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Newsletter – April 2021

Welcome to this edition of the TERRIFFIC Newsletter. We have two important events coming up in the next few months – the Final Trial in France and a tabletop field exercise in Slovakia. This will be both an exciting and a crucial time for us, as we test the integrated system with operational CBRNe practitioners.

Then in September 2021, we will be holding our final Public Workshop, at which all of the results and successes of the project will be shared with CBRNe experts. Details will be published a bit nearer the time.

Thank you for continuing to support our project and of course you can always visit www.terriffic.eu for the latest news and announcements in between newsletters.

Ulisse Gendotti, Project Coordinator, Arktis Radiation Detectors

Semi Public Workshop

We were delighted that the scheduled Workshop was able to be held, despite the travel and meeting restrictions imposed as a result of the COVID pandemic. Taking place virtually on 11th December 2020, as the world looked towards the end of a very difficult year with hope as several vaccines were being developed, more than 40 CBRNe experts took part in the meeting.

Practitioners and experts were joined by members of the European Commission, industry and academia. All of the project partners presented on their specific areas of work, building together to tell the TERRIFFIC story to the audience. Interactive Q&A sessions were held throughout the meeting, enabling a wide range of questions to be answered.

The key topics covered in the programme included:

- Why is the TERRIFFIC project important and why is it different?
- 'Missions for the System and challenges to be faced'.
- A User Story. How the TERRIFFIC System can benefit the CBRNe community – Lt. Col. Denis Giordan, SDIS73
- How innovative detection technologies can deliver a step change in RNe response
  - gamma cameras technology
  - MODES van and detectors
- Fast access to threat information & collection by integration of advanced gamma camera sensors on coordinated drones & robots
  - UAV/UGV + camera/sensor
- More accurate calculation of 3D propagation model thanks to real-time acquisition with advanced sensors
  - Innovative plume modelling technology
- Improved operational situational awareness using augmented reality and incident management software
- Integration of technologies within the TERRIFFIC System
- Evaluation of the TERRIFFIC System

A further two day integration session was held on 29th and 30th March in Chambéry, France to allow the technical teams to test the various components of the TERRIFFIC System with real radiation sources. This proved to be extremely useful and one final integration session is planned before the Final Trial and Field Exercise.

Final Trial

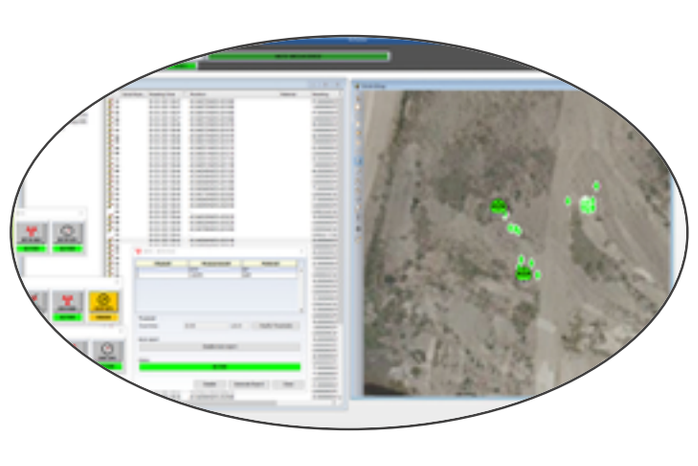
The Final Trial will be an important opportunity to evaluate the impact of the TERRIFFIC system with operational practitioners, who will first be fully trained in how to use the technology. Organised by project partner TL&A, the Final Trial will be held in Chambéry, France, hopefully in June or July, but this does depend on the state of the pandemic at that time.

CBRNe officers from the French fire service in the Savoie region, SDIS73, will put the system through its paces with challenging scenarios and using real sources. Lt. Col. Denis Gordon of SDIS73 has been involved throughout the project and we are very grateful to him and his team for their support and collaboration.

Field Exercise

After the Final Trial, a tabletop and field exercise will be held in the Slovak Republic, organised by project partners TL&A and ISEMI. The final timing is of course, like everything else, Covid-dependent, particularly as many practitioners are involved in managing the pandemic, but is likely to be in September.

The tabletop and field exercise will involve police, fire and civil protection CBRNe officers from at least five Member States and will serve as the final evaluation phase of the project, providing an excellent opportunity to test how effective and operationally beneficial the system is. Look out for a full report in an upcoming newsletter.



Infographic video showing how the data is collected from within the hot zone

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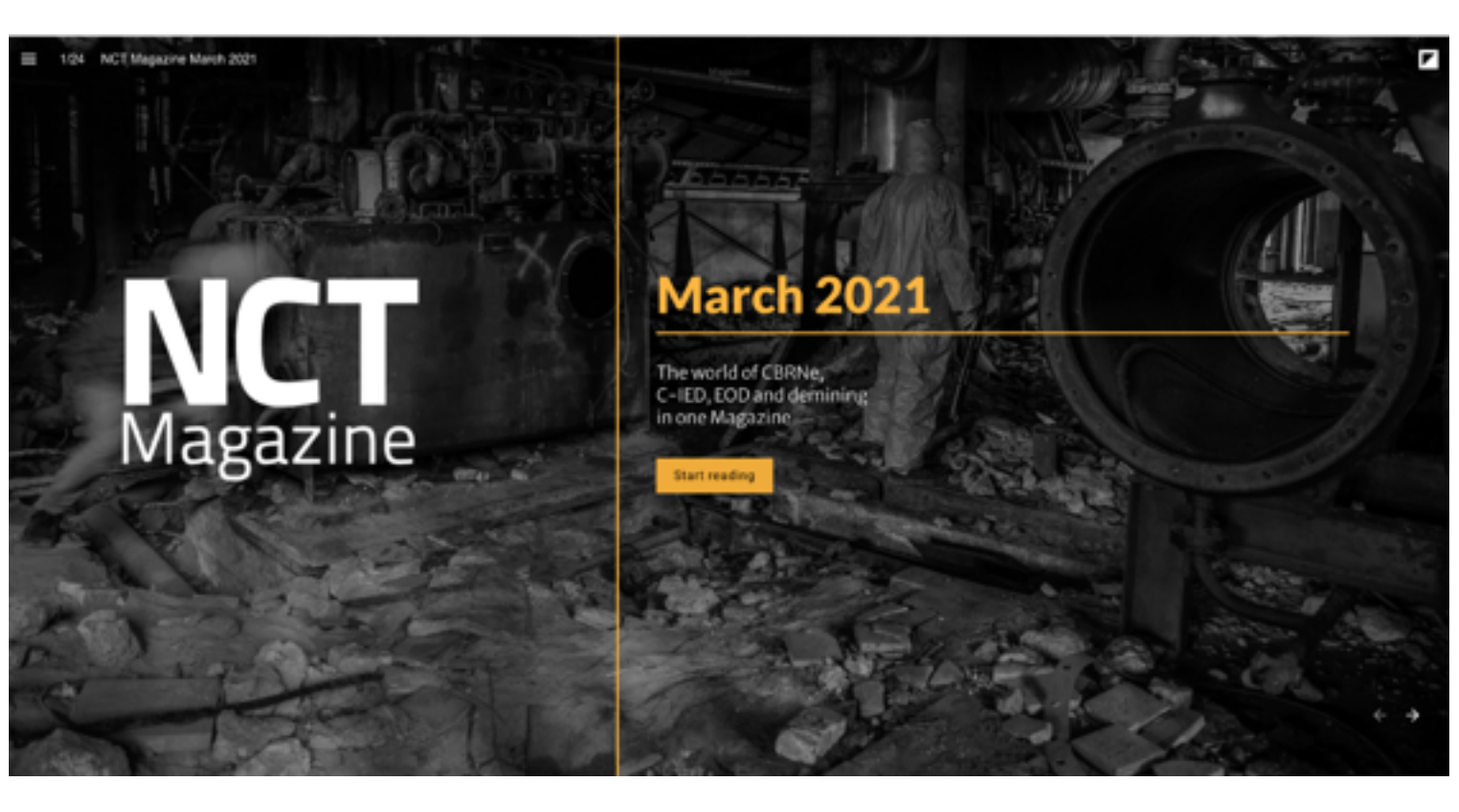

The excellent online publication, NCT Magazine, included a feature on the TERRIFFIC project, which looked at the importance to society of our Critical National Infrastructure and the role that the TERRIFFIC System could play to support CBRNe first responders. You can read the full article (page 17) by clicking on the link below.

https://nct-magazine.com/nct-magazine-march-2021/terriffic-project/

ISEM INSTITUTE
INTERNATIONAL SECURITY AND EMERGENCY MANAGEMENT INSTITUTE

The International Security and Emergency Management Institute (ISEMI) is a practitioner partner in TERRIFFIC and the Institute's director Dr Marian Kolencik has just had a paper published, entitled **Crime scene investigation in a CBRN context**.

This preprint paper describes the basic attributes of a crime scene investigation under CBRN conditions and recommends a global framework of procedures for investigators including the use of new technologies. It represents a basis for future Biological and Chemical Crime Scene Management Guidance Manual for Law Enforcement planned to be developed by international team of experts under the Umbrella of UNICRI.

https://www.researchgate.net/publication/350823604_Crime_scene_investigation_in_a_CBRN_context

Partner Profiles

CEA-List, located in Paris-Saclay and Grenoble, is a CEA research institute focusing on intelligent digital systems. It contributes to the competitiveness of businesses through innovation and technology transfer. Serving major economic and societal challenges, its R&D programmes focus on artificial intelligence, the factory of the future, cyber-physical systems and digital health.

A 50-person team from CEA-List is dedicated to the development of nuclear instrumentation for the main nuclear industry players (EDF, ORANO, Mirion Technologies, BERTIN Technologies, NUVIA…). It has a long and renowned expertise in various fields, addressing all nuclear and radiological applications (nuclear waste packages characterisation, decommissioning applications, development for current and future Nuclear Power Plants, Homeland Security, Defence).

As part of the TERRIFFIC project, the CEA-List institute is developing two state-of-the art instruments for improving the response of emergency operators during a radiological event:

- A miniaturised gamma camera, currently the world's smallest coded aperture gamma imager, developed to provide an accurate and fast localisation of radioactive hotspots in a scene. The very small and light form factor of this gamma camera allows its embedment on light robotic vectors. This enables a quick and exposition-free intervention, giving an image of source location and threat activity within a few seconds after deployment.
- A unique beta contamination probe, allowing measurement of beta contribution in a high and fluctuating gamma background. This measurement system provides contamination information and GNSS information on their location, sent every second to a command and control system, without any interference from surrounding gamma background.

Both of these technological breakthroughs, combined with other TERRIFFIC technological developments, significantly improve the capability of first responders to automatically gather quick, reliable and precious information on the radiological status of an event area, whilst also minimising the exposure of first responders.

Related CBRN Projects

INCLUDING is a five year project that seeks to provide comprehensive training in the RN security sector at the European level. It is creating a cluster of facilities and resources pursuing a Federated Model, in which individual components will cooperate together to optimise the exploitation of all the potentialities available in the Cluster. The project is organising a Joint Action each six months and five annual workshops. The last one was held online and the recording is available at this link: https://including-cluster.eu/movies.php.

The next joint action will take place in Palaskas (Athens, Greece), hosted by HMOD. Do you want to join us? Subscribe to our newsletter to find out more: https://including-cluster.eu.