



# The NATO Science for Peace and Security Programme

## ADVANCED RESEARCH WORKSHOP ON EXPLOSIVES DETECTION

Florence, Italy | 17-18th October 2018

### PROGRAM

#### TUESDAY | 16<sup>TH</sup> October, 2018

18.00-19.00 HOTEL DONATELLO  
Registration desk opening , Workshop Kit delivery and presentations upload

#### DAY 1 | 17<sup>TH</sup> October, 2018

08.30-09.00 UNIVERSITY OF FLORENCE Registration

09.00-09.20 **Introductory Remarks**  
Lorenzo Capineri, *University of Florence, Department of Information Engineering , Italy*  
Eyüp Kuntay Turmuş, *NATO SPS Advisor and Programme Manager*

09.20 -13.00 **MORNING SESSION**  
Moderator: Eyüp Kuntay Turmuş

09.20-09.40 **Opening Address**  
Robert Weaver, *Deputy Assistant General for NATO Emerging Security Challenges Division*

09.40-10.00 **Overview of SPS Programme and Explosive Detection as a Key Priority**  
Eyüp Kuntay Turmuş, *NATO SPS Advisor and Programme Manager*

10.00-10.20 **Holographic and Impulse Subsurface Radar for Landmine and IED Detection (G-5014)**  
Lorenzo Capineri, *University of Florence*  
Gennadiy Pochanin, *Usikov Institute for Radiophysics and Electronics of the NAS of Ukraine*  
Tim Bechtel, *Franklin & Marshall College, Department of Earth and Environment, USA*

10.20-10.40 **Explosives Detection: Growing Threat and New Approaches**  
Pierre Charrue, *SPS Independent Scientific Evaluation Group Member, France*

10.40-11.00 *Coffee break / Poster session*

11.00-11.20 **Advanced Technology for Landmine Detection**  
Tor-Sverre Lande, *Dept. of Informatics, University of Oslo, Norway*

11.20-11.40 **Engineering silicon carbide for enhanced borders and ports security (E-SiCure) (G-5215)**  
Ivana Capan, *Rudjer Boskovic Institute (RBI), Croatia*

11.40-12.00 **Explosive Trace Detection for Standex (EXTRAS) (G-5526)**  
Antonio Palucci, *Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) , Italy*

12.00-12.30 **Q&A session**  
Moderator: Tim Bechtel

12.30-12.50 **Speech from the Rector of the University of Florence**  
Luigi Dei, *University of Florence*

12.50-14.00 *Lunch*



# The NATO Science for Peace and Security Programme

14.00 -17.00

## AFTERNOON SESSION

Moderator: Eyüp Kuntay Turmuş

14.00-15.00

### TECHNOLOGY DEMONSTRATIONS

Holographic and Impulse Subsurface Radar for Landmine and IED Detection  
Project: G-5014 | Lorenzo Capineri

Engineering silicon carbide for enhanced borders and ports security (E-SiCure)  
Project: G-5215 | Ivana Capan

15.00-15.20

Portable Sensors for Unmanned Explosive Detection (G-5423)

Claudio Ferrari, *Institute of Materials for Electronics and Magnetism National Research Council (IMEM-CNR), Italy*  
Nahida Musayeva, *Institute of Physics, Azerbaijan National Academy of Science, Azerbaijan*

15.20-15.40

Standoff Coherent Detection of Warfare Chemicals via Photoacoustic Spectroscopy (G-5500)

Seydi Yavas, *Bogazici University Physics Department, Turkey*

15.40-16.00

Coffee Break / Poster session

16.00-16.20

Ground penetrating radar attached to a Hexacopter for Automatic Mine Detection (G-5208)

Dušan Gleich, *University of Maribor, Faculty of Electrical Engineering and Computer Science, Slovenia*  
Venceslav Kafedziski, *University SS Cyril and Methodius in Skopje, the former Yugoslav Republic of Macedonia (1)*

16.20-16.40

GPR Research for Military Search

Daniela Deiana, *Electronic Defence, TNO Defence, Safety and Security, The Netherland*

16.40-17.00

Q&A Session and Wrap-up

Moderator: Tim Bechtel

## DAY 2 | 18<sup>TH</sup> October, 2018

09.00 -12.50

## MORNING SESSION

Moderator: Lorenzo Capineri

09.00-09.20

Biological Method (Bees) for Explosive Detection (G-5355)

Sanja Vakula, *Croatian mine action centre - Centre for Testing, Development and Training (HCR-CTRO), Croatia*  
Zdenka Babić, *University of Banja Luka Research Fellow, Bosnia and Herzegovina*  
Ross Gillanders, *University of St Andrew, Scotland*

09.20-09.40

Magnetic resonance & MW detection of improvised explosive and illicit materials (G-5005)

Bulat Rameev, *Gebze Technical University, Department of Physics, Turkey*  
Sergey Tarapov, *O.Ya. Usikov Institute for Radio-physics and Electronics (IRE), Ukraine*  
Bektaş Çolak, *Alanya Alaaddin Keykubat University, Turkey*

09.40-10.00

Comprehensive Package for strengthening Jordanian C-IED defence capabilities (G-5387)

Tabi Levente, *C-IED Center Of Excellence, Spain*  
Eduardo Cazorla Sarabia *C-IED Center Of Excellence, Spain*

10.00-10.20

Development of New Chemical Sensors and Optical Technologies for Fast and Sensitive Detection of Improvised Explosives (G-5536)

Tomas Torroba Perez, *University of Burgos, Spain*

10.20-11.00

Implementation of a Terahertz Imaging and Detection System (G-5396)

Jean-Louis Coutaz, *Université Savoie Mont-Blanc, France*  
Mohamed Lazoul, *Ecole Militaire Polytechnique, Algeria*

11.00- 11.20

Coffee Break / Poster Session

(1) Turkey recognizes the Republic of Macedonia with its constitutional name.



# The NATO Science for Peace and Security Programme

- 11.20-11.40 Technology of High-Selective Imprinted Nanoantenna for Explosives Detection (G-5361)  
Volodymyr Chegel, V.E. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine  
Juan Pastor Martinez, University of Valencia, Spain
- 11.40-12.00 Microwave Imaging Curtain (G-5395)  
Dmytro Tatyanko, IRE NAS, Ukraine
- 12.00-12.20 ALIS Dual sensor for Humanitarian Demining  
Motoyuki Sato, Institution Tohoku University, Japan
- 12.20-12.40 Development of mine and IED recognition system based on ultrawideband technology (G-5217)  
Iurii Voitenko, Norwegian University of Science and Technology (NTNU), Norway
- 12.40-13.00 Q&A Session  
Moderator: Tim Bechtel
- 13.00-14.00 Lunch Break
- 14.00-15.00 TECHNOLOGY DEMONSTRATIONS
- ALIS Dual sensor for Humanitarian Demining  
Motoyuki Sato, Institution Tohoku University, Japan
- Development of mine and IED recognition system based on ultrawideband technology  
Project: G-5217 | Iurii Voitenko
- 15.00-16.00 Round Table Discussion:
- Contributions of SPS Programme to the Field of Explosives Detection;
  - Recommendations for future SPS Activities;
  - Call for Proposals
- 15.00-15.30 Wrap-up and Conclusions

## USEFUL INFORMATION

### REGISTRATION OPENING

- Registration
- Presentations upload
- Workshop kit

Registration Desk at **HOTEL DONATELLO** on TUESDAY, 16th October 2018, from 18.00 to 19.00

### THE VENUE

University of Florence | Department of Information Engineering | "Sala del Caminetto", Via Santa Marta 3 - Firenze

### HOW TO REACH HOTEL DONATELLO

**BY TRAIN** from Santa Maria Novella railway station: It's an 8 minute walk. Exit the station towards Piazza Alinari and walk along via Nazionale. Follow this street straight ahead until you arrive at Piazza dell'Indipendenza. Cross the square and you will arrive at the Hotel Donatello, number 23. You can reach the hotel also by bus or by taxi.

### BY CAR:

Hotel Donatello is located 8 minutes on foot from the railway station of Santa Maria Novella, in the city center. Under the railway station, there is a wide and well organized, though unattended, car park.

**From FLORENCE AIRPORT:** it's a 20 min drive by taxi

### HOW TO REACH THE VENUE FROM HOTEL DONATELLO | SHUTTLE BUS TIMETABLE

Wednesday, October 17 <sup>th</sup> 2018	Hotel Donatello > The Venue	08.00
	The Venue > Hotel Donatello	17.20
Thursday, October 18 <sup>th</sup> 2018	Hotel Donatello > The Venue	08.30
	The Venue > Hotel Donatello	16.45