NORTH ATLANTIC TREATY ORGANISATION

SCIENCE AND TECHNOLOGY ORGANISATION
SPECIALISTS' MEETING
SET- 265

on Compressive Sensing applications for Radar/ESM and EO/IR imaging

organized by the

Sensors and Electronics Technology Panel

to be held in

Salamanca, (ESP) on 6-7 May 2019

This Specialists' Meeting is **NATO UNCLASSIFIED open to Australia, Sweden, Switzerland, Finland**

No conference fee for presenters and participants

Topics to be covered:

The intention of this Specialist Meeting will be to present all relevant aspects of Compressive Sensing applied to radar, ESM and EO/IR systems.
A non-exhaustive list of relevant topics follows:

CS radar/ESM and EO/IR systems and applications:

- High resolution imaging;
- SAR GMTI and STAP;
- Direction of Arrival (DOA) estimation, tomography and beamforming;
- System Assessment;
- Performance Modeling;
- Identification & Recognition
- ESM;
- Detection, estimation, tracking, and classification;
- Conceptual Design;
- Novel architectures and algorithm design;
- Results using experimental and real data.
- Novel architecture, algorithm design and efficient implementation

INTRODUCTION

General Information

A Specialists' Meeting aims at promoting exchange of state-of-the-art knowledge among an audience of specialists on an important scientific topic to enhance the capability of the NATO S&T community to respond adequately to the NATO requirements.

The authors will be invited by the Programme Committee that will select papers, based on submitted abstracts that are considered suitable for presentation at the Meeting. The papers and presentations will be delivered only in English.

The audience will include experts from NATO and partner countries The respective National Coordinators will validate the participation.

S&T Organization in NATO

Science & Technology (S&T) in the NATO context is defined as the selective and rigorous generation and application of state-of-the-art, validated knowledge for defence and security purposes. S&T activities embrace scientific research, technology development, transition, application and field-testing, experimentation and a range of related scientific activities that include systems engineering, operational research and analysis, synthesis, integration and validation of knowledge derived through the scientific method.

The mission of the NATO STO is to help position the Nations' and NATO's S&T investments as a strategic enabler of the knowledge and technology advantage for the defence and security posture of NATO Nations and partner Nations, by:

- Conducting and promoting S&T activities that augment and leverage the capabilities and programmes of the Alliance, of the NATO Nations and the partner Nations, in support of NATO's objectives;
- Contributing to NATO's ability to enable and influence security- and defence-related capability development and threat mitigation in NATO Nations and partner Nations, in accordance with NATO policies;
- Supporting decision-making in the NATO Nations and NATO.

The Sensors & Electronics Technology Panel

The Sensors and Electronics Technology (SET) Panel is one of the seven Panels under the STB.

The mission of SET Panel is to foster co-operative research, the exchange of information and the advancement of science and technology among the NATO Nations in the field of sensors and electronics for defence and security. The SET Panel addresses electronic technologies as well as passive and active sensors as they pertain to Reconnaissance, Surveillance and Target Acquisition (RSTA), Electronic Warfare (EW), communications and navigation, and the enhancement of sensor capabilities through multi-sensor integration and fusion.

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SET-265 INFORMATION

Background

The desire for high quality, high performance radar and EO/IR products is particularly strong in military applications such as target acquisition at long ranges and over large search areas. Compressive Sensing (CS) is an emerging technology which has the potential to dramatically reduce the system cost and/or data volume while delivering the same or greater performance as a conventional design. For defense applications, CS holds the promise to gather more information at greater ranges to allow the war fighter to react faster to threats and gain a tactical advantage. However, the benefits of CS do not come without compromise. Although CS is a relatively young technology, many results have been achieved in recent years that must be reviewed and analysed to ensure that the overall operational benefits are realised.

Objectives

This Specialists' Meeting aims to bring together experts in the fields of radar, ESM, EO/IR and Compressive Sensing to establish the current state-of-the-art in Compressive Sensing for military applications and to discuss and identify future directions for collaborative research and development in this area that will ensure timely realisation of the operational benefits that Compressive Sensing based sensors can provide.

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Keynote speakers

Prof. Richard BARANIUK, (USA)

Prof. Dr. Ir. Joachim ENDER, (DEU)

Submission Deadlines:

- US Abstract submission : 07 Jan 2019
- Abstracts submission: 11 Jan, 2019
- Acceptance notification: 17 Jan 2019
- US Paper submission: 05 April 2019
- Final paper submission: 19 Apr 2019

PRELIMINARY INFORMATION TO AUTHORS

All authors that wish to be invited for presenting at the meeting need to send an abstract as described below.

The authors selected by the Programme Committee will receive the Instruction for Authors package from SET Panel office concerning the details of the paper/presentation, publication, etc.

Please note that the authors of papers selected for presentation will not be financially supported by this organization. You are fully responsible for your own hotel and travel.

Each speaker will normally have 20 minutes for presentation and 5 minutes for discussions.

ABSTRACTS
All abstracts of papers must be submitted by the deadline set in the preliminary schedule.

Non-US authors must send the abstract by e-mail as PDF to both:

SET- 265 Chair Dr. Laura ANITORI Laura.anitori@tno.nl

SET Panel Assistant- ewelina.glinska-lewis@cso.nato.int

US authors and non US Citizen affiliated with US organization please see Note below.

The abstracts (length :200-500 words) should contain the following information:

- SET-265 Specialist Meeting **on "Compressive Sensing applications for Radar/ESM and EO/IR imaging**
- TITLE OF ABSTRACT/PAPER
- Name of Author/Co-Author(s) Company/Affiliation, complete mailing addressees, telephone, Fax and e-mail addresses
- CONTENT - scope of the contribution, relevance to the meeting, rationale, conclusions

NOTE
SPECIAL NOTICE FOR US AUTHORS AND NON US CITIZENS AFFILIATED WITH US ORGANIZATIONS

Abstracts of Papers from the U.S. must be sent ONLY to the following POC:

NATO CSO US National Coordinator OASD(R&E)/International Technology Programs - 4800 Mark Center Drive Alexandria VA 22350-3600

Country: United States

Phone: +1-571-372-6538/9Fax: +1 571-372-6471

EMail: osd.pentagon.ousd-atl.mbx.usnatcor@mail.mil

All US Authors must include the following statement in a covering letter:

- The work described in this abstract is cleared for presentation to NATO audiences
- The abstract is technically correct
- If work is sponsored by a government agency, identify the organization and attest that the organization is aware of submission
- The abstract is NATO Unclassified; and
- The abstract does not violate any proprietary rights.

requirements, U.S. authors are encouraged to contact the US POC as early as possible. Delays in meeting POC deadlines will impact the timely submission of your abstract.

NOTE: 1. Only complete packages (abstract plus all items listed above) will be accepted by the US P.O.C.
2. After review and approval, the US POC will forward all US abstracts with the Details of Authors Form to the SET Panel Assistant. All US abstracts must be received directly from the US POC. US abstracts will not be accepted directly from authors

Enrolment must be made via internet only at https://events.sto.nato.int
Note: if you enrolled for other RTO-STO activities in the past, please use the same e-mail address as previously. If your e-mail address has changed, please inform the STO-CSO contact before enrolling.

Enrolment deadline- 19 April 2019

If you are unable to enrol via the internet, please contact the SET PANEL Assistant : ewelina.glinska-lewis@cso.nato.int

NATO Collaboration Support Office (CSO) – SET Panel

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