



## NATO - Specialist Meeting



- 12-13 Mai 2014
- Tallinn, Estonia

The Specialist Meeting is open to citizens of NATO Nations.

No conference fee for presenters and participants.

SET-213



Specialist Meeting:  
Compressive Sensing for  
Radar/SAR and EO/IR imaging

### Background

Compressive sensing (CS) techniques offer a well established framework for the reconstruction of sparse signals from a reduced number of samples. For instance, modern radar systems operate with high bandwidths - demanding high sample rates according to the Shannon-Nyquist theorem - and a huge number of single elements for phased array antennas. Often only a small amount of target parameters is the final output, raising the question, whether CS could be a good means to reduce data size, complexity, weight, power consumption and costs of radar systems.

### Objectives

This NATO S&T Specialist Meeting brings together experts of Compressive Sensing and military systems to explore the state-of-the-art in development of CS techniques in the different nations and for the different applications and to turn out its advantages or possible drawbacks compared to classical solutions.

### Topics to be covered:

The intention of this Specialist Meeting is to present all relevant aspects of Compressive Sensing in the area of Radar/SAR and EO/IR Imaging.

### Topics included, but not limited to:

- CS for Radar / synthetic aperture radar (SAR)
- CS for tomographic SAR (3D/4D-SAR)
- CS for active and passive airspace surveillance
- CS for moving target detection
- CS for MIMO architectures
- CS for EO/IR sensor
- CS for feature extraction
- CS for imaging systems
- CS for enhancing performance of existing systems
- Hardware aspects of CS
- Mathematical aspects of CS in imaging systems

### General Information

#### 1. INTRODUCTION

This two days Specialist Meeting will be held at the LOCATION, Tallinn, Estonia from 12 to 13 May 2014. It is supported by the Sensors & Electronics Technology Panel (SET) of Science & Technology Organization, Collaboration and Support Office (STO-CSO).

The audience will include experts from NATO countries. Attendance at STO specialist meetings is by invitation only from STO National Delegates and from SET Panel Members and will be restricted to citizens from NATO-Member Nations.

Authors are invited to submit papers for this Specialist Meeting. The Program Committee 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. Each speaker will normally have 20 minutes for presentation and 5 minutes for discussions.

#### 2. 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:

- Dr. Matthias Weiß - [matthias.weiss@fhr.fraunhofer.de](mailto:matthias.weiss@fhr.fraunhofer.de) and
  - SET Panel Assistant - [ewelina.glinska-lewis@cso.nato.int](mailto: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 also contain the following information:

- SET-213 Specialist Meeting on "Compressive Sensing for Radar/SAR 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, rational, 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, USA

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

E-Mail: [osd.pentagon.ousd-atl.mbx.usnatcor@mail.mil](mailto: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 technical 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.

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.

3. In the event, there are any questions or concerns with these 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.

CLASSIFICATION LEVEL - **Abstracts must not be higher than NATO-Unclassified.**

#### 3. PUBLIC RELEASE AND CLEARANCE OF ABSTRACTS

3.1 For US Authors and Non US Citizens Affiliated with US Organizations:

Abstract, Attachments 1 & Details of Authors Form should be submitted via e-mail by 14 February 2014 to the U.S. P.O.C. ONLY.

3.2 For Non US Authors (All other countries):

Abstracts and Details of Authors Form should be e-mailed in time to reach Dr. Matthias Weiß <[matthias.weiss@fhr.fraunhofer.de](mailto:matthias.weiss@fhr.fraunhofer.de)> as well as the SET Panel Office ([ewelina.glinska-lewis@csso.nato.int](mailto:ewelina.glinska-lewis@csso.nato.int)) not later than 28 February 2014.

It is the responsibility of the authors to ensure that his/her abstracts receives any necessary clearance before it is forwarded, and sufficient time should be allowed for this.

#### 4. PRELIMINARY SCHEDULE

**15 Feb. 2014** – Deadline for abstract sub. (only US)  
**28 Feb. 2014** – Deadline for abstract submission  
**15 March 2014** – Notification of authors  
**28 April 2014** – Deadline for final paper  
**12-13 May 2014** – Specialist Meeting

#### 6. PUBLICATION OF FINAL MANUSCRIPTS

Complete instructions for the presentation and transmission of papers will be provided shortly after the authors are notified of acceptance of their paper. The final manuscript should be received by the Symposium Chairperson and the SET Panel Assistant at STO-CSO not later than 12 April 2014.

#### IMPORTANT

The submitted papers have to be NATO Unclassified.

#### 7. ADDITIONAL INFORMATION

Authors will be notified by the STO-CSO of the opening of on line enrolment and receive a General Information Package about the meeting site and the host country by March 2014. There will be NO registration fee.

Any questions on the technical aspects of the scientific programme or the contents of papers should be addressed to the Co-Chairman/Local Coordinator Dr. Matthias Weiß.

Authors of papers selected for presentation will not be financially supported by this organization. You are fully responsible for your own hotel and travel.

#### Co-Chairs

**Prof. Joachim Ender** (DEU)  
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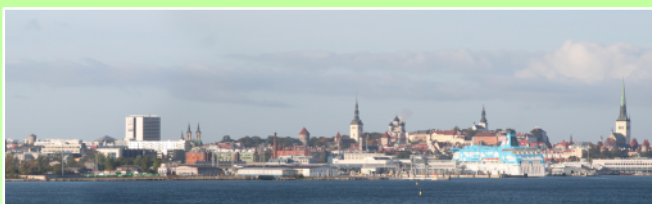
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#### Local Host Coordinator:

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#### 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 the Sensors and Electronics Technology 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.

#### NATO Collaboration Support Office (CSO) – SET Panel

SET PANEL EXECUTIVE: Maj. Mauro Roddi,  
[Mauro.Roddi@csso.nato.int](mailto:Mauro.Roddi@csso.nato.int)  
SET PANEL ASSISTANT: Mrs. Ewelina Glinska-Lewis,  
[ewelina.glinska-lewis@csso.nato.int](mailto:ewelina.glinska-lewis@csso.nato.int)

## Enrolment Information

(Participants & Authors)

### Specialist Meeting SET-213

### Compressed Sensing for Radar/SAR and EO/IR Imaging

**Tallinn, Estonia, 12-13 May 2014**

Open to citizens from NATO Nations.

Enrolment must be made via internet only at <http://www.csso.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.

Once your enrolment has been validated, you will receive a General Information Package with the latest information on travel, accommodation and local arrangements. Please note that participants are to make their own travel arrangements and hotel bookings.

If you are unable to enrol via the internet, please contact the SET Panel Assistant: Ewelina Glinska-Lewis:  
[ewelina.glinska-lewis@csso.nato.int](mailto:ewelina.glinska-lewis@csso.nato.int)

Please respect the following dates for enrolment.

#### Latest Enrolment Dates

NATO Nations: **04 May 2014**

