinking about the challenges of transboundary crisis management, and to discuss ways to overcome these challenges, thereby determining gaps that IN-PREP could help fill.

4.1 Introduction to IN-PREP

Arjen Boin (CPLAN) welcomed guests to Leiden and shared the plan for the day. Evangelos Sdongos (ICCS) then introduced the IN-PREP project goals (Figure 3).

Figure 2: Arjen Boin (CPLAN, left) and Evangelos Sdongos (ICCS, right) introduce IN-PREP to workshop guests

4.1.1 Project Goals

Much of the audience were unfamiliar with the IN-PREP project. The opening presentation therefore included information about the H2020 funding program, project partners and IN-PREP's specific aims (Figure 4 and 5).

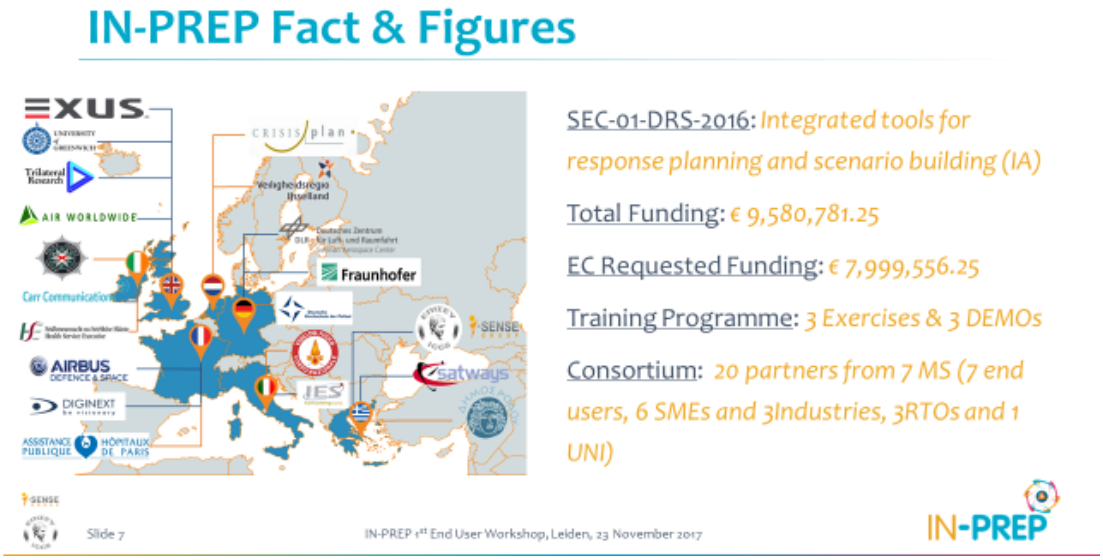


Figure 3: IN-PREP consortium and funding information

Figure 4: IN-PREP challenge and motivation

Following information about the current challenges identified in collaborative response planning, expected project outcomes were described. In short, as explained, IN-PREP will create a training platform (technology-side) and a Handbook of Operations (organizational/policy side). The project focus is on training and preparedness, but by improving these areas and once the platform is validated, an anticipated result is also an improved joint capacity to respond to crises.

The importance of the end user feedback in shaping the project outcomes was strongly emphasized. IN-PREP has many moments built into its 3-year lifespan to interact with the end user community, and workshop participants were encouraged to stay involved, ask questions, and look very critically at the project and its development. As highlighted, the consortium is committed to creating an IN-PREP system that is highly valued by the stakeholder community.

4.1.2 IN-PREP Technology capabilities

Following the initial project presentation, Antonis Kostaridis (IN-PREP Technical Manager from STWS) presented some functionalities of the IN-PREP platform from the technology perspective.

Participants learned more about the Mixed Reality Preparedness Platform (MRPP) that IN-PREP will create, comprised of mature systems offered by the consortium's technical partners, as well as of the end users' legacy systems. More specifically, the MRPP will be comprised of Information Systems, Modelling, Decision Support, Command & Control and Situational Awareness Tools. These systems include:

- Scenario Building/Authoring Tools
- Mixed Reality Training Platform
- Command and Control systems for resource management, Planning & Rehearsing Missions
- Vulnerability, Impact and Risk Assessment tools
- Evacuation Modelling
- Remote Sensing
- Sensors & Communications

Even if the project will integrate and expose the functionalities of all the aforementioned tools into a single platform, it has to be noted that each end user has different needs, and thereafter, not every tool/functionality is of the same importance and priority for them. Moreover, the project is very focused on interoperability – technical, to ensure the successful integration of systems; as well as operational, to aid crisis management professionals in collaborative training and preparedness to ultimately improve the joint capacity to respond.

End user feedback will be sought continuously throughout the project, with the project's overall aim of improving:

- Shared response planning (across borders and agencies)
- Real-time precise information sharing
- Shared coordination of assets and resources

The MRPP will be demonstrated at different phases throughout the project, becoming increasingly larger in scale as the project developments will be more mature as the project nears its end. These events (along with other training activities as part of WP7) will allow for end user feedback and continuous validation of the EURs (D2.6). The planned table top exercises and demonstrations are shown below in Figure 6.

Figure 5: IN-PREP training program

4.2 Scenario-based Small Group Discussions

After ICCS and STWS shared project information with workshop participants, the ee groups to generate interactive discussions. Each group was led by a modera in (CPLAN), Werner Overdijk (CPLAN) and Evangelos Sdongos (ICCS). An impressio in figure 7**Error! Reference source not found.**.

Figure 6: Three discussion groups

The aim was to encourage participants to share their experiences from their particular domain of expertise. In particular, they were asked to consider the complications of responding in a crisis situation that would require working with different actors and countries than they are used to collaborate and prepare with for routine responses. In order to spawn these discussions, CPLAN prepared four short scenarios, each of which incorporated transboundary complications.

- Wildfire on Rhodes Island, Greece
- Flooding in the Netherlands
- Terrorist attack in Northern Ireland
- Smallpox outbreak in the Netherlands

The scenarios were used as a way to initiate discussions and raise the complex issues inherent to transboundary crises. By giving the practitioners some context within which to share ideas, they were encouraged to do 'blue sky thinking' to consider the type of steps needed and challenges the aforementioned crises would pose.

Based on these scenarios, in an informal setting, users were asked general questions, such as:

- What would be the best response (ideally)?
- Which actors would be involved?
- What resources would be needed?
- What type of (organizational) skills would be needed?
- What would this mean for preparation?
- What would this mean for training?

The discussions covered many topics, from deciding who to call on for assistance (neighbouring countries or the EU), to tracking capacities, including those of collaborating organizations, (sensitive) information sharing, the type of response plans (many detailed vs. one generic plan), and, importantly, the challenge of identifying the relevant actors that should be involved in transboundary responses. These ideas were considered within the context of the IN-PREP project, and helped shape the specific needs that IN-PREP shall address.

4.3 Plenary Discussion

Having begun in small groups, where all participants could voice their ideas, in the afternoon, when everyone was more familiar with the project goals and with each other, a plenary discussion was held, moderated by CPLAN. It began with a wrap up of the morning sessions and a summary of the outcomes of three separate group discussions.

This discussion helped to mould the framework for the IN-PREP system needs. The ideas shared during this interactive workshop were analysed within the consortium more closely on the second day of the workshop. On this day, the broad categories of the End User Requirements were created. These are discussed further in Section 5.1.

5 Outcomes of Workshop #1

The end users present at the first workshop were optimistic about IN-PREP's potential to aid in training and preparedness. While the focus of the workshop was transboundary crises, 'typical' crises start locally, scaling up as needed. Transboundary crises may have multiple or no ground zero, i.e. cyber-attack. However, a more typical crisis response tends to start locally and then demands up-scaling. End users highlighted that the IN-PREP system could be useful for smaller disasters as well, not just for those that have a farther reach. They recognised this as an advantage, as they could become more familiar with the tool if they were able to use it for training and preparedness of events of all scales. They also noted that it would be useful during the response phase.

5.1 Six Step EUR framework

End users discussions helped to verify the general framework within which the EURs will be defined. Morning discussions based on the scenarios were useful in getting end users to think about training and preparedness (and response) processes related to transboundary crisis management, and what an IN-PREP system should include to aid in these processes. The afternoon plenary discussion began with additional blue sky thinking and imagined system uses, which were then roughly defined related to the different steps of training and preparedness.

The discussions from Day 1 led to the framework presented below. It breaks the MRPP down into six broad uses:

MRPP SYSTEM USES

1. Make a plan
2. Create a scenario
3. Define criteria to test
4. Play (train)
5. Score / asses / evaluate
6. Adapt

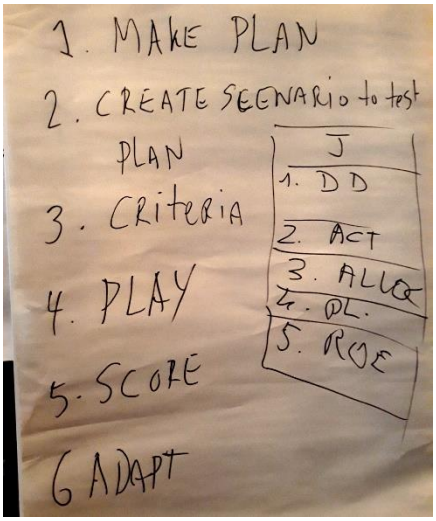


Figure 7: End User Requirement framework defined by project partners based on end user feedback

End users emphasized that training and preparedness is an ongoing job, never to be considered finished. These EUR categories allow for a circular, continuous training and preparedness process. In practice, the order of steps followed may change. Some will wish to first define criteria, for example, and then create a scenario. Others may have a scenario in mind, based on an identified threat, and then create the plan criteria as a way to train for that scenario. In short, these processes are considered essential, although the order is adaptable.

Users can **make a plan**, or enter an existing plan, and in this step, inventorize their assets. They agreed it was essential to track capacities in order to know what human and material resources are available to them.

To **create a scenario**, the MRPP will be used. Users can determine the scale and complexity, use simulated or real data, and make use of IN-PREP models and/or their own legacy software. Scenarios should be adaptable and scalable. Several workshop participants shared that in this step, the IN-PREP system will serve as a tool to help them think about a critical task: to recognize which actors should be involved in response (and therefore training) to various transboundary crises.

Defining criteria to test is a challenge, and a critical factor in determining the success of training / preparedness. These criteria can be generically defined for strategic level actions related to transboundary crises, or specifically made relevant for individual end user organizations. Users suggested that IN-PREP can make use of checklists within this step, and incorporate success and failure factors from previous trainings as well as actual responses.

Playing a scenario offers an opportunity to bring many actors together and test the validity of a plan. The opportunity to train will allow end users to gain awareness about the complexities of transboundary crises both within their own organizations and among collaborating agencies. It will allow users, in a safe environment, to identify obstacles to an effective response, which will lead to lessons learned and can then be incorporated in future trainings.

Scoring a training session allows users to assess whether they have achieved measurable goals, and based on the outcomes, they can improve their methods, and also incorporate them into future exercises. Users want to be able to save and re-use scenarios, which also means they will be able to **adapt** them in order to include lessons learned from previous training sessions or actual responses.

Participants of the first user workshop showcased the applicability and benefit of IN-PREP in all of these six steps.

The end user requirements derived from these discussions and those of Workshop #2 will be presented in detail in *D2.6. "User Requirements"*.

5.2 System Framework

Having received end user feedback from inside and outside of the consortium on Day 1 of Workshop #1, the project's technical partners were able to further define the IN-PREP system framework on Day 2. These discussions led to the following general architecture constructions, which are being further refined as part of WP3.

The IN-PREP General Architecture consists of two complementary aspects: operational systems and preparedness systems (see Figure 9).

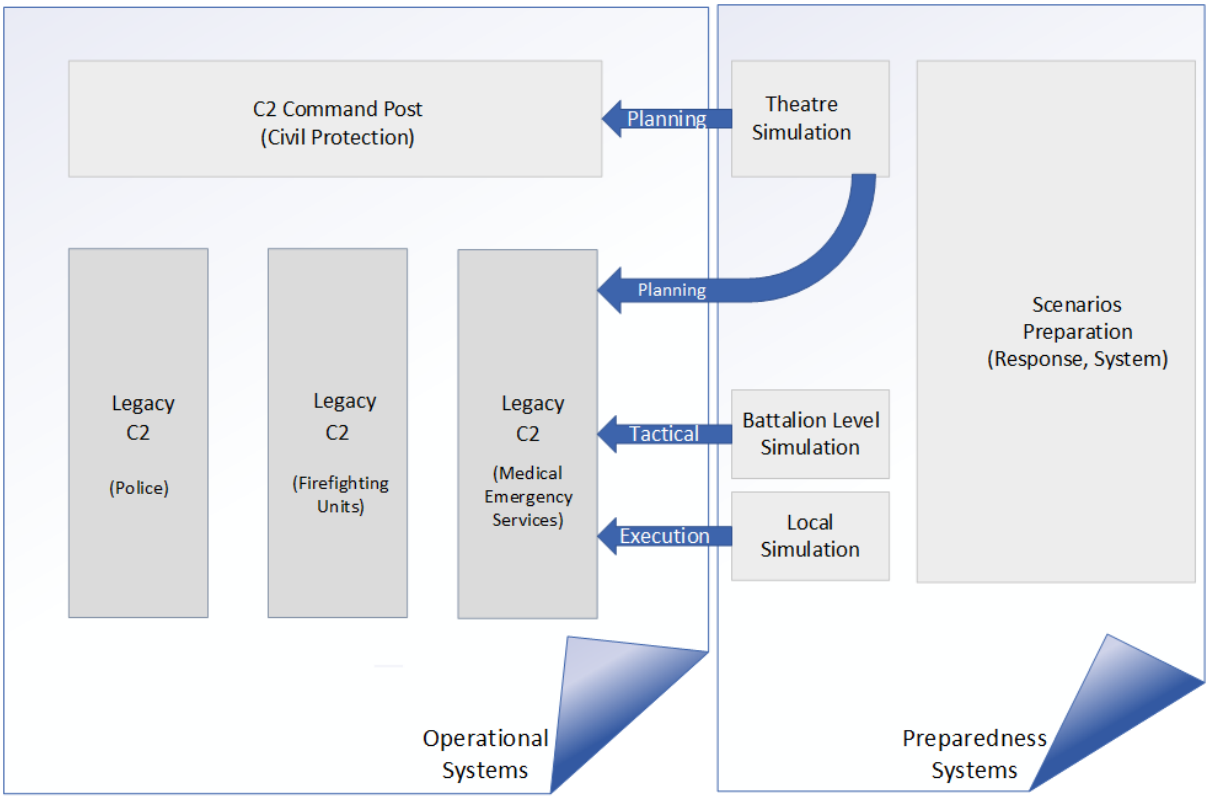


Figure 8: IN-PREP General Architecture IN-PREP General Architecture

The Operational Systems refer to the components that facilitate the collaboration between the agencies involved in the operational planning. User's legacy Command and Control systems (C2s) are enhanced to be more communicative with each other, while also being linked to a federative C2 (shown here as C2 Command Post), which enables and enhances information sharing.

The Preparedness Systems (pictured on the right side of Figure 9) refer to the MRPP and the system's training capabilities, namely, the preparation of scenarios. These will feed the simulation at the three levels: theatre, battalion and local, and that will enable playing these scenarios using operational C2s.

One of the agreements made by the participants was the IN-PREP project should cover the Training and the Preparedness phase of crisis management. Regarding the Preparedness phase, the project will cover the damage assessment sub-phase and the deployment, since both aspects are important for the planning. The left lower corner of the image below (Figure 10) depicts the C2 structure with the various levels and the two supporting functions named surveillance and intelligence cycles that provide situation awareness.

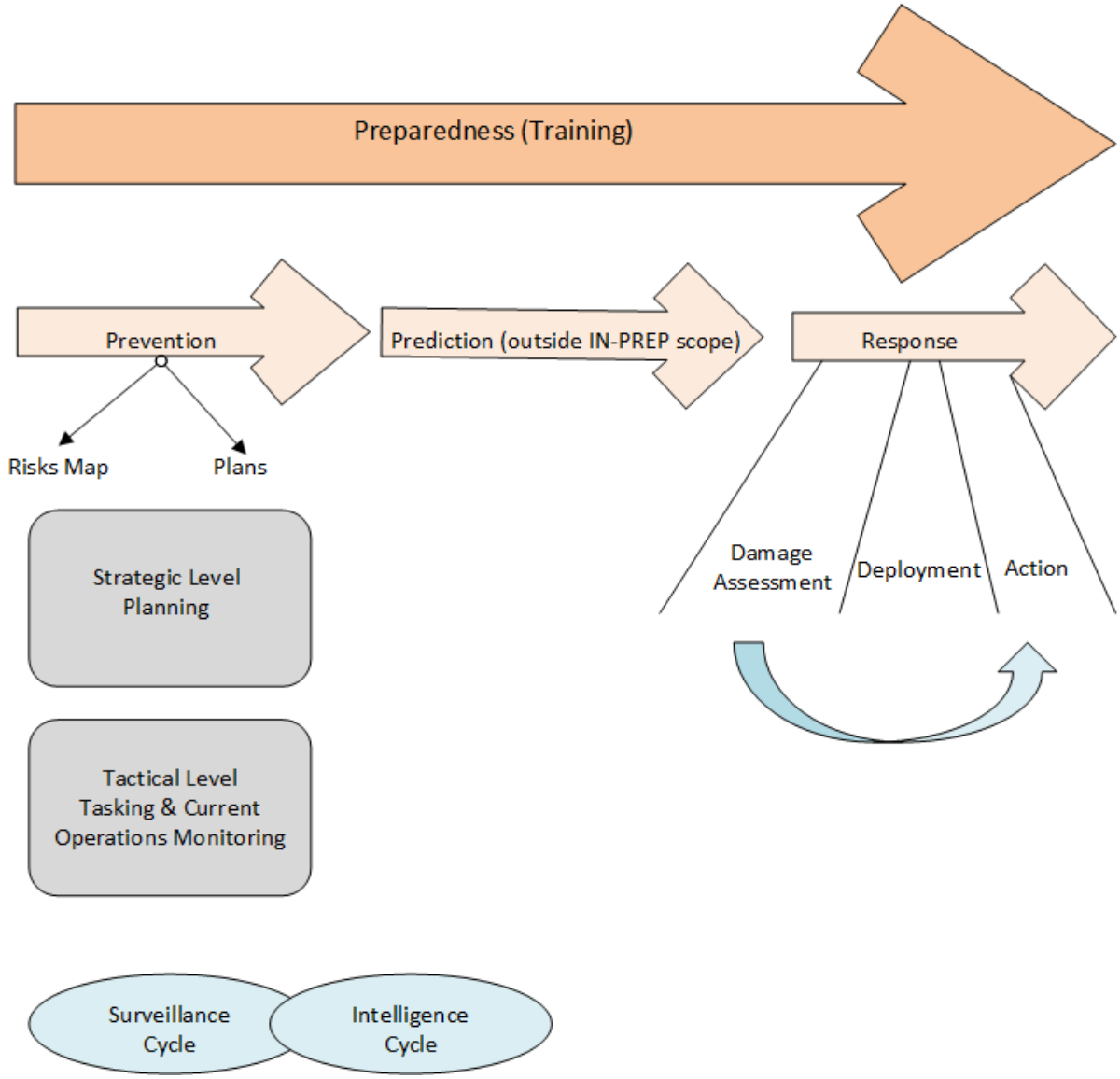


Figure 9: IN-PREP Operational View

6 Organization Workshop #2

The End User Workshop #2, hosted by FhG, was held at Fraunhofer Forum Berlin, Germany on 21-22 February, 2018. Potential end users were invited through email by FhG, in collaboration with CPLAN. The invitation asked the potential participants to validate the user requirements identified in the first workshop, based on their personal needs. The invitation is included in Annex III.

In the Berlin workshop all end user partner organizations of IN-PREP and invited external end users (e.g. fire fighters, police officers) were present. Additionally the technical partners of the consortium were present to discuss the technical details of the Mixed-Reality Preparedness Platform (MRPP) to the end users.

The breakdown of attendees is as follows:

- Number in attendance: **57**
- IN-PREP project partners: **41**, out of which were end users
- Invited end user guests in attendance: **16**
- Total number of end users from inside and outside of the project: **31**

6.1 Day 1 Agenda – 21 February 2018

Below, in **Error! Reference source not found.**, is the Day 1 agenda for the Berlin workshop.

	Activity	Participants
12:30 – 13:30	*Welcome & Snacks*	
13:30 – 13:45	Introduction to IN-PREP & Workshop Scope	Evangelos Sdongos (ICCS)
13:45 – 14:00	Presentation of results of the 1st User Workshop in Leiden (November 2017)	Arjen Boin (CPLAN)
14:00 – 15:30	Validation and Expansion of the User Requirements identified during the 1st User Workshop	Arjen Boin (CPLAN)
15:35 – 16:00	Identification of more detailed User Requirements of the IN-PREP Mixed Reality Preparedness Platform (MRPP) based on the "World Café" Methodology.	Claudia Berchtold, Sonja Grigoleit (FhG)
16:00 – 16:15	*Coffee break*	
16:15 – 17:45	World Café – Round I & II – Session Moderator: Fraunhofer	Claudia Berchtold, Sonja Grigoleit, Larissa Müller, Philip Sendrowski, Maike Vollmer (FhG) & ALL
17:45 – 18:00	Wrap up of first day	Sonja Grigoleit (FhG) & World Café Table Hosts
	Dinner with external end user participants	

Table 7: Agenda Day 1, Berlin Workshop

Figure 10: Participants Workshop #2

6.2 Day 1 Participants

	Country	Name	Organization	Role	End user domain / Expertise
1	France	Philippe Chrobocinski	Airbus DS	Technical partner	-
2	UK	Jared Seaquist	Air Worldwide Limited		-
3	Ireland	Johanna Varghese	CARR Communications	Communications	-
4	Ireland	Linda Henriksson	CARR Communications	Communications	-
5	Italy	Marcello Marzoli	Ministry of Internal Affairs (CNVVF)	End User	Government
6	Italy	Danilo Anastasi	Ministry of Internal Affairs (CNVVF)	End User	Government
7	Italy	Gianfilippo Micillo	Ministry of Internal Affairs (CNVVF)	End User	Government
8	Italy	Luca Torrini	Ministry of Internal Affairs (CNVVF)	End User	Government
9	Italy	Ottavio Anastasi	Ministry of Internal Affairs (CNVVF)	End User	Government
10	The Netherlands	Arjen Boin	Crisisplan	End User	Crisis Management
11	The Netherlands	Maureen Weller	Crisisplan	End User	Crisis Management
12	The Netherlands	Lavinia Cadar	Crisisplan	End User	Crisis Management
13	Germany	Pia Nottebaum	DHPol (German Police	End User	Police

			University)		
14	Germany	Gunnar Schwoch	DLR (German Air and Space Center)		Government
15	France	Romain Charbit	Diginext	Technical partner	-
16	UK	Panagiotis Efthimiou	EXUS Software	Technical partner	-
17	UK	Spyros Evangelatos	EXUS Software	Technical partner	-
18	Germany	Claudia Berchtold	Fraunhofer INT	Research institute	-
19	Germany	Klara Hardtke	Fraunhofer INT	Research institute	-
20	Germany	Larissa Müller	Fraunhofer INT	Research institute	-
21	Germany	Maike Vollmer	Fraunhofer INT	Research institute	-
22	Germany	Philip Sendrowski	Fraunhofer INT	Research institute	-
23	Germany	Sonja Grigoleit	Fraunhofer INT	Research institute	-
24	Ireland	Mannix McAlister	Health Service Executive	End User	Medical
25	Greece	Evangelos Sdongos	ICCS	Technical partner / Project coordinator	-
26	Greece	George Baroutas	ICCS	Technical partner / Project coordinator	-
27	Greece	Nikos Tousert	ICCS	Technical partner / Project coordinator	-
28	Italy	Fabrizio Ferrucci	IESC	End user	Government
29	Northern Ireland	Mark Roberts	Police Services of Northern Ireland	End user	Police
30	Northern Ireland	Natalie Wilson	Police Services of Northern Ireland	End user	Police
31	Northern Ireland	Brent Stevenson	Police Services of Northern Ireland	End user	Police
32	Greece	ILias Argyris	Municipality of Rhodes	End user	Civil protection
33	France	Benoit Vivien	SAMU	End user	Medical
34	The Netherlands	Sandra Oude Roelink	SRIJ	End user	Civil protection
35	The Netherlands	Gerwin de Groot	SRIJ	End user	Civil protection
36	The Netherlands	Rozemarijn Veneman	SRIJ	End user	Civil protection
37	Greece	Antonis Kostaridis	SATWAYS Ltd.	Technical Partner	-
38	UK	Jon Betts	Trilteral Research	Ethics partner	-
39	UK	Katrina Petersen	Trilteral Research	Ethics partner	-

40	UK	Katerina Pouliou	Trilteral Research	Ethics partner	-
41	UK	Lazaros Filippidis	University of Greenwhich	Research institute	-

Table 8: IN-PREP project participants, Berlin Workshop

6.3 Day 2 Agenda – 22 February 2018

As shown in the table below, on the second day the World Café discussions regarding the End User Requirements (EUR) of the Mixed-Reality Preparedness Platform (MRPP) continued. After that the focus was set on Ethics and Privacy Impact Assessment.

	Activity	Participants
9:00 – 9:30	Key note: Presentation of the DRIVER project	Michael Löscher (ARTTIC)
09:30 – 11:30	World Café – Round III & IV – Session Moderator: Fraunhofer	Claudia Berchtold, Sonja Grigoleit, Larissa Müller, Philip Sendrowski, Maike Vollmer (Fraunhofer) & ALL
11:30 – 11:45	*Coffee break*	
11:45–12:30	Introduction • What is an Ethics and Privacy Impact Assessment • Methodology and Principles Overview of the features, functions and characteristics of the IN-PREP system and information flows Privacy, social and ethical considerations • Introduction to risk mapping • Introduction to mapping solutions Initial findings	Katrina Petersen (TRI)
12:30 – 13:15	*Lunch break*	
13:15- 14:15	Breakout discussion groups – Session Moderator: TRI • Mapping risks, vulnerabilities, opportunities for responsible innovation Brainstorming additional legal, social and ethical considerations	ALL
14:15 – 15:15	Breakout discussion groups – Session Moderator: TRI • Potential solutions to mitigate negative legal, social and ethical impact Brainstorming additional potential solutions	ALL
15:15 – 15:30	Next steps and closing remarks of End User Workshop	Katrina Petersen (TRI)
15:30	*End of workshop*	

Table 9: Agenda Day 2, Berlin Workshop

6.4 Day 2 Participants

	Country	Organization	Domain / Expertise
1	UK	National Police Chiefs' Council	Police
2	France	Safe Cluster	Civil Protection
3	Sweden	Mid Sweden University, Härnösand	Police
4	Spain	Asociacion Profesional de Tecnicos de Bomberos (APTB)	Fire & Rescue
5	Sweden	Södertörns brandförsvarsförbund (SBFF)	Fire & Rescue
6	Germany	Technisches Hilfswerk (THW)	Civil Protection
7	UK	Cambridgeshire Fire & Rescue Service	Fire & Rescue
8	UK	International Association of Emergency Managers	Civil Protection
9	France	Office National des Forets (ONF)	Forest Fire
10	Ireland	Mayo County Council's Fire, Rescue and Emergency Planning department - Ireland	Civil Protection
11	Hungary	Capital Disaster Management Directorate	Civil Protection
12	Switzerland	University of Geneva	Crisis and Disaster Risk Management
13	Sweden	Södertörns brandförsvarsförbund (SBFF)	Fire & Rescue
14	Germany	Berliner Feuerwehr	Fire & Rescue
15	The Netherlands	Institute for Safety	Disaster Relief; Public Crisis Management
16	Germany	ARTTIC	DRIVER+ project

Table 10: Attending non-project end users, Berlin Workshop

7 Methodology and topics of Workshop #2

The second end user workshop was based on the results of the first workshop in Leiden. This first workshop was designed to gather information from end users about current practices, current collaborations and potential areas for improvement. Workshop #1 defined the initial EURs, which were then further refined and validated during the second user workshop in Berlin as input to D2.6 User Requirements.

Additionally, this second end user workshop was used for discussions in the area of ethics and privacy impact assessment, to develop a set of risk criteria against which to assess, analyse and map and therefore minimise and avoid project risks. The methodology behind and results of these discussions will be published in D2.2 "*Legal, ethical and privacy impact assessment report*".

The first workshop resulted in the following categories of user requirements (Figure 11), which represent the overall process of transboundary response, preparedness and training (see chapter 5.1).

Figure 11: IN-PREP process of transboundary response, preparedness and training

During the second End User Workshop in Berlin the results of this first workshop – the draft user requirements regarding the IN-PREP process – were validated (the results of this validation exercise will be described in D2.6 User Requirements). Additionally, these initial user requirements were complemented by more technical or detailed user requirements regarding the Mixed Reality Preparedness Platform (MRPP) (see Figure 12).

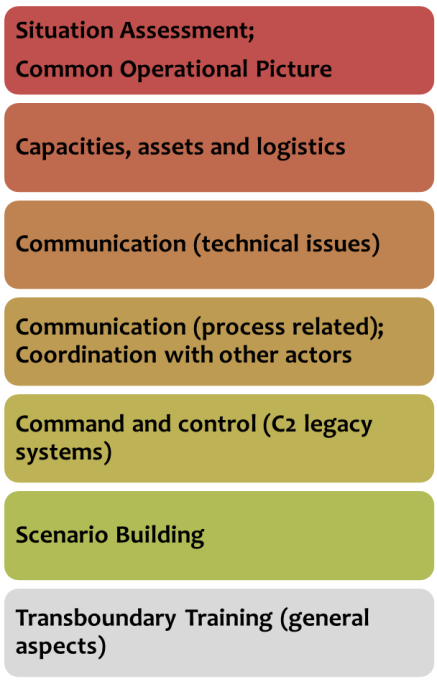


Figure 12: Discussion topics for Workshop #2

Thus, the overall process of the identification of user requirements is as follows:

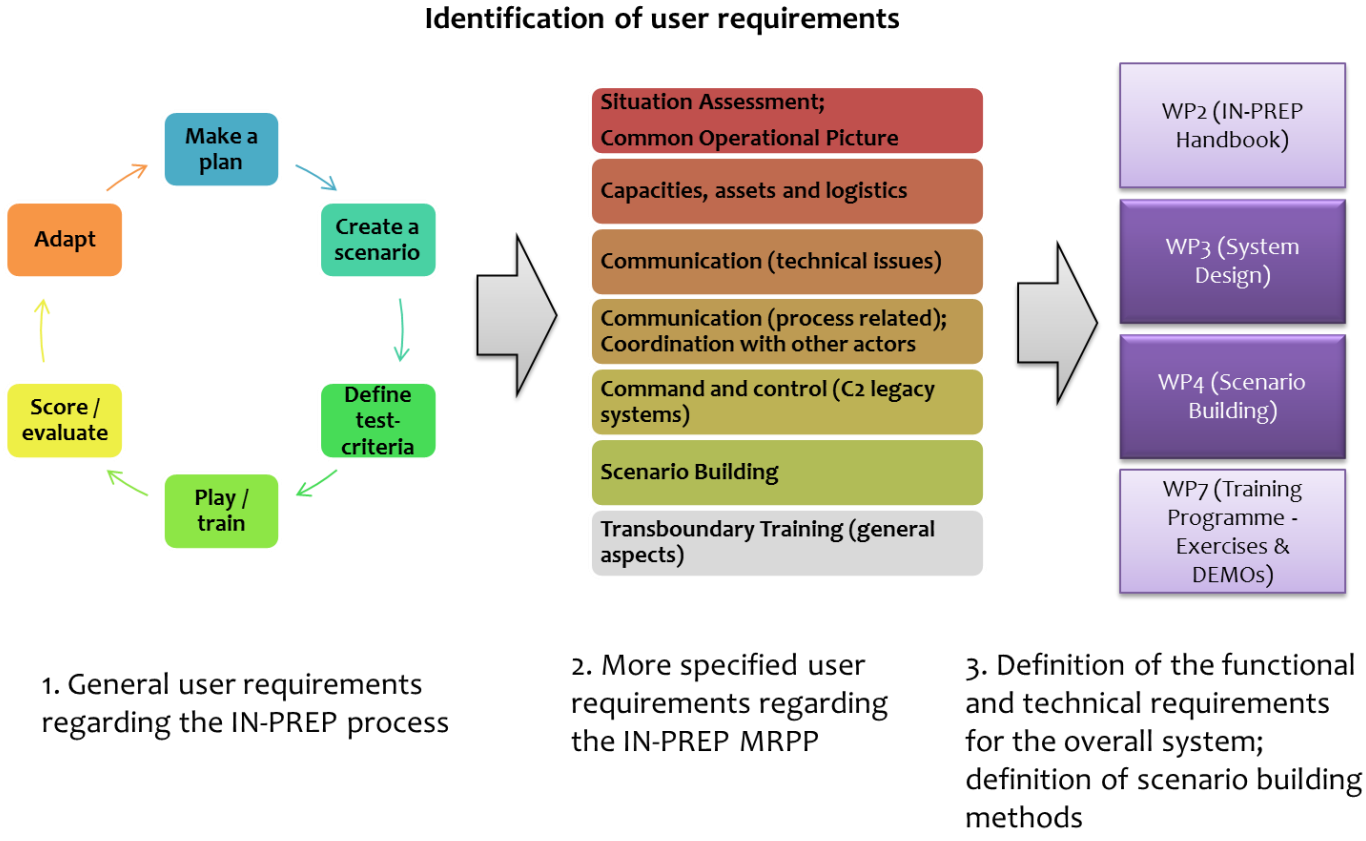


Figure 13: Overall process of the identification of End User Requirements (EUR) in IN-PREP

7.1 World Café Method

The second workshop used the World Café method to gather feedback. The aim of this simple and powerful method is: „Awaking & engaging collective intelligence trough conversations about questions that matter“[1].

The participants were sitting together at small tables in a casual manner. Around 5 to 6 people shared a table, including one "table host". The World Café questions were answered in discussions held at each table in four different rounds; the length of the rounds was about 30 minutes each.

At the end of each round everyone at the table, apart from the table host, changed to another table to discuss another topic. Permanent table hosts provided continuity to the discussions. They gave a short summary of issues discussed already and inspired subsequent participants to proceed with the discussion. Additionally, the table hosts took notes of the discussion. However, all other participants were also invited to draw, paint, sketch or write on the papers provided on the discussion tables[2] (See Figure 14).

The overall World Café Session was divided into 4 rounds. In each of the categories, the discussion started with the experience of the end users on the table's assigned topic (for example, situation assessment), then sought feedback on what users' needs would be for the IN-PREP MRPP platform related to that topic (see Figure 12**Error! Reference ource not found.**, above).

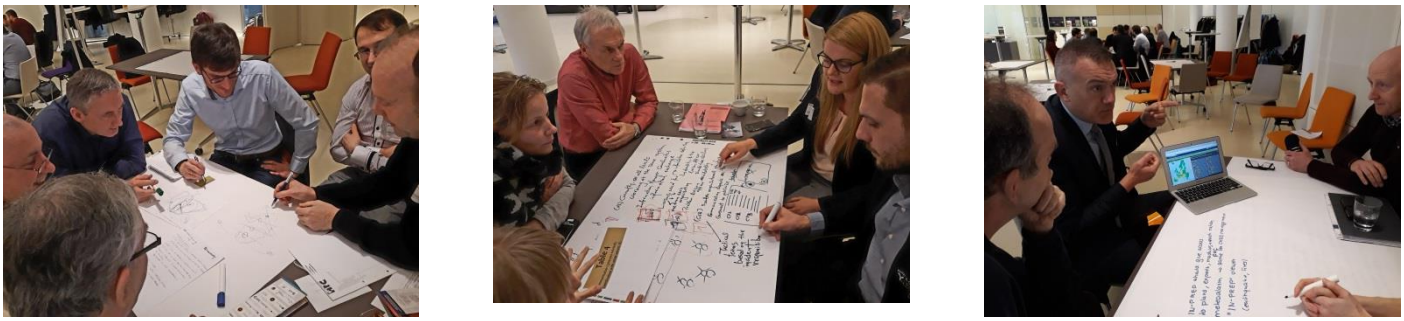


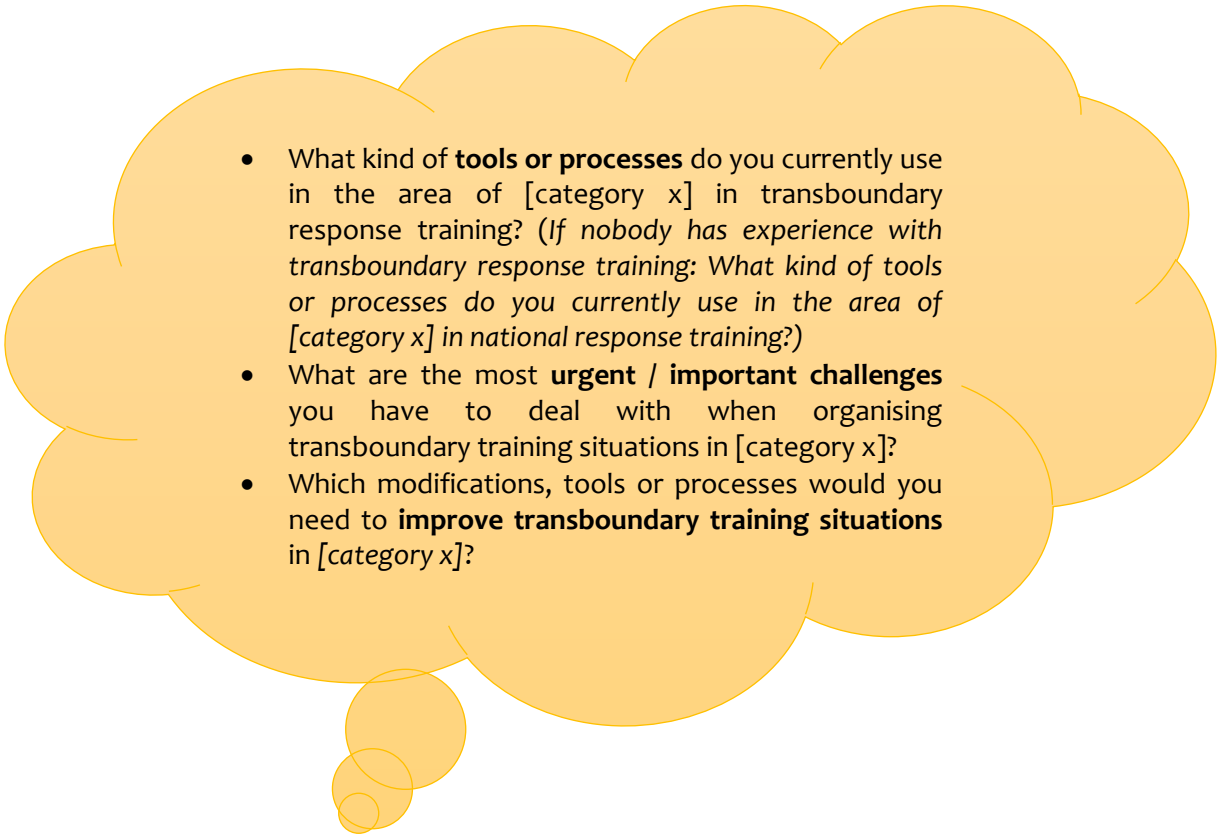
Figure 14: World Café Discussions

An exception was the last category "transboundary training (general aspects)". While the other tables dealt with more technical issues like communication or common operational picture issues, this category covered more general aspects, which should be addressed before starting with a transboundary response training. This could be, for example, the integration of different processes and tools into an international setting, legal requirements and regulations, bilateral agreements or how to organize the documentation and lessons learned.

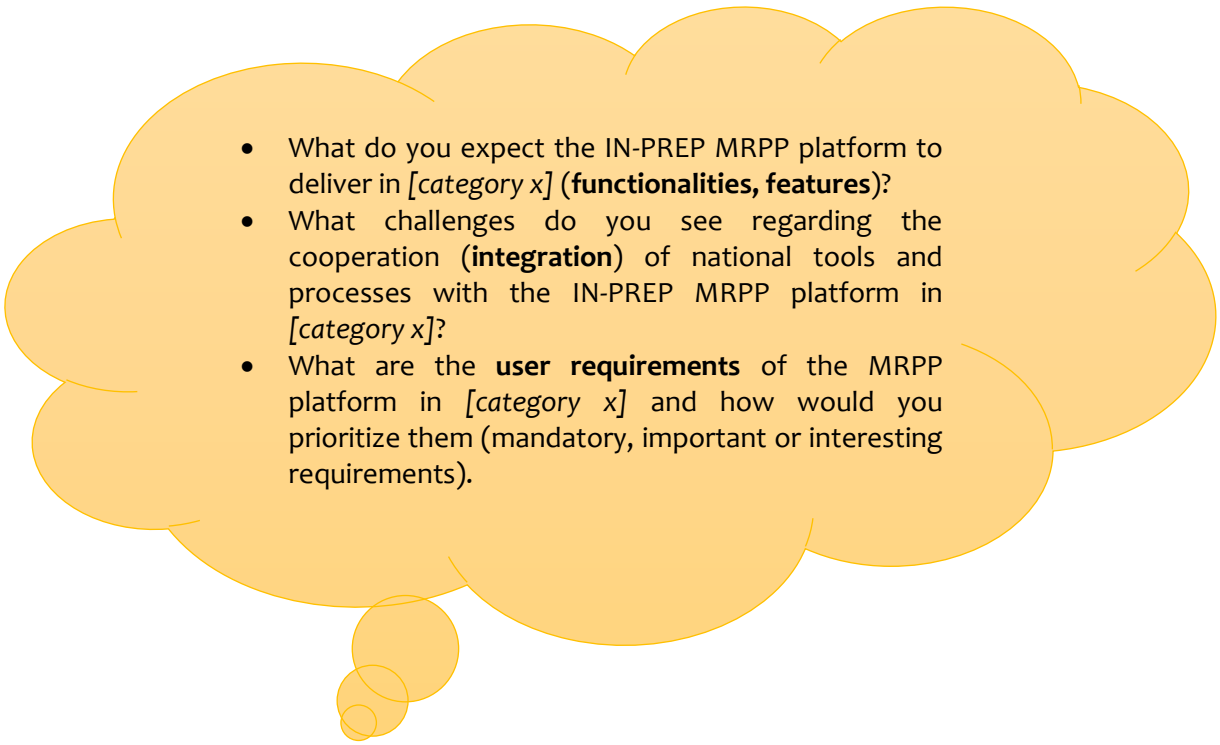
[1] http://www.theworldcafe.com/

[2] See: M. Khan, S. Savage, Documentation of methods and workshops, ETCETERA project, Oct. 2012.

On the first day, the World Café discussions were based on the following three questions:



On the second day the World Café questions were:



In the special case of the category "transboundary training (general aspects)" on both days the following three questions were discussed:

- What are the most urgent / important challenges in transboundary response training in general you have to deal with?
- What problems have to be solved before successful transboundary training in crisis management can take place?
- What would be the user requirements regarding the setting, planning and processes of transboundary response planning (e.g. integration of current tools and processes, legal requirements, bilateral agreement.)

Figure 15 contains an overview of the table hosts of the nine different tables of the World Café discussions.

Situation Assessment; Common Operational Picture	**Fraunhofer (Sonja Grigoleit)**
Capacities, assets and logistics	**Fraunhofer (Philip Sendrowski)**
Communication (technical issues)	**ICCS (George Baroutas)**
Communication (process related); Coordination with other actors	**(Table 1) Fraunhofer (Maike Vollmer) (Table 2) Fraunhofer (Larissa Müller)**
Command and control (C2 legacy systems)	**(Table 1) Satways (Antonis Kostaridis) (Table 2) CNVVF (Marcello Marzoli)**
Scenario Building	**EXUS (Panagiotis Eythimiou)**
Transboundary Training (general aspects)	**Fraunhofer (Claudia Berchtold)**

Figure 15: Table hosts of the nine different tables of the World Café discussions.

The table hosts were assigned the following tasks:

- To make sure that at their table 5 – 6 participants are present (if the number of participants at the table is too large, several participants might be discouraged to participate in the discussion)
- To ensure that there are 2-3 technical experts and around 3 end users present
- To encourage everyone's contribution
- To take notes, but also to encourage the other participants to draw, sketch or write down their ideas
- At the end of each round, to stay at the table and give the next group of participants a short summary of the discussion (1 or 2 technical experts could stay, but were encouraged to instead change tables)
- During the wrap-up session at the end of the day, to mention the 2 or 3 most important user requirements identified during the World Café session
- To provide the full list of identified End User requirements (EUR) to the consortium after the workshop (and additional comments if necessary)

7.2 Ethics and Privacy Impact Assessment Workshop Method

Trilateral organized an interactive Ethics and Privacy Impact Assessment Workshop to ensure that mitigation measures and solutions relevant to system design and organisational practice are identified and discussed from an early stage of the IN-PREP project.

Beginning with a plenary presentation, Trilateral shared information on the following topics:

- Introduction
    - What is an Ethics and Privacy Impact Assessment
    - Methodology and Principles
- Overview of the features, functions and characteristics of the IN-PREP system and information flows
- Privacy, social and ethical considerations
    - Introduction to risk mapping
    - Introduction to mapping solutions
    - Initial findings

Then, to foster discussion, end users and technology providers worked in small groups, with a set of starting questions to get them engaged. Topics were:

- Mapping risks, vulnerabilities, opportunities for responsible innovation
- Brainstorming additional legal, social and ethical considerations
- Potential solutions to mitigate negative legal, social and ethical impact
- Brainstorming additional potential solutions

8 Outcomes of Workshop #2

The outcomes of workshop #2 are twofold. First, the initial End User Requirements (EURs) identified during the first workshop in Leiden were validated. Then, refinements to these initial EURs, as well as additional EURs were sought. The validated results of the EURs will be described and explained in report D2.6 User Requirements.

8.1 Initial EURs validation

To validate the initial user requirements, CPLAN led a plenary discussion, supported by a presentation listing the EURs from the first workshop. These EURs were categorized based on the findings of workshop #1 into six categories of training and preparedness that will be possible within the MRPP:

1. Make a plan
2. Create a scenario
3. Define criteria to test
4. Play (train)
5. Score / asses / evaluate
6. Adapt

The methods and discussion context of workshop #1 were shared with participants in Berlin, and the findings were presented in order to receive feedback, criticism, new ideas, total rejection – anything the workshop #2 participants wanted to share. Going through all EURs within each category, all participants agreed with the initial findings, and agreed that these categories, and the EURs within them were a logical, useful way to conceptualize IN-PREP's MRPP.

8.2 User feedback for final EURs

Following this validation activity, the second part of the workshop aimed to identify more specified user requirements regarding the MRPP. Thereafter, a final list of EURs could be created, which would feed into the work to be done in WP3 related to the finalization of the system design and specifications. Furthermore, the EURs will be relevant to all other WPs, taking into account all technical developments and end user training and demonstration activity.

Figure 16: World Café Discussions – participant sketches

At each World Café Table a table host, one or two technical experts of the respective area as well as 3 or 4 end users were present. This setting allowed for a situation, in which the end users could explain their needs in the respective technical area (e.g. situational awareness, command and control, etc.) and the technical experts of the IN-PREP consortium could describe the relevant technologies and processes the IN-PREP project intends to include into the MRPP.

This had the advantage that the consortium partners responsible for a specific technology got direct feedback from the end users regarding their expectations of the IN-PREP platform. Also, end users had the opportunity to influence the further development of the platform and discuss their needs and suggestions with the responsible IN-PREP partners.

The participants explained that currently each country has its own **common operational picture** (COP). In transboundary crisis situations the information regarding this COP is usually shared orally, by email or via liaison officers. The main challenge regarding a transboundary common operational picture is to tackle the different languages and terminologies, the

different legal issues and regulations and to understand the structures and processes of the other country. The end users asked for a user-friendly platform, which should contain all necessary information (the modules of the other countries, the national plans, a list of experts and points of contact). Additionally, a cartographic tool which provides the users with a map of the event would be seen as helpful.

The area **capacities, assets and logistics** is generally seen as a cross-cutting issue in training activities. A special challenge in transboundary crises is seen in the different terminologies and the logistical structures of the participating countries. End users voiced wishes for an asset register, in which the assets are sorted according to their capabilities, their status (e.g. deployed, ready to use) and their possible usage in different services (e.g. fire, police, search and rescue). A functioning Geographic information system (GIS) was also deemed to be very important.

Regarding **transboundary crisis communications** the challenges are seen in the interoperability of the communications systems, in the different languages and terminologies and also the data protection issues. While in some European countries IT platforms are currently used to exchange common operational pictures, in other countries the communication mainly takes place via E-mail, phone and radio-communication or via liaison officers. The participants stressed that the prevention of communication breakdowns is important. As further user-needs for the IN-PREP platform they mentioned for example a high resolution map of the disaster scene, a situational awareness template, chatroom functions as well as the possibility to include social media.

The main challenges in transboundary **command and control** (C2) are seen in the interoperability of the different national C2-systems as well as in the different tactics, procedures, languages and symbologies. Therefore, the end users mainly requested that the IN-PREP platform should be interoperable with the national C2-systems and also that the crisis plans should be available to the field personnel.

So far, there is no common tool regarding **scenario building** for response training purposes. Currently exercises are designed and prepared on paper. During the table discussions the participants described the needs for a unifying tool for scenario building at all levels (operational, tactical and strategic). This tool should be flexible, editable and easy-to-use. The scenarios should contain a story line and have different phases with the possibility for multiple events. The main challenges for this tool are that it should be used in a cross-boundary crisis with cross-agencies cooperation and also include the actions of volunteers.

Regarding the more **general aspects of transboundary response training** it has to be decided who will participate in the training and exercises, who will take the lead and who will be responsible for organisation issues (e.g. catering, accommodation and payments). Data protection issues also should be taken seriously, so that the granularity of the recorded information needs to be determined: no blaming and shaming should be allowed. The end users also stressed the importance of having a clear set of goals for each exercise/ training and a de-briefing and identification of lessons-learned afterwards.

For a more detailed analysis with respect to the user feedback of the second workshop, please refer to Annex IV "Minutes of the World Café Discussions".

8.3 Ethics and Privacy Impact Assessment

The external end user experts and IN-PREP's technology partners engaged in a qualitative Ethical and Privacy Impact Assessment (EPIA) workshop in order to identify key ethical and privacy risks and, working together, begin to identify mitigation measures and solutions that would be relevant to system design and organisational practice. The idea is not to think of it as validating the system itself as innately ethical but to understand how the system enables ethical actions and considerations. The EPIA workshop is a middle step in a larger EPIA methodology to identify and analyse the impact of the project output on privacy, ethical, and societal issues.

Building on an initial map of the information flows of data in the IN-PREP platform as envisioned, external end users were consulted in order to ground this map in actual practice and use, taking abstract data flows and system designs

and contextualising them in what end users actually do during training and planning. Included in this overall EPIA process is the production of added end user requirements that support the design and consideration of the broader privacy, ethical, and societal considerations. The final result of this process will be to produce recommendations (in consultation with other IN-PREP partners and external privacy and ethics experts) for the overall design principles of the IN-PREP platform, Handbook, and general uptake of the project results.

The EPIA workshop began with a short introduction for the external end users and tech partners about the multiple meanings of privacy. It explained how various meaning have shaped the new General Data Protection Legislation and data subject rights, and where the legal accounts of privacy do not encompass the ethical, human rights, and societal foundations of privacy and security. The presentation also covered key ethical and societal issues and human rights that have already been identified to potentially impact the IN-PREP outcomes, such as autonomy, impartiality, dignity, exclusion, responsibility, proportionality, stewardship, and mission creep. It was made clear that many of these terms carry multiple assumed meanings. For example, security could mean privacy, security to share, or personal safety. It could imply surveillance, consent, pre-emptive risk assessment, and/or infringing upon human dignity. These nuances can fundamentally change how a risk is understood and acted upon. The presentation provided a foundation for workshop participants to understand the level of detail necessary for their discussions and interactions to produce meaningful results.

Then, the overall system and technology was introduced to the external participants. This was a generic overview of the parts and their interrelationships; enough so that the conversation could shift from generic end user requirements to the potential tools and functionalities in practice.

The workshop participants were then divided into 5 tables for discussion, each focused on a different set of tools. Technology partners were situated at each table in order to help users understand the architecture. Users were situated at each table in order to help technology partners understand practice. The aim was for these participants to work together to imagine tools in use, in action, and to see risks.

In the first half of the workshops, each table had to identify the data processed and potential risks in relation to these questions:

- What kind of data will be collected?
- Who will collect what data?
- From whom?
- Where/how will it be stored?
- How will the collected data be used?
- How will the data be shared and with whom?

To support this deliberation, each table was provided with a set of starting questions in order to support the initiation of discussions. These questions related to both the privacy and ethical principles presented and built upon interviews previously conducted with technology partners as part of the information flow mapping. The tool divisions and examples of starting questions are in the table below.

Decision Support	Accuracy: • Is it possible to have human intervention? At what point of the process? • How do you validate the analytics? Privacy: • Can aggregation reveal identities? Incidental Data Could data about behaviour/methods be collected of an item if linked to a person/team?
Simulation	Data Protection:

	• Are all historical data (e.g. visuals) being used for the same purpose as gathered? Inclusion/Exclusion: How do you know the simulation includes all groups that should be represented (in terms of response action and in terms of victims)?
Risk Assessment and Modelling	Mission Creep: • What if two locations have different priorities in classification of victims or response needs? Non-Discrimination: What categories of sensitive data are we working with (e.g. could training with this scenario lead to responses that (unintentionally) discriminate?
Resource and Asset Management	Personal Data: • Is it clear and accessible how data (name, unit/agency they work for, location data, photograph) is being used, analysed and stored? Accountability How do you account for inaccuracies of the data?
Integrated Observation, Sensor, and Communication	Responsibility: • If one person owns a sensor, who is responsible/liable for the data gathered? • Who determines the purpose and means of collection and processing? Autonomy: What are the implications for autonomy if one agency owns a tool and another one has to always ask to use it when collaborating?

Table 11: Tool divisions and examples of starting questions for ethics disucssion

In the second half of the workshop, the participants were asked to rank the risks using the following scale: 1. Must be solved; 2. Should be solved as comprehensively as possible; 3. Would be nice, but not essential. They were then asked to explain why it is a risk. Finally, they were asked to start to think through organisational, technological, and policy solution and mitigation measures.

Initial results made it clear that very little personal data will be processed by the IN-PREP system. However, despite such minimal use, participants still identified many high priority risks. Below is a sampling of what emerged from the workshop:

- The system relies on legacy systems deployed in agencies for the processing of personal data and access control, potentially bringing into conflict disparate organisational and confidentiality schemes. As a result, it must be conscientious of how these systems are able to converse through IN-PREP's platform in order to avoid mission creep and unintentionally exclusion due to different levels of accessibility.
- IN-PREP also needs to consider carefully how the data it does track are linked to this legacy data for training records. There was great concern across many tables as to how a) the traces within the IN-PREP platform could be used to offer insight into methods and decision-making processes that users do not want to be revealed outside of their agency or team, and b) these traces could be used as a way to retroactively evaluate training, conflating the trace with an individual's actions during the training. Suggested Mitigation measures ranged from only documenting completion of a training simulation but not actions taken, pseudonymising trainee data, to contractual agreements that such data cannot be used as part of individual job evaluation.
- Participants also identified risks in the use of outdated data in how the scenarios are built. This could lead to poor operational decisions that increase personal and property risk. As a result, IN-PREP has an obligation to

ensure data providers maintain up-to-date records and that the scenarios building tools need to encourage users to combine current with historical data.

- Participants also raised the high priority risks around trust between agencies from different countries, risking miscommunication no matter how many collaborative tools are in place. It became clear based on end users experience that IN-PREP's tools can augment but not replace prolonged, face to face encounters.
- Of high priority was the ethical concern that the machine learning could contain accidental bias and profiling. There needs to be transparency built into the system and the handbook as to how these analytics should work in order to ensure appropriate human interventions.

Detailed results of the EPIA workshop, including full impact assessment and recommendations, will be presented in D2.2 "*Legal, ethical and privacy impact assessment report*".

9 Conclusion

Workshop #1 in Leiden, the Netherlands, was organized with the purpose of gathering information from end users about current practices, current collaborations and potential areas for improvement. Based on feedback by the end users participating in the first workshop, a general framework of EURs was identified. The general framework follows these six steps: make a plan, create a scenario, define criteria, train, score, and adapt. This framework allows for a circular process for training and preparedness. The orders of these steps may change in practice, but all are considered essential. The main outcomes of the first workshop were the initial end user requirements for the MRPP, following the identified six steps. The initial requirements are to be presented in the first draft of D2.6 "*User Requirements*".

Workshop #2 in Berlin, Germany was intended to validate and further expand the draft list of user requirements based on the first workshop, and through the discussions in the area of ethics and privacy impact assessment, to develop a set of risk criteria against which to assess, analyse and map and therefore minimise and avoid project risks. The scheduled activities, including evaluation efforts, were successful in achieving the intended goals. End user feedback has been obtained on the following MRPP functionalities: situation assessment, capacities/assetts/logistics, communications, C2, scenario building, transboundary training End users also discussed ethics and privacy issues. All end user feedback will be used to update D2.6 "*User Requirements*".

The fruitful discussions with a broad stakeholder community on both occasions will result in a final list of User Requirements (D2.6) that will be a living document, continuously updated and validated with end users throughout the project lifespan.

Annex I: Informed Consent Form for the IN-PREP Project

Below is the form completed by all participants in the Leiden, NL User Workshop #1. The same form was used for the second workshop in Berlin, DE, with only the event name and location modified.

"An INtegrated next generation PREParedness programme for improving effective inter-organisational response capacity in complex environments of disasters and causes of crises"

(Grant Agreement Number 740627)

INFORMED CONSENT FORM

For participants in IN-PREP Research and Training Activities

You have been invited to take part in the 1st End-User Workshop, organised by Crisisplan BV, within the "INtegrated next generation PREParedness programme for improving effective inter-organisational response capacity in complex environments of disasters and causes of crises" (IN-PREP) Innovation Action (IA).

With your participation, IN-PREP aims to collect insights into preparedness, response planning and scenario building representative of high risk threats, transboundary disasters and causes of crisis that the European Civil Protection Community has faced and most importantly still needs to be better prepared on. The insights will be analysed to develop a mixed-reality preparedness platform and a handbook of operations.

The nature of the IN-PREP IA, the IN-PREP End-User Workshop's scope and aims, your involvement in it and your rights regarding your participation in it are explained herein.

Please read the following information carefully.

This Informed Consent Form consists of two parts:

1. Information Sheet (to share information about the IN-PREP IA with you);
2. Certificate of Consent (to sign, if you choose to participate in the End-User Workshop).

If you have any questions about this document, the accompanying "Statement of Informed Consent" form, or the IN-PREP IA in general, please ask Dr. Katrina Petersen or Mr. Evangelos Sdongos (contact details below).

Dr. Katrina Petersen
Email: katrina.petersen@trilateralresearch.com
Skype: katrina.g.petersen
Address: Trilateral Research Ltd., Crown House, 72 Hammersmith Road, London W14 8TH, United Kingdom

Mr. Evangelos Sdongos
Email: evangelos.sdongos@iccs.gr
Telephone: (+30) 210 772 2467

ICCS, National Technical University Campus
Address: Computer Building of Electrical Engineer, Office 2.02, 9 Iroon Politechniou Str. Zografou GR-15773, Athens, GREECE

INFORMATION SHEET

IN-PREP - An INtegrated next generation PREParedness programme for improving effective inter-organisational response capacity in complex environments of disasters and causes of crises

You have been invited to take part in an Innovation Action called IN-PREP - An INtegrated next generation PREParedness programme for improving effective inter-organisational response capacity in complex environments of disasters and causes of crises, being conducted by a consortium coordinated by the Institute of Communication and Computer Systems. In particular, you have been invited to participate to the 1st End-User Workshop.

In order that you are able to take an informed decision as to whether to take part or not, it is important that you understand:

a) What the Action is about;
b) Why the Action is important;
c) What your participation in the 1st End-User Workshop would involve.

This Information Sheet is designed to explain these aspects to you. Your participation is voluntary. Before you decide if you want to participate, it is important that you understand the aim of the research, what it will involve, and your rights as a participant.

To ensure that you have a proper understanding of these matters, please read carefully through this document. Please feel free to ask questions and satisfy yourself that you have received understandable answers before making a decision. You can also find further information at website: www.in-prep.eu

If you agree with the content, please sign the consent form overleaf.

1. WHAT IS IN-PREP?

IN-PREP is an Innovation Action (IA), funded by the European Commission. It began in September 1st 2017 and will finish in August 31st 2020. The Team working on the IN-PREP IA consists of 20 organisations from industry, public sector and academia. The overall Action Coordinator is Dr. Angelos Amditis, Research Director of Institute of Communication and Computer Systems.

IN-PREP aims to build a system that can better prepare civil protection practitioners (fire brigades, emergency medical services, police and civil protection agencies) at all levels of command, in responding collaboratively to urgent natural and manmade Transboundary Crises. Three urgent challenges are to be supported by the Action: (a) shared response planning across agencies and borders; (b) improved sharing of accurate and relevant information in real time and (c) improved coordination of critical and scarce resources and assets.

Guided by feedback from practitioners and tools brought by technology partners together they will create a Mixed Reality Preparedness Platform; a novel IT-based tool for response planning and scenario building to integrate Command and Control and Information systems, Situational Awareness modules, and a Decision Support mechanism. In addition, IN-PREP will create a Cross-organisational Handbook of Transboundary Preparedness and Response Operations. The principal aim for both outputs is improving preparedness with realistic training in representative scenarios of disasters and causes of crises. This will upgrade coordination of response actions and support the work of those with this responsibility.

More detailed information may also be found in www.in-prep.eu or may be provided by Mr. Evangelos Sdongos.

2. WHAT WILL THE RESEARCH INVOLVE?

As part of the IN-PREP Innovation Action we will conduct a wide set of Research and Training Activities, namely interviews, workshops, surveys, exercises and demonstrations (pilot trials and field trials), with consortium members and relevant stakeholders (including: command and control personnel, law enforcement staff, fire-fighters, health workers, civil protection organisations and humanitarian workers). Accordingly, we would very much welcome your participation in this research.

Interviews: will be open conversations to ask you questions about and discuss your experiences in situations of training and response for emergencies as well as your experiences using technology designed to aid in such work. With your permission, the interview will be written down or recorded on audio and then transcribed. The interview will take place at your convenience in person or virtually, e.g. on Skype. We estimate that it will take between 30-90 minutes.

Surveys: will focus on specific issues and gather input from you through questionnaires.

Workshops: will bring together various stakeholders to understand the practicalities of your work. They may involve shadowing an individual or group, observing interactions as you work through scenarios, or gathering information based on discussions about user experiences.

Exercises: The exercises will range from single organisation field tests and field tests with different organizations for training purposes. They will include the setup of a preliminary technical platform, for developing relevant Crisis Management and Disaster response table top and Computer Assisted Exercises. This simulation environment will be used for validating the IN-PREP individual components and the integrated modular solution against scenarios defined in the Action. The platform will allow the organization

of the simulated Computer Assisted Exercises in a distributed way, allowing the participation of all involved actors in a cost-effective manner.

Demonstrations: The Demonstrations will be built upon and advancing the above Exercises concept in the following way: based on a realistic scenario, where possible based on previous incidents ; involving all relevant entities (internal and external experts); realistic roleplay through the involvement of actors "playing" their day-to-day role; flexible and adaptive exercise/demonstration control; structured evaluation and lessons identified. They will include the setup of the final versions of the IN-PREP technical platform for training purposes.

3. WHO WILL BE CARRYING OUT THE RESEARCH?

The research will be conducted by expert researchers and professionals of the IN-PREP consortium which consists of the following organisations:

Partner	Short name	Country
Institute of Communication and Computer Systems	ICCS	EL
Crisisplan B.V	CPLAN	NL
AIRBUS DS SAS	ADS	FR
Deutsches Zentrum Fluer Luft - Und Raumfahrt EV	DLR	GER
DIGINEXT SARL	DXT	FR
Italian Ministry of Interior - Dipartimento dei Vigili del Fuoco, del Soccorso Pubblico e della Difesa Civile	CNVVF	IT
EXUS Software Ltd.	EXUS	UK
Satways Ltd. – Proionta kai Ypiresies Tilematikis Diktyakon kai Tilepikinoniakon Efarmogon Etaireia Periorismenis Efthinis EPE	STWS	EL
Fraunhofer Gesellschaft Zur Foerderung der Angewandten Forschung E.V.	FhG	GER
SAMU – Hopitaux De Paris	SAMU	FR
University of Greenwich - Fire Safety Engineering Group	UOG	UK
Trilateral Research Ltd.	TRI	UK
C.C.I.C.C Limited	CARR	IRL
Police Service of Northern Ireland	PSNI	UK
Intelligence for Environment & Security – IES Consulting SRL	IESC	IT
Deutsche Hochschule der Polizei	DHPol	GER
Safety Region Ijseselland – Veiligheidseregio Ijsselland	SRIJ	NEL
Municipality of Rhodes – Dimos Rodou	RHO	EL
AIR Worldwide Limited	AIR	UK
Health Service Executive - Inter-Agency Emergency Management Office	HSE-IAEMO	IRL

4. HOW YOU CAN HELP IN-PREP?

You have been invited to contribute to IN-PREP IA, namely to the 1st End-User Workshop. You have been invited because you have the expertise to provide insights into preparedness, response planning and scenario building representative of high-risk threats, transboundary disasters and causes of crisis that the European Civil Protection Community has faced and, most importantly, needs to be better prepared on. Your contribution to IN-PREP would

involve taking part in scenario-based discussions and providing your opinion, feedback, experiences or/and comments on IN-PREP solutions.

5. WHAT ARE THE POSSIBLE BENEFITS AND DISADVANTAGES OF TAKING PART IN IN-PREP?

Taking part in the IN-PREP End-User Workshop, you will not be placed in any situation in which there is a likelihood of physical, mental or emotional harm. Also, you will not be placed in any environment threatening to your physical or mental integrity. Potential cultural hurdles were identified in advance and ad hoc measures were taken in order to avoid any incident. We are available to satisfy any reasonable request or need you might have.

If you have been invited to the IN-PREP End-User Workshop by your employer, be assured that you are under no undue explicit or implicit pressure to take part. Taking part entails no advantage in terms of your employment and not taking part implies no disadvantage. Disadvantages related to taking part to the End-User Workshop include potential loss of time and the cost of attending to/conducting the activity, which is not paid nor reimbursed.

If you have been invited to the IN-PREP End-User Workshop by your school/university/professor, be assured that you are under no undue explicit or implicit pressure to take part. Taking part entails no advantage in terms of your grades and not taking part implies no disadvantage. Disadvantages related to taking part to the End-User Workshop include potential loss of time and the cost of attending to/conducting the activity, which is not paid nor reimbursed.

You will not be paid to participate.

Although your participation is genuinely aimed at getting your opinion, feedback, experiences or/and comments on IN-PREP solutions, there could be a risk that you may share some confidential information by chance, or that you may feel uncomfortable talking about some issues. However, we do not wish for this to happen. You do not have to answer any question or take part in the discussion if you feel the question(s)/topic are too personal or if talking about them makes you uncomfortable. If you say anything that you then realise you do not want to be reported or anyhow used for IN-PREP research purposes you can inform us at any moment, during or after your participation.

You have – and understand that you retain it at all times – the right to withdraw yourself and your data from the End-User Workshop and, in general, from the IN-PREP IA. You may do so for any (or no) reason and without prejudice. You may be asked for a reason, but be clear that there is no obligation, and that you are under no pressure whatsoever, to answer. You will be briefed, from the outset, on the procedures for ending your participation to the End-User Workshop, i.e. by simply expressing your free choice to withdraw.

6. WHAT WILL YOU DO WITH MY PERSONAL INFORMATION?

If you agree to be participate, any personal information (e.g., name, contact details) that will be collected from you is for our internal processing and administrative purposes only, and to enable us to contact you if we require further information. Your details will be kept for a maximum period of 12 months following the end of the research project. Unless you prefer otherwise, we will not publish any information in reports or communications materials that would enable you to be directly or indirectly identified.

7. IF YOU COLLECT DATA I USE IN AN EXERCISE OR DEMONSTRATION, WHAT WILL YOU DO WITH IT?

In gathering data, we will only record information that is necessary to address the central purpose of our research, and ensure it is anonymised. All data will be encrypted and stored in and/or shared through secure online platforms, where access is restricted by means of usernames and passwords.

8. WHAT WILL YOU USE MY PARTICIPATION FOR?

Your participation will be used to inform our user requirements, revise design, and develop the technologies with respect to responsible use. Additionally, the information that you provide may be used to write articles for peer-reviewed journals and relevant industry magazines, for presentations at conferences and workshops, and in the promotion of IN-PREP in general. Unless indicated otherwise, all information that could either directly or indirectly identify you will be anonymised.

9. WHAT ARE THE POTENTIAL RISKS OF PARTICIPATING IN RESEARCH?

Your participation raises some small risks in terms of entrusting your data and personal information to the research team. However, the research team has defined and outlined strict privacy and data management procedures, in line with National and EU regulations. These procedures have been approved by the European Commission and the relevant research authorities. These evaluations should ensure that these minimal risks have been adequately addressed.

10. ARE THERE ANY COSTS AND WILL I BE PAID?

There are no costs for participating. You will not be paid for participating in this research.

11. STORAGE OF DATA:

The audio recordings and transcriptions from this interview will be stored securely and will be managed by ICCS. Data and information gathered will be shared with only those members of the consortium who require access for their work. This information will be retained for the lifetime of the project and either deleted or archived for continued research in line with EU general data protection regulations.

12. YOUR RIGHTS AND CONFIDENTIALITY

A data minimisation policy is adopted by IN-PREP so that no data that is not strictly necessary for running the End-User Workshop is collected and processed.

By taking part in IN-PREP, you will be asked to provide the following information:

1. Your name, professional affiliation, age range and contact information (usually of the working place); The age range will be selected by you ticking one of the following: □ 18-30; □ 30-50; □ 50-60; □ over 60. This data will be provided voluntarily by you when compiling and signing the certificate of Informed Consent form (see below).
2. Your personal and professional views on the performance of the IN-PREP solutions during the IN-PREP End-User Workshop. This information will be provided voluntarily by you either orally or by filling up questionnaires.

Your personal data will be collected and processed by members of the IN-PREP consortium. In particular, they will be processed for the purpose of carrying out project research activities only.

Whenever you are requested to submit personal data (in Informed Consent forms), please be informed that this data is stored and processed by IN-PREP consortium members only. The data you provide by compiling and signing this informed consent will be gathered on paper and on computer files, stored in IN-PREP consortium member offices and accessed only by us or other select personnel who might be authorised to work on IN-PREP. Unauthorised access is prevented by the adoption of the following security measures: we will lock paper based information up in archives with a lock and key; we will employ a password to get access to computer files storing your personal data; your data on this computer is encrypted through available encryption software.

These data will not be shared with or disclosed to anyone outside the research team. If needed or required, they might be shared with the EU Commission. However, we may disclose collected personal information to the extent that it is required to do so by law, in connection with any legal proceedings or prospective legal proceedings, and in order to establish, exercise or defend our rights. Your personal data will be permanently and irrevocably erased 12 months after IN-PREP IA's completion.

This IN-PREP Activity has a specific "Data Protection Officer", Mr. Evangelos Sdongos, responsible for the data

Please understand that participation in IN-PREP is entirely voluntary: you are under no obligation whatsoever to take part. No disadvantage or stigma will arise should you decide not to participate. You have the right to refuse to answer particular questions. If at any time during the research you feel unable or unwilling to continue, you are free to leave without negative consequences. You may withdraw from this project at any time. Notes about what you say and do will be taken during your participation, but they will not include your name or any information that could identify you to others. Every effort will be taken to protect your identity. As part of anonymising the data you will be given a unique ID. You will not be identified in any report or publication of this study or its results, unless you request otherwise.

You can review any audio recording/notes of interviews and training activities should you choose to do so.

If you change your mind and do not want to be interviewed, please contact the researcher or project coordinator (details below).

If, after consideration, you decide that wish to take part in the IN-PREP End-User Workshop you will be asked to sign a "Statement of Informed Consent". This document records your agreement to take part, but it in no way obliges you to take part. You may decide not to take part at any time before or during your involvement with IN-PREP, even if you have signed the Statement of Informed Consent. You always retain the right to withdraw from the IN-PREP activity for any reason at all (or even for no reason at all), without prejudice. You may be asked why you have decided to withdraw, but you are under no obligation to give a reason. You should retain both this document and your copy of the Statement of Informed Consent for your records and information. Your participation in the IN-PREP IA is instrumental for the IN-PREP purpose of creating and implementing the integrated next generation Preparedness programme for improving effective inter-organisational response capacity in complex environments of disasters and causes of crises. Overall, your feedback on IN-PREP performance is key to fine-tune IN-PREP capabilities and contribution to a more secure society.

13. KEEPING IN TOUCH WITH THE PROJECT

You can choose to be kept informed about the project's progress, and will thus be put on a mailing list, however this is not mandatory.

14. MORE INFORMATION?

Thank you for taking the time to read this Information Sheet. If you have any questions about any aspect of the IN-PREP IA, or your prospective involvement in it, please contact:

Dr. Katrina Petersen
Email: katrina.petersen@trilateralresearch.com
Skype: katrina.g.petersen
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M.SC. Evangelos Sdongos
Email: evangelos.sdongos@iccs.gr
Telephone: (+30) 210 772 2467

ICCS, National Technical University Campus
Address: Computer Building of Electrical Engineer, Office 2.02, 9 Iroon Politechniou Str. Zografou GR-15773, Athens, GREECE

STATEMENT OF INFORMED CONSENT

Project Full Title: An INtegrated next generation PREParedness programme for improving effective inter-organisational response capacity in complex environments of disasters and causes of crises

Project Acronym: IN-PREP (www.in-prep.eu)

Contact: M.Sc. Evangelos Sdongos
Email: evangelos.sdongos@iccs.gr
Telephone: (+30) 210 772 2467

Address: ICCS, National Technical University Campus, Computer Building of Electrical Engineers, Office 2.02, 9 Iroon Politechniou Str. Zografou
Athens, GR-15773, GREECE

By signing this form, you agree to take part in the IN-PREP IA. The nature of the Action, your involvement in it and your rights regarding your participation in the Action are explained in the Information Sheet accompanying this form.

Before signing:

- Be aware that you are under no obligation whatsoever to sign this form or to take part in the IA.
- Even if you do sign this form, you may withdraw yourself, and any data relating to you, from the IA at any time, for any (or no) reason, without prejudice. You need to give no explanation.
- If anything on this form, or on the accompanying Information Sheet, is unclear, ask Dr. Katrina Petersen for clarification.
- If you have questions that are not answered by this form or the accompanying Information Sheet, ask Dr. Katrina Petersen.
- You may wish to take some time to consider whether to take part in the IN-PREP IA. You are absolutely free to do so.

Please place an "X" in the boxes below to indicate agreement with the following statements (leave them blank if you do not agree).

1. I confirm that I have read and understood both this form and the accompanying Information Sheet. ☐
2. I have had the opportunity to ask questions regarding ☐
    a. the nature and purpose of the IN-PREP IA,
    b. my potential involvement in it (disadvantages, risks and benefits), and
    c. this form and the accompanying Information Sheet.
3. I was informed about whom to contact for questions about the IN-PREP IA and the research participants rights. ☐

4. I understand that my participation in the IN-PREP IA is entirely voluntary (I will not be paid for my participation) and that I have the right to decline to answer any question or I may withdraw from the Action at any time for any (or no) reason, without prejudice. ☐

5. I understand and agree that research notes or recordings will be taken during the IN-PREP IA and my personal data be gathered during my participation in the IN-PREP IA to be used, stored and shared in the ways described on the accompanying Information Sheet. I understand that I can only withdraw my data from the research before any findings have been published. ☐

6. I confirm that I had sufficient time to take my decision and all my questions in connection with the IN-PREP IA have been answered to my satisfaction. ☐

7. I would like / not like to review transcripts of the recordings or writings upon completion.

   (Please circle the option you choose)

8. I would like / not like to receive updates on the progress and findings of the project.

   (Please circle the option you choose)

9. I would like / not like to be identified in any reports.

   (Please circle the option you choose)

   If you choose not to be identified, the researcher will not identify you by name in any reports using information obtained from this interview, and your confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies, which protect the anonymity of individuals.

10. I would like / not like to have photos or videos taken of me for research purposes

    (Please circle the option you choose)

11. I would like / not like to have photos or videos taken of me for communication purposes

    (Please circle the option you choose)

    Photos and videos taken could be used in the public domain, including but not limited to, in public reports about the project, the project website, project newsletters, and research publications.

12. I understand my right to request access to any, and all, personal information that I have voluntarily provided as part of my participation, and that I may ask for that information to be rectified and/or amended if it is inaccurate, or request that all personal information that I have provided be deleted. ☐

13. I understand that the IN-PREP consortium intends on retaining my personal contact details for a period of up to 12 months from the completion of the Project where necessary. ☐

14. I agree / disagree to be quoted directly.

(Please circle the option you choose)

15. I have been given a copy of this consent form. ☐

16. I agree to voluntarily take part in the IN-PREP IA End-User Workshop . ☐

Participant Name .....

Affiliation .....

Contact .....

Age Range □ 18-30; □ 30-50; □ 50-60; □ over 60.

Signature ..... Date .....

Researcher Name .....

Signature ..... Date .....

Statement by the Researcher/person taking consent

I have accurately provided the information sheet to the potential participant and, to the best of my ability, made sure that the participant understands it. I confirm that the participant was given an opportunity to ask questions about the IN-PREP IA, and the research activity he/she will be involved in, and all the questions asked by the participant have been answered correctly, to the best of my ability. I confirm that the individual has not been coerced into giving consent and that the consent has been given freely and voluntarily.

A copy of this Informed Consent Form has been provided to the participant.

Print Name of Researcher/person taking the consent _____

Signature of Researcher /person taking the consent _____

Date _____ (Day/month/year)

Annex II: Workshop 1 Invitation

Dear _____,

With great enthusiasm about our new project, IN-PREP, we would like to invite you to our 1st End User Workshop.

The 3-year IN-PREP project, funded by the European Commission's Horizon 2020 Programme, will build a system that can better prepare civil protection practitioners (*fire brigades, emergency medical services, police and civil protection agencies*) at all levels of command, in responding collaboratively to urgent natural and manmade Transboundary Crises. Three urgent challenges are to be supported:

- Shared response planning across agencies and borders
- Improved sharing of accurate and relevant information in real time,
- Improved coordination of critical and scarce resources and assets

Location: Grand Café de Burcht
Burgsteeg 12, 2312 JR, Leiden
The Netherlands

Date: 23 November 2017

Time: 09:00 to 17:00
(agenda to follow)

The Workshop will be very interactive and your help is needed!

We will present several scenarios related to transboundary crises, and ask what you would need to respond to such events. We are eager to hear about your current practices, technology, collaboration partners, shortcomings, successes and failures. At the same time you will be informed about IN-PREP system and the enhancements it provides to Preparedness and Response.

SEC-01-DRS-2016: ***Integrated tools for response planning and scenario building (IA)***

Total Funding: ***€ 9,580,781.25***

EC Requested Funding: ***€ 7,999,556.25***

Training Programme: ***3 Exercises & 3 DEMOs***

Consortium: ***20 partners from 7 MS (7 end users, 6 SMEs and 3Industries, 3RTOs and 1 UNI)***

About IN-PREP

Guided by feedback from practitioners and tools brought by technology partners together they will create a Mixed Reality Preparedness Platform; a novel IT-based tool for response planning and scenario building to integrate Command and Control and Information systems, Situational Awareness modules, and a Decision Support mechanism. In addition, IN-PREP will create a Cross-organisational Handbook of Transboundary Preparedness and Response Operations. The principal aim for both outputs is improving preparedness with realistic training in representative scenarios

of disasters and causes of crises. This will upgrade coordination of response actions and support the work of those with this responsibility.

IN-PREP's success depends heavily on active engagement with practitioners like you! If you are interested in joining us or have any questions please contact: Maureen Weller, weller@crisiplan.nl and Evangelos Sdongos, evangelos.sdongos@iccs.gr. We hope to hear back from you regarding your availability by Friday, 3 November.

Kind regards,

Angelos Amditis, IN-PREP Project Coordinator

Annex III: Workshop 2 Invitation

INVITATION

Dear XXX,

We are happy to invite you to our 2nd **End-User Workshop** in Berlin at 21-22 February 2018.

The 3-year **IN-PREP project**, funded by the European Commission's Horizon 2020 Programme, will build a system that can better prepare civil protection practitioners (*fire brigades, emergency medical services, police and civil protection agencies*) at all levels of command, in responding collaboratively to urgent natural and manmade Transboundary Crises.

We would like to learn from your experience and listen to your ideas and expectations regarding the future **IN-PREP Mixed Reality Preparedness Platform**. Our aim is to validate the user requirements identified during our first End-User Workshop in Leiden in November 2017 and also further expand these **user requirements** based on the actual needs of the practitioners.

We'll be happy to **demonstrate our system's components** and engage with you in a constructive cross-discipline dialogue towards shaping a preparedness platform (i.e. a training tool) that facilitates transboundary collaboration and shared views of assets and resources.

Our IN-PREP platform will be based on the **privacy by design** approach, so we are also looking forward to discussing ethical and privacy issues regarding our systems design with you.

Location: Fraunhofer Forum Berlin, Anna-Louisa-Karsch-Straße 2, 10178 Berlin, Germany

Date: 21-22 February 2018
Time: Lunch to lunch
(21.02.2018 12:30 – 22.02.2018 13:30)

We will apply the **World Café** methodology which is based on conversation, dialogue and discussion. It is a creative process for facilitating collaborative dialogue and the sharing of knowledge and ideas.

SEC-01-DRS-2016: ***Integrated tools for response planning and scenario building (IA)***

Total Funding: **€ 9,580,781.25**

EC Requested Funding: **€ 7,999,556.25**

Training Programme: **3 Exercises & 3 DEMOs**

Consortium: **20 partners from 7 MS (7 end users, 6 SMEs and 3Industries, 3RTOs and 1 UNI)**

About IN-PREP

Guided on the one side by feedback from practitioners and on the other side by tools brought by technology partners IN-PREP will create a **Mixed Reality Preparedness Platform**; a novel IT-based tool for response planning and scenario building to integrate Command and Control and Information systems, Situational Awareness modules, and a Decision Support mechanism. In addition, IN-PREP will create a Cross-organisational Handbook of Transboundary Preparedness and Response Operations. The principal aim for both outputs is improving preparedness with realistic training in representative scenarios of disasters and causes of crises. This will upgrade coordination of response actions and support the work of those with this responsibility.

IN-PREP's success depends heavily on active engagement with practitioners like you! Therefore if you are interested in joining us or have any questions please register or contact us: Sonja Grigoleit, sonja.grigoleit@int.fraunhofer.de and Evangelos Sdongos, evangelos.sdongos@iccs.gr. If requested certain travel costs may be covered by the project. We hope to hear back from you regarding your availability by Monday, 29th of January.

Kind regards,
Angelos Amditis, IN-PREP Project Coordinator

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Annex IV: Minutes of the World Café Discussions

Below are notes taken by the table hosts of the World Café during Workshop #2. These notes were based on comments made by individual participants and outcomes of small group discussions. In some cases they come across as very definitive, for example, statements about things that 'always' or 'never' happen. When analysing the feedback to create the end user requirements, all feedback is taken into consideration, while also recognizing that the view of one individual may not represent the wider end user group. To ensure that the EURs are indeed representative of a broad end user audience, they are validated with end users and continuously re-visited throughout the project.

World Café Table 1: Situational Awareness and Common Operational Picture (Sonja Grigoleit)

First Round:

- In every country they have their own common operational picture about their own assets
- If one country needs to work together in a crisis with another country, the communication often occurs via Email or phone
- Only selected data will be shared; this depends on the situation
- The UK system JESIP was presented (www.jesip.org.uk)
- In the Republic of Ireland JESIP is not used (difficulty of different processes)
- The input to the common operational picture comes from the first responders (e.g. type of incident, casualties, etc.); in the case of a terroristic attack other types of situation awareness tools will be used (e.g. drones or satellites)
- In a transboundary crisis situation information between countries is usually shared via liaison officers or by other ways from person to person (email, orally)

What are the challenges?

- To include all stakeholders (this is difficult to train, because in a training situation all participants know beforehand that they are part of the training – in real life situation it is difficult not to forget important actors)
- the terminology
- to understand the processes of the other country (to decide how to exchange information with the other country at each step of e.g. JESIP)
- different legal issues in different countries
- different regulations (e.g. in the UK the police forces are armed, in the Republic of Ireland they are not)
- to know who is in command in the other country
- to know what is my own rank inside the structure of the other country
- to deal with casualties (post-mortem rules)
- to know who is responsible for the planning
- psychological issues (trust between the actors in different countries)
- cultural factors
- different countries have a different understanding about what is a "mayor incident"
- the national protocols of a mayor incident are different
- to understand who is responsible (police, municipality)?
- In transboundary crisis the communication usually will be high-level

Second Round:

- In the Netherlands the LCMS system (National Crisis Management Systems of the Netherlands) is used for having a common operational picture
- Usually the first responders deliver the main input for situation assessment, but there are other technical tools like sensors for forest fire, GPS or water level sensors
- Additionally WhatsApps are used for situation assessment
- Smartphones can also be used to track people or to alert people in a certain area; e.g. it is possible to use a helicopter to subscribe all mobile phones in a certain area
- The situation assessment in transboundary crisis situation is usually done by using white boards, speaking to the actors or via radio communication
- To get information from the other country liaison officers are used

Challenges:

- The languages
- The structure of command and control is different in the other country; you don't know whom to contact
- Getting a common operational picture in transboundary crisis situations is not a technical problem – it is a political or legal challenge (who is responsible, the different procedures, human factor, language)
- In different countries there are different regulations (e.g. nuclear power plant; in Germany in a radius of 50 km, in the Netherlands in a radius of 100 km the people are asked to do preventions like taking Iodine, in case of an incident)
- Within the same country the people know each other (networking, trust), but they don't know who is responsible in the other country
- the operational compatibility is a problem

Third round:

Challenges of a common operational picture in transboundary crisis situations:

- In different countries there are different policies, equipment and procedures
- The language is a problem
- If Sweden contributes to an international mission they send autonomous cells, with their own food, water and radio-communication system
- The radio-communication has different standards in different countries

What do the end-users expect from IN-PREP?

- They do not expect IN-PREP to improve the national organisations in crisis-management; the national organizations already work quite well -> IN-PREP should concentrate on the transboundary cases
- They expect from IN-PREP, that the information which is provided by DG ECHO is presented all in one place and in a user-friendly way
- They need a user-friendly platform (website) with all necessary information (e.g. the modules of the other countries, the plans, the list of experts, points of contact) -> European response capabilities
- IN-PREP should give access to this information via a user-friendly tool
- This website could be similar to meteoalarm (but for crisis management)
- This shouldn't be a political problem, because the access to the information about the modules of the other country is only given when appropriate (if help is needed)
- At the moment this process of finding modules, experts, etc. in another country is very time-consuming
- In this webpage also a civil protection app with the possibility of a chatroom should be integrated
- They need a holistic solution (all information and tools at one place)

- This platform should not be used only in very big events – IN-PREP should focus on the small events as well, the day-to-day events; if the IN-PREP platform is not used on a daily basis it will not be used in case of a big event
- Example Spain-France:
    - It would be good, if the two 112-centres in Spain and France in regions near the border could cooperate better
- It is recommended to have exchange programmes, e.g. of police officers between different countries; so that they have the possibility to spend 1 or 2 years in a police unit of another country

Fourth Round:

- In a transboundary crisis (or training situation) the common operational picture should be visible for all countries
- This could include e.g. a cartographic tool (a map of the event), because these maps are usually compatible
- IN-PREP already has a 3-d-tool to be used as a COP
- It would be helpful, if the IN-PREP platform could show the incoming alerts (the urgent events)
- The common operational picture has three levels:
    - Strategic level:
        - The needs and interests of the different countries
        - The resources
        - The emerging threats and risks
        - Who is responsible
    - Tactical level:
        - The capacities
    - Operational level:
        - Tools, means and actions
- In case of a forest fire the actors have to know, if e.g. a hospital or a gas station is nearby and further actions have to be taken (in this case different agencies will be involved)
- The end-user would prefer to have both liaison officers AND a tool to share information
- This tool would help to avoid time-delays and would connect the different expertise domains and decision makers
- Automated decision support system: The end-users need a systems that makes suggestions, e.g. in form of a checklist ("is a hospital in this area?", "consider evacuation"
- "early warning" should also be part of preparedness
- A checklist could also be helpful for trainers (observers of a training)
    - Currently there is note-taking (goes well, does not go well), at the end a debriefing and it includes performance indicators
- Financial aspects: it is recommended to use more budget in the area of scenario building and less in response; prevention should be pushed, so that in the end less money has to be spend in response
- A good way to react to terrorism is to get back to normality quickly – this will reduce the fears of the citizens

World Café Table 2: Capacities, Assets & Logistics (Philip Sendrowski)

Working definition as agreed by participants: capacities and assets together make up capabilities; logistics is concerned with supporting rescue operations by providing resources and capabilities

Round 1 + 2

General Issues

- Capacities, Assets & Logistics is a cross-cutting issue for most organisations, specialised experts are only employed by very few organisations
- Managing Capacities, Assets & Logistics is seen as a skill set that is employed by key personnel, mainly on the strategic and tactical level
- Underlying every Capacities, Assets & Logistics activity is a thorough risk assessment (understanding what could happen and where in order to be prepared)

Status Quo of Training

- In general, Capacities, Assets & Logistics is a cross-cutting issue in training activities
- Specialisation in Capacities, Assets & Logistics management through trainings is rare
- Managing Capacities, Assets & Logistics is usually part of training curricula mainly for senior decision makers at strategic and tactical levels
- Training on Capacities, Assets & Logistics often focuses on
    - Learning how to match capabilities and requirements
    - Understanding differences regarding organizational structures, mentalities, ways of operating
- Some organisations use European training courses on logistics
- Lessons learned is a very important aspect in training Capacities, Assets & Logistics management
    - Some organizations use feedback systems and organizational learning frameworks which have special indicators specifically relating to Capacities, Assets & Logistics

Challenges in Training Capacities, Assets & Logistics

General challenges

- Coordination of training activities is difficult if several partners are involved
- Political support for training can be lacking
- Training burden can be difficult to overcome (time, resources, willingness)
- Communication can be a problem (knowing who does what in other organisations, sharing lessons learned within and among organisations)

Specific challenges

- There is a need to understand operational means and methods, as well as the terminology used by partners.
- Different organisations have differing role competencies regarding Capacities, Assets & Logistics management
    - Often people don’t know who does what or who can do what

    - This results in difficulties matching capabilities and requirements
- Practical challenge: training Capacities, Assets & Logistics management requires equipment and machinery which needs to be bought, maintained and transported to training facilities
    - Logistical challenge of getting equipment and machinery where it needs to go
    - Budgetary challenge is described as more problematic than in other areas

Potential for Improvement

- Standardisation
    - Of terminology
    - Of training activities, ideally resulting in a pan-European training curriculum on Capacities, Assets & Logistics management
    - Of policy governing Capacities, Assets & Logistics management
- Interoperability
    - Of communication tools
    - **OR** IN-PREP as means to communicate on all levels relevant to logistics (mainly strategic and tactical)
- Commitment
    - Of partners to training activities
    - To create common approaches
- Communication
    - Partners need to know what others can do
        - Categorization of capabilities
        - Information needs to be accessible depending on requirements at different levels of command
    - Partners need to know how others do their work
        - Broaden understanding of organisational differences
    - Lessons learned from exercises need to be properly documented and shared among and within organisations
    - Organisations need ways to properly communicate their requirements to the political level
        - Collection of useable evidence from exercise can help support policy development
- Training facilities for transboundary training to minimise logistical requirements of training

Round 3+4 - User requirements

Asset register

Users voiced the wish for a Capacities, Assets & Logistics management asset register. The register should have the following functions:

- Categorization of capabilities (not functions) - *(high priority / mandatory)*

    - Capabilities should be colour coded to show their status (e.g. deployed, ready to use, in need of support [e.g. fuel, maintenance])
- Glossary of terms - *(high priority / mandatory)*
    - Need to avoid confusion over terminology
- Ability to browse capabilities by specific service (fire, ambulance, urban search and rescue, police) - *(high priority / mandatory)*
- Allow the sustaining of supporting function of assets / keeping assets functional (see colour coding mentioned above) - *(high priority / mandatory)*
- Granularity - *(high priority / mandatory)*
    - Level of detail of asset register needs to be scalable depending on level of command and service type using the register
- Validation - *(medium priority / important)*
    - Assets, capacities and capabilities within the register need to be verified
- The platform should allow for external assets to be quickly integrated. This includes private sector (e.g. provision of machinery) but also volunteers (volunteer management) - *(medium priority / important)*
- Since volunteers play an ever increasing role in crisis management, the asset register should allow volunteer management - *(medium priority / important)*
- The platform could have an automated tool analysing scenario parameters and prompting the required capabilities for each scenario if requested - *(low priority / interesting)*

Capacity Planning tool

- Capacity planning tools exist in many countries, so they should be interoperable with IN-PREP, a dedicated capacity planning functionality is not considered a necessary core functionality for most users *(below low priority / nice to have)*

Resource and logistics planning tools

- Provide checklists for logistics planning / allow users to upload such lists individually - *(medium priority / important)*
- Resource and logistics planning tools very deemed to be an interesting addition to IN-PREP, but not identified as core functionalities - *(low priority / interesting)*

GIS

- A functioning GIS was deemed very important - *(high priority / mandatory)*
- Integration of legacy tracking systems - *(high priority / mandatory)*
    - Different types of signals need to be made interoperable
    - Rapid adaptability of IN-PREP to accommodate new users
- 3D mapping in real time - *(high priority / mandatory)*
- It should allow information on whether assets can be sustained in the target region (e.g. availability of fuel, landing possibilities for aircraft, storage facilities, etc.) - *(medium priority / important)*

Information management

- IN-PREP should facilitate the flow of information on Capacities, Assets & Logistics between organisations - *(high priority / mandatory)*
- Information needs to be easily kept up to date. End users wished to avoid duplication of efforts in maintaining information, wished for IN-PREP to be interoperable with legacy systems in this regard to updated information can be uploaded to IN-PREP - *(high priority / mandatory)*
- New information on Capacities, Assets & Logistics needs to be integrated rapidly to allow users to match assets and requirements – cross-cutting with asset register - *(high priority / mandatory)*
- User wished for a filtering mechanism for information management - *(medium priority / important)*
    - E.g. include an information flow chart
    - Make the platform interoperable or integrate existing standardised ways to gather information
- By using standardised information gathering templates and applying translation software, incident reports can be made available in different languages - *(medium priority / important)*

General requirements

- Continuous technical support of the system was mentioned several times as key to keep system attractive and encourage users to participate in improving it - *(high priority / mandatory)*
- IN-PREP should allow the exchange of experiences in using the system itself - *(medium priority / important)*
- The system needs to allow flexibility, allowing users to go off the books (e.g. by including non-registered assets, changing logistics plans, integrating new information etc.) - *(medium priority / important)*
- IN-PREP should, either be based on modelling or lessons learned from previous exercises /experience and integrate consequences of decisions made during exercises - *(medium priority / important)*
- IN-PREP needs to prove its usefulness to justify spending money on it. The same evidence may be used for political lobbying regarding crisis management policy or budgetary questions - *(low priority / interesting)*

World Café Table 3-5: Communication (George Baroutas, Larissa Müller, Maike Vollmer)

First Round:

Tools and processes that are being used

- Roundtables
- Conference Calls
- Situation Reports
- Web-based information System –connecting all Emergency Services

What are the challenges?

- Data protection issues
- To develop training systems
- Interoperability
- Training the "right" persons (e.g. municipality staff)
- Develop a mutual understanding
- Same terminology/language

Modifications/tools/processes

- Course/training that trains a breakdown of communication systems during a breakdown
- Easier information sharing → interoperability with different systems

Example Netherlands:

- All security organizations use the same system (LCMS), to exchange COPs. It is easy to use.
- Each organization has a liaison officer, who is part of a crisis team:
    - There are 3 crisis teams, one for the strategic, one for the tactical, and one for the operational level.
    - **Challenge**: The liaison officer usually has the best information + knowledge, but he is not a decision maker.
    - **Challenge**: Sometimes liaison officer is not available, because he/ she is very busy in crisis situations.
    - **Challenge**: Contact persons in other countries, or even within the country, are not known

Example Germany:

- Organizational structure is similar, there are liaison officers as well
- But no system such as LCMS is used. Instead, communication takes place via E-mail, phone, and radio communication.
- Different responsibilities depending on the type of crisis (e.g. fire -> fire brigade; terror attach -> police. If catastrophe -> ministry is in charge)
- **Challenge:** To speak the same language, even within Germany, e.g. between the police and the fire brigade. (E.g. – what is a "fire 10"?)

Example France (+ Spain):

- Radio communication is used, analogue + digital
- **Challenge:** Different countries + different provinces use different radio communication systems. Also foresters and fire fighters use different systems.
- **Challenge:** Especially France and Spain are not well connected, both because of the systems that are used, and the language. Example: With the number 112, in France hospitals are reached, in Spain it is a dispatch emergency number.
- **Challenge:** Time lags due to legal or political reasons

How could IN-PREP help to overcome the challenges:

- Include information per scenario on responsible organizations and persons
- Operators have to think carefully about what they provide to the IN-PREP platform – it has to be understood by others.
- How could IN-PREP "translate"? By Employing a liaison officer that speaks all languages?
- IN-PREP can help through enhancing understanding and better knowing each other

Second round:

- in Sweden the system in force is 'unity command': a unique chain of command connected to all the rescuers through the TETRA network which is interoperable between all the rescuers. As such, they have no problem in coordinating.
- In UK the situation is similar to Sweden. They use a 'unified command' system based on the legal jurisdiction authority ariculated in bronze, silver and gold command level
- In Stockolm training is managed by Stockolm Resilience.
- In Germany, smaller incidents are managed by firemen. When they feel no more able to cope with the scale of the incident, they ask for the activation of the Lander level. To improve this decision, several trainings are organised periodically: at municipal, regional and Lander level (the last ones are deployed more regularly).

Challenges:

- In Germany the Major is responsible for the emergency management, but sometimes he is not ready for the role he has to play. As a consequence there is a need for solutions to test decision makers: to understand if they are ready to take quick, right decisions in critical moments.
- In UK the above issue has been solved deferring to role competence, allowing to the police commander access to all the information available.

Facts:

- no training module/scenario for communication breakdown
- in case of communication failure,we would like to know and nominate responsible persons to deal with such issues/ communication responsible / liaison officers
- lack of training scenarios/modules regarding communication failure

Requirements:

- interoperable
- high resolution from disaster scene
- satellite HD picture / use of Galileo system
- increase bandwidth - critical people should get involved in change of radio network
- cross boundary: share common operational picture
- share common strategic view / share common views at different command levels
- First a common understanding is needed -> then put to platform -> clear master plan -> who is responsible/ accountable?
- tactical communication: see resources / GPS used for all available resources/ geolocation of resources
- use of different SOPs

Alternatives technologies:

- satellite phones
- digital radio

Third round

Additional challenges identified

- Different Standard Operating Procedures (SOPs)
- Missing legal basis for responsibilities

Functionalities/features

- Strategic checklist of responsible persons and organisations
- Checklist about what to talk about
- Separate lists/clustering of information depending on the strategic level of the user: strategic, tactical and operational (for users to click, which group they belong to)
- Map of resources → geolocation resources
- Include all the different SOPs + different organization of countries

National things to be integrated into the system

- Protocols of lessons learnt → constant improvements
- "stress test" to prevent having a breakdown of communication
- Different communication systems → if the first fails, use the second,…
- Social media systems should be integrated
- Systems to spread information to the public and to relevant other organizations
- Increase bandwidth of communication when systems are in danger (about to go down)
- VESZ smart phone app (with warning alerts)

Fourth rounds

- Library of plans
- System interpretation of plans
- "Chatroom function"
- Situational awareness templates
- Strategic intentions

Integration

- Legacy systems – mapping & training tools integration
- Everybody can send message / Send notification alert position through report
- When hazard automatically broadcast to other agencies to pay attention
- Send notification with few lines of scenario and later a bigger picture
- Nice to have a common protocol for communication
- System should be loaded for all SOPs
- Log and score actions taken

World Café Table 6-7: Command and control (Marcello Marzoli, Antonis Kostaridis)

Discussion and Challenges

- Command & Control systems are diverse. Some agencies utilize simple or sophisticated computer aided dispatch systems while other use information sharing during mass casualty emergencies.
- Mobile deployments in the field are rare (e.g. Netherlands, France). In UK there is partially support.
- All table participants agreed that Incident Management/C2 systems need to be used not only during Crisis situations but also in normal emergencies.
- Agencies are not keen to exchange information
- There is an on-going procurement program in UK and Netherlands for new systems
- JESIP[3] is an app (can be downloaded from App Store/Google Play) that creates scenarios for major incidents and it is used by the Fire Fighters, Police, Ambulance and Coast Guards.
- Strategic command level is easier to sell
- Overcome language barriers

Requirements

- Demonstration of interoperability of planning and C2 systems in IN-PREP is mostly welcome
- Plans should be available to field personnel in order to provide guidance
- Common symbologies
- Interoperability standard for information exchange

First Round

- presently the only practical solution to voice interoperability is to have a liaison officer with two radios to act as a bridge between the two networks.

What are the challenges?

- overcome language barriers in cross-border emergency management
- different tactics and procedures between organisations reporting to different States and regions
- voice interoperability is an issue, even when two regions have the same system (e.g., Navarra and País Vasco have both TETRA and Nouvelle-Aquitaine has TETRAPOL, but all of them are not interoperable, even if not for technical reasons).
- legal issues: by the law, rescuers cannot cross borders between regions even into the same State in Spain. Often rescuers are forced to bend regulations at their own risk to do their job
- in case of road accident with mass casualties (e.g., a bus crash with 40 Spanish victims) on the 'wrong side' of the border, many issues are difficult to solve: the French rescuers should bring them in France, but then the cost of the hospital is not easy to recover, the health insurance could have issues, there are language barriers between patients, doctors and nurses, parents have to bear higher costs.

Second Round

- in Sweden the system in force is 'unity command': a unique chain of command connected to all the rescuers through the TETRA network which is interoperable between all the rescuers. As such, they have no problem in coordinating.
- In UK the situation is similar to Sweden. They use a 'unified command' system based on the legal jurisdiction authority articulated in bronze, silver and gold command level

[3] http://www.jesip.org.uk

- In Stockholm training is managed by Stockholm Resilience.
- In Germany, smaller incidents are managed by firemen. When they feel no more able to cope with the scale of the incident, they ask for the activation of the Lander level. To improve this decision, several trainings are organised periodically: at municipal, regional and Lander level (the last ones are deployed more regularly).

Challenges:

- In Germany the Major is responsible for the emergency management, but sometimes he is not ready for the role he has to play. As a consequence there is a need for solutions to test decision makers: to understand if they are ready to take quick, right decisions in critical moments.
- In UK the above issue has been solved deferring to role competence, allowing the police commander to access all the information available.

World Café Table 8: Scenario Building (Spyros Evangelatos)

- So far, there is no common tool regarding scenario building for training purposes, for all agencies in all levels (operational, tactical and strategic). Common exercises are designed and prepared in plain paper.
- A few examples are the following:
  - UK LEA is a collaborative tool for training purposes.
  - JESIP[4] is an app (can be downloaded from App Store/Google Play) that creates scenarios for major incidents and it is used by the Fire Fighters, Police, Ambulance and Coast Guards.
  - NETGSS[5] is a simulator for crisis training developed in Sweden.
  - XVR[6] is a virtual reality training software used by the Irish Fire fighters only which is not only for resource management but also for operational tactics on the field.
- All end-users that participated in the workshop described a unifying tool for scenario building in all levels and the challenges IN-PREP has to address. More specifically:
  - It has to be flexible and editable, i.e., no limits in testing but all assumptions within the scenario should be reasonable
    - Information should be granular, adding complexity to the scenario in an incremental way.
    - Scenarios should be a story line ("*bits and pieces*") and have phases (e.g. a storyboard tool). Each phase should include a number of events
  - It should be easy for the LEAs to set targets and identify what they want to test/check
  - It should have 3D functionalities and contain real and simulated data
  - It should be intuitive, i.e., everyone (even from different agencies) could be able to see the same thing.
    - Replication of the event, i.e., what does it mean for every agency and what specifically they should test
    - Filter the information revealed at each one of the three levels in crisis management
    - Have specific roles for the involved people since the scenario events need different actions to be taken and test certain groups of people
    - Based on a "Punish and Reward" decision process according to the consequences – behaviour planning.
  - It should have embedded intelligence and provide holistic situational awareness
    - Important feature to be embedded is lessons learned from previous experiences/exercises
  - It should be for major incidents, especially for terrorist attacks and be designed also for future threats, i.e., autonomous vehicle attack consequences.
    - Provide realistic feedback for the consequences
  - It should be used for training not only for resources and actions to be taken but also for future technology methods that can affect the process.
  - It should be limited to a "Traffic Light Evaluation", i.e., red, orange and green, for easiness purposes.
  - It should be easy to connect with other tools (interoperable) and mix them up.
  - It should have a library of (past) events with different types of scenarios easily accessed by the LEAs

The main challenges are:

- The cross-boundary and cross- border, cross-agencies cooperation/collaboration
- The inclusion of volunteers during the scenarios (Red Cross, civilians, etc.)

[4] http://www.jesip.org.uk
[5] http://netgss.org
[6] http://www.xvrsim.com/

World Café Table 9: General aspects of transboundary response training (Claudia Berchtold)

Very general – to be answered to the external experts

- What will be the costs of the final product? How can it be accessed/ used?
- Can experts from the End-User workshop be involved in exercises/ demos?
- Can interim information about IN-PREP/the MRPP be provided to the experts for comments? An "External Experts" space on the Website (the RedMine?) could allow for sharing certain information with them.

Organisational Aspects

- Goal of the exercise/training
    - Has to be clear and results need to be evaluated against this set goal
    - Goal should be in the focus of the exercise; scenario can be comparatively simple (does not need to be 'fancy') and complexity needs to be reduced since the transboundary aspect of exercising is rare and thus already complex enough to most actors; complex tasks should be trained at local or regional level
    - Clearly differentiate the goal according to:
        - Training
        - Practice
        - Test/Exercise
- Scenario building will be different depending on what you want to do; transboundary CM aspects need to be trained and practiced first before exercise/test of e.g. communication skills/situation assessment is useful!!!
- Who should be contacted/ involved?
    - This depends on scenario, hence scenario should be developed first
    - Strategic vs. tactical level?
    - Training should include information about the involved partners and their (legal) competences → to be compiled by the exercise team
- Language barrier
    - Does the platform offer automatic translation of information entered to it?
    - Can be specifically difficult on the ground when staff is exchanged
- MRPP might contribute to a European Training Standard
- Different competencies of ranks/positions in different countries → the Civil Protection Mechanism (CPM) offers some clarification attempts in this respect but it remains limited
- Exchange between participants in the aftermath of the training is important to facilitate mutual learning and understand why/how certain decision actions were (not) taken – it should go beyond a usual debriefing
- Good knowledge about organisation-internal responsibilities and processes is required before transboundary training aspects should be taken into account
- Training agreements need to be established:
    - Who takes the lead?
    - Who supplies food and drinks to the staff involved?
    - Who organises hotel etc. for transboundary staff?
    - Who pays?

Political Aspects

- Due to the diversity in expectations and competencies in transboundary training it should be promoted by the national level/national crisis management authority; it should also stress the need for respective training (e.g. Italian forest fire plains were deployed to Sweden last year) – sometimes the neighbouring countries cannot help!

- There are conflicting interests with respect to training: it will always reveal weaknesses and some actors might not want to show them/to become obvious); willingness to participate on transboundary training can thus be limited
- MRPP will allow for learning before the accident happens

Technical Aspects

- Platform must:
    - Allow for exercises to be developed according to the goals defined – it would thus replace the paper-based scripts that are currently used
    - It must allow for flexibly formulating and inserting "injects" (sudden changes of the storyline)
    - Encompass a transboundary resources management function
    - Have a section that allows for capturing and sharing lessons learned in transboundary CM (e.g. daily and small incidents such as fires that occur at the boarder e.g. between France and Spain can serve for testing the MRPP and can serve as a source for identifying lessons learned). This section should also allow to add information about the organisation and department/unit that made this experience so that others can contact them and exchange about this experience
- How to bring different systems together? This also includes communication systems in different nation states
- Data protection: limit what is being shared
- Granularity of recorded information needs to be determined – if it is recorded on an individual level, it will allow for judging/evaluating individual persons: Is this what we want? Alternative would be abstract feedback
    - A "safe" training environment should be created: no blaming and shaming
    - Granularity should be scalable depending on the training goal. The above can be valuable if individuals are to be trained
- Be realistic about the response time (specifically if CPM is to be involved in exercise) and allow for time jumps (e.g. "72 hours later")
- Human Performance limitations

Concerning the Handbook:

- Should encompass a section of "How to build an exercise" (books on this are available)
- Should explain how to use the software (potentially a tutorial would be more useful/of added value; it could become part of the website)
- Should stress the need to identify a goal and to clearly differentiate this goal according to:
    - Training
    - Practice
    - Test/Exercise

Scenario building will be different depending on what you want to do; transboundary CM aspects need to be trained and practiced first before exercise/test of e.g. communication skills/situation assessment is useful!!! – own remark: Potentially; transboundary aspects of the 5 managerial tasks need to be translated into training and practice first!? This would have to be done by individual.