

CALL FOR PAPERS

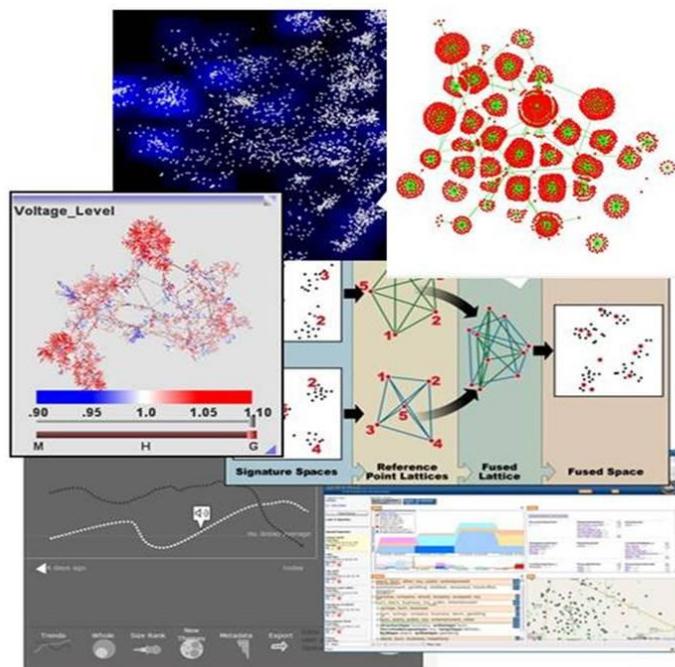
for the IST-116 Symposium on

VISUAL ANALYTICS

to be held at

Defence Academy, Shrivenham, Swindon, Wiltshire, SN6 8LA, United Kingdom

28 – 29 OCTOBER 2013



DEADLINE FOR RECEIPT OF EXTENDED ABSTRACTS:

1 MAY 2013

(20 APRIL 2013 for US Authors)

**This Symposium is NATO UNCLASSIFIED
OPEN to Partnership for Peace (EAPC/PfP) Nations**

A Workshop (IST-117/RWS-017) on Visualization for Analysis will be held right after this Symposium, 30 – 31 October.

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The NATO Science and Technology Organization

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.

In NATO, S&T is addressed using different business models, namely a collaborative business model where NATO provides a forum where NATO Nations and partner Nations elect to use their national resources to define, conduct and promote cooperative research and information exchange, and secondly an in-house delivery business model where S&T activities are conducted in a NATO dedicated executive body, having its own personnel, capabilities and infrastructure.

The mission of the NATO Science & Technology Organization (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, and 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.

The total spectrum of this collaborative effort is addressed by six Technical Panels who manage a wide range of scientific research activities, a Group specialising in modelling and simulation, plus a Committee dedicated to supporting the information management needs of the organization:

- AVT Applied Vehicle Technology Panel
- HFM Human Factors and Medicine Panel
- IST Information Systems Technology Panel
- NMSG NATO Modelling and Simulation Group
- SAS System Analysis and Studies Panel
- SCI Systems Concepts and Integration Panel
- SET Sensors and Electronics Technology Panel

These Panels and Groups are the power-house of the collaborative model and are made up of national representatives as well as recognised world-class scientists, engineers and information specialists. In addition to providing critical technical oversight, they also provide a communication link to military users and other NATO bodies.

The scientific and technological work is carried out by Technical Teams, created under one or more of these eight bodies, for specific research activities which have a defined duration. These research activities can take a variety of forms, including Task Groups, Workshops, Symposia, Specialists' Meetings, Lecture Series and Technical Courses

The Information Systems Technology (IST) Panel

The mission of the Information Systems Technology (IST) Panel is to implement, on behalf of the S&T Board, the STO Mission with respect to Information Systems Technology. The advancement and exchange of techniques and technologies to provide timely, affordable, dependable, secure and relevant information to war fighters, planners and strategists, as well as enabling technologies for modelling, simulation, and training are the focus of this Panel.

The **Information Systems Technology Panel (IST)** covers the fields of:

- (a) Information Warfare and Assurance,
- (b) Information and Knowledge Management,
- (c) Communications and Networks,
- (d) Architecture and Enabling Technologies

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THEME

NATO operations usually involve large amounts of complex disparate heterogeneous data which are difficult for decision-makers to assimilate and within which it is difficult to distinguish the essential from the irrelevant with respect to the decision-maker's task. The ever increasing availability of sensors and powerful IT infrastructure mean that the quantity and variety of sources and data are projected to expand without limit, and irrelevant data tend to obscure critical information. This leads to an ever-increasing burden on the decision-maker, as it is their challenge to transform the data from the unstructured collection into salient elements suitable for reasoning. Visualization in the decision-maker's mind is a major route to creating the conditions for analysis leading to effective and timely decisions. There is an urgent need to develop and improve methods that can assist this process in the face of emerging challenges of global security.

SYMPOSIUM OBJECTIVES:

The Symposium will discuss methods by which interactive visualization for analysis can assist decision-makers in different problem domains to explore the possibilities in, or find necessary understandings from, the increasingly large amounts of heterogeneous data availability to them.

SYMPOSIUM TOPICS:

Example topics in visual analytics include but are not limited to:

- Analytical reasoning
- Cognitive processes
- Counter IED operations
- Cyber operations
- Networks
- Health safety and health services delivery
- Bio-terrorism
- All-source intelligence
- Humanitarian operations
- User-selectable complexity
- Information trails
- Information abstraction
- Display characteristics affecting visual analytics
- Experimental measures
- System safety and monitoring
- Evaluation and use cases
- Spatio-temporal techniques
- Mathematical foundations of data transformations
- Uncertainty

SUBMISSION INSTRUCTIONS

For each paper you are proposing to submit, authors are required to submit a two page extended abstract for review. Authors will be notified if the abstract was accepted and a full paper is to be submitted. The extended abstract should provide an explicit statement of the content that will be contained in the paper and its relevance to the Symposium. The first page of the abstract must include the Title of the proposed paper followed by the full name of the principle author and co-authors with the respective e-mail addresses. This will assist the administrative process and ensure further communication. We also invite demonstrations and video demonstrations; a one page description is required for review. The one page description must clearly state it is for a demonstration or video demonstration. Authors will be notified if the description was accepted and a demonstration is to be prepared. Authors are allowed to submit multiple paper abstracts and demonstration descriptions.

Submissions are solicited on any of the listed topics, or on any other topic that illuminates any of the themes. An indication of which symposium topic the paper would logically fit would be of assistance to the Technical Programme Committee who will adjudicate on the papers selected. In addition to this, we kindly ask each author to fill in a Questionnaire (Part I and II) that you will find in **Annex B**. This will give the maximum amount of information on the status of feasibility of any project concerned, so that the Technical Committee is able to make clear and complete evaluation of the appropriateness and timely interest of the proposed paper.

It is the responsibility of the author to ensure that the paper/abstract received the necessary clearances before it is forwarded. Please allow sufficient time for the clearance to be issued before deadline. In this case, the NATO classification for the Symposium has been declared as NATO/PfP UNCLASSIFIED.

EXCEPTION: Authors from the United States must comply with US procedures. (*Refer to the Instructions in Annex A*)

Authors submitting paper abstracts and demonstration descriptions should ensure that financial support for attending the Symposium will be available.

Please send an electronic copy of the abstract and descriptions together with the completed Questionnaire (Parts I and II) herewith attached (Annexe B) to the IST Panel Assistant (aysegul.apaydin@cs0.nato.int) with a courtesy copy to the Technical Programme Committee Co-Chairs (bkmadahar@mail.dstl.gov.uk) and (mivarga@robots.ox.ac.uk), early enough to reach them by **1 MAY 2013**.

Authors will be notified of the decision by 3 JUNE 2013.

IMPORTANT DATES

- 1 MAY 2013** Submission of papers/extended-abstracts
- 1 JUN 2013** Authors to start national procedure to obtain the «Presentation/Publication Release and Clearance Certificate (Form 13e) (*this document will be attached to the "Instructions to Authors" document*)
- 3 JUN 2013** Notification to Authors by Chairman of Technical Programme Committee
- 15 JUN 2013** Authors to receive full «Instructions to Authors» package from CSO
- 1 OCT 2013** Submission of «Presentation/Publication Release and Clearance Certificate» (Form 13e) to CSO
- 1 OCT 2013** Submission of manuscripts to CSO (electronic by e-mail (Word & Pdf)
- 10 OCT 2013** Submission of the Oral Presentation (by E-mail to CSO)

PAPERS and PRESENTATIONS

Approximately 20-23 papers will be presented at the plenary sessions, each author being allocated 30 minutes, with usually twenty minutes for the presentation of their paper and ten minutes for discussion. All presented papers will be published. They should be written and presented in English. Authors whose papers are accepted will be asked to provide a full version of their paper electronically by e-mail. Detailed instructions (Authors Package) and necessary material will be sent to each "Lead" author of papers by **15 JUNE 2013**.

GENERAL INFORMATION

The UK Authorities have graciously invited the IST Panel to hold this event in their country. The audience will include the STO/IST Panel Members, experts from NATO nations, as well as potential participants from Partner for Peace (PfP) nations. The meeting will be at NATO UNCLASSIFIED level.

This symposium will bring together both military and civilian users, practitioners, researchers and technologists, with big picture ideals blended with appropriate level of detail. It will also feature invited presentations and keynote speeches.

At the end of the symposium a «**Best Paper Award**» will be assigned by the Technical Programme Committee (TPC) and presented on behalf of the IST Panel.

A Meeting Announcement as well as a General Information Package on the Defence Academy in Shrivenham where the symposium will take place, including Hotel Booking Forms will be available from the CSO in **JUNE 2013**.

Authors will be notified by the IST Panel Office of the opening of on line enrolment on the CSO web site (www.cso.nato.int). It is mandatory for all participants to enrol on this website using the reference IST-116 to get access to the meeting site. A General Information Package (GIP) will also be sent once the enrolment is validated, giving further details about the meeting venue, hotel bookings and other necessary information.

PUBLICATION OF MEETING PROCEEDINGS

Complete instructions will be sent by the IST Panel Assistant to the authors of the papers selected in **June 2013**. The Guidelines for Authors will detail all requirements and deadlines for the preparation of the final manuscripts and presentations.

All authors will need to provide CSO with a final version of their Paper by **1 OCTOBER 2013**, together with the Presentation/Publication Release and Clearance Certificate (Form 13e). Please be reminded that papers must be written and presented in English.

A week before the Symposium, CSO will pre-release the papers on the CSO website. These papers will be available under a login and password which will be provided by the IST Panel Office.

The final publication (Meeting Proceedings) will be at a URL address which will be given later, together with a login and password. This will represent the official reference of the Meeting Proceedings of this Symposium including the presentations, papers, posters (if any), demonstration videos (if any), an Executive Summary, abstract and the TER (Technical Evaluation Report). Please take note that CSO reserves the right to print in the Proceedings any paper or material presented at the meeting.

Any questions on the technical aspects of the scientific programme or the contents of papers should be addressed to the Programme Committee Chairman or Co-Chairman and members.

Questions on the administrative aspects of this Symposium or requests for further information on STO activities should be addressed to the IST Panel Office:

Attn: Mrs Aysegül APAYDIN
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SECURITY LEVEL AND CLEARANCE FOR PRESENTATIONS AND PAPERS

This Symposium is classified NATO/PfP UNCLASSIFIED and therefore is open to NATO and Partnership for Peace nations. It is the responsibility of each contributor to fulfil the publication release and clearance requirements of his/her organization/company and country to obtain clearance of abstracts and papers as needed. An official clearance is mandatory in the United States and there may also be a requirement in other countries to obtain clearance for unclassified as well as classified papers. For further information, authors should contact the appropriate Programme Committee Member listed in this document or their National STO Coordinator. To assist with this process, the IST Panel Assistant will send further detailed instructions to the authors of the papers selected in **June 2013**.

Authors of papers selected for presentation will not be financially supported by this organisation. You are responsible for your own hotel and travel reservations based on suggestions given in the General Information Package which we will provide. Expenses for travel and per diem costs are the responsibility of each author's organisation and nation.

Thank you for your contributions which are very much appreciated by the NATO community.

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PSC 116

APO AE 09777

FOLLOW-ON WORKSHOP (IST-117/RWS-017) on VISUALIZATION FOR ANALYSIS
30 - 31 October 2013

Immediately following-on from this Symposium, there will be a Workshop (IST-117/RWS-017) which will consist of focused discussions to augment and refine understanding of themes derived from the work of this Symposium. The Workshop provides a platform for intellectual synergy that is intended to generate novel insights and new approaches to shape future research and development in the topic areas. Most participants in the Workshop will have attended the Symposium, though the submission and enrolment processes for this Workshop and the Symposium are separate. Attendance will be conditional upon provision of a short note of technical interest and/or problems for working group discussion. Attendance will be limited to 40 people. Preference will be given to attendees of the immediately preceding Symposium. The announcement and invitation to attend the Workshop will be distributed separately and can also be found on the CSO website, (www.cso.nato.int) Ref.: IST-117.

**SPECIAL NOTICE TO U.S. AUTHORS
AND**

NON-U.S. CITIZENS AFFILIATED WITH U.S. ORGANISATIONS

Ref.: Symposium (IST-116-RSY-028) on "Visual Analytics" to be held in Shrivenham, Swindon, Wiltshire, UK, 28-29 October 2013

**ABSTRACTS OF PAPERS FROM THE U.S. MUST BE SENT ONLY TO THE
FOLLOWING P.O.C.:**

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Tel: +1 (571) 372 6539 / 6538
E-mail: usnatcor@osd.mil**

- 1. ALL U.S. AUTHORS MUST SUBMIT ONE ELECTRONIC COPY TO THIS P.O.C. BY
20 APRIL 2013**

**THE P.O.C. WILL FORWARD ALL US ABSTRACTS AS REQUIRED BY THE
TECHNICAL PROGRAM COMMITTEE.**

IN ADDITION TO THEIR ABSTRACT, ALL U.S. AUTHORS MUST PROVIDE:

- A) A CERTIFICATION (CAN BE SIGNED BY THE AUTHOR) THAT THERE ARE NO PROPRIETARY OR COPYRIGHT LIMITATIONS;
- B) INTERNAL DOCUMENTATION FROM THEIR LOCAL PUBLIC AFFAIRS OR FOREIGN DISCLOSURE OFFICE (OR EQUIVALENT) THAT CLEARLY SHOWS:
 - TITLE OF THE PAPER OR PRESENTATION
 - LEVEL OF CLEARANCE (I.E. APPROVED FOR PUBLIC RELEASE)
 - NAME, TITLE AND ORGANIZATION OF THE APPROVAL AUTHORITY
 -
- C) FULL DETAILS OF AUTHORS

NOTE THAT ONLY COMPLETE PACKAGES (ABSTRACTS + ITEMS LISTED ABOVE) WILL BE ACCEPTED BY THE U.S. POC. AFTER REVIEW AND APPROVAL, THE U.S. POC WILL FORWARD ALL U.S. ABSTRACTS TO THE IST PANEL OFFICE, WHO WILL SEND THEM TO THE PROGRAMME COMMITTEE. U.S. AUTHORS ARE ENCOURAGED TO ADDRESS QUESTIONS AND CONCERNS TO THE POC AS EARLY AS POSSIBLE. DELAYS IN MEETING DEADLINES WILL IMPACT THE TIMELY SUBMISSION OF YOUR ABSTRACT.

PART II: DETAILS OF AUTHORS

CO-AUTHORED PAPERS: Authors should be listed in the order they will appear on the program. Unless specified otherwise, the first listed author will be presumed to be the **LEAD AUTHOR** (i.e. the author having the major responsibility regarding the content of the paper).

TITLE OF PAPER:

AUTHORSHIP (*Please list full names of authors and affiliations*):

CONCISE BUSINESS MAILING ADDRESS (*include title (Mr, Mrs, Dr, etc.) full name & zip code*)

<p><u>Lead Author:</u></p>

Nationality:

Position in organisation:

Telephone: Country code: *Area/town code:* **Number:**

Fax No: Country code: *Area/town code:* **Number:**

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