



North Atlantic Treaty Organization

Research and Technology Agency

CALL FOR PAPERS & PARTICIPATION

for the

INFORMATION SYSTEMS TECHNOLOGY PANEL SYMPOSIUM

to be held in

PRAGUE, Czech Republic, 20-22 October 2003

NATO Unclassified / PfP Invited



MILITARY DATA AND INFORMATION FUSION

LA FUSION DES INFORMATIONS ET DE DONNEES MILITAIRES

DEADLINE FOR RECEIPT OF ABSTRACTS : AT THE LATEST BY 1 FEBRUARY 2003

THEME

Commanders at all levels and types of military organisations require timely and accurate awareness of the situation in their respective area of responsibility as well as prediction of likely intentions of the participants. These requirements exist throughout the range and variety of potential military missions from conflict-prevention to conflict and post-conflict activities. Additional to sensor based reconnaissance information, new and complex non-military information aspects such as political, ethnical, and criminal information are influencing the military intelligence cycle now and in the future. Large volumes of information and data will have to be processed and classical manual evaluation and the presentation of results is much too time consuming. Especially in respect to Counter-Terrorism intelligent data mining and knowledge based information retrieval and content extraction are gaining importance. It is therefore important to identify key issues affecting data and information fusion problems and to find methods to give automated support to information and data fusion in order to become more efficient in military intelligence.

The symposium will provide an interdisciplinary forum for research scientists, military experts, and system engineers to present the state of the art of research and technology in all different aspects of military data and information fusion in the command and control cycle. Interest is focussed on level 2, 3 and 4 of the JDL data fusion definition. The results of the NATO-wide efforts in this evolving area should be documented in technical presentations, research papers, and application oriented discussions. The conference program will include invited speeches by distinguished experts from research and practice as well as submitted papers. This symposium will be complementary to the planned SET Symposium on 'Target Tracking and Sensor Data Fusion for Military Observation Systems' which will take place the week before in Budapest, Hungary.

Topics of interest include, but are not limited to:

- Military requirements for data interpretation and information fusion
- Concepts of military data and information fusion for
 - Situation awareness, situation assessment
 - Threat/impact assessment
 - Intelligence preparation of the battlefield
 - Classification and identification of battlespace elements
- General fusion methods
 - Model and template based methods
 - Bayesian and belief approach to data and information fusion
 - Context sensitive information exploitation
 - Content extraction from unstructured data using natural language processing techniques
 - Research challenges toward achieving robust C2,C3 fusion
- Ontological approach to the representation of military knowledge
- Application examples and demonstrators of data and information fusion
 - Architecture of intelligence fusion systems in C4ISR
 - Resources: COTS S/W, Data, training materials, scenarios
 - Fusion of geo-spatial intelligence and military information
 - Fusion visualisation
- Lessons learned

Submission Instructions

Authors are requested to forward their e-mail addresses to the RTA IST Executive: (E-Mail: gouaya@rta.nato.int AND lachenya@rta.nato.int) as quickly as possible in order to receive the electronic version of this Call for Papers (CfP). To assure an effective, high quality Symposium, submissions are requested in two rounds: Extended abstracts are due by e-mail to the RTA IST Executive and Programme Committee Chairman by **1 February 2003**. Abstracts are preferred as attached Word documents. Abstracts now called for should provide an explicit statement of the content of the proposed papers and should consist of at least of two full pages of text in either English or French. In addition, the attached Questionnaire, Parts I and II, should be properly completed (see Annex A).

Part I: to give the maximum amount of information on the status of feasibility of any project concerned, so that the Technical Programme Committee is able to make clear and complete evaluation of the appropriateness and timely interest of the proposed paper.

Part II: to accurately identify the author(s) and the respective role of co-authors of that same paper, and also to ensure further communication.

The Questionnaire should be sent to the RTA IST Panel Executive and to the Chairman of the Technical Programme Committee, together with the abstract and not later than **1 February 2003**. Electronic submission is preferable.

Abstracts will be evaluated by the Technical Programme Committee and either rejected, or accepted provisionally, pending review of full paper. Authors will be notified of the decision by **3 March 2003**.

It is the responsibility of the author to ensure that the abstract receives the necessary clearances before it is forwarded. Please allow sufficient time for the clearance to be issued before the deadline. The deadline must be met to insure that the Technical Programme Committee considers your abstract.

EXCEPTION: Authors from the United States must comply with US procedures.
(Refer to Annex C).

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

IMPORTANT DATES

1 February 2003	:	Submission of Abstracts
3 March 2003	:	Notification to Authors by Chairman of Technical Programme Committee
March 2003	:	Authors to receive full «Instructions to Authors» package from RTA
March 2003	:	Authors to start national procedure to obtain the «Presentation/Publication Release and Clearance Certificate <i>(this document will be attached to the «Instructions to Authors» document)</i>
June 2003	:	Submission of «Presentation/Publication Release and Clearance Certificate» to RTA
8 September 2003	:	Submission of manuscripts to RTA (electronic by e-mail (Word & pdf), and paper copy by mail)
30 September 2003	:	Submission of the Oral Presentation (by E-mail to RTA)

Papers and Presentations

Approximately 25 papers will be presented at the plenary sessions, each author being allocated twenty minutes for the presentation of his paper and ten minutes for discussion. All papers will be published regardless of their presentation. They should be written and presented in English or in French, the official NATO languages. Simultaneous interpretation will be provided between these two languages at all plenary sessions of the Symposium. In addition to the papers presented at the plenary sessions, another large number of papers will be presented in poster sessions with no oral presentation during the plenary sessions. All necessary equipment will be provided to all the lecturers for their presentation whether oral in the plenary sessions, (35mm slides, viewgraph presentation, video cassettes and computer projection) or as poster presentation (a board of 120 x 90 cm (approximately 47.2 x 35.4 inch) will be available for each poster).

Authors whose papers are accepted will be asked to provide a full version of their paper electronically by e-mail together with a paper copy to be sent by mail to RTA. Papers are generally not longer than 12 pages. Detailed instructions (Authors Package) and necessary material will be sent to each "lead" author of papers by **March 2003**.

The oral presentations at the plenary sessions should be an extract of the paper and not a reading of it. It is requested to send a copy of the oral presentation (text and visual aids) by e-mail to the IST Panel Assistant well in advance as this copy will be used by the interpreters for simultaneous interpretation as well as downloaded on the laptop or PC of the meeting site before the beginning of the event, allowing a technical check of the equipment as well as putting the presentations in the necessary order. The deadline will be **30 September 2003**.

General Information

The Czech Republic's Research & Technology Board (RTB) Members have kindly invited the IST Panel to hold this meeting in their country. The audience will include the RTO IST Panel Members and Experts from NATO and Partners for Peace (PfP) nations (by invitation from RTO/IST Members or from RTB Members). The meeting will be NATO UNCLASSIFIED (*Partners Invited*).

The conference will provide a forum for the presentation of research and technological advances by scientists and engineers working in all aspects of information and data fusion techniques and systems. The conference will also feature invited sessions, keynote speeches and plenary talks.

A Meeting Announcement as well as a General Information Package on Prague including Hotel Booking Forms will be distributed by RTA by June 2003.

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

Conference Proceedings

The symposium papers will be electronically compiled on CD-Roms and presented as RTO Meeting Proceedings CD-Roms. Each participant at the symposium is entitled to receive a copy of the CD-Rom. These Meeting Proceedings will include the papers and presentations which are presented at the Meeting (whether orally or in poster sessions), as well as a Technical Evaluation Report of the Meeting. It should be noted that RTA reserves the right to print in this Meeting Proceedings any paper or material presented at the Meeting. The CD Roms will be prepared and sent out by the printer approximately 2 months after the symposium.

Symposium Website

A Symposium Website will be designed to inform the participants and to advertise the symposium papers and presentations.

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PSC 116

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NATO'S RESEARCH & TECHNOLOGY ORGANIZATION (RTO)

RTO is the single focus in NATO for Defence Research and Technology activities. Its mission is to conduct and promote cooperative research and information exchange. The objective is to support the development and effective use of national defence research and technology and to meet the military needs of the Alliance, to maintain a technological lead, and to provide advice to NATO and national decision makers. The RTO performs its mission with the support of an extensive network of national experts. It also ensures effective coordination with other NATO bodies involved in R&T activities.

RTO reports both to the Military Committee of NATO and to the Conference of National Armament Directors. It comprises a Research and Technology Board (RTB) as the highest level of national representation and the Research and Technology Agency (RTA), a dedicated staff with its headquarters in Neuilly, near Paris, France. In order to facilitate contacts with the military users and other NATO activities, a small part of the RTA staff is located in NATO Headquarters in Brussels. The Brussels staff also coordinates RTO's cooperation with Partnership for Peace nations, to which RTO attaches particular importance especially as working together in the field of research is one of the more promising areas of initial cooperation.

The total spectrum of R&T activities is covered by the following seven bodies:

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

These bodies are made up of national representatives as well as generally recognised 'world class' scientists. They also provide a communication link to military users and other NATO bodies. RTO's scientific and technological work is carried out by Technical Teams, created for specific activities and with a specific duration. Such Technical Teams can organise workshops, symposia, field trials, lecture series and training courses. An important function of these Technical Teams is to ensure the continuity of the expert networks.

RTO builds upon earlier cooperation in defence research and technology as set-up under the Advisory Group for Aerospace Research and Development (AGARD) and the Defence Research Group (DRG). AGARD and the DRG share common roots in that they were both established at the initiative of Dr Theodore von Kármán, a leading aerospace scientist, who early on recognised the importance of scientific support for the Allied Armed Forces. RTO is capitalising on these common roots in order to provide the Alliance and the NATO nations with a strong scientific and technological basis that will guarantee a solid base for the future.

The mission of the Information Systems Technology (IST) Panel is to implement, on behalf of the R&T Board, the RTO 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 warfighters, 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.