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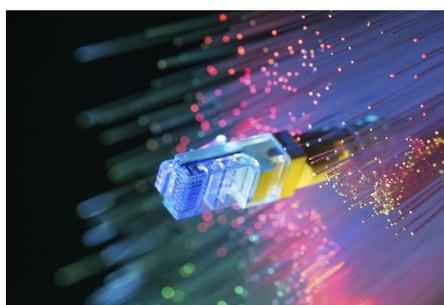
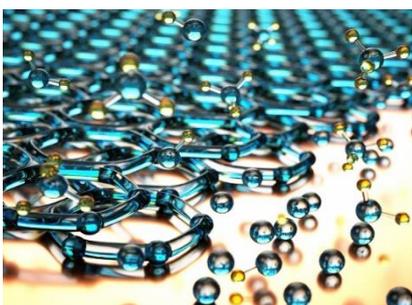
The NATO Science for Peace and Security Programme

NATO Emerging Security Challenges Division
Science for Peace and Security (SPS) Programme

“netwoRk for aLerting And managing publiC safeTy and resilience – REACT”

Official launch

Wednesday, 15 July 2020, 15:00-17:30 (CEST) – Videoconference





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The NATO Science for Peace and Security Programme

AGENDA

Join Google Meet meet.google.com/jte-riiq-rmb or by phone +1 432-827-0438 (PIN: 339816470)

or in person according to Covid-19 containment rules by reserving a seat at auditorium “Danilo Mainardi” –
Scientific Campus – Via Torino 155, Mestre Cà Foscari University of Venice – Cinsa operational headquarters

Moderator: Eyup Turmus, SPS Advisor and Programme Manager, NATO

3:00PM	Welcome speech	Prof. Michele Bugliesi - Rector of Ca' Foscari University Venice Dr. Antonio Missiroli – Assistant Secretary General for Emerging Security Challenges, NATO Interventions by Delegations at NATO- Italy, Georgia, USA
3:15PM	NATO Science for Peace and Security Programme: a common commitment and global challenges	Prof. Nelson Marmiroli – Cinsa Director & past SPS.MYP NPD Dr. Deniz Beten – Senior SPS and Partnership Cooperation Advisor, NATO Dr. Eyup Turmus – SPS Advisor and Programme Manager, NATO
3:30PM	Introduction to objectives and activities of SPS MYP REACT	Prof. Andrea Gambaro – Cinsa Venice Local Unit & NPD
3:45PM	PPD REACT	Prof. Ketevan Kapatadze - ILYA University, Georgia
4:00PM	Co-director REACT	Prof. David Ebert - Oklahoma University, USA
4:15PM	Project plan presentation and REACT working groups: from kick-off meeting to four milestones	Dott. Marco Benedetti – Cinsa Direction & International diplomacy and cooperation Dott. Marco Roman – Cinsa Venice Local Unit & REACT project leader Prof. Ketevan Kapatadze - Ilya University, Georgia Prof. David Ebert - Oklahoma University, USA Magg. Giuseppe Damato - CETLI, Ministry of Defence, ITALY Dr. Valerian Aptsiauri - Ministry of Defense, GEORGIA
5:00PM	Debate final remarks	Prof. Andrea Torsello - Ca' Foscari University & Vice Rector for Research Dr. Deniz Beten – Senior SPS and Partnership Cooperation Advisor, NATO Prof. Andrea Gambaro – Cinsa Venice Local Unit & NPD

PROJECT OVERVIEW

Description

This project responds to the need for the rapid and effective management of scenarios immediately following a terrorist attack with chemical and biological (CB) agents, and to control the diffusion of contamination in the short to long-term. The project's overall strategic objective is to enhance interoperability and increase security between NATO and partner nations through the development of an interactive, multilingual, multi-sourced, real-time platform. REACT contributes to NATO's commitment to "further develop NATO's capacity to defend against the threat of chemical, biological and radiological nuclear weapons" as laid out in the Strategic Concept (2010). This project will also contribute to NATO's objective of projecting stability in the South Caucasus region through partnership and cooperation.

Goals

REACT aims to develop an innovative platform for the rapid and effective management of scenarios immediately following a terrorist attack with chemical and biological agents. The platform will be built on two main analysis systems, to monitor and interact with CBRN context information. The first is an environmental physico-chemical sensing network. It will be developed as a flexible, hierarchical network of multi-sensor stations to be easily applied and adapted at limited installation and operational costs, and will permanently monitor wide areas. The second is a social sensing machine-learning-based approach. REACT will build on the Social Media Analytics and Reporting Tool (SMART), and integrate social network data and environmental parameters on CB attacks to increase first responders' situational awareness.

REACT will be designed as a permanent alarm system and platform, which will apply threshold criteria to both outputs of the integrated data and their uncertainties. The immediate detection of anomalies, and the visualization of their location through intelligent mapping will provide instantly usable references for immediate response to protect populations and environments. The platform's architecture will generate and allow the visualization of real-time data, which can be used to track and interpret the evolution of a CB attack, and to evaluate the effectiveness of first-response interventions.

Expected Results

This project intends to deliver environmental sensing networks in Italy and Georgia; information and communication tools for the elaboration and visualization of social sensing data; the REACT platform; dedicated protocols to develop, adapt and manage the platform over the long-term; and training materials and procedures for technology transfer to end-users.

REACT's outputs will provide public authorities with all necessary tools to implement, maintain, and possibly enhance a permanent, low-cost and intelligent alarm system for CB attacks and incidents. The platform will enhance capabilities to control the diffusion of CB effects in a specific area in the short to long-term, and the efficacy of remediation strategies. This project will increase the security of citizens and first responders in urban areas of high population density who are at risk of CB threats.

Building on joint applied research with concrete deliverables for end-users, REACT proposes an integrative collaboration of co-directors and stakeholders, while building a network of experts and young scientists. The project's results may influence future security policies and promote the standardization of actions protocols at the international level.



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PARTICIPATING INSTITUTIONS

**National
Interuniversity
Consortium for
Environmental
Sciences
(CINSA), Italy**

The National Interuniversity Consortium for Environmental Sciences (CINSA) is one of 61 Italian consortia officially recognized by the Ministry of Education to respond specifically to issues of environmental sciences. The eleven universities of Bari, Bologna, Brescia, Camerino, Firenze, L'Aquila, Milan, Palermo, Parma, Turin and Venice conceived of and created this organization capable of responding to the most advanced needs of the methodological and interdisciplinary study of environmental systems. CINSA is comprised of a network of over 500 scholars and 11 operative units. Thanks to the interdisciplinary and international work of CINSA, between 2003 and 2009, there was significant original scientific collaboration that allowed the design and implementation of various projects in environmental and food security within the framework of NATO's Science for Peace and Security Programme.

**Ilia State
University,
Georgia**

Ilia State University (ISU) was founded in 2006 as a result of a merger of six different academic institutions with long and varied histories. Currently, it is one of the leading research and educational institutions in Georgia. Representing a union of students and professors, ISU is a multifunctional educational and research institution offering a common space for academic and professional education and research with the joint efforts of its students, professors, teachers and researchers. The ISU vision as explained in the Strategy for the years 2018-2024 determines the university's positioning and the Strategy outcome. By the year 2024 ISU will be a leading and rapidly advancing university in Georgia and the entire region using innovative approaches for creating a solid foundation for scientific and technological progress, high-quality academic activities and public welfare.

**Oklahoma
University, USA**

Founded in 1890, the University of Oklahoma is an institution that embodies the ideals of the American public research university. We ensure that the state of Oklahoma has a top-tier research university, driving innovation and opportunity in a competitive, 21st-century world. We prepare students for citizenship and for life in a global society through our emphasis on student success, faculty development, and community engagement. OU is among the nation's top 130 doctoral degree granting institutes. OU is a Carnegie Foundation award winning school maintaining classification in the highest tier of research universities in the nation. The OU-Norman campus received \$255.6 million in research awards in fiscal year 2020 and the university is notable for fostering partnerships between academic programs and governmental and private industries. Major research centers established on the Norman campus include the Data Science Institute for Societal Challenges, the Advanced Radar Research Center, the US Department of the Interior South-Central Climate Adaptation Science Center, the Center for Energy, Security and Society (jointly with Sandia National Laboratory), and on the Tulsa campus, the Early Childhood Education Institute.

**Ministry of
Defense,
Brigade of
Protection from
CBRN Attacks,
Georgia**

The Brigade of Protection from Radiation, Chemical and Biological attack, belongs to the Eastern Command of the Defense Forces, Ministry of Defense. The Center operates within the whole national territory of Georgia, with particular attention to sensitive sites such as nuclear industries, former soviet military and scientific small facilities, storage areas for radioactive and chemical substances, facilities of biological facilities. The Brigade operates in the field in the framework of the national strategic plan for security measures against CBRN risks, including permanent State control and monitoring activities. Particular attention is devoted to the transit function of Georgia and adjacency to conflict areas, entailing the risk of illicit import of CBRN materials, as well as using the territory of the country as a transit, especially considering the hostile activities carried out in Syria and Iraq, rising security and intelligence concerns related to Islamist terrorist CBRN attacks.



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NBC Joint Technical Logistic Centre (CETLI), Italy

The NBC Joint Technical Logistic Centre (CETLI) of Civitavecchia is an Institution belonging to the Army Logistic Command - Ministry of the Defense, and is the only Armed Force in Italy with specific competence for the identification, defusing and disposal of explosive device with NBC loading (particularly chemical) over the national territory. The CETLI is operatively responsible for technical surveys, defined Explosive Ordnance Reconnaissance (EOR), involving the investigation, detection, location, marking, initial identification and reporting of suspected unexploded explosive ordnance loaded with potential chemical agents, in order to determine further defusing actions. The recognition activity is conducted according to specific protocols able to respond to the requirements fixed by the NATO and relative to the processing of information, and the consequent evaluations, useful for the correct planning and conducting of operations before, during and after a chemical event. The Centre provides specialized units dealing with the delicate and complex activities of recovery and decontamination of personnel and vehicles involved in chemical accidents.

Visual Analytics for Command, Control and Interoperability Center (VACCINE), USA

The Visual Analytics for Command, Control, and Interoperability Environments Center (VACCINE) was established by the U.S. Department of Homeland Security on July 1, 2009. VACCINE's mission is dedicated to creating methods and tools, to analyze and manage vast amounts of information for all mission areas of homeland security. VACCINE accomplishes its mission through an integrated program of research, education and outreach, spanning the disciplines of visualization and computer graphics, engineering, computer science, geographic information systems, cognitive psychology, information technology, and emergency management and public safety. VACCINE is an international center with the overall management and research component led by Purdue University. We focus on the research, development, and deployment of interactive visual analytic environments for communicating and disseminating information, and for deriving insight from the massive homeland security data deluge. VACCINE researches and develops tools to help homeland security personnel, responders, and decision makers make sense of the sea of text, sensor, audio, and video data by developing powerful analytical tools and interactive visual decision making environments that enable quick, effective decisions, as well as effective actions and responses based on available resources.



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ABOUT THE SCIENCE FOR PEACE AND SECURITY (SPS) PROGRAMME

The NATO Science for Peace and Security (SPS) Programme has been contributing to the core goals of the Alliance for more than six decades. It is one of the largest and most important NATO partnership programmes addressing 21st century security challenges, particularly cyber defence, advanced technologies, counter-terrorism, energy security, and defence against chemical, biological, radiological and nuclear agents. As part of NATO's Emerging Security Challenges (ESC) Division, the SPS Programme promotes practical scientific cooperation and capacity-building between researchers, experts and officials from NATO and partner countries. By supporting security-relevant activities in the form of grants for multi-year projects, advanced research workshops, advanced training courses, and advanced study institutes, SPS fosters the creation and expansion of networks of international experts, the sharing of best practices, and the exchange of expertise and know-how among scientific communities in NATO and partner countries.

The Programme involves partners across all of NATO's partnership frameworks (including the Partnership for Peace, the Mediterranean Dialogue, the Istanbul Cooperation Initiatives and cooperations with partners across the globe), through engagements with approximately 2000 experts every year. The Programme also invests in the development of the next generations of researchers, by actively supporting the participation and training of young scientists in its activities. As a testament to the scientific excellence supported by SPS, 21 Nobel Laureates have been involved in its activities since its creation.

The NATO Science for Peace and Security Programme also, provides the Alliance with separate, non-military communication channels by bringing together experts from NATO and partner countries, often in situations or regions where other forms of dialogue more focused on defence and security are difficult to establish. Accordingly, the Programme enables NATO to become involved in such regions, often serving as the first concrete link between NATO and new partners, based on partners' request for cooperation.

CONTACTS

For more information, please visit the SPS website at www.nato.int/science and follow us on Twitter at @NATO_SPS

For questions about the SPS Programme, please contact: sps.info@hq.nato.int

For media inquiries, please contact: MOC@hq.nato.int.