eNOTICE
European Network Of CBRN Training Centres

D4.3 eNOTICE Joint activities planning

Report 2

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5	Umea Universitet (UMU)	
6	Fire Department Dortmund (FDDO)	
7	University of Paderborn (UPB)	
8	Joint CBRN Defence Centre of Excellence Vyškov (JCBRND COE)	
9	Middle East Technical University (METU)	X
10	University of Rome Tor Vergata and The Italian Joint NBC Defense School (UNITOV)	
11	West Midlands Police, National CBRN centre (WMP)	
12	War Studies University, CBRN Defence Training Centre (WSU)	
13	Scientific and Research Centre for Fire Protection (CNBOP-PIB)	

Executive Summary

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

It includes the full report on the Joint Activities organised in Nîmes (FR), by ARMINES and METU, in January 2018; and in Peutie (BE), by UCL, in June 2018.

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).

They 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 projects, attending the exercise for observation, testing, validation or demonstration. In Nîmes, the EU projects IGNIS, MODEX, eCONFIDENCE, SAYSO, TARGET, INACHUS and EUMFH joined the exercise. METU team developed a prototype serious game before the exercise and collected usability and expectation questionnaires before and after the exercise. Experts from the EU projects (MM Blanc, Gilli, Van Gasteren, Eftichidys, Haddad, L'heritier, and Madam Giroud) participated to observe and learn and shared their feedback with the eNOTICE consortium partners.

In Peutie, the EU project B-LiFE – Biological Light Fieldable Laboratory for Emergencies (funded the European Space Agency in the framework of the IAP-ARTES 20 program) joined the exercise. Experts from the EU H2020 projects EuroBioTox – "European programme for the establishment of validated procedures for the detection and identification of biological toxins", ENCIRCLE – "European Cbrn Innovation for the maRket Cluster", TERRIFIC – "Tools for early and Effective Reconnaissance in CBRNe incidents and providing first responders faster

information and enabling better management of the control zone", participated to observe and learn and shared their feedback with the eNOTICE consortium partners.

The main lessons learnt and recommendations from both Joint Activities can be summarized as follows:

The Nîmes JA is considered as successful, being an exercise in real conditions. Despite being a very narrow exercise dedicated for medical consequences of a CBRNE attack, the activity was already able to demonstrate its added value in providing a range of network activities between stakeholders on the medical consequence at hospital level. One of the expectations of Task 4.2 was to set up a standardised approach that will improve the preparation and organisation of those activities. During the Nimes JA, a specific focus on lessons learnt to be shared has been demonstrated. Moreover, Nimes JA permitted to initiate follow up actions, including the identification of end user needs for R&D. The Nîmes JA is considered as successful, being an exercise in real conditions.

The Bio Garden exercise in Peutie-Vilvoorde of June 19, 2018 showed the necessity of multi-disciplinary national and international exercises where first responders of various disciplines, who do not train together a lot, can perform together in the same scenario, in the same setting to compare and align their procedures, to improve communication between them and with competent authorities. The involvement of R&D innovations to facilitate the first responders' work and communication is very important, so that the users know what is available to them on the market, and can state their needs and requirements to be sure that the innovative solutions exactly meet their needs. The exercise showed that it is necessary to provide a lot more details on the technological innovations. This means that the whole organisation of the exercise has to be arranged in such a way to address the real-time training or demonstration on the scenario, and also to have time to provide details on the R&D achievements.

These lessons will be taken into account for the preparation and organisation of the following eNOTICE Joint Activities.

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
TC	Training Centre
JA	Joint Activity

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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.

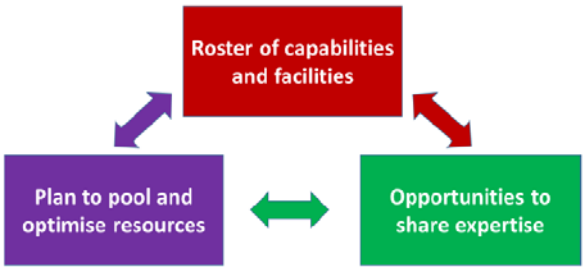

Figure 1 Three lines of actions

[1] European Commission Decision C (2017) 2468 of 24 April 2017, Horizon 2020 Work Pogramme 2016-2017, 14. Secure Societies - Protecting freedom and security of Europe and its citizens, web publication at: http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-security_en.pdf.

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.

11 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 buildup.

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-life 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.

Lessons learnt 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 D4.3 – eNOTICE Joint activities planning (Report 2) includes the full report on the JA organised by ARMINES and METU, in Nîmes (FR), January 2018 (Section 2 and Annex 1) and the full report on the JA organised by UCL, in Peutie (FR), June 2018 (Section 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). An evaluation of the use of these templates for the preparation of the UCL JA is included in Section 4. This feedback will be used in Task 5.3 for the continuous improvement of the Templates. The adjusted planning for the future Joint Activities is included in Section 5.

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 Nîmes Joint Activity

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

2.1 Overall presentation of the Nîmes Joint Activity

The JA was organized jointly by ARMINES and METU. They collaborated jointly on the organisation, on the design of the exercise, on the choice of experts and the design of the serious game. Indeed, the main objective of the JA in Nîmes was to gather user requirements and to integrate them in a serious game implementation phase.

The involvement of other EU projects was of great importance. They participated in the eNOTICE network activity. For some of them, they participated also in the exercise and provided their feedback. Moreover, two IT solutions developed during IGNIS and TARGET projects were tested during the JA.

During the Nimes JA, the hosting team worked on the elaboration of a framework, monitor participating interactions between practitioners (hospital managers, physicians, nurse etc…), technology suppliers (industry and research), training professionals and policy makers. We aimed to capitalize existing solutions from EU projects and see the potential transfer to the eNOTICE Joint Activity. Three main pillars were identified:

- Regular test of procedures (Massive arrival of victims (“emergency plan” called “white plan” based on an internal exercise);
- R&D initiative (user requirements, actual procedure, use of daily used informatics system, to design a comprehensive solution of training for all the staff of doctors, paramedics and administration persons);
- A focus on CBRNE purpose. The overall aim is to evaluate the impact on the medical chain.

2.2 Description of the scenario

For this scenario a major attack in a public place was chosen, yielding a large number of victims. The scenario needed to be sufficiently detailed so that a real case scene could be imagined and understood.

The place that has been defined is the airport of Nîmes-Garons. Indeed it has been shown in the past that airports or even airplanes could be targets of terrorist attacks (attacks of September 11, 2001 and the attack of the airport Zaventem of Brussels in 2016). Nimes airport was warned of a crisis management exercise involving an attack on its site.

A more comprehensive description of the scenario is included in the full report in Annex 1.

2.3 Nîmes JA Debriefing and lessons learnt

2.3.1 Feedback from the practitioners during the hot debriefing

Immediately after the exercise, a hot debriefing was set up. The main objective was to gather all the information and feedback from all the practitioners after a comprehensive tour de table.

All key persons had 10 minutes to explain their role and actions during the exercise, their overall feeling about their action (or lack of action) and their proposal for improvements. All the evaluators (senior that acted as a mentor during the exercise) proposed an assessment of what has been described by the juniors.

The hot debriefing was the opportunity to confirm the need of collaboration between researchers and practitioners. All the participants underlined the need of a dedicated solution (serious game) due to various reasons (cost and duration of the exercise, improvements of collaboration between participants, possibility of remote activity).

2.3.2 Feedback from the JA participants, based on the Evaluation & Debriefing

The added value of Joint Activities

During the Nîmes Joint Activity, all the participants attended the exercise (Day 2). They participated as observers. Observers are responsible for issuing findings on the progress of the exercise. They were selected because of their competence in the practice of this type of activity. It was useful to clarify, beforehand, the consistency of the mission of each observer, his level

of confidentiality, the form the expected rendering (precise identification of the observation theme, distinction of facts and interpretations, etc.).

The observer task usually consisted of taking notes (possibility of pre-established evaluation grid), the realization of photographs or video film. The position of the observers during the exercise was fixed or mobile. The observer did not intervene under any circumstances during the course of the simulation.

Their feedback was almost positive. They all confirmed two elements:

-The appropriate presentation of the objectives of the exercise.

Mainly, the observers appreciated the overall ambition to test the coordination of the interventions according to the plans, to test the validity of standards and procedures and their implementation. The entire chain of actions was covered, from detection and the alert of the event, the transmission of the alert to the intervention services, the reaction of all actors (first responders, mobilization of the various officials), the deployment of the equipment, in particular the closing devices, testing the routing times in the field and the implementation of the resources on the ground, etc. For example, the following aspects were observed and evaluated: reaction time of the person of permanence, delay closing time, arrival time of different services at the venue of the event, setting up a deviation route, appropriate use of equipment, back to normal situation, etc.

-The consistent realism of the exercise

An exercise is much more than a "simple training". Indeed, when the exercises lack realism, participants find it difficult to "play the game". During the Nîmes JA, all the observers appreciated the comprehensive involvement of all the stakeholders (from nurse to doctors). In order to reinforce the realism of the scenario, the seniors motivated the people involved in the exercise. They also improved the legibility of the scenario and therefore the smooth running of the exercise.

The realism of the Joint Activity was underlined. All participants were involved in their roles (and functions) and the scenario was rather close to actual issues. The timeline and the related concerns were appropriate. The role of each partner was appropriately described during the briefing phase. All observers appreciated the relevant “time management”. Indeed, during the two hours exercise, it was not possible to simulate real events and the corresponding real duration of emergencies. For instance, different types of operations (in the operation room)

were simulated; however, we decide to downscale the duration by a factor of 10. E.g. an operation of 40 minutes lasted for 4 minutes during the exercise.

The involvement of IGNIS solutions for the improvement of the debriefing.

During the Nimes JA, the IGNIS solutions (developed by Effective Command during the IGNIS EU Project) were tested. The Effective Command methodology is a Web-based assessment – this tool is used for formal assessment during an exercise setting or formal post-incident review (e.g. debriefing phase).

The web assessment tool has been created around the decisions making behavior required of an incident commander or crisis decision maker, regardless of their management tier. The key difference between the assessment tiers is the scope of the incident that the individual is expected to cope with. An operational commander coordinated the actions of a smaller operationally focused team, whereas, a strategic manager directed a multi-tiered incident with complex incident structure incorporating numerous strategic, tactical, and operational objectives.

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The assessment criteria were also aligned with several professional frameworks, standards, independent qualifications; and can be used as accredited evidence for these programmers.

For this exercise, eNOTICE assessors received initial and re-validation training provided by effective command, as required by the respective awarding bodies. This was to ensure that the assessment measures are being applied in a consistent manner and that the data collected is credible and suitable to be used for the formal qualifications.[i]

2.3.3 Point of improvements

Although the participants appreciated the realism of the scenario, one can also emphasize some rooms for improvements.

➔ *The difficult transfer/integration of existing solutions.*

The TARGET solution (from target EU project) has been developed for the purpose of communications between participants. This kind of solution need a comprehensive staff of assessors (and trained with the tool) and this wasn't possible to handle.

➔ *The debriefing and lessons learnt phase are difficult to emphasize*

The debriefing and the lessons learnt assessment are of great importance after an exercise. The debriefing methodologies have been developed for industry and the field of emergency engineering. As noted above, the main challenge of our eNOTICE project is to apply and adapt these methods to a CBRNE organization. However, this sector is characterized by the management of varied, heterogeneous, singular and unstable situations. Moreover, here, the debriefing is not intended to highlight an administrative error, but to set up a history of activities and processes deployed to take a critical look at their management. Debriefing should not be approached as an assessment of action against a regulatory framework, but rather as part of a process of progress. Capitalization must reveal the way in which the goal has been achieved without judging its quality.

On the other hand, the debriefing activities during Nimes JA aimed at improving a process or managing a dysfunction, there is undeniably a human factor that acts on a technical process, or an industrial system. However, in our case, the actions of a CBRNE organization do not rely on a technical system but only on the decisions of human actors with regard to a set of contextual elements. Taking this complex human dimension into account is one of the difficulties for the implementation of an innovative methodology.

Debriefing can be considered as one of the areas of Knowledge Management. This approach based on experience and aimed at generalizing knowledge is called the bottom-up method of knowledge management. It differs from so-called top-down methods which, conversely, apply a generic model of knowledge management to a particular domain.

Within the framework of this project, the objective is to develop an ascending methodology of exercise set up (and debriefing activities) resulting from exercises and JAs. Of course, the starting point for any lessons learnt work is the availability of information and data to capitalize on and process

At first, it was essential to specify the framework of the lessons learnt. Here, the objective was to capitalize the elements or decision processes identified in different

emergencies that the CBRNE organization has been dealing with - whether the outcome was positive or negative. On the other hand, at this stage of the project, the following questions have not yet been decided: When to capitalize: Experience feedback *a priori*, or *a posteriori*? On which events: Systematic or targeted experience feedback? Once the scope of the project has been defined, the work will focus on the definition and development of methods and tools adapted to carry out the Experience Feedback; they should also be tested and validated by applying them to real-life case studies.

A generic process is typically described in three major phases: the capitalization of experiences, the processing of information, and the exploitation of acquired knowledge,

The first process concerns the capitalization of experiences. It is characterized by the sub-processes of locating, collecting and storing information describing an event encountered or an emergency situation. This stage should lead to the characterization of the experiment according to three components: the context, the analyzes carried out, and the solutions implemented. However, at this stage of the project, we do not know exactly how much data will be provided to us.

2.4 Design and Implementation of a serious game

METU team worked with Armines on the details of the scenario and color-coded representation during the exercise. Before the JA, METU team prepared a user expectations and feedback survey on eNOTICE related serious games. The purpose has been to investigate the user expectations in this domain, users' gamer profiles, their suggestions and hesitations regarding using serious gaming in CBRNe training. This survey was publicly shared with eNOTICE partners and general public:

https://ec.europa.eu/eusurvey/runner/eNoticeSeriousGamePreDevelopment

The questionnaire includes 24 questions and the purposes of the questionnaire are:

- Understand the users' gamer profile
- Understand the perspectives of the user
- Understand the expectations of the user

- Ask for suggestions
- Ask for any hesitations
- Clarify the differences between the video/serious games vs. simulations

After acquiring the video-gaming background, expectations on serious games and user requirements, a hospital-based scenario was created.

Figure 2. ***An example screenshot from the eNOTICE serious game.***

Then, during the JA, a detailed presentation on the upcoming game, differences between virtual reality, augmented reality, serious gaming and simulations were explained to the audience. A new methodology from the exercise scenario to a created game was presented. Recent literature survey on serious games under CBRNe domain is explained in detail (Silva et al.[2], Garro et al.[3], Clavaud[4]). After the detailed presentation and presenting the video of the exercise, a follow-up questionnaire was sent to eNOTICE partners.

The overall purpose of the serious game is as follows:

- To map the roles and tasks to game events and scenarios
- To encourage the practitioners to exercise

[2] Silva, J. F., Almeida, J. E., Rossetti, R. J., & Coelho, A. L. (2013, May). A serious game for EVAcuation training. In Serious Games and Applications for Health (SeGAH), 2013 IEEE 2nd International Conference on (pp. 1-6). IEEE. http://ieeexplore.ieee.org/document/6665302/?reload=true

[3] Garro, A., Longo, F., & Nicoletti, L. (2013). Disasters management: a serious game architecture centered on a modelling and simulation infrastructure. SCS M&S Magazine, 4(1). http://scs.org/wp-content/uploads/2016/12/2013-07-Issue12-3.pdf

[4] Clavaud, E. (2012). The next step after Japan? (Virtual reality, training and crisis management). Transatlantic Security Paper No. 2, June 2012. https://www.frstrategie.org/en/publications/notes/the-next-step-after-japan-virtual-reality-training-and-crisis-management-05-2011

- To challenge the practitioners with different difficulty levels and behaviorlike models
- To teach the sequence of actions in emergency situations
- To give instant feedback
- To provide an open source tool to the community

The video of the prototype serious game can be found at: https://www.youtube.com/watch?v=thw4l9QU-kA&feature=youtu.be

The main strength of the presented game is to play in different roles (i.e. nurse, doctor, or affected person from the attack). Possible actions to perform are presented in a combobox list. Key Performance Indicators (KPI)s are also available to give feedback to the user.
After the serious game is presented, during the JA, METU team recorded the JA using GoPro devices. Besides, METU team was responsible for observing predefined actors and for using the Effective Command online tool as a post-assessment tool.

2.5 Conclusion on the JA in Nîmes

The Nîmes JA is considered as successful, being an exercise in real conditions.
Despite being a very narrow exercise dedicated for medical consequences of a CBRNE attack, the activity was already able to demonstrate its added value in providing a range of network activities between stakeholders on the medical consequence at hospital level. One of the expectations of Task 4.2 was to set up a standardised approach that will improve the preparation and organisation of those activities. The Nimes JA demonstrated the added value of collecting lessons learnt, in a way they can be shared in order to maximise input for follow up and improvements. The Nimes JA allowed indeed to initiate follow up actions, including for the identification of end user needs for R&D.

3 Report on the UCL Joint Activity

The full report of the UCL Joint Activity, based on the T4.1 Guidance and Templates, is included in the following paragraphs.

3.1 PREPARATION

3.1.1 The context

Bio-Garden is a CBRN exercise with an unusual biological focus. The objective is to raise the level of preparedness for a CBRN incident and to outline the multidisciplinary national and international cooperation in the field of CBRN preparedness and response.

3.1.2 Objectives, expected results and evaluation criteria

Objectives:

- To show the interactive role of Belgium and BE experts supported by federal authorities;
- To show and test interoperability of multidisciplinary civ-mil team & information flow;
- To present and use new communication technologies (WiFi, LTE, TETRA) linking end users and the Federal Crisis Center, and assess the impact on crisis management (specific of contribution ESA_IAP/ARTES20 project B-LiFE);
- To identify new needs for better CBRN crisis management.

Evaluation criteria:

1. Technical communication: Speed, clarity, smoothness and usefulness of information shared between key responders.

(a) The quality of the information provided by voice will be assessed between:

- Police and Civil Protection
- Mil and Police/COP
- All with C2 (Command and Control) vehicle
- C2 with Federal Crisis Centre (FCC)
- Deployable labs with C2
- FCC to both scenes and respective players

(b) The quality and added value of the images (real-time video) provided ; between players will be assessed

- Between Police and Civil Protection C2
- Between Police and deployed lab

2. To clarify and improve the understanding of the nature of information to be provided to the FCC, as well as the feedback to the practitioners (specific actions to be taken) to be expected – if any - on request of the FCC
   - Feedback from FCC (through C2), by teams operating in the labs
   - Feedback from FCC to each deployed lab
   - Feedback by the FCC to own staff (experts, crisis coordinators) (this part was mainly be played inside the FCC and not shown to the observers, nor the players)
3. Operational interoperability between practitioners
   - Between the 3 units intervening inside the clandestine lab
   - Between both deployed labs: sample exchange, etc…
   - Between both sites in the field (clandestine lab and deployed lab)
   - With FCC
4. Quality procedure, for sampling, inactivation and transportation to the deployed lab:

22 Quality procedure for decontamination of the PPE and equipment (for instance video camera worn by POL: role of the deployed lab feedback in terms of the nature of the bio-risks and adapted decontamination?)

Objectives of the invited activity:

The present demonstration of telecommunication capacities is in the framework of a joint exercise, «Bio-Garden», between B-LiFE and a Horizon 2020 project eNOTICE, CBRN Training centers network, which will take place in Peutie, Belgium on 19 June 2018.

The aim of it is to demonstrate and validate (using Keysight Technologies measurement solutions) the capabilities (functionality and QoS) of modern telecommunication facilities based on new Mobile Communication platform providing by SES (including satellite and WiFi subsystems), terrestrial telecommunication subsystems, based on TetraNode platform providing by Rohill and Nokia Ultra Compact LTE solution.

The main idea of this exercise is using TetraNode platform by Rohill to provide for participants services of narrowband TETRA system, broadband communications services (PTT, PTV) using a Nokia Ultra Compact LTE solution and a WiFi services using a WLAN based on Mesh topology, providing by SES. The omni-directional antennas for TETRA, LTE and WiFi

subsystems will be installed on the deployment site and arranged on a fast deployment antenna mast. SES satellite link is used as a backbone for a TetraNode platform in this case.

Evaluation criteria:

- Validate the interconnection between Rohill equipment and SES satellite backbone
- Validate the main functionality and QoS of a TETRA subsystem according chapter 2
- Validate the interconnection between terrestrial subsystem Rohill and external telecommunication networks, including PSTN or MNO via VoIP services
- Validate the interconnection between terrestrial subsystem Rohill and existing PMR system (Astrid).
- Deployment of the Nokia LTE equipment
- Validate the interconnection between Nokia equipment and SES satellite backbone
- Validate the main functionality and QoS of a LTE subsystem according chapter 2
- Validate the interconnection between terrestrial subsystem Nokia and external telecommunication networks, including PSTN or MNO via VoIP services
- Validate the interconnection between terrestrial subsystem Nokia and existing PMR system (Astrid).
- Validate the QoS of the SES WiFi subsystem

3.1.3 Type of exercise/activity and corresponding needs

The UCL JA was an operation-based / full scale / field exercise: single agency or multi-agency / multi-jurisdictional activities involving actual deployment of resources in a coordinated response, as if the real incident had occurred (mobilization of units, personnel and equipment in a realistic environment).

Bio Garden was a multidisciplinary CBRN exercise - several disciplines practice one or more parts of the tasks assigned to them. The emphasis is on collaboration between them. Response of situations was played in which biological hazards may be present, accidentally or intentionally (natural outbreak of a disease and CBRN terrorism).

3.1.4 Roles

The exercise roles and responsibilities were distributed among the UCL staff:

Exercise director and coordinator - Prof. Jean-Luc Gala (UCL-CTMA)

Exercise (project) team – Olga Vybornova (UCL-CTMA), Steven Verberckmoes (DLD Bio, exercise military coordinator)

Exercise operators – UCL-CTMA employees Jean-François Durant, Catherine Dumont, Mostafa Bentahir, Yann Deccache, Stephane Van Cauwenberghe, Christelle Demaret, Béatrice Sulka, Bertrand Bearzatto, Benjamin Smits, Oumaima Lakcher, Jamal Badir, Auxane Ladang, Jean-Paul Marcel, Cathy Delcorps, Michèle Bouyer, Léonid Irenge, Aleksandr Vybornov, Roland Gueubel, Clément Auzuech, Lander Vieren

Safety and security controller - Steven Verberckmoes (DLD Bio)

Exercise scenario participants:

Belgian participants:

- BE-Federal Crisis centre and CBRN coordination platform
- Fed scientific police
- Civil protection
- CBRN military sampling team
- B-LiFE deployable laboratory
- Observers: Public Health (Sciensano) and forensics experts (NICC)
- SMEs (Aurea imaging, Nazka mapps, EONIX)

International participants:

- Hungarian military deployable laboratory
- International observers from EU Member States
- SMEs / companies: LDI2 (Estonia), SES Techcom (LU), Rohill (NL), NOKIA International, Keysight Technologies (BENELUX)
- European Commission representatives

Static Display

- LDI2 (Estonia) – Decontamination monitoring technology
- ONT (UK) – MinION
- Food Defence: Tecnoalimenti (Italy) - poster and flyers
- Keysight technologies
- Nokia
- CTMA mapping : EONIX/ Nazka mapp - a Nazka banner + flyers
- Sciensano - 1 poster

Exercise scenario roles:

1. Telecommunication team

- Civil Protection (BE): TAST Vehicle and command and control bus

- SES Techcom (LUX): Mobile communication vehicle
- Rohill (NL): Tetra technologies
- Nokia (International / BE branch): LTE technologies
- Keysight (US/ BENELUX branch): Monitoring of the quality of data flow & transmission

2. Investigation conducted in a clandestine laboratory

a. Local investigation (including forensic aspects) and biological sampling

i. BE CIV PROTECTION,
ii. BE Military SIBCRA team,
iii BE Scientific and Technical Police
Observers: *Expert from the BEL National Institute of Criminology and Forensics (NICC)*

b. Sample analysis for rapid pathogen identification

i. BE B-LiFE
ii. HUN (Military) CBRN deployable laboratory

c. Chain of Decontamination

BE Military CBRN Sampling Team and/or BE Civil Protection

d. Decontamination: new monitoring tools

i. EST LDI Innovation Technologies (Estonia)

3. Food Defence in a context of concurrent natural outbreak of norovirus

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a. Reception and analysis of suspicious food samples collected in the VIP restaurant

i. BE B-LiFE
ii. HUN CBRN mobile laboratory

b. Analysis of samples collected in the clandestine laboratory for pathogen identification

i. BE B-LiFE
ii. HUN CBRN mobile laboratory

c. Sample transfer between mobile labs by drone

i. BE B-LiFE
ii. HUN CBRN mobile laboratory
iii. BE SME's (Aurea imaging / Eonix)

Observers: *Sciensano experts, FPS Health-Food Chain Safety and Environment*

4. Site mapping using drone

BE B-LiFE
ii. BE SME's (Aurea imaging / Nazka mapps : Eonix)

5. Coordination of information from the field

i. BE Federal Crisis center & BE CBRN Coordination Center (new structure)

The list of eNOTICE participants:

Jean-Luc Gala	Université catholique de Louvain (UCL)
Olga Vybornova	Université catholique de Louvain (UCL)
Kathleen Van Heuverswyn	Campus Vesta APB (VESTA)
Ronald Ackermans	Campus Vesta APB (VESTA)
Bavo Cauwenbergh	Campus Vesta APB (VESTA)
Francis Comas	Service Departemental D'incendie Et De Secours De Seine Et Marne (SDIS 77)
Nicolas Raulin	Service Departemental D'incendie Et De Secours De Seine Et Marne (SDIS 77)
Sylvia Pratzler-Wanczura	Fire Department Dortmund (FDDO)
Christian Fritsch	Fire Department Dortmund (FDDO)
Maximilian Kiehl	University of Paderborn (UPB)
Volker R. Quante	Joint CBRN Defence Centre of Excellence Vyškov (JCBRND CoE)
David Martinek	Joint CBRN Defence Centre of Excellence Vyškov (JCBRND CoE)
Elif Surer	Middle East Technical University (METU)
Doğa Çağdaş Demirkan	Middle East Technical University (METU)
Mariachiara Carestia	University of Rome Tor Vergata (UNITOV) and The Italian Joint NBC Defence School
Liz Benson	West Midlands Police (WMP)
Adam Bagniewski	CBRN Defence Training Centre, War Studies University
Adam Wieczorek	Scientific and Research Centre for Fire Protection (CNBOP-PIB)
Marco CAROSI	JOINT NBC DEFENCE SCHOOL NATIONAL JOINT CBRN AREA CONTROL CENTRE Deputy Director
Roman Laimer	Joint CBRN Defence Centre of Excellence Vyškov (JCBRND CoE)
Per-Erik Johansson	CBRNE COE

The list of external participants:

B-LiFE project (invited activity):

Roland Gueubel	Université catholique de Louvain
Aleksandr Vybornov	Université catholique de Louvain
Julien Dellacherie	Eonix, Belgium
Nicolas Delhaye	Eonix, Belgium
Dimitri Dutartre	Eonix, Belgium
Ides Bauwens	Nazka mapps, Belgium
Bert Bouwers	Rohill, the Netherlands
Lenard Molhoek	Rohill, the Netherlands
Joachim Gloeckler	Nokia
Ken Spruyt	Nokia Bell NV
Timo W.H. Bakker	Nokia
Xavier Allart	Keysight
Luc Hastir	SES Networks, Luxembourg
Denis Hourt	SES Networks, Luxembourg
Alexander Vesselinov	SES Networks, Luxembourg
Alexandre Wodarczyk	SES Networks, Luxembourg

Rodolfo Solar Mulas	SES Networks, Luxembourg
Dan Isaac	SES Networks, Luxembourg
Monika Lebkowska,	SES Networks, Luxembourg
Romain Cloos,	SES Networks, Luxembourg
Richard Holmes	Keysight Technologies
Gustaaf Sutorius	Keysight Technologies
Daniel Günzel	Nokia
Jaco Van Iterson	Nokia
Didier Legras	Nokia
BOUDALAL ZINEB	Keysight Technologies
du bois d'Aische Gilles	DLD, Belgium
Maere Pierre	inflights
De Blauwe Hugo	infilghts
Guy HENDRICKX	Avia-GIS NV, Belgium
Els Ducheyne	Avia-GIS NV, Belgium
Fatima Hammouqah	Avia-GIS NV, Belgium
Cedric Marsboom	Avia-GIS NV, Belgium
Antonius Stiphout	Aurea Imaging, Belgium
Didier GUIGON	Keysight Technologies
Scott Oliver Oakley	inFlights bvba
Guy Dehandtschutter	inFlights bvba

ENCIRCLE project:

Clive Goodchild	BAE Systems, UK
Brigitte Serreault	University of Nice Sophia-Antipolis, France
Krister Liljegren	Environics OY, Finland
Gwyn Winfield	Falcon Communications, UK
Zoe Rutherford	Falcon Communications, UK
Pierre RODDE	OUVRY, France
Agnieszka Sprońska	PIAP, Poland
Bartlomiej Jankiewicz	Military University of Technology, Poland
Marco Gerevini	Tecnoalimenti, Italy
Thierry Pollet	OUVRY, France
Morgan Abily	University of Nice Sophia-Antipolis, France
Grzegorz Kowalski	PIAP, Poland

Invited observers:

Łukasz KRZOWSKI	Polish mil B mobile lab	Poland
Sergey Babichenko	LDI Innovation, Estonia	Estonia
Innokenti Sobolev	LDI Innovation, Estonia	Estonia
Denis Josse	SDIS06, health technical adviser on CBRN and toxicological risk magmt	France
Peter Tulkens	Politics Matters	Belgium

Nicolas Lewyckyj	VITO N.V.	Belgium
Bart Nys	NICC	Belgium
Mirjana Andjelkovic	SCIENSANO , EUROBIOTOX	Belgium
Olivier Lucas	Oxford Nanopore	France
Fiona Higginbotham	Emergent Biosolutions	UK
Laurent Walle	TERRIFIC project, TLA	France
David Fretin	SCIENSANO	Belgium
Eric Marion	C112 Bruxelles Dir. Med.	Belgium
Nada Milisavljevic	DG HOME	Belgium
Jérome Glorie	Director-General for Civil Protection	Belgium
Ophélie Boffa	Ministry Home Affairs, Communication manager Civil Security	Belgium
Péter Balázs	HUN MoD ED Co.	Hungary
József Berényi	HUN MoD ED Co.	Hungary
Antal Gyurkovics	HUN MoD ED Co.	Hungary
Nancy Héléne Roosens	Sciensano	Belgium
Indre Karciauskaite		Lithuania

VIP participants:

Steven Vandeput	The Minister of the Defence, Belgium
Jan Jambon	The Minister of the Interior, Belgium
Maggie De Block	The Minister of Public Health, Belgium
Cedric Erken	Civil Protection, Belgium
Isabelle Mazzara	President, Interior Affairs Executive Committee, Belgium
Bart Raeymaekers	Director General of the Federal Crisis Centre, Belgium
Hans De Neef	Chairman of the CBRN Federal Coordination Platform
Tom Auwers	Federal Public Service Health, Food Chain Safety and Environment (PRESIDENT)
Gino Claes	Federal Public Service Health, Food Chain Safety and Environment (B-FAST)
Jan Eyckmans	Federal Public Service Health, Food Chain Safety and Environment (SPOKESPERSON)
Claude Fontaine	Director General, Forensic Police
Marc De Mesmaeker	Commissionar General
André Desenfants	Director-General, Police
Thierry Dupont	Général Major Aviateur, Deputy Assistant Chief of Staff Operations and Training
Iivi Luuk	DG ECHO
Julia Stewart-David	DG ECHO
Wiktor Wojtas	DG HOME
Philippe Quevauviller	DG HOME - eNOTICE and ENCIRCLE Project Officer!
Ville Petäsnoro	DG DEVCO
Eddie Maier	DG DEVCO
BLEY Guy	Ministère d'Etat – Haut-Commissariat à la Protection nationale
Arnaud Runge	European Space Agency
Katleen De Meulenaere	ad interim Comd DLD
Julian King	Commissionaire

Silvio Mascagna	Member of Cabinet of Julian King
Yves Stevens	Federal Crisis Centre, spokesperson
DE BRABANDER K	COMOPSLAND-MILENG
VAN HOECKE R	COMOPSLAND-MILENG
Koen Milis	Director of Campus Vesta APB (VESTA)
Christine Leurquin	Vice President of SES
Luc Defieuw	Country Manager Nokia Belgium
Tessa Latrez	Kabinet Volksgezondheid
Anabela Gago	DG HOME

Other participants whose names cannot be cited in the public report, included:

- 23 participants from defence
- 19 participants from civil protection
- 7 participants from police.
- 120 attendees from DG DEVCO - all CBRN focal points of CBRN centers of excellence from different parts of the world. They followed a whole week session organised by DG DEVCO and were invited to Bio Garden exercise to have a look at the joining activity within the eNOTICE project network of training centres, which is of high interest for them.

3.1.5 Planning of the preparation and timeline

Timeline todo's preparation

Time	Owner	Description of the action	Participants
X-8M	Exercise director	Initial idea of the exercise plan and players	Project team
X-6M	Exercise director	Definition of objectives / evaluation criteria / scenario	Project team
X-5M	Exercise director	Choice of the participants – players & instructors	Project team
X-4M	Exercise director	Validation of objectives / evaluation criteria / scenario	Project team and key actors: Federal Crisis Centre, scientific police, Civil Protection, Public Health, Defense, telecommunication experts
X-3M	Exercise director + Invited activity	Preparation of the communications part of the exercise – definition of roles and responsibilities, equipment and protocols, information flow mapped on the scenario and timing	Telecommunication experts, project team and key actors: Federal Crisis Centre, scientific police, Civil Protection, Public Health, Defense

X-3M	Exercise military coordinator + administration	Booking of all necessary assets Exercise military facilities – playground and meeting rooms; Presentation materials – screens, microphones, recorders Lunch and coffee breaks; Lodging of players at the military base; Transportation Color jackets for host team Badges for invited experts	
X-3M	Project team	Invitations for external experts, VIP guests	Project team
X-2M	Project team	Final general information sheet preparation for eNOTICE partners	Project team
X-1M	Exercise director	Plays of part of scenario	All actors in corresponding parts
X-1W	Exercise director	Dry run	All actors

Timeline todo's organisation:

Time	Owner	Description of the action	Participants
X-1W	Exercise director	Dry run with telecommunications part	All actors
X-1D	Exercise director	Installation of mobile laboratories, scenario timing recording	All actors
07.30	Exercise director + Exercise military coordinator	Last briefing for all actors	All actors
8.00 – 9.00	Project team	Arrival and registration of participants	Project team and administration
9.00 – 9.30	Exercise director + Safety and security controller	Welcome and introduction and safety briefing	Observers
9.30 – 11.00	Exercise director	VIP tour (with tour guides), in parallel with the morning groups sessions	VIP guests
9.30 – 11.00	Project team	The first shift of the scenario play – 1 hour (green group: clandestine lab, yellow group: deployed labs) Hot wash, Q&A – 15 min Walk to other demo site – 15 min	All participants
11.00 – 12.30	Project team	The second shift of the scenario play – 1 hour (green group: deployed labs, yellow group: clandestine labs) Hot wash, Q&A – 15 min Walk to meeting room – 15 min	Project team

12.30 – 13.30	Project team	Lunch – along with static display	All
14.00 – 14.30	Exercise director + Safety and security controller	Welcome and introduction and safety briefing	Observers
14.30 – 16.00	Project team	The first shift of the scenario play – 1 hour (green group: clandestine lab, yellow group: deployed labs) Hot wash, Q&A – 15 min Walk to other demo site – 15 min	All actors

Timeline for VIP guided tour:

Time slot	Activity	Location	Press present?
08.30-09.00	Welcome + static display	Block D4	NO
09.00-09.30	General introduction briefing to all participants (safety briefing, exercise scenario,…)	Meeting room (Block D4)	Yes
09.00-09.15	Specific briefing VIPs (specifics of VIP tour, reception, press,…)	Meeting room (Block D4)	YES
09.15-09.20	Move to clandestine lab (2 groups; same tour, but different guide)	Outside	YES
09.20-10.05	Visit to clandestine lab (Ex is going on, no interaction with players)	Clandestine Lab (block C4)	YES
10.05-10.10	Move to deployed labs	Outside	YES
10.10-10.45	Visit to deployed labs Visit to clandestine lab (Ex is going on, no interaction with players)	Outside	YES
10.55-11.00	Move to meeting room	Outside	YES
11.00-11.15	SHORT speeches and press moment	Meeting room (Block D4)	YES
11.15-12.00	Reception	Meeting room (Block D4)	YES
1200	End of VIP activity	Meeting room (Block D4)	

3.1.6 X Scenario

Background: The context is a European Level 3 security justified by an unprecedented wave of terrorist activity in several European cities in the preceding months. In June 2018, the weather is unusually hot and "Nowhere Country" experiences an outbreak of norovirus-based gastrointestinal infections in the population.

Following an informer's tips, the police fear a biological attack and are actively searching for evidence of terrorist activity. As one of the preventive measures for the final of the European Champions League 2018 in the capital city, the "Nowhere Country" authorities decide to preventively deploy two analytical capacities near the football stadium. Both capacities are in stand-by mode and ready to operate.

The exercise takes place in the morning of the 19th June with two tightly interconnected and simultaneous parts:

(1) **Investigations conducted in a clandestine laboratory**: The police discovers a clandestine laboratory containing recipients with white powder and coloured liquids which suggest the manipulation and/or production of bioweapons. Several teams (police, civil protection and military CBRN sampling team) will intervene to conduct investigations, provide samples to deployed laboratories and report to federal authorities.

(2) **Food Defence activities**: At the same time, severe gastrointestinal symptoms are reported in VIP persons having been invited, the day before, for lunch in one of the Capital's best restaurants, as part of the social events preceding the football final. The public health authorities are informed that the same symptoms affect several citizens having ordered pizzas on the previous evening. All pizzas have apparently been delivered by the same pizzeria "No Name Biopizza".

The outline of the scenario will underline:

1. The interaction and information sharing between Police, Civil Protection and Military CBRN Sampling Team in the clandestine lab;

2. The role of both deployed laboratories in fast analysis of samples received both from the clandestine lab and suspicious food samples (from the restaurant and the pizzeria);

3. The importance of communications, i.e. timely-relevant and well-coordinated information sent to the Federal Crisis Centre and its new CBRN Coordination Center, and the speed of feedback information to the scene.

Static display:

Aside of the exercise, new tools (equipment) and emerging technologies in relation with the needs of end-users/ practitioners such as those pinpointed in the scenario will be presented and commented.

Three sites locations contributing actively to the scenario of the exercise:

- the clandestine lab
- the site of two deployable lab including B-LiFe and the Hungarian military deployable lab
- the Federal Crisis Center (downtown Brussels)

Four companies proposing new terrestrial and/or SatCom technologies - Rohill, NOKIA, SES Techcom, Keysight

Five companies proposing new technologies embedded in the B-LiFE Ops capacity - Vecto Map, Nazka mapps, Aurea Imaging, Eonix, LDI Innovation

Players - first responders from different areas: crisis managers, medical and AFSCA (Security of the Food Chain) experts at the Federal Crisis Centre; biomedical, defence, civil protection and police on the scene)

3.1.7 Logistic requirements

The military compound in Peutie-Vilvoorde was chosen as the exercise venue due to: sufficient size of the territory to accommodate more than 300 participants, to deploy a civilian and military mobile laboratories and to organise a "clandestine laboratory" with good visibility of all assets; controlled secure environment with appropriate security and safety conditions to organise a large scale CBRN exercise; availability of qualified personnel trained in the CBRN field; suitable infrastructure – military barracks to host defence and civil protection teams; meetings rooms to organise exercise and project-related meetings; proximity to the airport, convenient for participants arriving from abroad; accommodation possibility nearby (Lodge Hotel Vilvorde) for invited experts; affordable distance to the city and transportation.

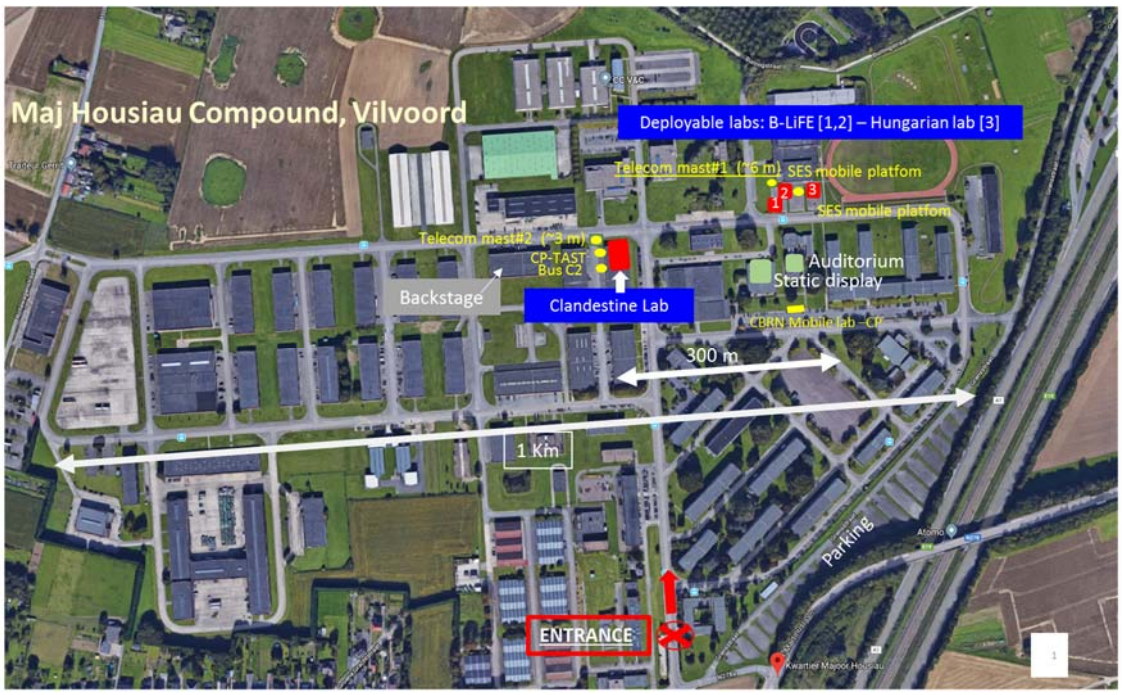

Figure 3 Map of the Bio Garden exercise site

Clandestine laboratory:

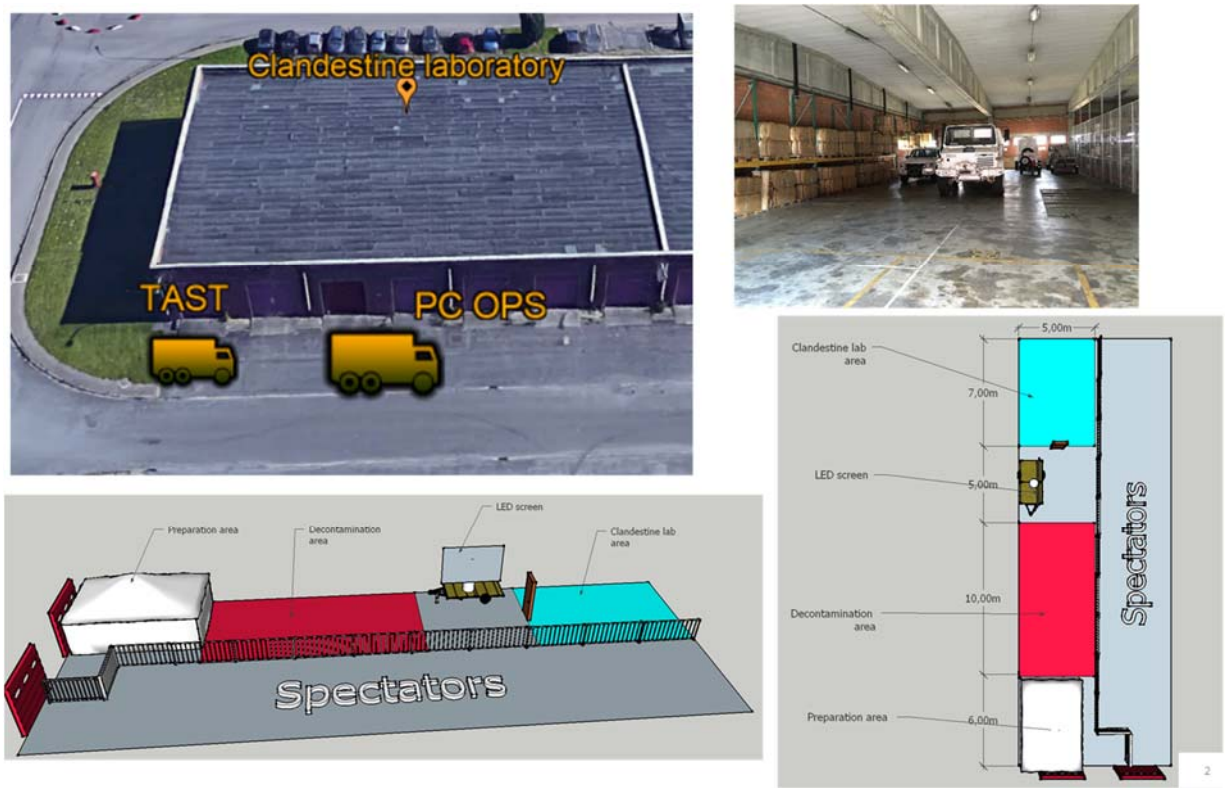

Figure 4 Plan of the Clandestine laboratory site arrangement

Site location of deployable laboratories:

Figure 5 Site location of the Belgian and Hungarian deployable laboratories

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Static display:

Aside of the exercise, new CBRN tools (equipment) and emerging technologies in relation with the needs of CBRN end-users/ practitioners such as those pinpointed in the scenario were presented and commented. Meeting rooms and static display were in Block D4. The new CBRN laboratory Truck from Civil Protection was displayed on the parking lot in front of the block.

Figure 6 Site location of the Block D4 (external view) and meeting room (inside view)

3.1.8 Communication strategy

Internal communication

During the preparation phase, internal communication was ensured by the eNOTICE project coordination team (Exercise director - Prof., ret. Col. Jean-Luc Gala and Dr Olga Vybornova), and the exercise military coordinator (Maj. Steven Verberckmoes), in charge of the practical arrangements of organising the JA.

The internal communication comprised numerous preparatory meetings, discussions and trials with the UCL-CTMA lab staff who contributed a lot in the organisation and implementation of the exercise, with the military staff of BE DLD who provided the exercise facilities and logistics and with the key actors of the exercise on the scenario, roles and ways to achieve desired results.

External communication

The Bio Garden exercise organised as the JA within the eNOTICE project, was an activity highly visible at the national and European level. By all participating Belgian actors it was considered a great opportunity to gather multidisciplinary players to test the communication, coordination, performance on a carefully selected scenario consisting of both natural accidental outbreak and a deliberate terrorist attack.

Communication to stakeholders:

As the exercise was open for participation and observation to external experts, multidisciplinary organisations, external communication on the exercise plans, goals, objectives, scenario, schedule, composition and setting had to be ensured – for the multiple exercise players, for invited observers including CBRN experts and high-level representatives of authorities, such as Minister of the Interior (HE J. Jambon), Minister of Health (HE M. De Block,) Minister of Defense (HS S. Vandeput), The European Commissioner for European Security (Sir Julian King), European Commission Directorates General HOME, ECHO, DEVCO, European Space Agency, etc., and for the media.

The JA has been announced to the public through the eNOTICE website and eNOTICE Twitter. During the exercise, DG HOME retweeted the eNOTICE information, pictures videos on their account for the larger audience.

A template was used to communicate to the consortium partners, EU projects that were interested in joining, as well as experts that were interested in attending the exercise to observe. The information & communication sheet for the JA in Peutie-Vilvoorde is presented below.

The following **press releases** on the Bio Garden exercise came out:
Defence: https://www.mil.be/fr/article/bio-garden-permet-aux-departements-de-travailler-ensemble
HLN: https://www.hln.be/nieuws/binnenland/grootschalige-oefening-moet-hulpdiensten-voorbereiden-op-biologische-terreuraanslag~aba62950/
HLN: https://www.hln.be/regio/vilvoorde/defensie-oefent-biologische-terreuraanslag~aa5d0c40/
La libre Belgique: http://www.lalibre.be/actu/politique-belge/la-defense-se-prepare-en-cas-d-attaque-bioterroriste-5b28fafe5532a296888cf8c5
7 sur 7: https://www.7sur7.be/7s7/fr/1502/Belgique/article/detail/3440795/2018/06/19/La-menace-bioterroriste-existe-d-ou-cet-exercice.dhtml
MEDI-SPHERE: https://www.medi-sphere.be/fr/actualites/la-defense-organise-un-exercice-de-reponse-a-une-attaque-bioterroriste.html
https://www.nieuwsblad.be/cnt/blpva_03569682

TV coverage:
RTBF: https://www.rtbf.be/auvio/detail_jt-13h?id=2364421
RTL TVI: https://www.rtl.be/info/video/674446.aspx
VTM:
https://nieuws.vtm.be/video/?f%5B0%5D=sm_field_properties%3AVolledige%20uitzendingen&aid=284741
VRT: https://www.vrt.be/vrtnws/nl/2018/06/19/is-ons-land-voorbereid-op-een-chemische-of-biologische-terreuraa/

Radio emission:
Matinale – Votez pour moi à 08.15 hrs : https://www.rtl.be/belrtl/video/674739.aspx

Documentation on every step

The following documents were elaborated and used for the UCL Joint Activity in Peutie-Vilvoorde:

1. The information & communication sheet was designed to communicate about the joint activity (see below):
    - General information about the exercise to be carried out (objectives, expected results & evaluation criteria);
    - Short description of the scenario;
    - The expected agenda;
    - Some practical information to join the exercise venue.

2. Registration Forms and an Information sheet with practical information for those who registered
3. The Informed Consent form

General Information Sheet eNOTICE for a Joint Activity

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

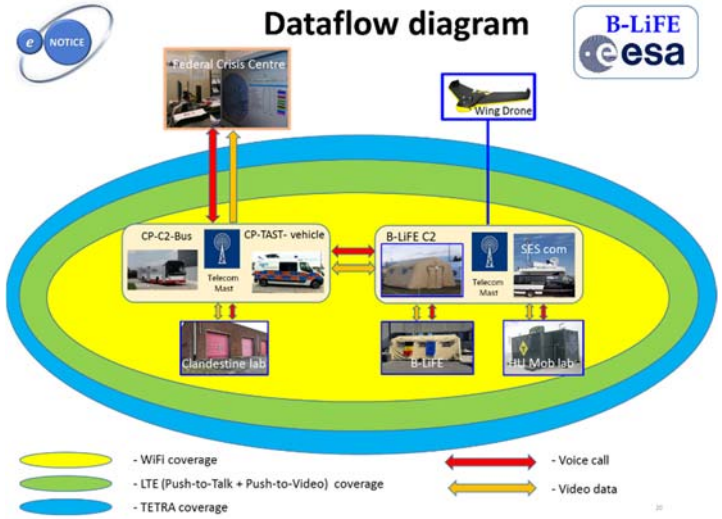
Main activity	Invited activity
eNOTICE – field exercise with the focus on biological mobile capacities.	*This part 1-4 on the invited activity is important information for: 1) The organising partner, as a basis to assess whether a joint activity is feasible, if yes: as a basis to start from to make arrangements to make the observation/demonstration/… possible; 2) eNOTICE partners to identify interested nationals.*

1 Type of activity and contact details of the hosting exercise	Type of activity and contact details of the invited activity
Organising partner: Université catholique de Louvain (UCL), Centre for Applied Molecular Technologies (CTMA/UCL)	Joint Research project: B-LiFE - Biological Light Fieldable Laboratory for Emergencies – ESA IAP/ARTES20 The B-LiFE capacities bring a new Field Communication and Control System to the existing services. An important task of B-LiFE services is to deal with emergency and surveillance situations in different parts of the world. The most significant part of this work is done in the field, so all the tools must match the needs accordingly. Radio communications are extremely important to Public protection and disaster relief (PPDR) organizations to the extent that PPDR communications are highly dependent on it. At times, radio-communication is the only form of communications available.

	- Multi-mission , multi-user Field Communication and Control System - Telecommunication and satellite communication back-up for the protection of critical infrastructures, including tunnels. - System Interoperability and Modularity. - Rapid Response Vehicle for telecommunication back-up with TETRA (ASTRID) interoperability. The vehicle can be rapidly deployed during emergencies and provide back-up of terrestrial communications (TETRA, LTE and later 5G) using integrated satellite terminals. A new tactical surveillance platform will also be integrated in B-LiFE to extend the monitoring capacities of the crisis area. - Real time mapping and monitoring of first responders, equipment and sensor data. - Biological and medical monitoring. - Integration of Crisis management and Logistics support tools. - Local support and remote training. - Synergy with GovSatCom.

2 Objectives and evaluation criteria of the hosting exercise	Objectives and evaluation criteria of the invited activity
Objectives: Bio-Garden is a CBRN exercise with an unusual biological focus. The objective is to raise the level of preparedness for a CBRN incident and to outline the multidisciplinary and international cooperation in the field of CBRN preparedness and response. **Specific aims of the exercise:** To show the interactive role of Belgium and BE experts supported by federal authorities Interoperability of multidisciplinary civ-mil team & information flow, To present and use new communication technologies (WiFi, LTE, TETRA) linking endusers and the Federal Crisis Center, and assess the impact on crisis management (specific of contribution ESA_IAP/ARTES20 project B-LiFE) To identify new needs for better CBRN crisis management **Evaluation criteria:** 1. Technical communication: Speed, clarity, smoothness and usefulness of information shared between key responders. (a) The quality of the information provided by voice will be assessed between: - Police and Civil Protection - Mil and Pol/COP - All with C2 (Command and Control) vehicle - C2 with Federal Crisis Centre (FCC) - Deployable labs with C2	**Objectives:** The present demonstration of telecommunication capacities is in the framework of a joint exercise, «Bio-Garden», between B-LiFE and a Horizon 2020 project eNOTICE, CBRN Training centers network, which will take place in Peutie, Belgium on 19 June 2018. The aim of it is to demonstrate and validate (using Keysight Technologies measurement solutions) the capabilities (functionality and QoS) of modern telecommunication facilities based on new Mobile Communication platform providing by SES (including satellite and WiFi subsystems), terrestrial telecommunication subsystems, based on TetraNode platform providing by Rohill and Nokia Ultra Compact LTE solution. The main idea of this exercise is using TetraNode platform by Rohill to provide for participants services of narrowband TETRA system, broadband communications services (PTT, PTV) using a Nokia Ultra Compact LTE solution and a WiFi services using a WLAN based on Mesh topology, providing by SES. The omni-directional antennas for TETRA, LTE and WiFi subsystems will be installed on the deployment site and arranged on a fast deployment antenna mast. SES satellite link is used as a backbone for a TetraNode platform in this case. **Evaluation criteria:**

- FCC to both scenes and respective players (b) The quality and added value of the images (real-time video) provided between players will be assessed - Between Pol and C2 - Between Pol and deployed lab To clarify and improve the understanding of the nature of information to be provided to the FCC, as well as the feedback to the practitioners (specific actions to be taken ?) to be expected – if any- on request of the FCC - Feedback from FCC (through C2), by teams operating in the lab - Feedback from FCC to each deployed lab - Feedback by the FCC to own staff (experts, crisis coordinators) (this part will mainly be played inside the FCC and not shown to the observers nor the players) Operational interoperability between practitioners - Between the 3 units intervening inside the clandestine lab - Between both deployed lab : sample exchange etc… - Between both scenes (clandestine lab and deployed lab) - With FCC Quality procedure, for sampling, inactivation and transportation to the deployed lab Quality procedure for decontamination of the PPE And equipment (for instance video camera worn by POL: role of the deployed lab feedback in terms of the nature of the bio-risks and adapted decontamination?)	Validate the interconnection between Rohill equipment and SES satellite backbone Validate the main functionality and QoS of a TETRA subsystem according chapter 2 Validate the interconnection between terrestrial subsystem Rohill and external telecommunication networks, including PSTN or MNO via VoIP services Validate the interconnection between terrestrial subsystem Rohill and existing PMR system (Astrid). Deployment of the Nokia LTE equipment Validate the interconnection between Nokia equipment and SES satellite backbone Validate the main functionality and QoS of a LTE subsystem according chapter 2 Validate the interconnection between terrestrial subsystem Nokia and external telecommunication networks, including PSTN or MNO via VoIP services Validate the interconnection between terrestrial subsystem Nokia and existing PMR system (Astrid). Validate the QoS of the SES WiFi subsystem

3 Main scenario: short description	Description of the invited activity
Background: The context is a European Level 3 security justified by an unprecedented wave of terrorist activity in several European cities in the preceding months. In June 2018, the weather is unusually hot and "Nowhere Country" experiences an outbreak of norovirus-based gastrointestinal infections in the population. Following an informer's tips, the police fear a biological attack and are actively searching for evidence of terrorist activity. As one of the preventive measures for the final of the European Champions League 2018 in the capital city, the "Nowhere Country" authorities decide to preventively deploy two analytical capacities near the football stadium. Both capacities are in stand-by mode and ready to operate. The exercise takes place in the morning of the 19th June with two tightly interconnected and simultaneous parts: (3) **Investigations conducted in a clandestine laboratory**: The police discover a clandestine laboratory containing recipients with white powder and coloured liquids which suggest the manipulation and/or production of bioweapons. Several teams (police, civil protection and military CBRN sampling team) will intervene to conduct investigations, provide samples to deployed laboratories and report to federal authorities. (4) **Food Defence activities**: At the same time, severe gastrointestinal symptoms are reported in VIP persons having been invited, the day before, for lunch in one of the Capital's best restaurants, as part of the social events preceding the football final. The public health authorities are informed that the same symptoms affect several citizens having ordered pizzas on the previous evening. All pizzas have apparently been delivered by the same pizzeria "No Name Biopizza". ***The outline of the scenario will underline:***	Access level - service provider: Terrestrial telecommunication subsystems TETRA+LTE+WiFi Rohill + Nokia + SES Transport/backbone level: Satellite telecommunication subsystem SES Measurement equipment for KPI validation: Drive tests equipment + Spectrum analyzer Keysight Technologies 

(a) ***The interaction and information sharing between Police, Civil Protection and Military CBRN Sampling Team in the clandestine lab;***

(b) ***The role of both deployed laboratories in fast analysis of samples received both from the clandestine lab and suspicious food samples (from the restaurant and the pizzeria);***

(c) ***The importance of communications, i.e. timely-relevant and well-coordinated information sent to the Federal Crisis Centre and its new CBRN Coordination Center, and the speed of feedback information to the scene.***

Static display:

Aside of the exercise, new tools (equipment) and emerging technologies in relation with the needs of end-users/ practitioners such as those pinpointed in the scenario will be presented and commented.

Participants to Bio Garden

1. Telecommunication team

Civil Protection (BEL): TAST Vehicle and command and control bus
SES Techcom (LUX): Mobile communication vehicle
ROHILL (NL): Tetra technologies
NOKIA (International / BEL branch): LTE technologies
KEYSIGHT (US/ BENELUX branch): Monitoring of the quality of data flow & transmission

Bio Garden data flow diagram

Tests programme:

Test and validate WiFi subsystem services for different user groups, using speed tests

Test and validate TETRA subsystem services for different user groups.

Test and validate LTE subsystem services for different user groups.

NOTE: All tests will be done using test calls between:
the line dispatcher station and subscribers in both directions
and between the subscribers.

In addition, calls from LTE subscribers to subscribers of the other telephone networks PSTN or MNO`s should be tested in both directions via VoIP services

2. Investigation conducted in a clandestine laboratory

a. Local investigation (including forensic aspects) and biological sampling

i. BEL CIV PROTECTION,
ii. BEL Military SIBCRA team,
iii BEL Scientific and Technical Police
Observers: *Expert from the BEL National Institute of Criminology and Forensics (NICC)*

b. Sample analysis for rapid pathogen identification

i. BEL B-LiFE
ii. HUN (Military) CBRN deployable laboratory

c. Chain of Decontamination

BEL Military CBRN Sampling Team and/or BEL Civil Protection

d. Decontamination: new monitoring tools

i. EST LDI Innovation Technologies (Estonia)

3. Food Defence in a context of concurrent natural outbreak of norovirus

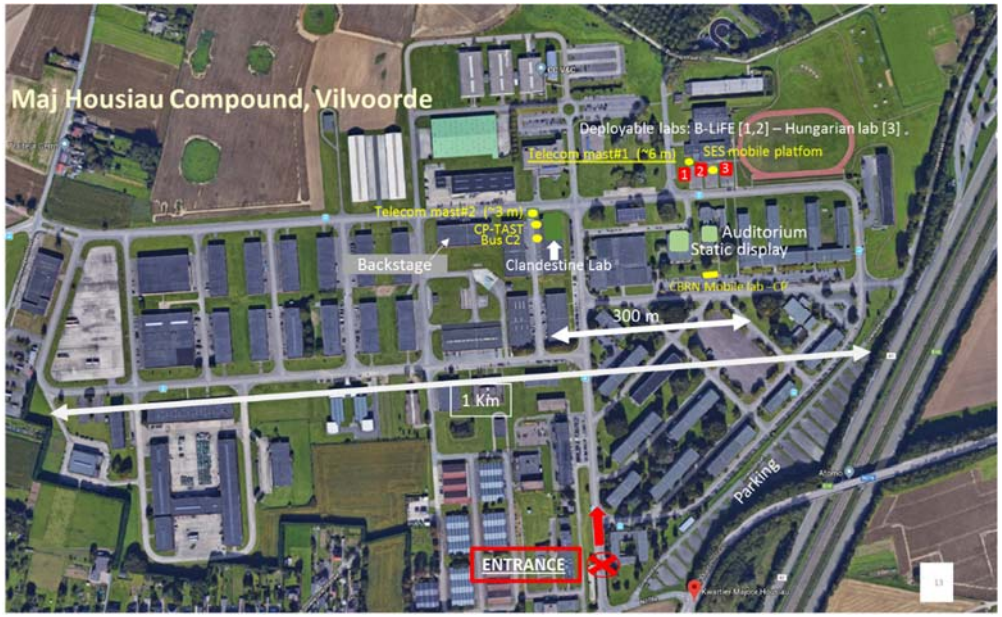
a. Reception and analysis of suspicious food samples collected in the VIP restaurant

i. BEL B-LiFE
ii. HUN CBRN mobile laboratory

b. Analysis of samples collected in the clandestine laboratory for pathogen identification

i. BEL B-LiFE
ii. HUN CBRN mobile laboratory

c. Sample transfer between mobile labs by drone i. BEL B-LiFE ii. HUN CBRN mobile laboratory iii. BEL SME's (Aurea imaging / Eonix) Observers: *Sciensano experts, FPS Health-Food Chain Safety and Environment* **4. Site mapping using drone** i. BEL B-LiFE ii. BEL SME's (Aurea imaging / Nazka mapps : Eonix) **5. Coordination of information from the field** ii. BEL Federal Crisis center & BEL CBRN Coordination Center (new structure)	

4 Facilities used for the activity	If relevant, extra facilities needed for the activity
Biological  Map of the Bio Garden exercise site	

5 Profile of the participants of the hosting exercise	Profile of the participants of the invited activity
Belgian participants: • BE-Federal Crisis centre and CBRN coordination platform • Fed scientific police • Civil protection • CBRN military sampling team • B-LiFE deployable laboratory • Observers: Public Health (Sciensano) and forensics experts (NICC) • SMEs (Aurea imaging, Nazka mapps, EONIX) **International participants:** • Hungarian military deployable laboratory • International observers from EU Member States • SMEs / companies: LDI2 (Estonia), SES Techcom (LU), Rohill (NL), NOKIA International, Keysight Technologies (BENELUX) • European Commission representatives **Static Display** 1. LDI2 – Decontamination monitoring technology 2. ONT – MinION 3. Food Defence: Marco GEVERINI (Italy) - poster and flyers 4. Keysight technologies 5. CTMA mapping : EONIX/ Nazka mapp - a nazka banner (2m heigh, 0.9m wide) + flyers 6. Sciensano - 1 poster	**B-LiFE project:** UCL-CTMA (Belgium, coordinator) Rohill (SME, the Netherlands) – Terrestrial telecommunication subsystems TETRA+LTE+WiFi SES (satcom operator, Luxemburg) – satellite telecom subsystem Nazka Mapps (SME, Belgium) – geolocalization, mapping Aurea Imaging (SME, Belgium) – drones, Earth observation Eonix (SME, Belgium) – information management infrastructures and secure servers Nokia - Terrestrial telecommunication subsystems TETRA+LTE+WiFi Keysight Technologies – measurement equipment for KPI validation

Part B: Practical organisation

Agenda

Day 1: June 18, 9.00 - 17.30 Project meeting: Room A1114, Clos Chapelle-aux-Champs, 30, 1200-Brussels	Day 2: June 19, 9.00 – 17.30 Exercise: HOUSIAU Mil Compound, Martelarenstraat 181, 1800-Vilvoorde	Day 3: June 20, 9.30 – 17.00 HOUSIAU Mil Compound, Martelarenstraat, 181, 1800-Vilvorde	Day 4: June 21, 9.00 – 11.30 Project meeting: Room A114, Clos Chapelle-aux-Champs, 30, 1200-Brussels
9.00 – 9.15: Welcome, intro - UCL 9.15 – 10.00: WP2: Roster (presentation + discussion) - VESTA 10.00 – 11.30: WP2: Quality label – SDIS77 *11.30 – 11.50: Coffee break* 11.50 – 12.50: WP3: Information and communication platform, search function – UPB 12.50 – 13.00: Presentation of the Joint Activity of January 2019 by JCBRND CoE *13.00 – 14.00: Lunch* 14.00 – 14.30: WP2: Task 2.3 - KPIs - VESTA	9:00 – 12.30: 2 iterations of the scenario, with immediate debriefing and answering questions after each iteration. Rotation of participants groups at different location – two mobile laboratories, clandestine lab *12:30 – 14.00: Lunch* 14.00 - 17:30: 1 or 2 iterations of the scenario, with immediate debriefing and answering questions after each iteration Rotation of participants groups at different location – two mobile laboratories, clandestine lab	9.00 – 10.00 Meeting room D4: Overview of the salient events of the 19th – discussion of Bio-Garden 10.00 – 12.00 Auditorium D5: Policy meeting 12.00 - 13.00 Meeting room D4: Lunch 13.00 – 14.50 Auditorium D5: Lessons learnt: - exercise itself – how it went, organisation, scenario, impressions - telecommunications and communications	9.00 – 10.30: eNOTICE General Assembly meeting: preparation of the workshop in October Presentation of the JA in Rome-Rieti in October (UNITOV) 10.30 – 11.30: workshop on the web-based platform, all about the functionalities, requirements, search function and capacity label, current status and perspectives (UPB, SDIS77 + all)

14.30 – 14.45: WP5: Task 5.3 – Security, legal and ethical aspects - UMU 14.45 – 15.15: WP2: Framework for a sustainable European CBRN TC network – UNITOV 15.15 – 16.15: WP4: Presentation of the exercise, scenario, timing – UCL 16.15 – 16.30: Serious gaming, developments for JAs in Brussels and in Rome - METU *16.30 – 16.50: Coffee break* 16.50 – 17.20: WP5: Technical management – VESTA ***18.00 – 21.00: Social dinner in the restaurant D'ici et D'Ailleurs (close to lab - metro Alma)***		- procedures, operational gaps, interoperability, requirements for improvement - way forward, next steps 14.50 - 15.10 Meeting room D4: Coffee break 15.10 – 17.00 Meeting room D4: eNOTICE – ENCIRCLE session: - synopsis of both projects - synergy between training centres and CBRN cluster, what, how, where, when - brief presentation of new part b) projects, possibilities of collaboration with training centres	

Agenda of the Bio-Garden exercise, June 19 – 20

HOUSIAU Mil Compound, Martelarenstraat 181, 1800-Vilvoorde

Tuesday, June 19:

8.30 – 9.00	*Arrival, registration and welcome coffee – along with static display*
9.00 – 9.30 Meeting room D4	**Welcome and introduction** to the Bio Garden exercise for the group of the morning and for VIPs
9.30 – 11.00	VIP tour (with tour guides), *in parallel with the morning groups sessions*
9.30 – 11.00 Outside, demo areas	The first shift of the **scenario play** – 1 hour (green group: clandestine lab, yellow group: deployed labs) Hot wash, Q&A – 15 min Walk to other demo site – 15 min
11.00 – 12.30 Outside, demo areas	The second shift of the **scenario play** – 1 hour (green group: deployed labs, yellow group: clandestine labs) Hot wash, Q&A – 15 min Walk to meeting room – 15 min
12.30 – 13.30 Meeting room D4	***Lunch*** *– along with static display in the meeting room. Lunch for people with blue tickets*
13.15 13.30	*(1st) DEVCO group leaves* *Buses with other participants leave. 2nd DEVCO group arrives*
14.00 – 14.30 Meeting room D4	**Welcome and introduction** to the Bio Garden exercise for the group of the afternoon
14.30 – 16.00 Outside, demo areas	The first shift of the **scenario play** – 1 hour (green group: clandestine lab, *yellow group: deployed labs*) Hot wash, Q&A – 15 min Walk to other demo site – 15 min
16.00	*End of Bio Garden exercise*

Wednesday, June 20:

08.30 – 09.00 Meeting room D4	*Arrival, registration and welcome coffee*
9.00 – 10.00 Meeting room D4	**Overview of the salient events of the 19th – discussion of Bio-Garden**
10.00 – 12.00 Auditorium D5	**Policy meeting** *Moderators:* Pr Jean-Luc Gala (UCL) – Pr Philippe Quevauviller (DG HOME) *Rapporteur:* Col Volker Quante (JCBRND CoE) *Panel of speakers (15 min presentation):* DG ECHO*:* Mrs Iivy Luuk; DG HOME: Mrs Nada Milisavljevic; Mr Wiktor Wojtas; DG DEVCO: Mr Ville Petäsnoro
12.00 - 13.00 Meeting room D4	***Lunch***
13.00 – 14.50 Auditorium D5	**Lessons learnt:** - Exercise itself – how it went, organisation, scenario, impressions - Audiovisual communications - Procedures, Ops gaps, interoperability, requirements for improvement - Way forward, *Chairman*: Pr Jean-Luc Gala (UCL) *Panel*: *Representatives of practitioners, i.e., Defence, Pol, Civ Prot, deployable labs* Open discussion with eNOTICE consortium
14.50 - 15.10 Meeting room D4	**Coffee break**
15.10 – 17.00 Meeting room D4	**eNOTICE – ENCIRCLE session:** - synopsis of both projects - synergy between training centres and CBRN cluster, what, how, where, when - brief presentation of new part b) projects, possibilities of collaboration with training centres *Moderators:* *e-NOTICE:* Pr Jean-Luc Gala, Dr Olga Vybornova (UCL) *ENCIRCLE:* Clive Goodchild (BAES)

eNOTICE Joint Activity Registration Form

External participants

To confirm your attendance to the eNOTICE Joint Activity organised in Peutie, Vilvorde and Brussels by Université catholique de Louvain (UCL), on June 19-20, 2018, please send the complete form to olga.vybornova@uclouvain.be before May 20, 2018.

Joint Activity				
Type of exercise:	Field exercise, C**B**RN mobile capacities			
Location:	**Address:**	HOUSIAU Mil Compound, Martelarenstraat 181, Vilvorde		
	City:	Brussels - Vilvorde	**Zip code:**	1800
	Country:	Belgium		
Timing:	**Begin:**	June 19, 2018, 9:00		
	End:	June 20, 2018, 17:00		

Attendant		
Contact details:	**Name:**	
	E-mail:	
	Phone number:	
Organisation:	**Name:**	
	Address:	
	City:	**Zip code:**
	Website:	
Function within organisation:		
Field of expertise		
ID /passport number	*Please have your ID with you on June 19 and 20*	
Nationality		
Date of birth		
Car licence plate number (if arrival by car)		
Current involvement in EU or national R&D projects		
Specific interests and motivation to attend the eNOTICE Joint Activity		
Arrival:		
Departure:		
Dietary restrictions/requirements:		

Comments:

Informed Consent Form

I, the undersigned, agree to take part in the eNOTICE field exercise Bio Garden that will take place on June 19, 2018 at HOUSIAU Mil Compound, Martelarenstraat 181, 1800-Vilvoorde. I confirm that the purpose and scope of the Joint Activity has been explained to my satisfaction. I am well aware of the above notes and the content of the Information Sheet and understand what the Joint Activity involves. I have had the opportunity to consider the Information Sheet, the verbal explanations given and to ask questions and I have had all my questions answered to my full satisfaction.

My participation in the Joint Activity is voluntary and I understand that I am free to withdraw at any time during the period of data collection and engagement with the researcher without giving a reason and without my right to medical care or my legal rights being affected in any way.

I understand that any information collected during the Joint Activity will be held in confidence and will only be shared within the eNOTICE project consortium. I understand that conclusions reached from the Joint Activity may be published in emergency planning and academic journals, as well as in project reports. I understand, however, that individuals participating in the Joint Activity will not be identified in any of such publications.

I consent to the processing of my personal information (name, affiliation, email address, phone number) for this project. I understand that such information will be treated in strict confidence and handled in accordance with the provisions of the Data Protection Act 1998. I understand that the project research team may use my data for future research and understand that identifiable data will be reviewed by the project ethics monitoring experts before such use to ensure it would not be included in any report.

I consent to my participation in the Joint Activity and in focus groups being video-recorded and transcribed. *(If and when needed!)*

City/training facility/place *Date*

……

Name typed

Personal data:

Name and surname:	
Contact details (phone number, email):	
Affiliation: (name and address, contact details)	

Additional information (to be stored in eNOTICE project internal databases):

Background/ Education:	
Expertise:	
Professional experience: (including important national or EU projects/ initiatives/ committees):	
Additional qualifications:	

3.2 ORGANISATION

3.2.1 Set up of the location/Material of the exercise

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The two sites of the exercise included two deployed mobile laboratories (Belgian – civilian and Hungarian – military), and the clandestine laboratory setting in a hangar.

The Belgian mobile laboratory consisted of two tents accommodating the personnel, the materials and equipment for biological analytical tasks and for telecommunication tasks. The following figures illustrates the Belgian mobile laboratory B-LiFE setting:

Figure 7 B-LiFE mobile laboratory outside and inside

The Hungarian military mobile laboratory materials were delivered by the military truck and deployed in a container.

Figure 8 Hungarian military mobile laboratory

The clandestine laboratory was simulated in a hangar with all the setting appropriate for a lab of this kind – a door was specially installed as it is essential for the police procedures to delimit the potentially contaminated zone, and all the equipment for bio analytics that could be found in such a laboratory was provided by UCL-CTMA.

Figure 9 Clandestine laboratory

3.2.2 Setting up the décor

Outside

The following installations took place outside:

LED Screens
PA installation
Telecom mast 3m
Electrical generators
Flood light (Defender Luminator)
Crush barriers (75m)
Shelter for spectators

Figure 10 View of the outside installations

Inside

Inside a reception room for the participants registration, coffee, lunch and at the same time stands for the display of innovative technologies relevant for the exercise were organised.

Figure 11 Static display setting

3.2.3 Set up of a reception

Welcome point

Before the exercise, all participants were invited in the reception room for registration, welcome coffee and networking, including the static display participants who showed their technologies. The welcome presentation of the exercise director outlined the objectives of the eNOTICE project that stipulated the context of the exercise, and the invited project B-LiFE. The participants were briefed about the exercise scenario, schedule and roles of actors. The presentation was followed by the safety and security briefing provided by the host military exercise organizer.

Visual recognition

Since the number of participants was quite high (more than 300 people), the scenario was played three times – twice in the morning sessions, and once in the afternoon session. All participants were split into two groups, one was led by a group leader wearing a yellow jacket, this group was observing first the part of the scenario played at the deployable laboratories site. The other group led by the group leader wearing a green jacket, was observing the site of clandestine laboratory. Then the groups switched – the "yellow group" moved to the clandestine lab, and the "green group" moved to the mobile labs site. One shift was sufficient for the afternoon session. This organisation ensured good visibility of the action at all sites, and good access of observers to the players so that everybody could see the exercise in detail.

The UCL-CTMA organizers team were wearing blue jackets, they were assisting the participants with practical and logistical arrangements during the exercise.

3.2.4 Start-up Safety and Exercise briefings

The exercise plan, scenario and schedule were introduced by the exercise director. Then it was followed by the safety briefing provided by the military exercise coordinator explaining the safety procedures during the exercise, safety exits, and local arrangements of the site.

3.2.5 Roll out of the scenario

See description of the timeline before.

3.3 DEBRIEFING AND EVALUATION

3.3.1 Post exercise debriefing

On the day of the exercise on-site hot wash debriefing and Q&A sessions with attendees right after each part of the demo were made to catch immediate reactions of the observers.
On the day following the exercise: global two-hour debriefing with all players' representatives (lessons learned) was organised. Since the exercise was seen by all the players as unique training opportunity for defence, police, civil protection, Federal crisis centre, public health representatives, academia and industry to play together in the same scenario, a lot of precious lessons learnt were drawn from the exercise. In particular, it was about the comparison of procedures, alignment of these procedures, coordination of actions between different players and efficient information exchange.

The lessons learnt session underlined the fact that actually this exercise took place in the days and weeks and months before the demonstration on June 19. It means a snapshot of something that was realised collectively by all players - a collective result of the interaction between a lot of federal players and mobile laboratories and biologists, police, civil protection and defence. If it were a real exercise, the audience would need to stay a full day and part of the night to assist real time. Before there was tabletop also associated to this and there was training actually associated with it. Training actually took place also during the exercise. However, it was about how to interact between all actors, how to interface nicely with a logic that makes sense and respecting a scenario that is plausible, how to interface all the players together. It was really the main challenge, and it was very intense.
Around 120 attendees were CBRN focal points of CBRN centers of excellence, who were invited by DG DEVCO to follow a whole week session to discuss a lot of things of relevance for DEVCO's CBRN CoE. DEVCO asked to take this opportunity to invite these attendees to the JA and give them a chance to look at the demo. So many people from outside the EU, massively came to ask about training, how to train, how to use training facilities available in the EU, how to interface with the eNOTICE project as a possible capacity to provide training.
Communication is still is a very weak point in major crisis situations. Reliable secure communication between all actors, available all the time without breaks or interruptions is a must during a crisis response, so communication was a critical point during the Bio Garden exercise – both technically and conceptually. Technical implementation of the multi-actor communication tested brand new technologies brought on the field by SES, Rohill, Nokia and

Keysight. Various protocols and channels were tested to measure individual and collective performance of technologies providing one-to-one, one-to-many and many-to-many voice communication and image transmission both in the field of the exercise site and between distant sites, like linking with the Federal Crisis Center. Conceptually many preparations were held before the exercise, and a lot of lessons learnt are drawn from the definition of the information flow between the actors, what information has to be sent to whom, at what time, in what sequence, and how and by whom this information shall be used. The importance and role of the communication is a lessons learnt in itself.

The feedback from the players on how they felt the exercise itself, the preparation, the demonstration, their roles in that, revealed the following lessons learnt, in summary:

- Civil Protection, Police, Defence:
    - Defence has to follow NATO procedures. Police has already done exercise with Defence. But this is the first time with CP. In order to work together with the three services there is a need of common procedures on the crime scene.
    - The re-organisation of the way of working on the crime scene itself is necessary in order to obtain more coordination on the crime scene between the three services.
    - Police needs exercises to work in contaminated area. For now police works with PPE that people are not used to wear. Currently the clothing and the decontamination procedures are new. It needs time and lots of training to learn and prepare the team to these procedures, and to learn to work with civil protection and with defence.
    - There is a need of more exercises to validate the procedures and to train.
    - Common or interoperable communication systems must be defined.
- Federal Crisis Centre:
    - There is a need for the different multidisciplinary services to know who does what at what moment.
    - The operationalisation of working on the field is really something that needs to be done in the next months/years in order to achieve a “well-oiled machine” in Belgium.
    - Emergency plans are written giving rules to several services, but these plans are too theoretical for now. To implement the plans there is a need to operationalize the procedures.

The role of Federal Crisis Center is integration of efforts. It is important to ensure that not everyone is on his own side, but we should integrate all the available capacities that exist in Belgium and use them together. It is not only about procedures, it's also about education, creating, exercises, innovation and better integration of results of research and development in the emergency plans. And also it's about (if something happens tomorrow) for decision-makers (responsible authorities) to have really quick support by expertise, within their environment.

- Belgian fire departments are organised by zone. There are 35 zones in Belgium and they have great responsibilities in coordination and response in all kind of incidents, also in CBRN. In case of crisis the fire departments are the first responders on the scene. Fire department did not participate in the exercise. When something happens it will not be immediately obvious if there's a CBRN event going on or not. We have to discuss this with them. In general it's the fire department who will take over the multidisciplinary coordination on the field. The judicial authorities will have their own regulations to make the forensics examination. But we know that on the field there will be or can be discussion on who is responsible. That's one of the purposes of the new CBRN center in the FCC to create this multidisciplinary environment because now within our national FCC, we invite the representatives of all disciplines to work together.

- Belgian deployable laboratory B-LiFE:
  - The demo was scripted (written explanation presented by the speakers, screens to show what was done…) but the training wasn't. This was something that was very new for a lot of participants (Defence, Police). This is a question to training centers, how to organise and when to prefer this kind of training, scripted training versus a very open training where you present a problem to the participants and you ask them to solve it the way they usually would do it but without taking them by the hand and really having a very scripted scenario?
  - B-LiFE team was very happy of the interplay between B-LiFE and the Hungarian lab and on exchange of samples and also to make the analysis in a complementary way.
  - The B-LiFE team identified the following needed improvements:

- Biohazard is the first concern: inside of the bio-lab the hazard is well-managed, but outside, when you look at how the samples come in from the drone or from the truck – this still needs improvement.
- Another gap that we need to improve is the turn around time because although it's one hour and a half, we can still gain minutes on different parts of the processing of samples.
- The coordination between the different involved bio-labs: It's important to harmonize the way we work together, have the same protocols, the same way of managing and collecting data and send data.

- Hungarian Lab
  - Problem currently faced with civilian and military assets working on CBRN crisis scene is the identification of who is the leader controlling and managing the different capabilities and sub-units: command chain, communication, data management and controlling
  - It was a unique experience for the Hungarian military lab to join such an exercise, and it was easy to join this multidisciplinary capability package
  - It was the opportunity to demonstrate how we can put together similar capabilities, but capabilities with different strengths – for the Hungarian lab it is samples preparation and for the Belgian lab it is new generation sequencing, and this is very perspective in the two labs cooperation
  - The major concern was for sample data management which need harmonization like in an ISO certification of a bio-lab (difficulties are not the same equipment, not the same electrical network, no printer, no wifi connection, registration of data in Word or Excel, use of different languages…).
  - Another concern was that no communication was made with the sampling team. We need to know when they started, how they collected samples, how many samples they collected. They could also send us video recording of the kitchen were pizzas were made. If we saw the kitchen, we can have small signs if it was a terrorist attack or if it was a natural contamination. This is very important in order to get effective, sensitive and reliable results from the deployable lab in every situation.

- Injects of incidents (like e.g. a strike of the UAS on a tree) were not done in Bio-garden. Injects increase the stress pushing players to make mistakes especially during multidisciplinary exercises. It is a question of deciding how much stress you want to put

into the exercise to make it as close as possible to real crisis. It was decided to not put injects in Bio Garden, however it is desirable to have unexpected elements in the scenario.

- ENCIRCLE is a project dedicated to help industry to identify real end-users requirements, and to push innovation guided by these end-users requirements. We believe that this will ease access to the market which is indeed very fragmented in CBRN. The ENCIRCLE expectation from such exercises is to take advantage of the presence of a so large number of practitioners to test new strategy on new technology like done for Bio-garden with terrestrial communication. There were many very nice technologies that were displayed during the exercise, not only communications but also sensors from LDI which were used in the clandestine lab and so on. But not much details were provided on the innovations that were used – the purpose, the impact, the applications, what shall be improved, etc. More communication would be needed on the innovations that were tested.

  Also, it's very important for ENCIRCLE to know the practitioners' main needs & gaps after this kind of exercise. There was one clear need expressed on multiservice procedures that is common. Another clear need is on how to plan and anticipate communication means that must be deployed in a certain crisis situation. The ENCIRCLE cluster really needs to know the important needs & gaps, the protocols, desired interfaces, the procedures of practitioners where these innovations would be used and ways to test them.

- A suggestion for eNOTICE was expressed to use the database of videos and recordings from the exercises as training modules for e-learning, to identify common analysis and differences in procedures in the EU.

  Based on the scenario the most relevant technologies could be selected to fit with the scenario goals or the second approach is to build the scenario around technologies to be tested in an evaluation process of equipment selection or equipment development, if the achieved TRL level is sufficiently high for demonstrator tests.

- The eNOTICE project targets two big objectives imposed by the Commission. The first one is to bridge between practitioners and researchers and developers and the second line of action is to pool resources and having plans of action to optimize resources.

  Regarding the second goal training centers have to pool resources, it will never work if they try to give recommendations on a strategic plan. Training centers are

multidisciplinary and they organize a lot of practical training and multidisciplinary exercises. Today they are doing that for their own students or for local customers like first responders. The goal is to open these exercises at multiple purposes players pursuing different objectives. Project consortia that are developing tools and technologies for full testing, technical testing, for validation and demonstration could be invited against payment to take part in exercises which they often cannot afford. For them that will be less expensive than if they had to order an exercise to do the testing. For the training centers this give extra revenues to cover the training center fixed cost.

For the first objective aiming at bridging between practitioners and researchers/developers the assigned mission to the training centers is to get these practitioners involved as structural partners of the training centers. The training centers have three assets that practitioners' organizations don't have: expertise, network and infrastructure.

eNOTICE will publish on its website a catalog with the capacities of each training center and their annual activities.

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Therefore, the research and/or development projects consortia would shop on the catalogue accordingly to their needs of identification of end-users requirements, testing, validation and demonstration. These exercises will then be organized as an instrument.

- The purpose of eNOTICE is to compare procedures in different countries, in different organisations and see what are the differences, what are the similarities and to learn from each other. For Bio Garden exercise the idea was to show how we do it in Belgium, so that police, fire brigades and defence in the UK, Germany, France, Czech Republic, Italy, etc. can watch and compare to their own practices.
- It is recommended to look at other European on-going projects to see if they are developing technology which can be used in bio labs and to invite them to participate to the exercise.
- There is a need of harmonization of equipment to equip bio laboratories to facilitate logistic management (maintenance, repairs…) and use of common SOP.
- It would be useful if the actual exercise is recorded before, and then the demo is shared afterwards. It would be good to have a presentation of how the exercise went to draw lessons for real deployments.

- Technologies are developed much faster than writing procedures which is time consuming. Implementation of these new technologies takes a lot of time. We are using only 10 – 20 % of the system capabilities.

  Therefore, it would be easier to have first a kind of national doctrines for these procedures and from there to see, within these procedures, what we need really as technology. Often it goes the opposite way i.e. we have a technology, let's now adapt our procedure to the technology.
- The SatCom capacity was deployed well for the exercise. What is missing after this exercise is that even with the very detailed close to real-life scenario, it was not a real time exercise. If tomorrow we have to deploy in a real-life situation, from telecommunication point of view, we don't know if we brought enough capacity, enough equipment or if we need twice as much or ten times as much. We have taken traces and statistics about the traffic exchange during the exercise but are not sure if it is representative of a real-life situation.

  System developers are expected to go during the exercise closer to real life situations in order to help define the end user needs, to assess the match and the gaps between their proposed solution and the end users requirements.

- Technology providers taking part in the exercise would like to get the scenario and the exercise requirements in advance in order to size their solution to the needs.
- There is a concern on data protection, e.g. secure exchange of video images – proof of the source where the images come from and where they go to. It is important for forensic purposes to know who sent the images, who received and what they were used for.
- Organisational issue - there were no sitting seats the audience following the demonstration, probably it was a little bit long for them, it is something to take into account for the next exercise.

3.3.2 Evaluation of the exercise

The evaluation of the exercise is done internally by the staff of UCL and all the exercise players. The main lessons learnt and recommendations are presented above.

3.3.3 Conclusions on the UCL JA

Two complementary debriefings were organised to collect a maximum of input and feedback. On the day of the exercise on-site hot wash debriefing and Q&A sessions with attendees right after each part of the demo were made to catch immediate reactions of the observers.

On the day following the exercise: global two-hour debriefing with all players' representatives (lessons learned) was organised. Since the exercise was seen by all players as a unique training opportunity for defence, police, civil protection, Federal crisis centre, public health representatives, academia and industry to play together in the same scenario, a lot of precious lessons learnt were drawn from the exercise. In particular, the lessons learnt were related to comparison of procedures, alignment of these procedures, coordination of actions between different players and efficient information exchange.

The main recommendation was to organize more multidisciplinary exercises so that various services can align their procedures. Also, it was recommended to provide more details on the numerous technological innovations displayed during the exercise.

4 Evaluation and feedback on the eNOTICE Templates

As the eNOTICE templates were not yet available for the Nîmes JA in January, only UCL could benefit from their availability for preparing the JA. Their feedback on the use of the Templates is included in the following paragraphs.

It was difficult to ask the organisation hosting the exercise to stick to these templates. Every exercise, demonstration or real-life mission is prepared according to the rules and templates already established and used by the organisation since many years, thus the staff is reluctant to change something that works already well. Both the civilian and military staff of UCL are quite experienced in preparation of such events, they already have their own developed forms that have proven efficiency. And the staff is of different functions – from operational in the field to administration, so it was not easy to convince everybody to switch to unfamiliar project templates instead of the ones used successfully before.

Basically, all the information used for the Joint Activity in June 18-20 preparation is very well precisely reflected in the eNOTICE templates. But for the above-mentioned reason not all the templates was possible to use directly BEFORE the exercise, they were mainly filled after the event, transferring the information from UCL templates and Excel sheets to the eNOTICE templates. At the exercise preparation it was only made sure that indeed the eNOTICE templates do not contain any extra information that is not comprised in existing preparation forms. Once the correspondence was acknowledged, usual UCL templates were used, and then the information was transferred to the eNOTICE templates unified for all project Joint Activities. eNOTICE templates were actually used before the Joint Activity to communicate the information to eNOTICE partners.

For the contents of the templates – they appear to be very detailed and relevant to the preparation and organisation of the exercise.

5 Updated JA calendar

Provisional calendar of eNOTICE activities		Date	Hosting partner	Location	Type of activity	
	1	15.09.17	UCL	Brussels, BE	Project Kick Off Meeting	
	2	12-14.12.17	SDIS77	Gurcy, FR	Multidisciplinary Training Exercise	
	3	30.01-01.02 2017	ARMINES + METU	Alés, FR	Multidisciplinary Exercise preparing Serious Gaming	
	4	18-20 Jun 2018	UCL	Brussels, BE	Bio Mobile Lab Field Exercise	Policy Meeting 1, 20/6, Brussels
	5	9-10 Oct 2018	UNITOV	Rome/Rieti, IT	Multidisciplinary Field Exercise	Annual Workshop 1
	6	Jan 2019	JCBRND	Vyškov, CZ	Live Agent Testing - Radiological Basic Training Course	
	7	**May 2019**	**SDIS77 + ARMINES**	**Gurcy, FR**	**Multidisciplinary Field Exercise + Serious Gaming**	**Annual Workshop 2**
	8	Jul 2019	WMP	To be determined, UK	Table Top Exercise	
	9	Oct 2019	FDDO + CNBOP	Dortmund, DE + Jozefow, PL	Multidisciplinary Field Exercise + Table Top Exercise	Policy Meeting 2
	10	Jan 2020	METU	Ankara, TR	Serious Gaming	
	11	**May 2020**	**VESTA**	**Ranst, BE**	**Multidisciplinary field X**	**Policy Meeting 3**
	12	Jul 2020	UNITOV	Rieti, IT	Multidisciplinary Field Exercise	Annual Workshop 3
	13	Nov 2020	**Moved to the date of the final conference**			
	14	Jan 2021	NDU	Warsaw, PL	Table Top Exercise	Policy Meeting 4
	15	Apr 2021	FDDO	Dortmund, DE	Multidisciplinary Field Exercise	Annual Workshop 4
	16	Oct 2021	JCBRND COE	Vyškov, CZ	Live Agent Testing - Radiological Advanced Training Course	
	17	Feb 2022	NBU + CBNOP	PL	Combined Civil-Military Exercise	Policy Meeting 5
	18	**May - Jun 2022**	**VESTA + UCL**	**Brussels, BE**	**Multidisciplinary field X + Final conference**	

Table 1 Updated calendar of eNOTICE activities

Annex 1: Full report on the Nîmes JA, 29-30-31.01.2018

Report on the preparation, organisation, evaluation and follow up of the second eNOTICE Joint Activity for disaster management and CBRN preparedness, hosted and organised by the METU and ARMINES

This report aims to describe in a comprehensive way the different steps for the preparation, organisation, evaluation and follow up of the second eNOTICE Joint Activity. This Joint Activity (JA) was organised by METU and ARMINES (further referred to as Nîmes JA in this report). The JA took place on January 29-30 and 31, 2018.
During the first day and the last day, eNOTICE project meetings were organized (see information sheet).

X PREPARATION

Description of the context

The Nimes JA is a Joint activity (as described in the Exercise guidance : *A Joint activity is an exercise organised by the Training Centre - TC and joined by an external party, each having their own, specific objectives).*
The objective of the Nîmes JA was the organization of mandatory training for practitioners at the Nimes Hospital. This training was part of the regular program of the Hospital.
Various EU projects were invited to join the exercise. (IGNIS, FIRE IN, eCONFIDENCE, SAYSO, TARGET and EU MFH). They have been selected by their potential interest, scientific added value and links with the EU project eNOTICE.

Short clarification of these projects:

- **IGNIS** (Simulation and training for practitioners), is financed by the European Commission through the Civil Protection Financial Instrument. The IGNIS project (Initiative for Global Management of big fires through Simulation), brings together the knowledge and experience of emergency service partners from four different European countries including France, Italy, Portugal and the United Kingdom. The project aimed to develop a mobile simulation tool and training packages that can be used within the partner countries and across Europe to train fire officers in how to safely, effectively and efficiently command and control large wildfires.

  The link with eNOTICE is clearly highlighted in terms of training packages implementation and simulation techniques. Various “bridges” from IGNIS to eNOTICE were identified, e;g. training assessment, debriefing activities

- **FIRE IN** (Network of practitionners). The FIRE IN Project aims to build 5 thematic networks for the associated Experts Community including key thematic

practiotionner experts from public, private, NGO bodies and representatives from existing network (e.g. eNOTICE network). The added value for the NOTICE activities was well demonstated. For instance, one practionner (medical doctor that was involved in the Nîmes JA) was thereafter invited to participate at the Emergency Medical Response WG FIRE In at Barcelona)

- **eCONFIDENCE** (Serious games and training). The eCONFIDENCE targeted to explore how digital games can play a major role in enhancing and enriching learning for people (e.g. childern but not only) in a formal educational context as part of learning objectives and, where needed, aligned with curriculum. The results of the project can further enable other stakeholders to understand the benefits of the serious games in developing skills. This particular aspect was the link with eNOTICE project. The project results can also promote the inclusion of serious games as one of the digital resources with educational opportunities, promoting its study by future teachers and educators as a reliable tool. Based on the educational results that have been obtained by **eConfidence**, the interest in the incorporation of subjects relating to the creation of specific serious games for education qualifications (such as eNOTICE activities), from broader disciplines teaching digital skills up to specific assignments on game design have been indentified.

- **SAYSO**'s (situational awareness) ambition is to define the reference architecture and specifications for future innovative European cost-effective and user-friendly situational awareness tools that fulfil end-user requirements and can be used across different organisations, hierarchical levels and national borders. The potential links between SAYSO and eNOTICE is devoted for the Situational Awareness Systems for Multiple Stakeholders assessment during the exercises.

- **TARGET** (training and debriefing activities)[ii] TARGET aims to deliver a pan-European serious gaming platform featuring new tools, techniques and content for training and assessing skills and competencies of SCA (Security Critical Agents - counterterrorism units, border guards, first responders (police, firefighters, ambulance services civil security agencies, critical infrastructure operators). Mixed-reality experiences are tested and the links with eNOTICE in terms of assessment is clearly identified (e.g. trainees at task, tactical and strategic command levels with scenarios).

- **EU MFH** (Hospital management and training procedures) is a DG ECHO project. It aims to improve medical care during European disaster relief missions. The various EU Member States are contributing their specific expertise in order to develop a mobile emergency field hospital which can be quickly set up and used to treat a large number of patients from first response to hospital care. The link with eNOTICE activities was clearly demonstrated in training activities for hospital practitioners.

Objectives, expected results and evaluation criteria

During the Nimes JA, METU and ARMINES worked on the elaboration of a framework, monitor participating interactions between practitioners (hospital managers, physicians, nurse etc…), technology suppliers (industry and research), training professionals and policy makers. We aimed to capitalize existing solutions from EU projects and see the potential transfer to the eNOTICE Joint activity.
Three main pillars were identified

- Regular test of procedures (Massive arrival of victims ("emergency plan" called "white plan" based on an internal exercise).
- R&D initiative (user requirements, actual procedure, use of daily used informatics system, to design a comprehensive solution of training for all the staff of doctors, paramedics and administration persons)
- With a focus on CBRNE purpose. The overall aim is to evaluate the impact on the medical chain.

Objectives, expected results & evaluation criteria for the annual exercise of the hospital emergency plan (« white plan »)

The hospital emergency plan ("White Plan") is set up in the event of an influx of victims.
The implementation of the White Plan involves all the professionals of an establishment (administrative, doctors, caregivers, technical staff). It is concretized by the need of exercise to respond effectively to the situation. It involves:

- Alert : Coordination with all the regional emergency services to ensure the care and guidance of patients (e.g. strengthening of telecommunications and information links, the recall of all medical, paramedical and other hospital personnel

- Staff management : Availability of hospital and reception beds by organizing the reopening of beds, the provision of additional beds ...

- Coordination : Transport and transfers related to other health care facilities , reception, triage of victims

- Logistics: supply chain with essential medicine, Intervention of the medico-psychological emergency unit to support patients and their families.

Each of these phases can be linked with specific objectives.

Mission	Objectives
Alert	The triggering of the alert requires verification of the validity of the request. The analysis of recent catastrophic events proves that Alert calls are not interpretable until 15 minutes. The delay between the first signals of an alert and the arrival of the first victims in the hospital may not exceed 20 minutes.

	The transmission circuit of the alert must be fast and efficient, with all trained staff.
Staff management	It is essential to respect a gradual increase in the recall according to the potential risk, the event or the number of more or less anticipated victims. The triggering of a white plan requires a new distribution of tasks and skills, and the assignment of staff to support the other staffs. Each staff with coaching responsibilities has a "reflex sheet" to apply.
Coordination and communication	Coordination with all the stakeholders is taken into account. The (internal and external) communications are assessed.
Reception of victims	It is also important to question the nature and character of gravity medical problems as well as the foreseeable duration of treatment in the acute phase of the disease (distinguished between a NRBCE disaster and an epidemic ...).
Logistics	Anticipation of the flow is important because of the time required to complete a pharmaceutical stock or necessary material

Objectives, expected results & evaluation criteria for the invited partners

IGNIS cooperation objectives

During the Nimes JA, the IGNIS solutions (developed by Effective Command during the IGNIS EU Project was tested). The Effective Command methodology is a Web-based assessment – this tool is used for formal assessment during an exercise setting or formal post-incident review (e.g. debriefing phase)

The web assessment tool has been created around the decisions making behaviours required of an incident commander or crisis decision maker, regardless of their management tier. The key difference between the assessment tiers is the scope of the incident that the individual is expected to cope with. An operational commander will coordinate the actions of a smaller operationally focused team, whereas, a strategic manager will direct a multi-tiered incident with complex incident structure incorporating numerous strategic, tactical, and operational objectives.

The assessment criteria are also aligned with several professional frameworks, standards, independent qualifications; and can be used as accredited evidence for these programmers.

For this exercise, eNOTICE assessors received initial and re-validation training provided by Effective command, as required by the respective awarding bodies. This is to ensure that the assessment measures are being applied in a consistent manner and that the data collected is credible and suitable to be used for the formal qualifications.[iii]

FIRE IN cooperation objectives

The main objective of the FIRE IN project was to collaborate with eNOTICE participants and see potential collaboration in terms of networking activities (e.g.. participation to the platform implementation).

TARGET cooperation objectives

The general objective for TARGET cooperation was to test their debriefing solutions (suitable on iPad) during an exercise in a hospital at strategic level.
The expected results were to
-Evaluate the capability of the web assessment tool developed by the IGNIS project to be used during a comprehensive exercise at strategic (gold) level.
-Assess the capability to reinforce the European collaboration for the training of practitioners
-Check the capability of the debriefing solution in a complex environment (various actors, various interactions).

Type of exercise/activity and corresponding needs

Type of exercise

Comprehensive and preparatory exercises are necessary and mandatory for a formative purpose. Training of all personnel (management, medical and health care) remains indispensable. It targets both for the knowledge of the circuits and the related procedures. Indeed, its effectiveness is based on clear drafting. However, performing an exercise remains a delicate experience in terms of skills which must be available in due time but also in terms of organization (anticipation of the emergency situation, relationships with the related institutions ...).

Corresponding needs for the JA

No crucial adaptations to the exercise were set up for the joint aspect of the exercise. The various external partners joined a standard exercise (following its standard procedure)

The list of participants.

Participants from the consortium		
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Laurence CESSIO	CHU Nîmes	
Cadre IADE (à définir)	CHU Nîmes	
Nathalie VIALES	CHU Nîmes	
PICARD Olivier		
Florence MOULIS		
Jean FLECHET		
Pascale BRANCHEREAU	CHU Nîmes	
Informaticien 1	CHU Nîmes	
Informaticien 2	CHU Nîmes	
TALLARON Jérôme	SDIS 30	
HIEBLER Christophe	SDIS 30	
ROIG Benoit	UNimes	
Observers/ translators/ invited persons others		
MONTMAIN Jacky	IMT Mines Alès	
MIGNE Frank (traducteur)	IMT Mines Alès	
MAURIN Isabelle	IMT Mines Alès	
LHERITIER Cécile (traducteur)	IMT Mines Alès	
ASSO Nastasia		
LEBORGNE Alexandre (traducteur)	IMT Mines Alès	
MORANDI Bherang (traducteur)	IMT Mines Alès	
Direction CHU		

Planning of the preparation and timeline

Preparation, organisation & timeline for Emergency plan at the Hospital

Timeline Todo's Preparation				
Timing	Action Number	Owner	Description of action	Participants
X-1Y	1	Hospital authority	Overall scenario relationships with relevant other authorities (involvement or not) Definition of the precise objective of the X.	Project team
X-1Y	2	Exercise director	Scenario definition, evaluation criteria	Project team
X-1Y	3	Exercise director	Scenario definition, validation with participants, evaluation criteria	Project team
X-1Y	4	Exercise director	Planning of activities (framework, role assignment)	Project team
X-9M	5	Exercise director	Booking of all the mandatory assets : -Training facilities (location) -Logistics (radio, telephone, water, food)	Project team
X-6M	6	Exercise director	Specific informatics issues and communication Meeting (identification of needs, proposal of solutions)	Project team
x-6M	7	Exercise director	Choice of participants, role assignment confirmation)	Project team
X-3M	8	Exercise director	Last check meeting	Project team

Organisation

Timeline Todo's Preparation				
Timing	Action Number	Owner	Description of action	Participants
7:30	1	TC support logistic team	Set up of all the assets (Crisis room, phones, radio, beamers)	Junior instructor
12:00	2	TC coordinator	Lunch with all participants	Project team
13:30	3	TC coordinator	Reception of the actors Safety Instructions	Participants
14:00	4	Lead Instructor	Briefing : scenario description, objectives description, debriefing ambition	Participants
16:00	5	Senior instructors	Hot debriefing	Participants
17:00	6	participants	Equipment and training reconditioning	Participants

X scenario

Scenario definition

As the objective is to evaluate all the involved stakeholders to better communicate, to improve the triage of victims and to evaluate the ICU (Intensive Care Unit) activities, the purpose of the exercise is to educate specific role and increase their awareness about their performances
For this scenario a major attack in a public place, with a large number of victims was chosen. The scenario needed be detailed so that all participants can imagine the scene and understand. The airport of Nîmes-Garons was chosen as location. Indeed it has been shown in the past that airports or even airplanes could be targets for terrorist attacks (attacks of September 11, 2001 and the attack of the airport Zaventem of Brussels in 2016). Nimes airport was warned of a crisis management exercise involving an attack on its site.

Criteria for qualitative scenarios

A dedicated focus on communication between authorities and the related medical coordination was assessed. In collaboration with ARMINES, METU coordinated the discussion and planning of the future serious game. User requirements and key performance indicators of two roles were finalized for the serious game planning. The purpose, main mechanism and event types were clarified and decided. Details of the roles, their interaction method and structure were discussed and determined.

X Scenario

A plane from London Luton arrives at the Nimes airport terminal.

Passengers are waiting in the boarding lounge to register for the following flights. Disembarked passengers await their luggage in the designated area. Nearly 250 people are in the airport when three people break into the hall with weapons of war. They shoot the crowd repeatedly, while the shots have been fueled for several minutes. One of the attackers wounds several people with a knife. A hostess calls on the 17th to inform about the event. At the same time a person composes the 15th. After several minutes of shooting, one or several men explode.

3 types of wounds: weapons of war, white weapons and blast (explosion)

Once the killing is over, a luggage bearing a radioactive pictogram is discovered at the entrance to the hall. The attack affects 100 people including:

- 32 Red Emergencies
- 55 Yellow Emergencies
- 13 dead

The proposed scenario was a terrorist attack at the International Nîmes airport including the use of explosion, machine guns. 200 injured people from various nationalities. The use of radiologic weapon ("dirty bomb") is suspected at the very first time. All the related services are impacted. The ambulance services and the Intensive Care Unit have to reconsider its internal organization and deploy a now temporary triage system. The Hospital is immediately flooded by injured people and the press/media pressure is very high

The objective is to evaluate all the involved stakeholders to better communicate, to improve the triage of victims and to evaluate the ICU (Intensive Care Unit) activities. the purpose will be to educate specific role and increase their awareness about their performances

A dedicated focus on communication between authorities and the related medical coordination will be assessed. In collaboration with ARMINES, METU will be coordinating the discussion and planning of the future serious game. User requirements and key performance indicators of two roles will be finalized for the serious game planning. The purpose, main mechanism and event types will be clarified and decided. Details of the roles, their interaction method and structure will be discussed and determined.

The eNOTICE JA in Nimes is a first step of a more comprehensive process. Although there is mandatory exercise for all the hospital every year, the dedicated serious game exercise aims to elaborate beyond the administrative obligation. The main objective of the serious game exercise is to conceptualize, elaborate, test and validate a serious game dedicated for an CBRNe attack at the hospital level. It aims to build a comprehensive system for all the practitioners (decision

makers, medical or paramedical level) enabling to test their immediate response in case of a CBRNe attack.

Learning process of the Nîmes Joint Activity

The learning process during the Nimes JA, consisted in the evaluation of the interactions between trainers (generally a senior), trainees (generally a junior) and observers

- The trainer (also called "animator") plays a crucial role. He provides information to trainees, answers his/her questions, reviews the procedure, observes the trainee, delivers information during debriefing, acts as a mentor model.
- Trainee (also called "player"): Generally a junior Follows all the procedures, provides a good standard of practice, identifies learning needs
- Observers (mainly eNOTICE participants), videotapes the event, takes notes and does post-assessment

Once the scenario is established, a timeline is provided. It is a document in Excel format which describes the events and the different actions of the exercise. The events are detailed from T-10 to T + 150 (T-0 being the time of the attack). Times are not linear but contracted, to avoid long periods of inaction. In order to facilitate the learning process, a timeline was available on a screen.

Timeline (Example from T0 to T+8 minutes)

Time (minutes)	Event **Message from trainers to trainees**
T 0	Nîmes-Garons airport: the flight from London Luton is landing
T+4	Passengers are present in the lobby and others are waiting for their luggage in this area
T+6	Three men enter the hall and fire with weapons of war on present people and attack them with knives
T+7	A flight attendant calls the police, to warn of the event within the airport
T+7	At the same time, a tourist dials emergency call to report deaths and injuries
T+8	Hospital is informed and warns the hierarchy

The decision process at the hospital has been modelled and divided in 6 cells.

- Command cell
- Triage cell
- Operating room
- Operating management cell
- Paramedic cell
- Regulation cell

Identification of roles and functions

The roles and responsibilities for the preparation of the exercise are listed in the following table :

Role	Actor	Responsabilities
Exercise Director	Medical Doctor	Define the objectives of the exercise, Manage all the process of the exercise (from the preparation to the reconditioning) Propose the evaluation criteria Validation of observer list and the related action during the exercise.
Project team (instructors/trainers)	Selected medical doctors, administrative persons, nurse, academic	Scenario elaboration, validate the evaluation criteria, debriefing definition, define the different roles and actions for all the participants, act as mentor with the junior trainees Evaluate the cost
Participants (trainees)	Selected medical doctors, administrative persons, nurse, academic	Perform the exercise according to the briefing, , detail their role and actions during the debriefing phase, fulfil the questionnaires
Observers	Selected persons (experts)	Each observer follow a phase or a group of persons, Identify potential improvements in the process

Step by step approach

Step 1	Develop the case for scenarios	The exercise director has the responsibility to the scenario elaboration. His role is to check that all the key elements of the emergency plan will be assessed during the exercise (based on the lessons learnt from previous exercises).
Step 2	Gain executive understanding, support and participation	The Exercise director (and the project team) are in contact with the stakeholders in order to check the appropriateness of the scenario and its credibility.
Step 3	Design the decision focus	The decision process has to be followed by the observers. During the debriefing phase, all the decisions can be evaluated and discuss by the project team.
Step 4	Design the process	The process to be followed to design the exercise is as follows: 1. Definition of the objectives of the exercise, detail the expected outcomes 2. Identification of a project team (assignment of roles) 3. Scenario definition, validation by the all the project team and the exercise director 4. Define a precise agenda for the next phases (definition of roles of each participants, logistics requirements)
Step 5	Select the facilitator	The facilitator is one person from the project team (with experience and negociation capabilities)
Step 6	Form the scenario team	The scenario team is selected by the project team (in agreement with the exercise director)
Step 7	Gather available data, views and projections	Lessons learnt from other exercises are of great interest (in the same Hospital or other experiences)
Step 8	Identify critical forces & drivers	Select the available and motivated person. Identify drivers of innovation in order to capitalize experience
Step 9	Conduct focused research on key issues, forces & drivers	Include key persons as observers to perform this topic
Step 10	Assess the importance and uncertainty of forces and drivers	Associate some academics in that topic
Step 11	Identify key “axes of uncertainty”	Associate some academics in that topic
Step 12	Select scenario logics to cover the “envelopes of uncertainty”	Associate some academics in that topic

Step 13	Write the story lines for the scenario	The proposed scenario was a terrorist attack at the International Nîmes airport including the use of explosion, machine guns. 200 injured people from various nationalities. The use of radiologic weapon ("dirty bomb") is suspected at the very first time. All the related services are impacted. The ambulance services and the Intensive Care Unit have to reconsider its internal organization and deploy a now temporary triage system. The Hospital is immediately flooded by injured people and the press/media pressure is very high
Step 14	Rehearse the future with scenarios:	Not applicable
Step 15	Get to the decision recommendation	Not applicable
Step 16	Identify signposts to monitor	Not applicable
Step 17	communication of the results to the organisation	Organise meeting with all the stakeholders

Logistics requirements.

Logistics requirements are linked with the features of the exercise. Since, this serious game emergency plan is indoor, there is no specific décor or demarcation ribbons for the scenario.
However, various key elements are important. For instance, the parking management is crucial (open access for all participants). The indications for the location of the exercise to be putted in place sufficiently earlier).
Moreover, all the participants (project team, exercise director, trainees) have to wear a badge in order to identify their role and function during the exercise.

The following equipment has been used during the exercise

- Computers (one per participant)
- Beamer (for the timeline)
- Furnitures (paper, etc..)

Communication strategy

Internal communication

During all the preparation phase, the internal communication remained to the complete responsibility of the exercise Director.
The project team prepared all the communication equipment (telephone, computer (mail). A clear separation with the operational (normal) communication has been taken in consideration.

External Communication

The Nimes JA was not accessible to the local press.
For the information and communication to eNOTICE partners, research projects and experts interested in joining or participating, an Information & Communication Sheet was elaborated.

JA Nîmes Information and Communication Sheet, Part A - Summary description of the objectives and topic of the CBRN Exercise

1. Main activity – Type + contact details organising partner	Invited activity – Type + contact details research project
eNOTICE : Serious game Exercise (explosion in airport) airport organised by ….. (ARMINES and METU)	IGNIS EU project (https://www.ignis-project.eu/)
2. Main activity – Objectives and evaluation criteria	**Invited activity – Objectives and evaluation criteria**
Objectives: Training of all the medical chain (medical doctors, paramedics and firefighters) on a scenario of massive attack at Nîmes Aiport - **Evaluation criteria:** The objective is to evaluate all the involved stakeholders to better communicate, to improve the triage of victims and to evaluate the ICU (Intensive Care Unit) resilience A dedidated focus focus on communication between authorities and the related medical coordination will be assessed.	**Objectives**: Improve the efficiency of Command and Control through a serious games within the EU project, **Evaluation criteria**: Identification of opportunities for improvement of debriefing techniques, communication between sub-cells, follow-up of adminsitrative requirements
3. Main activity – Short description	**Invited activity – Short description**
Terroristic attack in an airport including the use of explosion, machine guns. 200 injured people from various nationalities The use of radiologic weapon (“dirty bomb”) is suspected at the very first time. All the related services are impacted. The ambulance services &and the Intensive Care Unit has to reconsider its internal organisation and deploy a now temprorary triage system. The Hospital is immediatly flooded by injured peapole and the press/media pressure is very high.	The project IGNIS targets to develop a mobile simulation tool and training packages that can be used within the partner countries and across Europe to train fire officers in how to safely, effectively and efficiently command and control large wildfires. The relations with IGNIS is relevant. During the IGNIS exercise I England in June 2017, we agreed with IGNIS coordinator that the overall training methodology and the debriefing technique have got strong connections. For instance, we will invite the University of Coventry that developed a debriefing tool (tested during the IGNIS exercise) that can be transferred to the Nimes Exercise. The Ignis consortium will act as observers. It will not be

	a combined exercise. We'll invite them in order to share experience in the process of building serious game exercises (how to build scenarios, what are the expected outcomes, how to improve the lessons learnt). Our objective is to improve the community of users by the networking activities. Their role during the exercise will be only observers. They will learn from our experience. A dedicated session will be prepared (in English) for that purpose During the Nimes exercise, ARMINES ll use our own overall system (method, technique and tools). Based on the eNOTICE initiative, we have launched a comprehensive programme of training sessions with various stakeholders (local hospitals, firemen, decision makers) It aims to implement and test a serious game dedicated for CBRN attack and the medical and organizational consequence at the hospital level.
4. Main activity – Profile of participants	**Invited activity – Profile of participants**
Fire fighters, police, medical services, specialised services, an operational command post, a coordinating body at the level of the responsible competent authority, actors playing civilians,	Although there is mandatory exercise for all the hospital every year. However, the serious game exercise aims to elaborate beyond the administrative obligation. The main objective of the serious game exercise is to conceptualize, elaborate, test and validate a serious game dedicated for an CBRN attach at the hospital level. It aims to build a comprehensive system for all the practitioners (at the decision makers, medical or paramedical level) enabling to test their immediate response in case of CBRN attack. By the use of the serious game (that will be finalized in 3 years) we plan to improve the organizational capability of the hospital by the use of innovative training tool.

JA Nîmes Information and Communication Sheet, Part B - Practical organisation

- **Course Manager/Exercise Director (contact)**:
  - Name: Gilles DUSSERRE
  - Mobile: +336622907424
  - Email: gilles.dusserre@mines-ales.fr
- **Transfer information from the airport to the course venue**:
  Shuttle (if arrivak at Nimes Airport), Taxi (from Montpellier : 50 km), from marseille (100 km)
- **Dates: January 30; 31, February 1st 2018**
- **Location**
  - of the meetings and the exercise: Nîmes Hospital (Intensive care Unit)
    - The Nimes Hospital is rather far from the historical part of the Nimes City. we suggest 3 hotels
    - Hotel Vatel : The closest http://www.hotelvatel.fr/fr/nimes/restaurant-vatel
    - Hotel B&B : You need a car rental : http://www.hotel-bb.com/fr/hotels/nimes-ville-active.htm
    - Hotel Kyriad : You need a car rental : http://www.nimes-hotel-kyriad.com/

- **Number of participants:**
  - Participants to the exercise: 30 persons
    The French participants are mainly practitioners (medical doctors, physicians, paramedics) from the Hospital. The administrative board of the Hospital will also participate. The other participants are the French Civil protection Agency (firefighter from the Nimes Fire Brigade). We'll have the participation (as observers) of professors (and two phd students) from The Nîmes University, two phd students from Ecole des Mines (ARMINES).

  - Participating persons from the 13 eNOTICE partners + invitees,
  - invitees from the project: e.g. project officer REA, other EU DG's officials, other network representatives, policy makers, …
    Participating persons from the invited research project : IGNIS EU project. Moreover, we plan to invite three EU projects. IGNIS , MODEX (http://eu-modex.eu/w/RedCMS/exercises/) and eCONFIDENCE http://www.econfidence.eu/.

- **Deadline for registration for the activity:**
  - November 30th 2017

Documentation on every step

The following documents were elaborated and used for the JA in Nîmes.

1. A general information sheet for communication to eNOTICE partners, EU projects interested in joigning and experts, interested in participating.
2. The following documents were communicated to all registered participants, a few days before the JA (23/1)
    a. Final scenario (see before) and timeline (see below)
    b. Plan of the site
    c. PWP Briefing of the participants on the JA
3. Registration Forms
4. The Informal Consent Form
5. Overview document with all the questions for feedback assigned to the registered participants

Detailed timeline

Time (minutes)	Event **Message from trainers to trainees**
T 0	Nîmes-Garons airport: the flight from London Luton is landing
T+2	Passengers are present in the lobby and others are waiting for their luggage in this area
T+5	Three men enter the hall and fire with weapons of war on present people and attack them with knives
T+7	A flight attendant calls the police, to warn of the event within the airport
T+7	At the same time, the first Incident Command calls and informs the Hospital
T+8	Hospital is informed and warns the hierarchy
T+9	An MRA (Medical Regulatory Assistant) calls all cell managers to identify all the phone numbers as well as all the postmasters
T+9	Arrival of the police and rescue to the scene
T+9	Arrival of reinforcement forces to secure the area (firemen vehicles)
T+10	A call for Special Weapons and Tactic (SWOT) forces is confirmed
T+11	Arrival of the SWOT forces
T+15	The SWOT finishes its mission, a suspicious bag is found on the site (it presents the symbol of radioactivity)
T+16	Arrival of reinforcement persons (firemen and ambulances) from Nimes fire brigade
T+17	The Hospital contacts the Hospital administration with an alert message, a description and a trigger level of the emergency plan (called **white plan**)
T+18	The Director General of the Hospital is contacted. Message from the Incident Command “confirmation of terrorist attack”
T+18	The command cell informs all the cells (e.g. operational blocks of the) of the trigger of the emergency plan level 3
T+19	Opening of a crisis room at the ICU. The CEO of the Hospital is contacted.
T+20	The operational manager (DSMH) is informed by the physician regulator of the trigger of the emergency plan and its level He coordinates the organization of reception, orientation and treatment of patients He informs the health executive of emergencies of the outbreak of the emergency plan
T+21	The Crisis cells informs the internal security forces
T+22	The crisis cell informs the operating room cell about the emergency plan level 3
T+23	The regulation cell confirms to the operational bloc about level 3
T+24	Overall information of the level 3
T+25	Opening of the crisis room

T+27	The Crisis Cell informs outpatient or direct admission to services on the anticipated transfer of the maximum number of patients present in emergencies
T+28	Opening of the NRBC decontamination zone of the hospital
T+29	Arrival of the first victims in emergencies
T+30	All the staff (in holidays) are asked to return to their workstation at the hospital
T+31	Phone call from the Mayor in order to have more information
T+32	Arrival of a specialized fireman truck which is able to detect and identify a radiological substance
T+33	Firemen declare: No presence of radiological contamination on the area
T+35	Closing of the NRBCE Decontamination Zone of the hospital
T+40	Massive arrival of potential victims at the hospital (by their own means) Updating identification files is difficult
T+43	With the arrival of the victims, the availability of the beds must be clarified In the hospital, each zone can contain only a limited number of patients
T+47	The operational block informs the command cell that the area dedicated for Red Patients (life threatening injury) are still functional
T+47	All teams are all very busy with the many victims, the improvement of supply chain is necessary to contribute to the proper functioning of the different emergency zones
T+50	In agreement with the Command cell Crisis, all team asks to stop all visits to the hospital (from the entrance gate) since level 3 of the emergency plan is reached
T+70	The press arrives on the spot
T+72	The general public is worried and calls for information

T+75	Families of victims begin to arrive at the gates of the hospital
T+78	Mayor's call: Do we have to evacuate the neighboring cities of the airport? of the hospital?
T+82	Press media are on scene and must be taken into account
T+86	Breaking News Flash: Attack at Nîmes Airport, numerous victims, risk of radiological contamination
T+90	Angry prefect has seen the television: Are there any unidentified victims?
T+110	Request from the crisis cell to the command cell to close the emergency plan
T+115	The prefect is informed about the next closure of the emergency plan
T+118	Media are informed that the emergency plan level 3 is ending
T+120	End of exercice

92 **Plan of the site**

All the JA was organized in the crisis management room of the hospital. Telephone, fax lines, whiteboards, maps and site plans, television, radio, beamers were available.

Figure 12 Plan of the site for the Nîmes JA

Final Agenda

Monday Jan 29 – Project Meetings and JA (Location: Hotel Vatel)	Tuesday Jan 30 – Exercise (Location: Nimes Hospital)	Wednesday Jan 31 – eNOTICE Meeting (Location: Hotel Vatel)
14:30 Presentation of Joint Activities **EU Projects** **14:30 IGNIS (S. UNGEMACH – BENEDITE)** **15:00 FIRE IN (S. Lahaye)** **15:30 Econfidence (M.Vangasteren)** **16:00 SAYSO (George Eftichidys)** **16:30 TARGET (Elisabeth Haddad)** **17:00 EU MFH (B. LHERITIER)** **17:30 Re(h)strain (N. Daclin)** **17:30 Networking discussion and potential future initiatives** **18:00 End of meeting** **19:30 Dinner (Hotel Vatel)**	**8:30 Details of ARMINES-METU joint activity and the description of the framework for the future Serious Game (METU) - 30'** 2.1.1 - Roster, Vesta, deadline 28/2 - 20' 2.1.2 - Quality label, SDISS - 10' (Nicolas) 2.2 - Needs & Gaps, UCL - 10' (Olga) 2.3 - KPI's, Vesta - start 1/1 - 20' (Kathleen) 3.1 - Dissemination, UCL - 10' (Olga) 3.2 - Web based platform, UPB - 20' (Maximilian) **10:20 Break** **10:30 Open discussion eNOTICE activities** **11:30 Exercice explanation (Gilles Dusserre)** **12:00 – 13:30 Lunch break** **13:30 Briefing of external partners, by the hosting partner: on the scenario, evaluation of the event, safety & security measures, etc.** **14:00 – 17:00 Exercise** **17:00 – 19:00 Debriefings and lessons learnt** **19:00 End of meeting** **19:30 Dinner (Hotel Vatel)**	**8:30 12:00 ENOTICE Meeting** 4.1 - Templates, Vesta, deadline 30/1 - 15' 4.2 - Joint Activities, Vesta, deadline 30/1 - 15' 5.1 - Project Management, UCL - 30' (Olga) 5.2 - Technical coordination, Vesta, first deadline 28/2 - 20' 5.3 - Ethics, Security, Legal Issues, UMU - 20' (Per-Erik) **12:00 End of meeting**

User consent

Clarification on the obligation for all participants to sign the Informed Consent Form:
The user consent has been designed before the exercise. The use of personal data is central to the eNOTICE exercises. This document helps all the stakeholders (organisation and experts) to understand their role and responsibilities. The main objective is to feel confident in the overall approach that takes into account all rights and wishes of the participants.

Informed Consent Form

I, the undersigned, agree to take part in the eNOTICE field exercise Nîmes Hospital that will take place on January 30, 2018 at Nîmes Hospital.
I confirm that the purpose and scope of the Joint Activity has been explained to my satisfaction. I am well aware of the above notes and the content of the Information Sheet and understand what the Joint Activity involves. I have had the opportunity to consider the Information Sheet, the verbal explanations given and to ask questions and I have had all my questions answered to my full satisfaction.
My participation in the Joint Activity is voluntary and I understand that I am free to withdraw at any time during the period of data collection and engagement with the researcher without giving a reason and without my right to medical care or my legal rights being affected in any way.
I understand that any information collected during the Joint Activity will be held in confidence and will only be shared within the eNOTICE project consortium. I understand that conclusions reached from the Joint Activity may be published in emergency planning and academic journals, as well as in project reports. I understand, however, that individuals participating in the Joint Activity will not be identified in any of such publications.
I consent to the processing of my personal information (name, affiliation, email address, phone number) for this project. I understand that such information will be treated in strict confidence and handled in accordance with the provisions of the Data Protection Act 1998. I understand that the project research team may use my data for future research and understand that identifiable data will be reviewed by the project ethics monitoring experts before such use to ensure it would not be included in any report.
I consent to my participation in the Joint Activity and in focus groups being video-recorded and transcribed.

City/training facility/place *Date*

……
Name typed

Personal data:

Name and surname:	
Contact details (phone number, email):	
Affiliation: (name and address, contact details)	

eNOTICE Joint Activity Registration Form eNOTICE partners

To confirm your attendance to the eNOTICE Joint Activity organised in **Nîmes**, by **ARMINES** and **METU**, **29, 30 and 31 January 2018**, please send the complete form to gilles.dusserre@mines-ales.fr before **November 30th**

Joint Activity	To be completed by the organiser of the exercise.			
Type of exercise:	Multidisciplinary field exercise, planning of the future serious game			
Location:	**Address:**	Hopital Caremeau Nîmes		
	City:	30100	**Zip code:**	30000
	Country:	France		
Timing:	**Begin: January 29th (14:00)**			
	End: January 31 th (12:00)			

Attendant(s)	To be completed by the attendant(s).
Organisation:	
Representative (1):	**Name:**
	E-mail:
	Phone number:
Function within the organisation:	
Arrival:	
Departure:	
Dietary restrictions/requirements:	

OVERVIEW QUESTIONS FOR OBSERVERS – JOINT ACTIVITY NIMES	
This overview lists questions for observers during the Nîmes Joint Activity, 30.01.2018 Purpose of the questions: The overall purpose of the observations is to extract as much information as possible from these Joint Activities, considered as eNOTICE show cases to achieve the project's objectives. The specific purpose of these questions is: - To provide guidance for all observers, in order to ensure an active participation during the exercise - To gather information, relevant for the different ongoing tasks or tasks starting in a near future - To provide for input and guidance for the discussions during the debriefing sessions The questions will be distributed and assigned to three categories of participants – see next column, to ensure they are answered by different profiles (academics and Training Centres, eNOTICE partners and external experts): different focuses because of different profiles will hopefully enrich the discussion on lessons learnt. For each participant a template for observation and evaluation will be made with only a few questions (to keep the observation focussed). - eNOTICE partners will be assigned questions related to tasks they participate in - the EU experts participating in the Joint Activity and the invited experts will be assigned questions related to 1) visibility of the centres, 2) added value of this type of Joint Activity, 3) needs	Three categories of observers: A) eNOTICE partners B) Participating EU projects/experts C) Invited experts

	and expectations from TC's in general, this type of activity in particular.	

Task		Lead		A	B	C	Observer	Organisation/project
2.1.2	Quality label	SDIS 77	What kind of characteristics of this type of exercise (simulation/serious game) are valuable to promote?	X			T. BERK ATALAY	METU
			What do you consider to be 'unique selling points' from this type of multidisciplinary exercise for CBRN preparedness?	X			K. VAN HEUVER-SWYN	VESTA
			What do you consider to be 'unique selling points' from this type of multidisciplinary exercise to promote as part of the development process (of tools, technologies/methods/procedures) in research projects?	X			O. VYBORNOVA	UCL
			How would you describe the added value of this type of multidisciplinary exercise compared to field or table top exercise ? On what aspects? For what (preparedness, mutual understanding of different stakeholder profiles, …) To whom?	X			E. BENSON	WMP
2.2	Mapping	UCL	What would be determining assets, elements, etc. for you to choose this type of multidisciplinary exercise as part of the development process (of tools, technologies/methods/procedures) in research projects? The scenario? The involvement of practitioners? The cost? Balance effort (for preparation/output?			X	G. EFTYCHIDIS	KEMEA
			What characteristics of this type of multidisciplinary exercise is or would be critical in your decision for participating (again)?			X	J.P. BLANC	ENSOSP
			Would you consider this type of multidisciplinary exercise as a learning opportunity between practitioners and academics/industry/competent authorities? If yes, for what purpose? Mutual understanding, testing the outcome of new tools, technologies/methods/procedures?	X			M. CARESTIA	UNITOV

			Do you see any barriers/obstacles to participate in this type of multidisciplinary exercise as non practitioner?	X			P.M. RICCIO	ARMINES
2.3	KPI	VESTA						
			Did you feel like there was mutual understanding between the different profiles of participants within the exercise?	X			N. RAULIN	SDIS77
			Did you notice any valuable interaction between practitioners and researchers/developers?	X			M. KIEHL	UPB
			After observing the Joint Activity, do you feel like you have a better image of the needs of practitioners?		X		E. HADDAD	ARTTIC/ IGNIS
			After observing the Joint Activity, did you notice any barriers for collaboration between practitioners and researchers/developers?		X		M. VAN GASTEREN	ITCL/ ECONFIDENCE
2.4	Framework	UNITOV	Does the development of a CBRNe TC's network, implementing standardized procedures, with a common programme/catalogue of exercises (covering all the fields of CBRNe specializations), help to increase the practitioner access to an optimized training process? Why (not)?			X	B. L' HERITIER	SDIS30
			Do you think that a TC's network (composed of training centres sharing a quality label, with a complete range offer of CBRNe facilities) can become a reference point for those looking for a TC to involve EU or national research project? Why (not)?		X	X	E. HADDAD	ARTTIC/ IGNIS
			In the light of the exercise you observed and the TC you have visited, can you figure out whether your TC has activities and facilities that can be complementary and that can be used to perform joint activities or propose joint training curricula?	X			M. CAROSI	UNITOV
4.1	Methodology and templates	VESTA	Could the use of a common methodology for the organisation of exercises be useful? Have added value?	X	X	X	D. AHN	FDDO
			Do you feel like the debriefing and evaluation forms are sufficient to ensure follow-up of the lessons learnt?	X			M. NEMEC	CBRN COE

4.2	Joint activities	VESTA	What did you learn from participating in/observing the exercise?	X			A. WIECZOREK	CNBOP
			Were you able to achieve your objectives while participating in the exercise? (e.g. testing of technology)		X		E. HADDAD	ARTTIC/ IGNIS
			Did you feel like the exercise provided you with enough opportunities to learn from?			X	N. DACLIN	IMT
			Did participation in the exercise meet your expectations?		X	X	J.M. DUMAZ	FIRE IN
			In what way could the exercise be adapted so that it will become more interesting for you?	X			A. BAG-NIEKWSKI	WSU
			Is your expertise and/or way of working compatible with the practice within the exercise?	X			E. BENSON	WMP
			Did the exercise offer sufficient opportunities for the identification of good practices?	X			J.L. GALA	UCL
			Were there any obstacles in observing and learning from the exercise?			X	R. VIDAL	ATRISC
			Were the objectives from each participant compatible? Did the scenario allow all parties to participate sufficiently? Did they not get in the way of each other?	X			K. VAN HEU-VERSWYN	VESTA
			Was the briefing of the practitioners clear, using a guideline?	X			B. L' HERITIER	SDIS30
			Was the debriefing activity clear? Did it provide an analysis of gaps or lacks in the practitioner activities?	X			M. KIEHL	UPB
			Is there a clear vision of the lessons learnt and what will be the next steps to move forward?	X			A. WIECZOREK	CNBOP
			Do you consider this type of exercise relevant for the collection of end user needs at the start of an EU project?			X	G. EFTYCHIDIS	KEMEA

			Do you consider this type of multidisciplinary exercise as an interesting setting for testing, as part of the technical development process in an EU project? What is most interesting: interaction with practitioners, the infrastructure, other?	X			M. CARESTIA	UNITOV
			Do you consider this type of multidisciplinary exercise as an interesting setting for a validation session as closure of the technical development process in an EU project? What is most interesting: interaction with practitioners, the infrastructure, other?			X	M. VAN GASTEREN	ITCL/ ECONFIDENCE
			Do you consider this type of multidisciplinary 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 with practitioners, the scenario, the setting, other?		X		S. UNGEMACH	PARCOURIR IGNIS
4.3	Policy recommendations	UCL	Through the involvement of external participants within the exercise, do you notice any aspects of training that transcend the national level?			X	N. DACLIN	IMT
			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?	X			D. AHN	FDDO
			Shall there be synergies between civil and military training practices? Why (not)? In what aspect?	X			M. NEMEC	CBRN COE
			During this Joint Activity what kind of "critical technological gap(s)/need(s)" could you - as practitioner/end-user /stakeholder - immediately identify which would justify the recommendation for a prompt new end-user-guided innovation project? or several projects?			X	R. VIDAL	ATRISC
4.4	Plan to pool resources	UMU	Do you see any opportunity to increase cost-efficiency?	X			P.M. RICCIO	ARMINES
			Did you witness each participant having a clear objective and task during the exercise?	X			N. RAULIN	SDIS77
			Would you be interested in observing/participating in the exercise if you had to pay a fee for attendance?		X		T. BERK ATALAY	METU

		Does the distance you have to travel holds you back to participate in (future) joint activities?			X	J.P. BLANC	ENSOSP

[i] https://www.effectivecommand.org/
[ii] https://cordis.europa.eu/project/rcn/194852_en.html
[iii] https://www.effectivecommand.org/