eNOTICE
European Network Of CBRN TraIning Centres

D4.4 eNOTICE Joint activities planning

Report 4

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8	Middle East Technical University (METU)	X
9	University of Rome Tor Vergata and The Italian Joint NBC Defense School (UNITOV)	
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11	War Studies University, CBRN Defence Training Centre (WSU)	
12	Scientific and Research Centre for Fire Protection (CNBOP-PIB)	

Executive Summary

This document is the fourth progress report on the organisation of eNOTICE Joint Activities (JA).

It includes the full report on the Joint Activities organised in Birmingham (UK), by WMP, in July 2019; in Dortmund (DE), by FDDO and CNBOP, in September 2019; and in Ankara (TR), by METU, in February 2020.

These JAs are considered as a core instrument to achieve the eNOTICE objectives, which are to build a bridge between different public safety and security stakeholders and to learn from these gatherings to build a sustainable network of CBRN Training Centres (TC).

The JAs are meant to collect information in order to achieve a better understanding of the needs and expectations of different stakeholders and to explore the possible added value of different kinds of exercises (field, table top, simulations and serious gaming) as a favourable setting to bring these stakeholders together. Therefore, a lot of attention is given to the 'joint' character of these activities and to the preparation of a structured debriefing and evaluation in order to collect as much valuable input as possible. The 'joint' character is achieved through the participation of ongoing EU research projects, attending the exercise for observation, testing, validation or demonstration.

In Birmingham the EU project PROACTIVE joined the exercise as delegates and completed the exercise alongside UK police, fire, ambulance, local authority, education, and military commanders.

The Joint aspect of the Activity in Dortmund (DE) consisted of a joint effort of FDDO and CNBOP, both eNOTICE partners. Beside the participants of the eNOTICE project, also national CBRN experts, proposed or invited by the eNOTICE Consortium Members observed the JA. The profile of the invited experts was: first response practitioners (fire & rescue, police, military, emergency medical services), lecturers from CBRN Training Centres and academics or developers involved in research to improve CBRN preparedness.

The Dortmund JA was an end-user full-scale exercise, where different end-users trained their response to a given scenario (railway accident).

The structure of the JA in Ankara was as follows:

- The training of practitioners using serious games
- There were also two field visits:
    1) Mine at Beypazarı
    2) Mine at Eskişehir Osmangazi University
- Serious gaming workshop

The main lesson identified and recommendations from the three last Joint Activities can be summarized as follows:

The Joint Activity in Birmingham showed that an EU H2020 project can successfully be integrated into a business as usual CBRN training centre exercise. The most positive factor to this success was to introduce the organisers and leaders of the exercise to the eNOTICE project, the joint activity team and external partners ahead of the exercise. Making the organisers and leaders aware of eNOTICE and showing the project at a joint exercise before hosting meant they were invested and passionate about the project and were willing to adapt their product to make the joint activity a success. It also showed how an exercise which has sensitive elements can be designed to appeal to all participants, if the effort is taken to explain why some agenda items are restricted, and to ensure the participants are engaged in and valued the other interesting briefings or demonstrations.

The Joint Activity in Dortmund showed us that participating in an JA is good to have the time and space for different type of observers (academics, practitioners, policy makers and decision makers) to discuss and exchange ideas. This JA has built on the recommendations and lessons identified from former JA's. The observers' (including eNOTICE observers) visibility was high, they could be recognised from far and here was a liaison officer between the observers and exercise staff. These liaison officers would elaborate on wat was going on in the field. However, not all observers could hear those liaison officers, a broadcast via loudspeakers would have been helpful. Observers are not all practitioners and are not always aware of what is happening and what still needs to be done. Therefore, direct and clear communication is imperative not to 'lose' these observers in the exercise.

The JA in Ankara was proof that augmented or virtual reality in the future will support practitioners. It is a cost-efficient way to test new technologies and train first responders.

Recommendations:

- One comment which resonated though the feedback was the difficulty in understanding the CBRN acronyms. A glossary for, or blanket ban on acronyms is highly recommended for joint activities.
- Make sure that all observers can hear the liaison officer.

Tables and figures

Definitions

CBRN Training Centre - eNOTICE uses the following instrumental definition of CBRN Training Centres:

CBRN Training Centres

A CBRN Training Centre is a civil or military organisation that provides education and training in the field of public safety and security. The Training Centre can be monodisciplinary, such as firefighting, medical, police or military academy and/or multidisciplinary, including incident/emergency/disaster management. Education and training covers the thematic areas Chemical, Biological, Radiological and Nuclear.

eNOTICE focus

The eNOTICE project focuses on those Training Centres with a CBRN thematic capacity and corresponding infrastructure to organise exercises for first responders or civil protection practitioners such as demonstrations, tests, table tops, field exercises, simulations and serious gaming.

eNOTICE ambition

One of the ambitions of the eNOTICE project is to promote these Training Centres as a facilitator for Innovation, Research and Development through their exercises which can be joined for the purpose of observation to obtain a better understanding of end user needs and requirements, for technical testing, technical and scientific validation and demonstration to a broad audience.

eNOTICE rationale

The combination of the Training Centres' network of practitioners, their available infrastructure and their annual program of practical training and exercises provides for unique opportunities for R&D solution providers to observe and participate in real case scenarios, to engage structural collaboration with practitioners and end users and to strengthen mutual understanding

Nomenclature

CBRN	Chemical, Biological, Radiological, Nuclear
eNOTICE	European Network of CBRN Training Centres
JA	Joint Activity
NATO	North Atlantic Treaty Organization
TC	Training Centre
Observation	An observation is a short description of an issue which may be improved.
Lesson learned.	A lesson is the generic word for a lesson identified and/or a lesson
Lesson Identified	A LI is the output of the analysis phase.
Lessons Learned	A lesson identified which remedial action has been approved and already implemented.

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1 Introduction

1.1 Overall objectives of eNOTICE and scope of WP4

The objective of the eNOTICE project – European Network of CBRN Training Centres – is to build a dynamic, functional and sustainable European network of CBRN Training Centres, testing and demonstration sites (CBRN TC), aiming at enhanced capacity building in training and users-driven innovation and research, based on well-identified needs.

eNOTICE seeks to improve European preparedness, resilience and incident response to CBRN attacks and emerging threats through close multi- (stakeholders) and single-discipline (practitioners) interactions. Considering the variety of disciplines involved in managing CBRN risks, collaboration has always been quite challenging. CBRN TC can act as the perfect operational intermediary between all civilian and military CBRN actors, EU relevant bodies and policy-makers, and thus serve as the best cradle for expansion of a CBRN network of professionals.

To set up such a network that is both efficient and effective in meeting the needs of different security actors, several lines of action will be followed within the five-year timeframe of eNOTICE in order to develop a network that will be viable, attractive as well as sustainable. The work programme (SEC-21-GM-2016-2017 – Pan European Networks of practitioners and other actors in the field of security[1]) proposes three lines of actions: 1) establish and maintain a roster of capabilities and facilities, 2) organise the best way to share expertise, and 3) plan to pool and share resources with a view to optimise investments. These lines will serve as a baseline for the project (Figure 1) and will be achieved through a mix of activities.

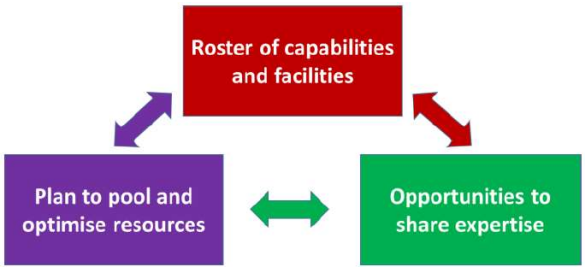


Figure 1 Three lines of actions

[1] European Commission Decision C (2017) 2468 of 24 April 2017, Horizon 2020 Work Programme 2016-2017, 14. Secure Societies - Protecting freedom and security of Europe and its citizens

One of the key activities within eNOTICE is the organisation of Joint Activities, which is the main scope of WP4.

The objectives of WP4 are defined in the DoA as followed:

> WP4 aims at transforming the WP3 information and communication network into a transactional network, based on sharing of expertise and effective practices and collaboration through the organisation of joint activities between the eNOTICE consortium partners and external partners. WP4 will also identify and encourage opportunities to optimise investments through pooling of resources, and liaise with other networks and policy makers to avoid duplications and to create synergies to align policies and optimise efforts.

Joint Activities can be defined as exercises for first responders or civil protection practitioners organised by CBRN TCs as part of their regular educational or training activities, opened up to external stakeholders, which allows for the activity to be combined with tests, validations or demonstrations.

The eNOTICE Joint Activities can be seen as showcases to demonstrate the role, contribution and added value of the TCs *beyond* their traditional activities, in terms of user driven R&D, enhanced preparedness, improved training capacity and a community build-up.

During the project, all eNOTICE consortium partners organise such activities in which they open up their core activities such as multidisciplinary field exercises, table top exercises, trainings, serious gaming and simulations to external partners, such as, EU R&D projects, industry, policy makers and other practitioners. These realistic settings of real situations provide unique opportunities for the identification and development of user-driven technological solutions, e.g. through the identification of genuine user's needs, technical testing, validations, demonstrations, focus groups, etc.

Lesson identified from these Joint Activities result in recommendations to improve their organisation and output, for optimised resource allocation and for enhanced collaboration, both at operational and strategic (policy) levels.

1.2 Objectives and scope of Task 4.2

Task 4.2 – "*Organisation of joint activities (exercises combined with tests, validations or demonstrations)"* is responsible for the organisation of these eNOTICE key activities, which are the Joint Activities, organised during the whole duration of the project.

The current Deliverable D4.5 – eNOTICE Joint activities planning (Report 4) includes the full reports on the JA's organised by WMP, in Birmingham (UK), July 20019 (Annex 1); by FDDO and CNBOP, in Dortmund (DE), in September 2019 (Annex 2) and by METU, in Ankara, in February 2020 (Annex 3).

For the reporting on these JAs, the format of the D4.1 "Templates for the preparation, organisation and evaluation of Joint Activities" is used (eNOTICE D4.1, February 2018). This feedback will be used in Task 5.3 for the continuous improvement of the Templates.

A clarification on the context and objectives of the eNOTICE JAs and a full description of the methodological approach can be found in the first report (D4.2, February 2018).

2 Report on the Birmingham JA

The full report of the Birmingham Joint Activity, based on the T4.1 Guidance and Templates, is included in Annex 1, a summary presentation and lesson identified is to be found in the following paragraphs.

2.1 Overall presentation of the Birmingham Joint Activity

The Birmingham JA was a CBRN table top exercise run by the UK National CBRN Centre (WMP partner). A one day indoor exercise, where 90 delegates received an immersive exercise, with visual and audio recordings, to consider what their role, capability, capacity and policy would look and feel like throughout an emerging CBRN terrorist attack in a crowded place. Joining the activity were PROACTIVE project members. ('**PR**eparedness against CBRNE threats through c**O**mmon **A**pproaches between security pra**CTI**tioners and the **V**ulnerabl**E** civil society.')

PROACTIVE is a 3-year EU funded H2020 project starting in May 2019. Aiming to enhance societal CBRN preparedness by increasing practitioner effectiveness in managing large, diverse groups of people in a CBRN environment.

As a project which started 2 months before this Joint activity, the opportunity for PROACTIVE to learn early on what consideration is given to vulnerable society in a CBRN attack by key decision makers and first responders was of benefit to their understanding of what a CBRN attack looks and feels like.

2.2 Short description of the scenario

This was a one-day exercise, based on a fast acting Chemical CBRN mass casualty event requiring a coherent multi-agency detection, identification and monitoring capability, decontamination strategy and mass casualty planning.

Objectives for the exercise:

- To enhance individual participants' knowledge around multi-agency CBRN response against current threat intelligence
- To strengthen the multi-agency command, control, communication and co-ordination of the response to a CBRN event.
- To strengthen joint understanding of all agency's plans, doctrine & capability.
- To identify learning opportunities and capability issues that need to be fed back into national planning to enable the National CT Policing (NCBRNC) to better support the response.
- To raise awareness of the breadth of capabilities available via NCBRNC in support of operations.

Evaluation criteria:

- Raise awareness of the role of the security and private sector in counter-terror response
- Promote benefits of active engagement in planning, preparation and training for a CBRN event

2.3 Birmingham JA Debriefing and lesson identified

2.3.1 Feedback from eNOTICE observers

It was clear from the hot debrief that some more effort needs to be given to making the feedback focussed on the 'joint activity' and not so much on the quality and design of the exercise. An hour was given for hot debrief, and it became clear that the feedback too often was drifting into longer reviews of the exercise. A mechanism to maintain brevity of comment is required. This was also noted in the feedback on the 2019 Gurcy Joint Activity.

The feedback which was focused on the joint aspect of the activity was mainly positive:

- This was a safe and relaxed environment for PROACTIVE to ask questions throughout the exercise. The TTX encouraged conversation between injects, and this allowed opportunity for
- A TTX is a cost-effective way to combine participants. (No significant cost came from adding a joint activity to the exercise.)

One comment which resonated though the feedback was the difficulty in understanding the CBRN acronyms. A glossary for, or blanket ban on acronyms is highly recommended for joint activities.

2.3.2 Feedback from evaluation and debriefing forms – eNOTICE, Invited Expert and PROACTIVE members

Following feedback could be obtained from the feedback-forms.

- From the point of academics, this exercise would probably need more technological support in order to test new developments.
- This was a real JA because members from other projects could active participate in the exercise.

2.3.3 General notes and points for improvement

The Birmingham JA was not ideal for testing, validation or demonstrations from external stakeholders. This was a table top, front loaded exercise, which restricted the practical application of equipment and technology. Where success was found, was in the external partner invite to a Coventry University department, who specialise in immersive virtual reality exercising. They were able to observe the exercise and take away the exposure to what would have previously been a closed event.

They also connected with eNOTICE partners and create synergy in their understanding and ambitions for CBRN exercising.

As the organiser of the joint activity I found the practical guide for attending an eNOTICE Joint Activity as an observer useful. I made amendments to suit UK specific details, as an example, the tabard used for live exercising was not required, and in this environment, a lanyard was sufficient.

Especially useful was the safety briefing and check list pages from the 'protocol for observers' which VESTA elaborated and which was trialled and evaluated in Gurcy.

The joint activity was published across the UK counter terrorism network news, encouraging this style of learning, and showcasing innovation for CBRN training.
Appreciation came about the refreshing and open manner in which the exercise was held. It was noticed that the relationship between civil and military partners was convivial.

2.4 Conclusions on the Birmingham JA

The Joint Activity in Birmingham showed that an EU H2020 project can successfully be integrated into a business as usual CBRN training centre exercise. The most positive factor to this success was to introduce the organisers and leaders of the exercise to the eNOTICE project, the joint activity team and external partners ahead of the exercise. Making the organisers and leaders aware of eNOTICE and showing the project at a joint exercise before hosting meant they were invested and passionate about the project and were willing to adapt their product to make the joint activity a success.
It has been discussed now at policy level, the desire to invite external stakeholders and R&D into the participant and observer framework.
It showed how an exercise which has sensitive elements can be designed to appeal to all participants, if the effort is taken to explain why some agenda items are restricted, and to ensure the participants are engaged and valued in other interesting briefings or demonstrations.

While being secure with personal details, the UK counter terrorism network benefited from the joint activity. The International protect and prepare team, and the UK foreign office both supported International stakeholders who attended the activity. This was a real success, and for the CBRN community globally to have the ability and access to network, and consider how events which are considered secure, can be opened to the right standard, and made more inclusive to enhance CBRN response and capability.

3 Report on the Dortmund Joint Activity

The full report of the Dortmund Joint Activity, based on the T4.1 Guidance and Templates, is included in Annex 1, a summary presentation and lesson identified is to be found in the following paragraphs.

3.1 Overall presentation of the Dortmund Joint Activity

Beside the participants of the eNotice project, also national CBRN experts, proposed or invited by the eNOTICE Consortium Members observed the JA. The profile of the invited experts was: first response practitioners (fire & rescue, police, military, emergency medical services), lecturers from CBRN Training Centres and academics or developers involved in research to improve CBRN preparedness.

The Dortmund JA, an end-user full-scale exercise, where different end-users will train their response to a given scenario (railway accident). The key-players were:

- General Fire Service (professional and volunteer)
- HazMat Team
- Decontamination Unit
- Command and Control Structure
- Analytical Task Force (CBRNDet-Team)
- DB AG
- RUND
- CNBOP

The proposed scenario was adopted in relation to a possible response for a situation caused by incidental/accidental release. The scenario for the exercise focussed exclusively on chemical-threats. The aim of the exercise was the training of large scale events with hazardous substances - the venue set up inspiring background for detection and identification procedures, as well as decontamination.

Representatives from the following national and international research and networking projects attended the field exercise as observers:

- Observing research projects & (end) users: A-DRZ, Proactive, Vision, Athmos, LaserRettung, AtheBOS, *FD of Dortmund, Bochum, Saarbrücken, Unna, Essen tbc.*

- **Proactive** ***("PReparedness against CBRNE threats through cOmmon Approaches between security praCTItioners and the VulnerablE civil society")***: this Horizon2020 project will test common approaches towards CBRNe threats between European practitioners such as Law Enforcement Agencies (LEAs), First Responders, railway undertakings, public transport operators, etc. The common approaches will be evaluated and validated against the requirements of civil society, including vulnerable groups of citizens as reflected in the European Security Model. A Practitioner Stakeholder Advisory Board and a Civil Society Advisory Board will extend the representation of both sides and members will participate in several surveys, focus-groups, workshops and field exercises (further information: https://proactive-h2020.eu/)

- ***A*-DRZ "*Aufbau des deutschen Rettungsrobotik-Zentrums*"**: This four-year project is supported by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung* - BMBF) within the framework of the funding announcement „*Zivile Sicherheit – Innovationslabore / Kompetenzzentren für Robotersysteme in menschenfeindlichen Umgebungen*", within the framework of the program „*Forschung für die zivile Sicherheit 2012 bis 2017*" of the German Federal Government and is funded by the interdisciplinary and renowned network consisting of users, industry, universities and research institutions. The long-term goal is to go beyond this initiation or funding phase and establish a scientifically-oriented competence centre that will promote innovative developments with its partners. In this way, increasingly powerful robotics technology for rescue forces is supposed to become available on the market. (further information: https://rettungsrobotik.de/information-in-english/)

- **Vision "*Vernetzte integrierte UAS-gestützte Datenerfassung und -aufbereitung für die Unterstützung von BOS im Bevölkerungsschutz*"**: This three-year project is supported by the Federal Ministry of Transport and Digital Infrastructure (*Bundesministerium für Verkehr und digitale Infrastruktur* - BMVI) within the framework of the funding announcement „*Angewandte Forschung und Experimentelle Entwicklung*", within the framework of the program „*Modernitätsfonds*" of the German Federal Government. The goal of the project is a support of our rescue units by unmanned aerial system (UAS). The central idea is an anticipatory drone, which is automatically dispatched with the alerting of the task force to the place of deployment and collects information relevant to the operation (further information: https://vision-mfund.de/)

- ***LaserRettung****:* The main goal of the three-year project supported by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung* - BMBF) is the development of a mobile laser cutting device for rescue operations. The focus is put on high flexibility concerning the processing of high-strength materials and multilayer structures. Moreover, robustness, easy handling and system weight shall be optimized, as rescuers often

work under harsh conditions concerning temperature, humidity, dirt and stress. Crucial aspect of laser rescuing is safety which must be guaranteed for all persons involved at any time. Here, results of laser cutting experiments and measurements concerning reflected and scattered radiation as well as the emissions of hazardous substances outward the process zone are presented.

- ***Celidon*** is a research project financed by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung - BMBF*) within the framework of the program „*Forschung für die zivile Sicherheit 2012 bis 2017*“ of the German Federal Government. The project duration is about two years, started in March 2019 and consist of three partners: Fire Department of Dortmund, the Technical University Dortmund and the University of Applied Sciences Zwickau. The overall goal of Celidon is the localisation of fire fighters in environments characterised by low visibility (smoke). Due to this zero-sight-condition it is possible that the fire fighter team lose its orientation, what is seen as a very dangerous situation. The solution is an augmented reality unit (ARU) inside the respirator. The micro display of the ARU shows location information of the team partner in case of separation. As a result, separated firefighters can reunite quickly and reduce critical situations and accidents (further information: http://celidon-projekt.de/)

- ***AtheBOS*** is financed by Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung - BMBF*) within the framework of the program „Forschung für die zivile Sicherheit 2012 bis 2017“ of the German Federal Government. The duration of the project is about two years, started in August 2017 and consists of three project partners: Fire Department of Dortmund, Fire Department of Gelsenkirchen and the RWTH Aachen University. The overall goal of the project is the initiation of a so called „error culture“ (no blame culture) in all emergency services, especially in the fire service. For this, a system of information management is developed that includes error detection, the analysis of errors and the communication process of elaborated solutions to avoid future mistakes.

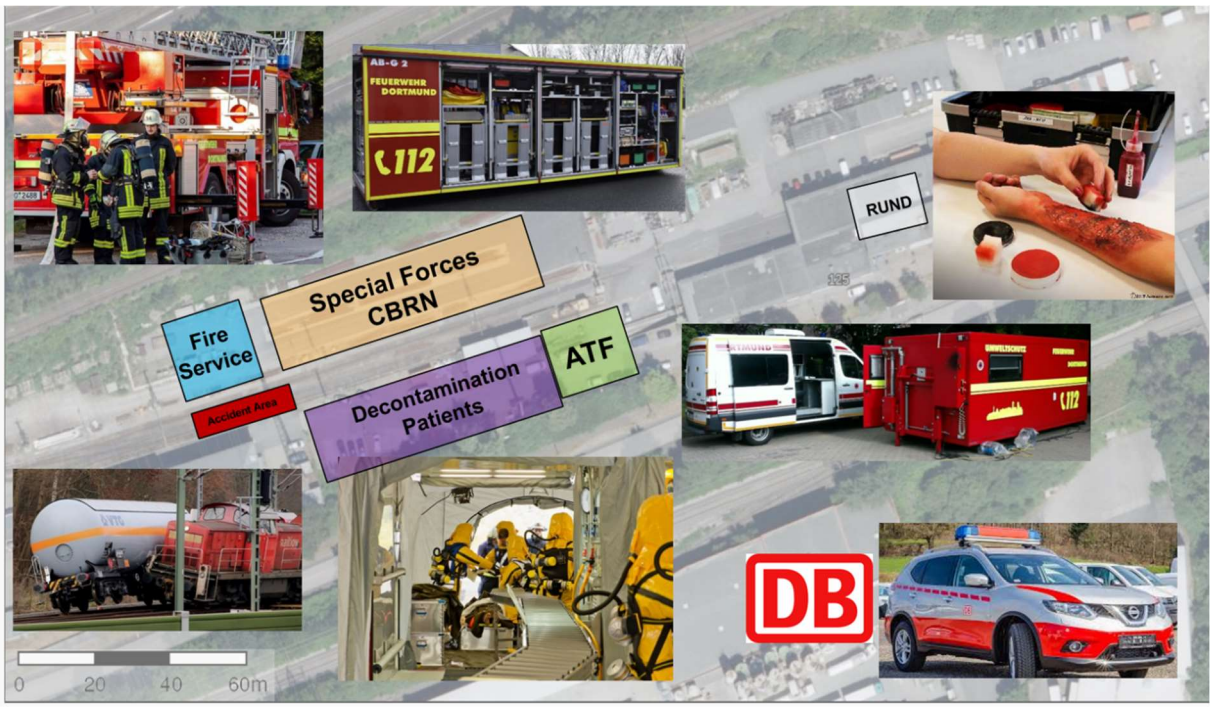
- ***Athmos "Atmosphärische Detektion von Gefahrstoffen durch mobile Infrarotspektroskopie***”: This three-year project is supported by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung* - BMBF) within the framework of the funding announcement „*KMU-innovativ: Vorfahrt für Spitzenforschung im Mittelstandt*“, within the framework of the program „*Forschung für die zivile Sicherheit 2012 bis 2017*“ of the German Federal Government and is funded by the interdisciplinary and renowned network consisting of users, industry, universities and research institutions. Incidents with the release of invisible cluods of harmful substances are still problematic. Caused by the available detection systems for

civil applications it is not possible to detect and to analyse the cloud and to visualize it geo-referenced as a 3D model projected in a 3D map. This is the goal of this project to research such a system which delivers 3D information in a short time for a current situation awareness.

The objectives **objectives and evaluation criteria of the JA** were the improvement of coping capacity of different units concerning their tasks; training of management structures on different levels in case of large scale events, here : Cooperation between units of the Fire Department, Analytics and German Railway in the context of railway related risks; test and improve operating procedures of first intervention, HazMat containment, decontamination and casualty treatment; Cooperation and interaction between the different units concerning: information flow (command and control), handover of tasks, sampling and detection (HazMat Team & CBRNDet), decontamination. The objectives for the invited experts were: Observation and identification of the interplay between the actors on scene; Reflection on the added value of opening activities up to other stakeholders in the field of safety and security with focus on CBRN threats; Identification of opportunities to raise the understanding within the triangle: rescue units – industry – scientists. The objectives for the eNotice partners were: Identification of opportunities to strengthen the network of CBRN Training Centres; Identification of best practices to share with the eNOTICE community; Identification of input for ongoing eNOTICE Tasks.

3.2 Short description of the scenario

On the morning of September 21st, on the premises of the German Railway (Deutsche Bahn - DB) in Dortmund it comes in the context of manoeuvring to an accident between a parked tank car and a maintenance train of the DB. Result of the accident is an (assumed) deformation of the cab of the maintenance train and leakage of a liquid from the tank car, which is not identified due to an incomplete / illegible marking. The crew of the maintenance train consists of 15 persons. The persons present different injury patterns due to the accident: ten walkable patients and five lying patients' needs to be transported (no unconscious patients). During the exit from the maintenance train and the trial to self-help, the persons come into contact with the leaked liquid. Due to the current situation the first-arriving forces will initiate extensive additional demand of special units.



3.3 Dortmund JA Debriefing and lesson identified

The combined feedback and suggestions for improvement obtained from all participating observers, shared during the hot debriefing as well as the more in depth reflexions based on the eNOTICE Evaluation and Debriefing forms can be structured according to the questionnaire:

How far did the exercise offer sufficient opportunities for the identification of good practices?

Most of the project partners rate the possibilities for identifying good practices as good to very good. Points that were particularly highlighted:

- To see how well trained and experienced firefighters handle a complex chemical incident
- To demonstrate the high amount of coordination and cooperation
- Directly see, assess, comment actions and ask a question
- Notice similarities in the practices
- See perfect harmonization of professional and volunteer firefighters
- Observe the intervention in the hot zone and the decontamination

Possibilities for improvement:

- broadcast some parts of the communication via loudspeakers, so participants might have a better understanding of the ongoing operation
- sufficient opportunities mainly related to fire fighters and civil protection units, but not to police and medical actions
- not all actions observable (advanced command post, work inside of the mass decontamination)
- due to pre-planning, the exercise is only of interest for the development of technical skills for firefighters, but not the best way to develop and evaluate decision-making and other incident command skills

How far did the participation in the exercise met your expectations?

For almost all of the project partners the expectations were fully met (with a few wishes to improve). The expectations of two participants were only partly fulfilled. Points that were particularly highlighted:

- no feeling about a "show-exercise"
- time to prepare and ask questions
- very professional organization
- very interesting after the hot phase of the exercise to take a look at different level's incident command vehicles and working environment

Possibilities for improvement:

- expectations were not met with regard to the treatment of wounded or injured personnel (took too much time, supervision of personnel was not really organized)
- inability to act as in a real event (operator and drone were allowed to move in the contamination zone to take better photos)
- would have been interesting to see a "hot wash" or immediate evaluation from the participants of exercise
- expected to see incident command-chain build-up and decision making in these structures from the start

In what way could the exercise be adapted so that it will become more interesting for you?

The following proposals were made:

- the possibility of using drone pollution sensors

- Make a difference between "training the troops" and "demonstrate the perfect functioning" to outsiders
- Use audio and video support
- Avoid obstacles blocking sight of spectators
- Give the observers more room to observe
- Every exercise in the context of CBRN is interesting
- use a swarm of drones, a hazardous substance detector in drone, a drone speaker to help evacuate crowd, a wearable sensors by firefighting
- Include a "hot wash" or immediate evaluation from the participants of exercise
- observe the work of the command post and/or could listen to the communications between the first responders
- The possibility to monitor incident command-chain build-up
- add public interaction (communication line: How will they interact with the press? curious spectators: how to deal with them?)
- having a small active part in the exercise (if feasible)
- to raise the challenge to the next level: What about a scenario with chemical warfare agents, they are not aware of? How good are the procedures in identifying such difficult scenario? How good is the awareness and the perception?
- more realistic response to the incident and more realistic visualization of the accident scene (although it is difficult to implement) to develop decision making competencies

How far is your expertise and/or way of working compatible with the practice within the exercise?

The expertise and way of working are highly compatible for almost all project partners. Common intersections lie, for example, in the following topics:

- "participated in similar exercise (at airport) in my country (but national-level, not international)"
- first responder is similar in military
- "fully compatible in the roles (rescue, decontamination…)"
- "triage, decontamination procedures are close to our expertise"

For some partners the exercises were very well executed and can be copied, others recognized differences like:

- "In Belgium we don't use separate showers for the emergency workers"
- "We do limit the number of people in the danger zone to a minimum"
- In military the "awareness is higher and the precautions measures are more complex"
- "Roles are played by different actors"
- "we try to separate decision making incident command exercises from firefighter's technical skill exercises" and for this "we use a more virtually simulated environment"
- "dressing of hazmat suits was directly on the ground, making these suits unnecessary vulnerable by exposing them to the soil (dressing shelter)"
- "safety precautions could be upscaled during the liquid/gaseous release of the product (water shield)"

Do you consider this type of exercise as an interesting setting for a demonstration session to present the final results at the end of an EU project? What is most interesting: interaction between end-user, scientists and industry, new technical / conceptual solutions, etc.?

Most of the observers considered this type of exercise as an interesting setting, some of the observers like to adapt the exercise to the following:

- bigger exercise
- separation between exercises for technical skill development and decision-making development and evaluation
- focused on the spectators
- not run an exercise, but prepare a demonstration

What is most interesting?

- New technical/ conceptual solutions
- interaction between end-user, scientists and industry, new technical / conceptual solutions
- participation of scientists and industry as responders
- SOPs, interaction, communication, new technologies and their applications, policy
- interaction between different groups (most relevant would be civil-military cooperation)
- exchange of opinions, good practices, preliminary talks on new project consortia

After participating in the joint activity, do you feel like there is a need for harmonization/ standardization of exercise practices? Why (not)? What specific aspect?

Most of the project partners respond, there is a need for harmonization/ standardization, because of e.g.:

- "certainly with cross-border incidents"
- "so every scenario can be compared"
- "Standardisation is one key of success when different organisations are practicing together"
- "There has to be a common understanding of decision making processes and ways how to train them"
- "harmonisation of procedures is important for cross-border cooperation and for civil-military cooperation, to compare procedures of different actors and see the common points of interoperability"

What specific aspect should be harmonized/ standardized?

- "steps of proceedings/actions"
- "how prepare and what take into account during using drones"
- "procedures for the use of the drone in CBRN actions and activities"
- "There has to be a very clear understanding who is the target and what competencies will be trained"
- "guide book for organizers which should be harmonized and recognized between different countries"

Four project partners think, there is no need for harmonization/ standardization, because of:

- "comanding structures differ in a high measure"
- "not always possible due to restrictions on incident command, equipment, local procedures"

Shall there be synergies between civil and military training practices? Why (not)? In what aspect?

Nearly all observers stated, there shall be synergies between civil and military training practices or tend to this, due to / because:

- "in case of need of combined activities"
- ""save lives and health" as the same goal"

- “Each type of synergy is welcome to increase the practice, but this aspect should not be the major priority”
- “to know each other and to know how to work together”
- “to learn from each other”
- “to compare, align procedures, to learn from each other, to maximize joint response capability”
- “plan how if in need civil and military sector works together”
- “to have developed and trained procedures in large scale incidents”
- “effort put in during different stages of the crisis have just some variations”
- “eliminating the threat and consequences of the incident”

In what aspect?

- “cooperate with the same language, strategy and actual "handwork"”
- “communication, public awareness, coordination of actions for maximum effectiveness”

23 *What kind of "critical technological gap(s)/need(s)" could you immediately identify which would justify the recommendation for a "prompt" new end-user-guided innovation project? or several projects?*

- “need for projects in the area of digital solutions for the interaction between the different command levels”
- “Fully automation of using drones (charging pad, safety systems/parachutes, HAZMAT sensors, high reliability)”
- Detection, not necessarily identification, of radiological, biological (second priority) and chemical substances with subsequent trained standardized operating procedure for the units
- “new CBRN sensors (easy to use in full PPE, light, mobile, precise)”
- “automatically recorded and transmitted triage data”
- “better information exchange and visualization means of the command center with operational field”
- “decontamination site showed some room for improvement regarding processes”
- “Joint understanding of incident command and decision making competencies”
- “speed and effectiveness of the release (isolation) of a victim from the damaging factor”

- "Communication with a victim who does not know the language of the host country"
- "Take a look at "Intraorganizational Communications"" (possibility of weakness/ failure, determine risk factors scientifically)

Do you consider this type of activity where academics join for observation useful to make them understand your working conditions and requirements as practitioners?

All project partners see an (big) advantage in this type of activity where academics join for observation, because / due to:

- "shaping education processes and creating standards"
- Exchange must be there for good results
- For better understanding of actions and procedures
- "Academia, practitioners, policy makers, decision makers, they all must get together"
- "Otherwise research and development would be too far from real needs" and "development of new capabilities might go into a wrong direction"
- Additionally:

    1. "time should be allocated for further reflexion and discussion"
    2. "Don't divide them into the same groups (eNotice, ACAO?) but mingle them so they can discuss in between"

4 Report on the METU Joint Activity

As this consortium partner is a University, the JA was held in the Technopolis of METU (CoZone) and in collaboration with Eskişehir Osmangazi University.

The structure of the JA was as follows:

- The aim of the exercises is the training of practitioners using serious games
- There were also two field visits: 1) Mine at Beypazarı 2) Mine at Eskişehir Osmangazi University
- Serious gaming workshop

Figure Project meeting at CoZone.

4.1 Overall presentation of the METU Joint Activity

Objectives and evaluation criteria of the hosting exercise were:

- Testing the three serious games developed for three different CBRNe scenarios
- Acquiring feedback using the Technology Acceptance Model (TAM), System Usability Scale (SUS), Immersive Tendency Questionnaire (ITQ)
- Obtaining feedback on the use of University of Vienna's game analytics tool
- Showcasing and testing the Scenario-Based Game Generator tool (Please see Surer et al., 2019: https://arxiv.org/abs/1911.07380).

Objectives for the invited experts

- Observation and identification of the use of serious games in CBRNe scenarios
- Observation and identification of the use of serious games in virtual reality and mixed reality
- Evaluation criteria for all participants:
- Technology Acceptance Model

- System Usability Scale
- Immersive Tendency Questionnaire
- Open-ended questions and suggestions

The program of the JA was as follows:

Tuesday, 25 February 2020 – eNOTICE project meeting, Ankara, Turkey	
0900	*Welcome coffee*
0930	Welcome & Introduction
1000	eNOTICE project meeting
1200	*Lunch*
1300	eNOTICE project meeting
1530	*Coffee-Break*
1600	eNOTICE project meeting
1700	Summary & Outlook
1900	*Light dinner in Ankara*
2100	Transfer to the hotels

Wednesday, 26 February 2020 – Game Testing in Ankara and Mixed Reality in Eskisehir	
0730	Check out from the hotel in Ankara
0800	Testing the games in Virtual Reality at METU CoZone, Ankara
	Coffee in between
1200	Light Lunch and Transfer to Eskişehir
1530	Testing the mining games in Mixed Reality and Virtual Reality at Eskişehir Osmangazi University
1900	Transfer to Hotel Ibis, Eskişehir
Thursday, 27 February 2020 – Mine Visit and Serious Games Activity and Workshop	
0730	Check out from the hotel in Eskişehir
1030	Visiting the Cayirhan Mine
1200	Light Lunch and Transfer to Bilkent Otel
1530	Transfer to the METU Informatics Institute
1600	Serious Gaming Workshop
1900	Transfer to the restaurant
1930	*Gala Dinner*

Friday, 28 February 2020 – METU Research Visits and De-briefing	
0900	Check-out from the Hotels and Transfer to METU CoZone
1100	In-depth debriefing of the games
1200	Introducing the next Joint Activity and end of the METU JA 2020
1300	*Lunch*

4.2 Short description of the scenario

Most of the scenarios of the METU JA 2020 were adapted from previous JAs of eNOTICE, Nimes JA (January 2018) and Brussels Biogarden scenario (June 2018) to virtual reality and mixed reality environments. Also, two mining games were developed and adapted to virtual reality and mixed reality. The exact 3D modelling of Eskisehir overground mine was built and participants interacted with the mixed reality environment where interactive tasks on safety in mines were performed by the participants.

Figure: Screenshot from the Hospital game (eNOTICE Nimes JA 2018).

Figure: Screenshot from the Biogarden game (eNOTICE Brussels JA 2018).

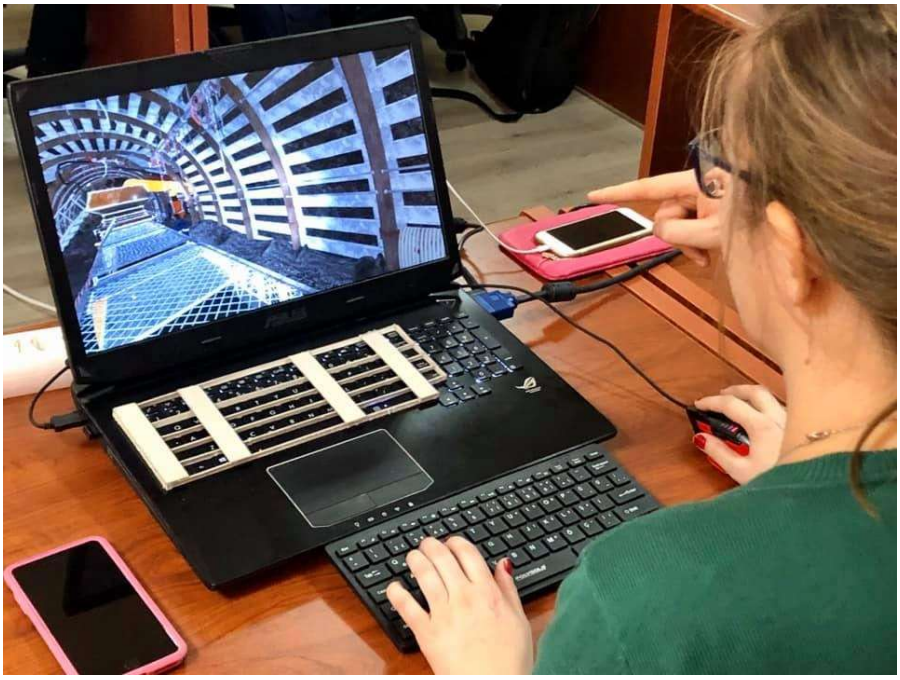


Figure: Virtual model of the Eskisehir mine.

Figure: Mixed reality interaction at Eskisehir mine.

Also, a half-day serious gaming workshop was held with participants from several EU projects. The program of the serious gaming workshop was as follows:

METU Serious Gaming Workshop – 27 February 2020, METU Informatics Institute	
1600	Prof. Deniz Zeyrek Bozşahin (Director, METU II)
1605	Asst. Prof. Elif Sürer (METU MMI, eNOTICE)
1610	Asst. Prof. Mustafa Erkayaoğlu (METU MINE, eNOTICE)
1620	Laura Petersen (PROActive)
1630	Prof. Şebnem Düzgün (Colorado School of Mines, eNOTICE)
1645	Assoc. Prof. Sule Ergün (Hacettepe University, TAEK)
1655	Asst. Prof. Gürdal Gökeri (Hacettepe University, TAEK)
1705	*Coffee Break*
1715	Prof. Gilles Dusserre (ARMINES, eNOTICE)
1735	TEAMWORK Project
1745	Andrea Conti (CRIMEDIM - Università del Piemonte Orientale, NO-FEAR)
1800	*Coffee Break*
1810	Özge Gözay (TUBITAK)
1830	Asst. Prof. Günter Wallner (Eindhoven University of Technology & University of Applied Arts Vienna)
1900	*Closing Speech*

4.3 METU JA Debriefing and lesson identified

The debriefing was held on February 28, 2020, on the last day of METU JA and the feedback was very positive. Below are some comments from the participants.

Participant 1: *"The proposed system is quite interesting, and this has been my first-time experience regarding gaming, VR, and serious gaming. There is a huge opportunity for the future where action tools to make training where training facilities are not available."*

Participant 2: *"This is the first time that I met VR technology, I found it very interesting, and it is a good opportunity to teach training teachers and different users. Cost of technology is low but developing the applications is costly. We can implement different scenarios like Coronavirus. We have a good future for the potential of the applications."*

Participant 3: *"Using a technology like augmented reality or virtual reality in the future will support practitioners, and this JA was a proof-of-concept. An example application can be using AR with the spread of radiating of the dose rate. Using VR is a cost-effective tool for sampling teams and it can be used to provide the network team in the hot zone. Just a corporate approach is possible, or cooperative work in CBRN environment. How to complete IpE equipment can also be another application. Another possible scenario is using AR in the real situation with the practitioner groups on contamination."*

Participant 4: *"It is a promising technology, we should be careful with it though. As mentioned during the workshop, having it in 3D is not the main issue, but the complexity of the task. Reach back and military purposes are good. US is working on this already. In overall, this JA has been a very complex and interesting one. The Serious Gaming workshop was also high-level."*

Participant 5: *"When I saw the program of this JA, to me the most important part was on how to use VR and serious gaming for training purposes. We should teach people how to do it. It was good to see how we can use different technologies in one direction, to transfer knowledge effectively. I always said that if you want to better understand some process and device, you have no limitation. It is good to see that the software was very good and developing this software is the future in CBRNE. One possible application is the development of a process to prepare the real agents on learning how to use these tools."*

Participant 6: *"I was very surprised with the level of the tool, i.e. graphics, and flexibility, congratulations to the team. My opinion is that the VR and serious gaming are the future. I am also aware that we cannot replace the real training. You do not need to make tool as real as possible, that will never be the case since in real life you smell and you feel the chaos, that is not necessary to be realistic. Enabling the practitioners to repeat the exercises should be the focus, how to put a gun together, could be in done in VR, repetitively which will enable it to be done in real-life. In a big scale event, game developers can enable you to see and identify the details of the event. You can learn from the results; I have done this, but I could have done that. We can do this in VR but we cannot do this in real life."*

4.4 Conclusion on the METU JA

METU JA 2020 was held between the dates of 25-28 February 2020 in Ankara and Eskisehir. The JA included project meetings, virtual reality and mixed reality serious games of previous eNOTICE JAs and two games on mining, two field trips to real mines, a serious gaming workshop and a debriefing session.

5 Updated JA calendar

The updated calendar of the Annual workshops and policy meetings – partially combined with JA's can be found here, present date until the end of the project.

	Date	Hosting partner	Location	Type of activity	
4	June 18, 2020	**UCL - eNOTICE Dissemination and Training workshop**	Joint **webinar** on Just-in-time Training, hosted by 5 Networks of Practitioners – eNOTICE, FIRE-IN, NO FEAR, MEDEA and DAREnet	**Annual Workshop 3**	June 18, 2020
5	Nov 23-27, 2020	**JCBRND CoE**	**Vyškov, CZ**	Consequence Management after a CBRN Incident course	Nov 23-27, 2020
6	April 26-30, 2021	**UNITOV**	**Rieti, IT**	Multidisciplinary Field Exercise	April 26-30, 2021
7	May 2021	**VESTA**	**Ranst, BE**	Multidisciplinary Field Exercise	May 2021
8	June 2021	**eNOTICE Dissemination workshop**	Hannover, Germany	Booth and dissemination collaboration with other Network of practitioners projects at INTERSCHUTZ 2021	June 2021
9	Sep 2021	**FDDO**	**Dortmund, DE**	Multidisciplinary Field Exercise	Sep 2021
10	Nov 2021	**WSU + CNBOP-PIB**	**PL**	Combined Civil-Military Exercise	Nov 2021
11	Apr 2022	**WSU**	**PL**	Table top exercise	

Table 1 eNOTICE Provisional Calendar of future activities from March 2019 – June 2022

6 Feedback on the eNOTICE templates

A methodology for the preparation, organisation, evaluation and follow up was made to be used during the JA's. The use of this methodology and the corresponding templates is evaluated at each JA, either as such, or through their use as reporting format, as is shown in the annexes. In the following paragraphs, the feedback from the partners who organised a JA in the reporting period covered by this Deliverable is listed.

The latest JA's have shown that most TCs already have their own methodology for the preparation, organisation, evaluation and follow up exercises. This means that only a small part of the methodology is used. What part of the templates are used, can be found in annex 1, 2 and 3. Therefore, an update of the templates will be made.

7 Conclusions and Transversal lessons of the past JAs in Birmingham, Dortmund and Ankara.

The lesson identified from each JA are used in the preparation and organisation of the next JAs, thus creating a continuous loop of improvement during the whole project. Conclusions, lesson identified and areas of improvement from the past JA's in Birmingham, Dortmund and Ankara can be summarized as followed:

The Joint Activity in Birmingham showed that an EU H2020 project can successfully be integrated into a business as usual CBRN training centre exercise. The most positive factor to this success was to introduce the organisers and leaders of the exercise to the eNOTICE project, the Joint Activity team and external partners ahead of the exercise. Making the organisers and leaders aware of eNOTICE and showing the project at a joint exercise before hosting meant they were invested and passionate about the project and were willing to adapt their product to make the joint activity a success. It also showed how an exercise which has sensitive elements can be designed to appeal to all participants, if the effort is taken to explain why some agenda items are restricted, and to ensure the participants are engaged and valued in other interesting briefings or demonstrations. A lesson identified from the JA in Birmingham is the difficulty in understanding the CBRN acronyms. A glossary for, or blanket ban on acronyms is highly recommended for joint activities.

The Joint Activity in Dortmund showed us that participating in an JA is good to have the time for different type of observers (academics, practitioners, policy makers and decision makers) to discuss and exchange ideas. This JA has built on the recommendations and lessons identified from former JA's:

- The observers (including eNOTICE observers) their visibility was high; they could be recognised from far.
- There was a liaison officer between the observers and exercise staff. These liaison officers would elaborate on wat was going on in the field.

However, not all observers could hear those liaison officers, a broadcast via loudspeakers had been helpful. Observers are not all practitioners and are not always aware of what is happening

and what still needs to be done. Therefore, direct and clear communication is imperative not to 'lose' these observers in the exercise.

The JA in Ankara was proof that augmented or virtual reality in the future will support practitioners. It is a cost-efficient way to test new technologies and train first responders.

The main lesson identified from the last three JA's is that not all TC will and/or can use the templates provide by eNOTICE – for many reasons. Therefore, an update of these templates needs to be made – or at least finding a solution to this Lesson Identified.

Annex 1: Full report on the Birmingham, July 2019

General Information Sheet eNOTICE for a Joint Activity

Part A: Summary description of the objectives and topic of the CBRN Exercise

Main activity	Invited activity
The main activity opened up as an eNOTICE Joint Activity will consist of a one day table top exercise (TTX), organised by the **West Midlands Police in collaboration with the National CBRN Centre**	The joining activity is the H2020 project PROACTIVE – **PReparedness against CBRNE threats through cOmmon Approaches between security praCTItioners and the VulnerablE civil society** In addition, national experts will participate, proposed or invited by the eNOTICE consortium members, including the UK member.

1 Type of activity and contact details of the hosting exercise	Type of activity and contact details of the invited activity
Organising partners: West Midlands Police in collaboration with the National CBRN Centre. UK CBRN emergency response uses continuous professional development (CPD) to work together to refresh and enhance their CBRN knowledge. This 1 day TTX is a regional event, hosted by West Midlands Police, and led by the National CBRN Centre CPD team.	PROACTIVE - PReparedness against CBRNE threats through cOmmon Approaches between security praCTItioners and the VulnerablE civil society Starting in May 2019, PROACTIVE aims to enhance societal CBRN preparedness by increasing practitioner effectiveness in managing large, diverse groups of people in a CBRN environment. This will be achieved by testing common approaches between European Practitioners such as Law Enforcement Agencies (LEAs) and First Responders. These will be evaluated and validated against the requirements of civil society, including vulnerable groups of citizens reflected in the

1

	European Security Model. A Practitioner Stakeholder Advisory Board (PSAB) and a Civil Society Advisory Board (CAB) will extend the representation of both sides in several surveys, focus-groups, workshops and field exercises. A benchmark study between LEAs will identify common approaches in assessing CBRN threats and the protocols and tools used to help citizens. Liaising with the eNOTICE H2020 project, three joint exercises will include role play volunteers recruited by PROACTIVE. They will evaluate the acceptability and usability of existing procedures and test new tools developed within PROACTIVE to provide innovative recommendations for Policy-makers and safety and security Practitioners. PROACTIVE will result in toolkits for CBRN Practitioners and for civil society organisations. The toolkit for Practitioners will include a web collaborative platform with database scenarios for communication and exchange of best practice among LEAs as well as an innovative response tool in the form of a mobile app. The toolkit for the civil society will include a mobile app adapted to various vulnerable citizen categories and pre-incident public information material. These will provide valuable inputs to the EUROPOL initiative to develop a knowledge hub for CBRN activities and help consolidate the EU Action Plan to enhance preparedness for CBRN threats.

2 Objectives and evaluation criteria of the hosting exercise	Objectives and evaluation criteria of the invited activity
Objectives of the Table top: • To enhance individual participant's knowledge around multi-agency CBRN response against current threat intelligence • To strengthen the multi-agency command, control, communication and co-ordination of the response to a CBRN event. • To strengthen joint understanding of all agency's plans, doctrine & capability. • To identify learning opportunities and capability issues that need to be fed back into national planning to enable the National CT Policing (NCBRNC) to better support the response. • To raise awareness of the breadth of capabilities available via NCBRNC in support of operations. Evaluation criteria: There is no mandated performance criteria for the continuous professional development for attendees.	Objectives for PROACTIVE participants: • To observe and participate in UK emergency response planning. This will give an understanding of the type of communication that civil society can expect in a CBRN event from first reponders. This will inform a project goal which is to enhance societal CBRNE preparedness by increasing first responders ability to effectively manage large, diverse groups of people. • Networking with a broad group of EU and UK CBRN community • Make professional connections with the eNOTICE consortium members. (PROACTIVE and eNOTICE will liaise during three eNOTICE joint activities) Evaluation criteria for participants (eNOTICE and PROACTIVE. • Relevance of the specific training activity to the eNOTICE project or their own organisation • Relevance of the available training facilities and capacities for testing, demonstration etc. in research projects • Relevance of other training activities to the project • Opportunities for further collaborations • Interesting aspects to further build the eNOTICE network

3 Main scenario: short description	**Description of the invited activity**
A full day exercise, based on a fast acting Chemical CBRN mass casualty event requiring a coherent multi-agency detection, identification and monitoring capability, decontamination strategy and mass casualty planning.	PROACTIVE will have the opportunity to have unrestricted access to observe and, in part participate, in the TTX. This will be insightful for understanding how presently the UK plans for vulnerable society in CBRN events. This is of value for the dynamic decision making and interoperability of responders. This information will be used to develop a toolkit for civil society and include a mobile app adapted to various vulnerable citizen categories and pre-incident public information material.

4 Facilities used for the activity	If relevant, extra facilities needed for the activity
This is an indoor conference environment, where participants will be seated at cabaret style tables and encouraged to interact with delegates throughout the day. www.tallyhouk.com	

5 Profile of the participants of the hosting exercise	Profile of the participants of the invited activity
Strategic, tactical and operational commanders in law enforcement, fire and rescue and medical services Emergency managers Communications managers	Invited experts: PROACTIVE project partners UK CBRN stakeholders: eNOTICE Consortium Partner and invited experts

Part B: Practical organisation – Agenda (Draft)

Day 1: Wednesday July 10, 0800 – 1700	Day 2: Thursday July 11, 0800 - 1700 Social event 1900-2200 TBC	Day 3: Friday July 12th, 0900-1300
0800-Collection from 2 locations in Birmingham city centre (TBC – dependent on hotel bookings to decide best location) 0830-eNOTICE project meetings 1200- Lunch 1300-Travel to National CBRN Centre 1400-1600 Tour of National CBRN Centre 1730-Return to Birmingham city centre	0800- Collection from 2 locations in Birmingham city centre (TBC – dependent on hotel bookings to decide best location) 0830-TTX 1700 hot debriefing 1730-Return to Birmingham city centre 1900-2100 social event and dinner	0800-1300 West Midlands Police Head Quarters – Birmingham city centre 0800-0900 Structured, in depth debriefing 0900-1300 eNOTICE project meetings 1300-1400 Sandwich lunch 1400 departure

Part C: Practical organisation – To be communicated to all organisations/persons who registered for participation

Practical information	
Dates:	10-12 July 2019
Location:	Birmingham, UK
Meetings and exercise:	Tally Ho conference suite, Tally Ho, Pershore Road, Edgbaston, Birmingham, B5 7RN
Hotel/accommodation:	Premier Inn – New Street Station https://www.premierinn.com/gb/en/hotels/england/west-midlands/birmingham/birmingham-city-centre-new-st-station.html Jurys Inn – Broad Street https://www.jurysinns.com/hotels/birmingham?utm_medium=cpc&gclid=EAIaIQobChMIkMGwwK-f4QIVT7XtCh033g-GEAAYASAAEgIMgvD_BwE&gclsrc=aw.ds Novotel – Broad Street https://www.accorhotels.com/gb/hotel-1077-novotel-birmingham-centre/index.shtml
Contact person:	Name: Elizabeth Benson
	Mobile: +44 07747008243
	E-mail: cbrnprotect@west-midlands.pnn.police.uk
Deadline for registration for the activity:	10th May 2019
Transfer information	
Train:	Birmingham New Street Station is well connected nationally
Airport:	Birmingham International Airport (BHX)
Highway:	Manchester to Birmingham: 2 hours via the M6 or 1 hour 40 minutes by train Newcastle to Birmingham: 3 hours 40 minutes via the A1(M) or 3 and a half hours by train Leeds to Birmingham: 2 hours 20 minutes via the M1 or 2 hours by train London to Birmingham: 3 hours via the M40 or 1 and a half hours by train

AGENDA DAY 1 - eNOTICE - Events Control suite, Tally Ho Training Centre, Birmingham, B5 7RN

www.tallyhouk.com

DATE	TIME	EVENT
Wednesday 10th July	08h 0810h	Shuttle from Premier Inn Shuttle from Jurys Inn
	0845h - 12h	eNOTICE project work
	1030h	coffee/tea/biscuits
	12h-13h	Lunch with PROACTIVE members
	13h-14h	Travel to NCBRN Training Centre (security check)
	14h-1630h	• Formal greeting • Tour of the centre • Presentation to eNOTICE by PROACTIVE • Introduction to Ex. Retribution • Safety and observer briefing • Refreshments
	1630h-1730h	Return to Premier Inn and Jurys Inn

TIME	TOPIC	Lead
0845-0900	Welcome and security briefing	WMP
0900-0945	Continuous improvement of the templates Update roster/catalogue + label	UNITOV
0945-1030	Continuous improvement of the sustainability plan	VESTA
1030-1045	Refreshments	WMP
1045-1130	Further development of the ECC	SIC
1130-1200	JA METU	METU

Shuttle collections - 2 locations	
Premier Inn	Birmingham Exchange Buildings, Stephenson Place, Birmingham B2 4NH
Jurys Inn	245 Broad Street, Birmingham , B1 2HQ

At 1930h we will meet at All bar One, Brindley Place, B1 2HL. For informal self funded drinks/meal should you like to join us.

AGENDA DAY 2 - **Exercise Retribution** - Tally Ho Training Centre, Birmingham, B5 7RN

www.tallyhouk.com

DATE	TIME	EVENT
Thursday 11th July	0710h-0720h	Shuttle from Premier Inn Shuttle from Jurys Inn
	0745h	General/security briefing and registration
	0830h	Opening Address - West Midlands Police Chief Constable - Mr Dave Thompson
	09h - 0930	Preparation for TTX
	0930 - 1215	Joint Activity - NCBRNC TTX - Exercise RETRIBUTION
	1230 - 1315h	Lunch - opportunity to network
	1330 - 1530h	eNOTICE/PROACTIVE Workshop to meet the Rieti/Dortmund/Jezefow Exercise Hosts
	16h	TTX hot debrief led by Stuart Beaumont
	17h	Shuttle to Premier Inn and Jurys Inn
	18h30	A walk through Birmingham to the Jam House for evening social/buffet meal

The spirit of this meeting is for PROACTIVE to understand how best to work with eNOTICE, and learn how to dove-tail the civilian aspect of PROACTIVE into the three eNOTICE exercises.

1. *Understanding their priorities and "red lines" to which PROACTIVE will keep to.*
2. *Quick review of Tasks 6.3, 6.4 and 6.5 descriptions (ref. PROACTIVE DoA), and identify updates leading to a discussion on the possible scenarios for the 3 exercises*
3. *Liaison regarding the attendance of civilians. I want to discuss a method for recruiting the civilians but will need their expert local knowledge to make this happen.*
4. *Liaison regarding the attendance of vulnerable civilians.*
5. *Dates for visiting the sites starting with Rieti after this (July) meeting.*
6. *Discussing the opportunity visit Dortmund and as an observer on the 19th -21st Sept.*
7. *Other topics – you and everyone in cc to give me other subjects if necessary.*

This is an outline, and PROACTIVE would of course like eNOTICE to review this and be prepared with questions.

AGENDA DAY 3 - **eNOTICE**

DATE	TIME	EVENT	Lead
Friday 12th July	09h	Debrief of WMP JA	VESTA WMP
	1030h	Relations with other networks: Round table where all partners share interesting information on 'their' project/network	SIC VESTA
	1130h	JA FDDO Sept 2019	FDDO
	1200	Continuous improvements part 1: Report of last JA Continuous improvements part 2: World Café	VESTA
	1300	Lunch and departure - No shuttle	

Location - Lloyd House

No shuttle - Please make own way to venue

This venue has been booked to allow for staggered departure timings.

Police Headquarters - West Midlands Police, Lloyd House, Colmore Circus, Birmingham, B4 6NQ

12 minute walk to New Street Station where trains to Birmingham airport and London run every 15 minutes.
Train to the airport takes 8 minutes
Train to London takes 1.5hrs
www.rome2rio.com

- **Useful contacts and details:**
  - Premier Inn, Birmingham Exchange Buildings, Stephenson Place, Birmingham, B2 4NH
  - Jurys Inn, 245 Broad Street, Birmingham , B1 2HQ
  - For others staying at different location these are the key hotels for the shuttle/collection
  - The Jam House, 3-5 St Pauls Square, Birmingham B3 1QU.
  - 0121 200 3030 birmingham@thejamhouse.com Thursday night meal and entertainment. 7pm onwards
  - Please have a look at the venue for info on dress code, ID, and taxi/travel recommendation.
- The cricket world cup semi final will be taking place on the 11th July in Birmingham. The city busy and vibrant. Please consider this when out and about enjoying the city, and stay safe with smart planning and personal safety.
- Contact: Liz Benson - 0044 (0)7767 008 243
- Contact: Scott Howard - 0044 (0)7387 098 199
- Bus travel from the city to Tally Ho - Catch the number 45 or 47 bus from the stop opposite Grand Central station (Boots shop) to Tally Ho, Pershore road. (coins or contactless for payment on buses)
- Recommended Taxi company - Use any hackney carriage (black cab) from taxi ranks or call TOA Taxis Tel 0121 427 8888 to book a taxi
- www.h2020-enotice.eu
- www.proactive-h2020.eu

Exercise Retribution
Attending Partners 11th July 2019

Annex 2: Full report on the Dortmund JA, September 2019

General Information Sheet eNOTICE for a Joint Activity

Part A: Summary description of the objectives and topic of the CBRN Exercise

Main activity	Invited activity
eNOTICE JA Practical training of the FDDO in the field of CBRN with focus on chemical substances involving a reconnaissance unit of CNBOP	Participation of national experts, proposed or invited by the eNOTICE Consortium Members. The profile of the invited experts is: first response practitioners (fire & rescue, police, military, emergency medical services), lecturers from CBRN Training Centres and academics or developers involved in research to improve CBRN preparedness. Participation of the eNOTICE Consortium Members as observers in the practical part of the training.

1 Type of activity and contact details of the hosting exercise	Type of activity and contact details of the invited activity
Organising partner: FDDO with support of CNBOP **Full scale field exercise on 21 September** - The aim of the exercise is the training of large scale events with hazardous substances - The field exercises will be held in Dortmund. The venue will set up inspiring background for detection and identification procedures, as well as decontamination.	External guests will participate in the exercise as passive observers (A-DRZ, Proactive, Vision, Athmos, LaserRettung, AtheBOS).

2 Objectives and evaluation criteria of the hosting exercise	Objectives and evaluation criteria of the invited activity
- Improvement of coping capacity of different units concerning their tasks - Training of management structures on different levels in case of large scale events, here : Cooperation between units of the Fire Department, Analytics and German Railway in the context of railway related risks - Test and improve operating procedures of first intervention, HazMat containment, decontamination and casualty treatment	**Objectives for the invited experts** - Observation and identification of the interplay between the actors on scene - Reflection on the added value of opening activities up to other stakeholders in the field of safety and security with focus on CBRN threats - Identification of opportunities to raise the understanding within the triangle: rescue units – industry – scientists

- Cooperation and interaction between the different units concerning * information flow (command and control) * hand over of tasks * sampling and detection (HazMat Team & CBRNDet) * decontamination	**Objectives for the eNotice partners** - Identification of opportunities to strengthen the network of CBRN Training Centres; - Identification of best practices to share with the eNOTICE community; - Identification of input for ongoing eNOTICE Tasks. **Evaluation criteria for all participants:** - Questions for **scientists / research projects**: • To what extent is the use of a practical exercise relevant to your project? • How far would you consider to include joining this type of exercise for testing, validation, demonstration? • What is your objective to participate in / observe the exercise? What kind of information do you aim to collect? and for what kind of tasks in your project will this information be used? • To what extent does the chosen scenario fit with your project objective, is it relevant to your project? • What are your expectations from the exercise? What is the added value of the exercise for collection of information compared to other types of activities (workshops, braimstorming, surveys)? • What are your evaluation principles for the scenario from your project´s perspective? • Which area of the exercise is most relevant for your project? Why? • What are the conclusions for your project / scientific work? • Do you have suggestions to improve the preparation or organisation of a JOINT activity in order to optimise return and added value? - Questions for the **end-users** • How far did the exercise offer sufficient opportunities for the identification of good practices? • How far did the participation in the exercise met your expectations? • In what way could the exercise be adapted so that it will become more interesting for you? • How far is your expertise and/or way of working compatible with the practice within the exercise?

	• Do you consider this type of exercise as an interesting setting for a demonstration session to present the final results at the end of an EU project? What is most interesting: interaction between end-user, scientists and industry, new technical / conceptual solutions, etc.? • After participating in the joint activity, do you feel like there is a need for harmonisation/standardisation of exercise practices? Why (not)? What specific aspect? • Shall there be synergies between civil and military training practices? Why (not)? In what aspect? • What kind of "critical technological gap(s)/need(s)" could you immediately identify which would justify the recommendation for a "prompt" new end-user-guided innovation project? or several projects? • Do you consider this type of activity where academics join for observation useful to make them understand your working conditions and requirements as practitioner?

3 Main scenario: short description	Description of the invited activity
On the morning of September 21st, on the premises of the German Railway (Deutsche Bahn - DB) in Dortmund it comes in the context of maneuvering to an accident between a parked tank car and a maintenance train of the DB. Result of the accident is an (assumed) deformation of the cab of the maintenance train and leakage of a liquid from the tank car, which is not identified due to an incomplete / illegible marking. The crew of the maintenance train consists of 15 persons. The persons present different injury patterns due to the accident: ten walkable patients and five lying patients needs to be transported (no unconscious patients). During the exit from the maintenance train and the trial to self-help, the persons come into contact with the leaked liquid. Due to the current situation the first-arriving forces will initiate extensive additional demand of special units.	- Observing research projects & (end) users: A-DRZ, Proactive, Vision, Athmos, LaserRettung, AtheBOS, *FD of Dortmund, Bochum, Saarbrücken, Unna, Essen tbc.* - **Proactive *("PReparedness against CBRNE threats through cOmmon Approaches between security praCTitioners and the VulnerablE civil society")***: this Horizon2020 project will test common approaches towards CBRNe threats between European practitioners such as Law Enforcement Agencies (LEAs), First Responders, railway undertakings, public transport operators, etc. The common approaches will be evaluated and validated against the requirements of civil society, including vulnerable groups of citizens as reflected in the European Security Model. A Practitioner Stakeholder Advisory Board and a Civil Society Advisory Board will extend the representation of both sides and members will participate in several surveys, focus-groups, workshops and field exercises (further information: https://proactive-h2020.eu/) - ***A*-DRZ "*Aufbau des deutschen Rettungsrobotik-Zentrums*"**: This four-year project is supported by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung* - BMBF) within the framework of the funding announcement *„Zivile Sicherheit – Innovationslabore / Kompetenzzentren für Robotersysteme in menschenfeindlichen Umgebungen*", within the framework of the program *„Forschung für die zivile Sicherheit 2012 bis 2017*" of the German Federal Government and is funded by the interdisciplinary and renowned network consisting of users, industry, universities and research institutions. The long-term goal is to go beyond this initiation or funding phase and establish a scientifically-oriented competence centre that will promote innovative developments with its partners. In this way, increasingly powerful

	robotics technology for rescue forces is supposed to become available on the market. (further information: https://rettungsrobotik.de/information-in-english/) - **Vision "*Vernetzte integrierte UAS-gestützte Datenerfassung und -aufbereitung für die Unterstützung von BOS im Bevölkerungsschutz*"**: This three-year project is supported by the Federal Ministry of Transport and Digital Infrastructure (*Bundesministerium für Verkehr und digitale Infrastruktur* - BMVI) within the framework of the funding announcement *„Angewandte Forschung und Experimentelle Entwicklung*", within the framework of the program *„Modernitätsfonds*" of the German Federal Government. The goal of the project is a support of our rescue units by unmanned aerial system (UAS). The central idea is an anticipatory drone, which is automatically dispatched with the alerting of the task force to the place of deployment and collects information relevant to the operation (further information: https://vision-mfund.de/) - ***LaserRettung***: The main goal of the three-year project supported by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung* - BMBF) is the development of a mobile laser cutting device for rescue operations. The focus is put on high flexibility concerning the processing of high-strength materials and multilayer structures. Moreover, robustness, easy handling and system weight shall be optimized, as rescuers often work under harsh conditions concerning temperature, humidity, dirt and stress. Crucial aspect of laser rescuing is safety which must be guaranteed for all persons involved at any time. Here, results of laser cutting experiments and measurements concerning reflected and scattered radiation as well as the emissions of hazardous substances outward the process zone are presented. - ***Celidon*** is a research project financed by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung - BMBF*) within the framework of the program *„Forschung für die zivile Sicherheit 2012 bis 2017*" of the German Federal Government. The project duration is about two years, started in March 2019 and consist of three partners: Fire Department of Dortmund, the Technical University Dortmund and the University of Applied Sciences Zwickau. The overall goal of Celidon is the localisation of fire fighters in environments characterised by low visibility (smoke). Due to this zero-sight-condition it is possible that the fire fighter team lose its orientation, what is seen as a very dangerous situation. The solution is an augmented reality unit (ARU) inside the respirator. The micro display of the ARU shows location information of the team partner in case of separation. As a result, separated firefighters can reunite quickly and reduce critical situations and accidents (further information: http://celidon-projekt.de/) - ***AtheBOS*** is financed by Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung - BMBF*) within the framework of the program „Forschung für die zivile Sicherheit 2012 bis 2017" of the German Federal Government. The duration of the project is about two years, started in August 2017 and consists of three project partners: Fire Department of Dortmund, Fire Department of Gelsenkirchen and the RWTH Aachen University. The overall goal of the project is the

	initiation of a so called „error culture" (no blame culture) in all emergency services, especially in the fire service. For this, a system of information management is developed that includes error detection, the analysis of errors and the communication process of elaborated solutions to avoid future mistakes. - ***Athmos "Atmosphärische Detektion von Gefahrstoffen durch mobile Infrarotspektroskopie"***: This three-year project is supported by the Federal Ministry of Education and Research (*Bundesministerium für Bildung und Forschung* - BMBF) within the framework of the funding announcement „*KMU-innovativ: Vorfahrt für Spitzenforschung im Mittelstand*", within the framework of the program „*Forschung für die zivile Sicherheit 2012 bis 2017*" of the German Federal Government and is funded by the interdisciplinary and renowned network consisting of users, industry, universities and research institutions. Incidents with the release of invisible cluods of harmful substances are still problematic. Caused by the available detection systems for civil applications it is not possible to detect and to analyse the cloud and to visualize it geo-referenced as a 3D model projected in a 3D map. This is the goal of this project to research such a system which delivers 3D information in a short time for a current situation awareness.

4	Facilities used for the activity

Outdoor facilities of the German Railway (*DB – Deutsche Bahn*)

Structure of the exercise with units

5	Profile of the participants of the hosting exercise	Profile of the participants of the invited activity
	The exercise will be an end-user oriented exercise, where different end-users will train their response to a given scenario (railway accident). The key-players are: - General Fire Service (professional and volunteer) - HazMat Team - Decontamination Unit - Command and Control Structure - Analytical Task Force (CBRNDet-Team) - DB AG - RUND - CNBOP	- Invited experts: CBRN stakeholders, mainly first responders and experts involved in Research, Development and Innovation of unmanned systems and CBRN

Part B1: Practical organisation – Agenda (Draft 30.07.2019)

Friday, 20 September 2019 – project meeting, Policy meeting, Annual workshop	
0700	*Transfer from Zweibrücker Hof to meeting venue*
0800	*Welcome coffee*
0830	Welcome & Introduction, Theoretical presentation of the Full Scale Exercise (FDDO)
1000	Preparation of Policy Meeting and Annual Workshop (UCL)
1200	*Lunch*
1300	Preparation of Policy Meeting and Annual Workshop (UCL)
1400	Policy meeting (UCL)
1530	*Coffee-Break*
1600	Welcome and Annual Meeting (UCL)
1800	Summary & Outlook (FDDO)
1830	*Light dinner in Dortmund (ABZ)*
2000	*Transfer to Zweibrücker Hof, Herdecke*

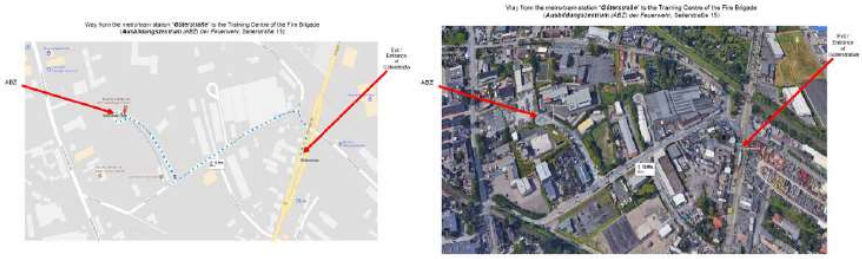
Saturday, 21 September 2019	
0700	*Transfer from Zweibrücker Hof to exercise area, Dortmund*
0800	Registration of Participants & Welcome and instructions (FDDO)
	Coffee in between
0930	Demonstration of the Full Scale Exercise (FDDO)
1400	*Lunch*
1445	Debriefing of exercise (FDDO)
1530	Cooperation with ProActive (FDDO, UCL, VESTA) → open for all partners
1630	*Transfer to Zweibrücker Hof, Herdecke*

Sunday, 22 September 2019 – Social event & Formal Dinner	
1400	*Transfer from Zweibrücker Hof to Zeche Zollern, Dortmund*
1500	Guided Tour (FDDO)
1900	Formal Dinner (FDDO)
2130	*Transfer to Zweibrücker Hof, Herdecke*

Monday, 23 September 2019 – policy meeting	
0800	*Transfer from Zweibrücker Hof to meeting venue, Dortmund*
0900	Welcome and Introduction (UCL)
0910	In-depth debriefing of the exercise (FDDO & ALL)
1000	*Coffee*
1030	Capacity label (SDIS77 & ALL)
1115	Discussion of the policy meeting and Annual meeting results, contents of D4.9 on Recommendations for CBRN policy (UCL & ALL)
1200	*Lunch*
1300	General assembly: Criteria of training centres acceptance in the network: presentation of current status of the network discussion of the criteria and future strategy on communication with TC – UCL + ALL
1400	Network sustainability (VESTA, UNITOV)
1500	*Coffee*
1530	Pooling of resources (UNITOV)
1615	ECC development (SIC)
	Coffee in between
1700	JA in Ankara (METU)
1730	Miscellaneous and Conclusions (UCL)
1800	Transfer to Zweibrücker Hof, Herdecke
2100	*Informal Dinner in Herdecke*

Part C: Practical organisation – To be communicated to all organisations/persons who registered for participation

Practical information	
Dates:	20 September – 23 September 2019
Location:	Ausbildungszentrum der Feuerwehr (ABZ) – Training centre of the FDDO, Seilerstr. 15, 44147 Dortmund, Germany
Meetings and exercise:	U3A/B Conference Room, Seilerstr. 15, 44147 Dortmund – 1st floor (meeting) Heyden-Rynsch Str. 125, 44149 Dortmund (exercise)
Hotel/ accommodation:	FDDO provides the shuttle bus from the Hotel Zweibrücker Hof to the training / conference facilities and vice versa. Please note that participants who stay in an alternative hotel will be responsible for their own transportation from/to their hotel to the meeting location. The participants will be picked up **directly in front of** the Hotel Zweibrücker Hof by a representative of FDDO (uniformed person) and guided to the bus / vans. Please be always on time (see agenda) as – especially the bus – has only limited options to park for a longer time in the close vicinity of the hotel.
Contact person:	**Name:** Dr.-Ing. Sylvia Pratzler-Wanczura
	Mobile: +49 (0) 172-7011826 **Office:** +49 (0) 231 50 29495
	E-mail: swanczura@stadtdo.de
Deadline for registration:	31.07.2019
Dress code for exercise	Please consider appropriate clothing for the exercise: - Weather-proof (space for observers won't be roofed) - Sturdy shoes
Transfer information	
Plane:	**From Düsseldorf Airport (DUS) to Dortmund main station (*Dortmund Hauptbahnhof*):** By train: Using the train is the fastest and easiest option to go to Dortmund. You can use the InterCityExpress (ICE), the RegionalExpress (RE) or the S-Bahn. We suggest to use the RegionalExpress, as it offers the best balance between time and price (S-Bahn too slow, ICE too expensive) and there is no need to change the train for your trip to Dortmund. Taking this into account, your options are - Regional-Express (RE6) direction: *Minden (Westf)* - Regional-Express (RE1) direction: *Hamm (Westf)* For further information, please visit: https://www.bahn.com/en/view/index.shtml **From Dortmund Airport to Dortmund main station (*Dortmund Hauptbahnhof*):** for information, please visit https://www.dortmund-airport.com/bus-and-train

Highway:	Connections to more distant parts of Germany are maintained by Autobahn routes A1 and A2, which traverse the north and east city limits and meet at the *Kamener Kreuz* interchange north-east of Dortmund. In combination with the Autobahn A45 to the west these form the Dortmund Beltway.
Way to the Training Centre (ABZ)	By metro / train from the Dortmund main station: Taking the U41 Direction "*Brambauer*". Exit at Güterstraße (6th stop), ask Google 
From Dortmund Main Station to the Hotel Zweibrücker Hof	By train: From Dortmund Main Station take the RB 52 (RegionalBahn – Regional train No. 52) direction *Lüdenscheid*. Leave at the stop "*Herdecke*" (*Herdecke* is the 6th stop). Your hotel is in walking distance of about 1km – ask Google

Olga : Sylvia, please put more information about the preparation of Dortmund JA, even if you did not use eNOTICE template, but your own – it's ok, but all the information has to be present in the report

3: Full report on the Ankara JA, February 2020

General Information Sheet eNOTICE for a Joint Activity

Part A: Summary description of the objectives and topic of the Serious Gaming Activity

Main activity	Invited activity
eNOTICE JA **Using serious games having different scenarios (etc. mining, eNOTICE Biogarden exercise, and eNOTICE Nimes exercise) in virtual reality and mixed reality for training purposes** Mining exercise: February 26 in Eskişehir Biogarden and Nimes scenarios: February 27 in Ankara There will also be a serious gaming workshop in February 27, afternoon.	Active involvement and participation of the eNOTICE Consortium Members in the practical part of the serious gaming exercise.

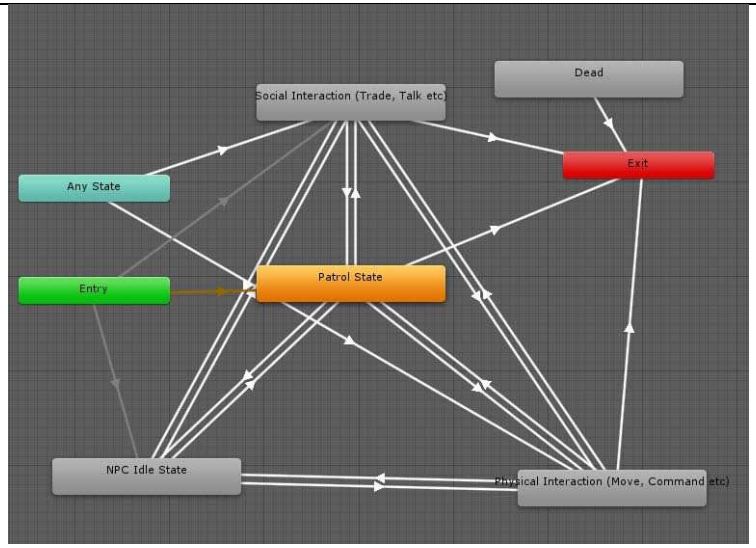
1 Type of activity and contact details of the hosting exercise	Type of activity and contact details of the invited activity
Organizing partner: Middle East Technical University (METU) with support from Eskişehir Osmangazi University - The aim of the exercises is the training of practitioners using serious games - There will also be two field visits: 1) Mine at Beypazarı 2) Mine at Eskişehir Osmangazi University - Serious gaming workshop	External guests will also participate in the exercise as active players (Proactive, NO-FEAR).

2 Objectives and evaluation criteria of the hosting exercise	Objectives and evaluation criteria of the invited activity
- Testing the three serious games developed for three different CBRNe scenarios - Acquiring feedback using the Technology Acceptance Model (TAM), System Usability Scale (SUS), Immersive Tendency Questionnaire (ITQ) - Obtaining feedback on the use of University of Vienna's game analytics tool - Showcasing and testing the Scenario-Based Game Generator tool (Please see Surer et al., 2019: https://arxiv.org/abs/1911.07380).	**Objectives for the invited experts** - Observation and identification of the use of serious games in CBRNe scenarios - Observation and identification of the use of serious games in virtual reality and mixed reality **Evaluation criteria for all participants:** - Technology Acceptance Model - System Usability Scale - Immersive Tendency Questionnaire - Open-ended questions and suggestions

3 Main scenario: short description	Description of the invited activity
Mining game: Radioactive substance found in an apartment block A box containing 137Cs- was found in an unoccupied cellar of an apartment building by the caretaker. The box was marked with the words “Cesium 137, radioactive” in a foreign language and was correctly sealed. The police were called and started tracking the man they believed may have abandoned the substance. The officials opened an investigation and a search was launched to find the former tenant of the apartment to which the cellar is connected. Authorities wanted to question the man about why he was in unauthorized possession of the substance. The effects on the health of the residents of the apartment block were deemed negligible. Tests show that the substance was not manufactured in the country where it was found. It was an industrial product, mainly used for measuring processes and for calibrating instruments. This scenario is interesting for testing the national response to an emergency that combines health, security, media, and trans-boundary issues. **Hospital game:** The scenario of the eNOTICE Nimes JA, January 2018. **Biogarden game:** The scenario of the eNOTICE Brussels JA, June 2018.	 Screenshot from the Mining game.

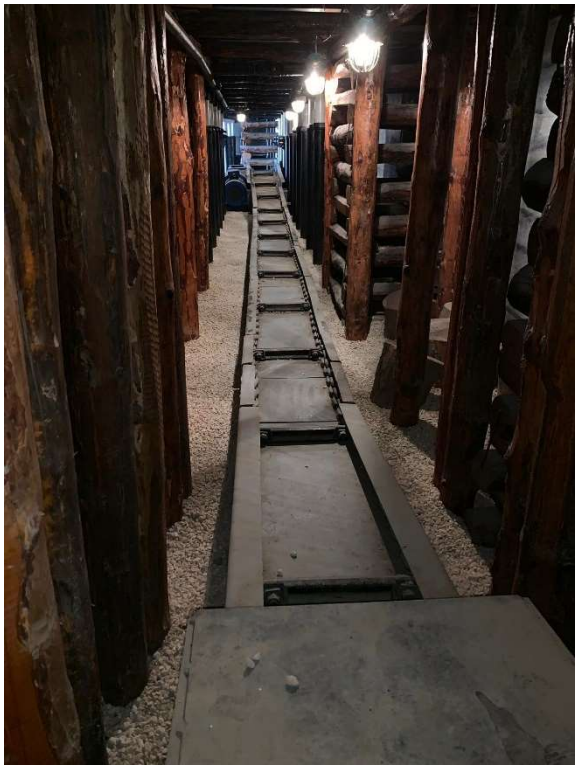
Screenshot from the Hospital game.

Screenshot from the Biogarden game.



Scenario-based Game Generator.

HTC Vive (VR) and Microsoft Hololens (MR) headset.



Outdoor facilities of the Eskişehir Osmangazi University

Serious Gaming Workshop at METU Informatics Institute

METU Technopolis CoZone

Tuesday, 25 February 2020 – eNOTICE project meeting, Ankara, Turkey	
0900	*Welcome coffee*
0930	Welcome & Introduction
1000	eNOTICE project meeting
1200	*Lunch*
1300	eNOTICE project meeting
1530	*Coffee-Break*
1600	eNOTICE project meeting
1800	Summary & Outlook
1830	*Light dinner in Ankara*
2030	Transfer to the hotels
Wednesday, 26 February 2020 – Game Testing in Ankara and Mixed Reality in Eskisehir	
0730	Check out from the hotel in Ankara
0800	Testing the games in Virtual Reality at METU CoZone, Ankara
	Coffee in between
1200	Light Lunch and Transfer to Eskişehir
1530	Testing the mining games in Mixed Reality and Virtual Reality at Eskişehir Osmangazi University
1900	Transfer to Hotel Ibis, Eskişehir
Thursday, 27 February 2020 – Mine Visit and Serious Games Activity and Workshop	
0730	Check out from the hotel in Eskişehir
1030	Visiting the Cayirhan Mine
1200	Light Lunch and Transfer to Bilkent Otel
1530	Transfer to the METU Informatics Institute
1600	Serious Gaming Workshop
1900	Transfer to the restaurant

1930	*Gala Dinner*
2200	*Karaoke*

Friday, 28 February 2020 – METU Research Visits and De-briefing	
0900	Check-out from the Hotels and Transfer to METU CoZone
1100	In-depth debriefing of the games
1200	Introducing the next Joint Activity and end of the METU JA 2020
1300	*Lunch*

METU Serious Gaming Workshop – 27 February 2020, METU Informatics Institute	
1600	Prof. Deniz Zeyrek Bozşahin (Director, METU II)
1605	Asst. Prof. Elif Sürer (METU MMI, eNOTICE)
1610	Asst. Prof. Mustafa Erkayaoğlu (METU MINE, eNOTICE)
1620	Laura Petersen (PROActive)
1630	Prof. Şebnem Düzgün (Colorado School of Mines, eNOTICE)
1645	Assoc. Prof. Sule Ergün (Hacettepe University, TAEK)
1655	Asst. Prof. Gürdal Gökeri (Hacettepe University, TAEK)
1705	*Coffee Break*
1715	Prof. Gilles Dusserre (ARMINES, eNOTICE)
1735	TEAMWORK Project
1745	Andrea Conti (CRIMEDIM - Università del Piemonte Orientale, NO-FEAR)
1800	*Coffee Break*
1810	Prof. Bilge Demirköz (METU Physics)
1830	Asst. Prof. Günter Wallner (Eindhoven University of Technology & University of Applied Arts Vienna)
1900	*Closing Speech*

Contact Person

Practical information		
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