



A WORKSHOP/MASTER CLASS, 30<sup>TH</sup> AUGUST 2017  
TRIAGE & TOXICITY

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**REGISTRATION : PLEASE [REGISTER HERE](#)**

**VENUE : [HOTEL MUTTERHAUS](#), Geschwister-Aufricht-Straße 1, 40489 Düsseldorf**

**ABOUT THE EVENT:**

What is the triage process and how does it change in the case of a CBRN event? How to behave in the hot zone? What is needed to get a full operational picture as a first responder ambulance crew or firefighter in full protective gear? How can this be enhanced by TOXI-triage technology? These are some of the issues which will be addressed during the day.

The Horizon 2020 Project TOXI-triage is working to develop accelerated situational awareness alongside traceable point of care diagnostics. Advances in remote piloted airborne systems (“drones”), breath analysis, tag and trace as well as machine learning are under development and review to provide “tools for detection traceability triage and individual monitoring of casualties”. An important, indeed vital, element of our work is listening to and consulting carefully with end-users and we are pleased to announce a workshop/master class on triage and toxicity. In this meeting we plan to:

- Share insights into the current way CBRN triage is performed from a medical as well as a blue light responder perspective taking different countries with distinct approaches into account.
- Give an overview of the technologies our partners already provide and develop within the scope of the project to improve the triage and the creation of an operational picture.
- Discuss the CBRN triage process as well as the data needed and collected and how to combine them in the best possible way.

The workshop/master class starts with expert practitioner presentations from Fire Department Mannheim, Deutsche Bundeswehr, National Ambulance Resilience Unit (NARU) and Fire Rescue Brigade of Moravian-Silesian Region (HZSMSK) to get an overview of triage and treatment from different perspectives. Furthermore there will be a technology expo, showing the latest developments in the TOXI-triage project. Perhaps the most important part of the exercise follows with table-top discussions about technology, simulation, field technical exercises (FTX) and triage where each delegate will rotate through different teams who will provide structured analysis and feedback. Each team will be supported by an expert who will chair, provoke and encourage contributions to ensure that all points-of-view, insights and ideas are heard and considered.

This workshop/master class will enable practitioners and planners to benchmark and align their expertise and experience and provide informed feedback and direction to the wider community of users as well as researchers and developers of next-generation technologies for CBRN crises management and response.

Enquires should be addressed to: Lois Child [L.E.Child@lboro.ac.uk](mailto:L.E.Child@lboro.ac.uk)



The triage process itself differs from country to country. Within the scope of the TOXI-triage project we have analysed distinct approaches and looked for similarities.

This will help us to find out how to integrate our technologies for detection, traceability, triage and individual monitoring for victims. Furthermore we focus on dual case applications that can be used in the field as well as the hospital. In this way the daily use of our technologies makes sure that they can be used best during a CBRN incident.

#### **ORGANISING COMMITTEE:**

##### **Prof Rainer Koch, Chair of Computer Application and Integration in Design and Planning (C.I.K.), Paderborn University**

Prof. Dr.-Ing. Rainer Koch is full Professor at the Paderborn University, Faculty of Mechanical Engineering, Research Group “Computer Application and Integration in Design and Planning” (C.I.K.). In the year 2000 he initiated a specific research focus on public safety and security, especially concerning the application of IT in this domain. With this regard several national and European research projects were and are conducted and coordinated. Rainer Koch is a volunteer fire officer since 1970 of the Dortmund Fire Department. Additionally he is appointed technical consultant for the Dortmund Fire Department and Deputy Head of IFR (Institute for Fire Fighting and Rescue Technology), the research division of Dortmund Fire Department.

##### **Deputy Chief Fire Officer Vladimir Vleck, PhD., Fire Rescue Brigade of Moravian-Silesian Region (HZSMSK)**

With years of experience in EU projects and as a firefighter Vladimir Vleck represents one of the end-users in TOXI-triage. He is the president of the Czech Association of Fire Officers (CAFO) and representative of CAFO in the Federation of the European Union Fire Officer Association (FEU). Furthermore he has been assigned to several missions on the EU Civil Protection Teams, as a team leader in 2011 and 2012. He has participated as a speaker and lecturer on many international conferences and trainings and has also great experience as a trainer and team leader.

##### **Prof C. L. Paul Thomas, Project Co-ordinator, TOXI-triage, Loughborough University**

Analytical Scientist and co-ordinator for the H2020 Project TOXI-triage. He leads research in ion mobility spectrometry and non-invasive diagnostics with specific emphasis on emergency medicine applications. He has led 30 National, EU and Industry funded projects with distinguished co-ordination of multi-national experiments in emergency diagnostics and detection for urban search and rescue applications.

## OUTLINE OF THE DAY'S PROGRAMME

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Time start	Time finish	Title
11:00	11:30	Registration
11:30	11:45	<b>Welcome Address</b> Prof Rainer Koch, Paderborn University
11:45	11:50	<b>Aims and objectives for the day</b> Prof C. L. Paul Thomas, Loughborough University
11:50	12:30	<b>A clinician's perspective on CBRN triage</b> Dirk Steinritz, Institut für Pharmakologie und Toxikologie der Bundeswehr, Munich
12:30	13:00	<b>Treatment in the hot zone (1) – an ambulance perspective</b> Christian Cooper, NARU
13:00	14:00	Lunch & technology EXPO
14:00	14:30	<b>Treatment in the hot zone (2)</b> Jürgen Schreiber, Secretary General - German Society of Disaster Medicine (DGKM); CEO NOKRIMA - Emergency & Crisis Management Consultancy
14:30	15:00	<b>Triage Needs and Priorities</b> Vladimir Vlcek, HZSMSK, Czech Republic
15:00	15:30	Tea/Coffee & technology EXPO
15:00	17:30	<b>Structured discussion and reflection</b> Prof C. L. Paul Thomas, TOXI-triage coordinator, Loughborough University
17:30	17:45	<b>Plenary review</b>
17:45	19:00	<b>Summary and farewell</b>
19:00		<b>Informal discussion and dinner</b>

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**INTEGRATED AND ADAPTIVE RESPONSES TO TOXIC EMERGENCIES FOR RAPID TRIAGE**

TOXI-triage addresses the operational, technological, ethical and societal dimensions of CBRN response and recovery, and importantly the economic base from which sustainable CBRN and multiuse systems are derived.

The approach defines a concept of operations that envisages accelerated delivery of situational awareness through an ensemble of embedded sensors, drones, standoff detectors, artificial intelligence for processing sensor signals and web-traffic from social media, and centralised command and control. Dynamic mapping of casualties and medical treatment by real time tracing. Two field exercises are intended to test and verify the operational attributes of the systems.



COOPERATION

 www.lboro.ac.uk	 www.ed.ac.uk	 www.helsinki.fi
 www.ntua.gr	 www.uni-hannover.de	 www.ous-hf.no
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- ICT
- Situational Awareness
- End User
- Triage
- Clinical



**TOXI TRIAGE** | [www.toxi-triage.eu](http://www.toxi-triage.eu) | Tools for detection, traceability, triage and individual monitoring of victims



- ▶ Information and communication technology
- ▶ Situational Awareness
- ▶ End User
- ▶ Triage
- ▶ Clinical



**1**  
**Headlines**

**Traceability by design:** End-to-end mapping of casualty journey, End-to-end mapping of end user interventions

**Environmental monitoring:** Toxic chemicals and radioactive compounds on surfaces and in the air, fast sampling methods with ion mobility spectrometry (IMS), gas detectors, hyperspectral imaging, (R)- and (N)-detectors

**Aptamer based biosensing**

**Clinical trials:** Metabolomics (organo-phosphorous, toxic alcohol and radiation injuries), GC-IMS

**CBRN toolkit and data base** designated by CWA laboratory

**Field trials:** Rigorous field trials through exercises "Focus" and "Disperse"

**Integrated approach to cross-cultural communication, security and ethics**

**Managing and exploiting the semantic web**

**Pathways to economic impact** through multi-use technologies

**2**  
**Objectives**

**Accelerated delivery of situational awareness**

**Command and control** with secure, dynamic and seamless communication

**Traceable point-of-care diagnostic tests** with integrated casualty tracking

**Comprehensive field toolbox** for CBRN threats for end users

**Protocol for the registration of biomarkers of injury** from CBRN poisoning

**Establish a harmonized European framework** for ethical and accountable civilian CBRN operations

**Establish a community of commerce** and deliver a commercial vision

**3**  
**Technologies**

**Airborne and hand-held detection of CBRN release and contamination:** IMS, (R)- and (N)-detection, Hyperspectral imaging

**Non-invasive assessment of metabolite markers of injury:** GC-IMS

**Information and communication technologies:** Traceability by design, Artificial intelligence for sensor and web-traffic data processing, Wireless traceability of casualties, Dynamic mapping, including medical care

**DETECTION**

**TRACEABILITY**

**TRIAGE**

**MONITORING**



**4**

**Research**

**Integrated environmental and stand-off hazard designation**

**Rapid non-invasive assessment of exposure/injury through monitoring**

**Metabolic markers of injury, aptamer-based biosensing**

**Casualty-to-discharge system integration**

**Traceability by design**

**Exploiting the semantic web**