



North Atlantic Treaty Organization

**Research and Technology Agency**



**CALL FOR PAPERS & PARTICIPATION**

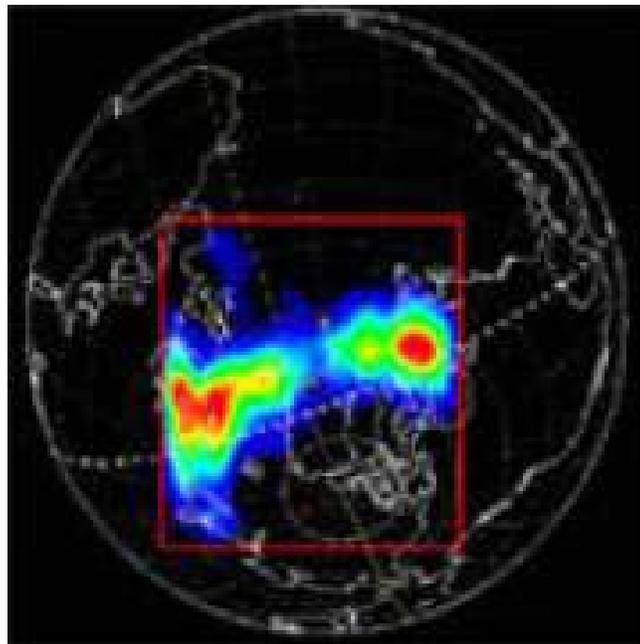
for the

**INFORMATION SYSTEMS TECHNOLOGY PANEL** in conjunction with URSI  
**SPECIALISTS' MEETING/Symposium**  
(IST-056/RSM-002)

on

**CHARACTERISING THE IONOSPHERE**

*NATO Unclassified / PfP Invited*



Credit: NOAA

to be held in

**ALASKA, United States, 12-16 June 2006**

**DEADLINE FOR RECEIPT OF ABSTRACTS: 21 DECEMBER 2005**

**SOFT COPY MAY BE LODGED VIA URL at <http://www.rta.nato.int/> (once open, click on IST-056)**

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## GENERAL DETAILS

The use of the ionosphere for communication purposes can be exploited as with sky wave transmissions or it can be disruptive as with satellite to ground transmissions. In both instances, knowledge of the properties of the medium is required. The ionosphere is dynamic and currently not sufficiently defined to match the aspirations of the users in the fidelity of the parameters known. This Specialist's Meeting held in conjunction with URSI aims to allow researchers to present their findings and discuss with others working in associated disciplines. We are seeking forty papers to be presented, with provision for interested parties to present their research in poster sessions.

The intent is to advance the knowledge of the science to improve the information transfer for ground based users. The nature of the specialist meeting allows forty minutes for each presentation. Selected presenters will be expected to submit a paper for peer review two months prior to the meeting.

## BACKGROUND

The use of the ionosphere for communications has been applied at HF for a number of years but the resurgence demands higher fidelity in the prediction methods, and the ability to adjust the predictions to reflect the latest observations. The perturbations give rise to characteristics that are difficult to predict and thus offer uncertainty in the information transfer. The other unavoidable effect is the transmissions to satellites, which will transit the ionosphere with variable length of the propagating path dependent on the orbit. Ground based navigation systems based on signals from satellites, and communications using a satellite as a node, are obvious candidates but satellites used as a platform for sensors will also be affected.

The location of the Specialists' Meeting lends itself to an emphasis on the auroral region but not to the exclusion of other significant regions. Reports of measurement campaigns outside the auroral oval are encouraged. The military community should be aware of the properties and hence define the impact on their systems when deployed and using systems that exploit the ionosphere.

## SESSIONS

- Morphology and Dynamics
  - Particle precipitation
  - Plasma convection
  - Auroral oval
  - Solar Cycle Variation
  - Coupling Processes
- Plasma Structures
  - Plasma Instabilities
  - Small scale ionospheric irregularities
  - Travelling ionospheric disturbance
- Space Weather Science
- Propagation
  - Refraction
  - Diffraction
  - Scattering
  - Non Linearities
- Instrumentation
  - Ground based
  - Space based
- Mapping
  - GNSS /Tomography
  - Satellite emitters and sensors
- Modelling
  - Climatological
  - Physical

- EM Environment
  - Spontaneous emissions
- Ionospheric Modification

### **SUBMISSION INSTRUCTIONS**

The abstract should be about 200 words but not more than 500 words and describe the content of the paper and its relevance to the symposium. An indication of which session the paper would logically fit would be of assistance to the Technical Committee who will adjudicate on the papers selected.

In addition, the attached **Questionnaire** (*Annexe A*), should be completed and set together with the abstract.

This will 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.

***First page to include the Title of the Paper followed by the full name of the principal author and co-authors with the respective e-mail addresses. This will assist the administrative process and ensure further communication.***

Abstracts and Questionnaires should be sent electronically to the Chairman of the Technical Committee with a copy to the IST Panel Assistant. Soft copy is preferred but the Technical Committee can accommodate hard copy if necessary. Soft copy can be lodged via URL <http://www.rta.nato.int/> (*once open click on IST-056*), or by e-mail. If you send your Abstract via the URL, you will find an automatic link to the Questionnaire.

Authors will be notified of the decision by **February 2005**.

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)

### **PAPERS AND PRESENTATIONS**

Approximately 40 papers will be presented, each author being allocated thirty minutes for the presentation of his paper and ten minutes for discussion.

Authors whose papers are accepted will be asked to provide a full version of their paper for electronic reproduction. Detailed instructions and necessary materials will be sent to lead authors of papers in **March 2006**.

### **SPECIALISTS' MEETING PROCEEDINGS**

The Proceedings of this meeting will be compiled electronically in the RTO Specialists' Meeting Proceedings on CD-Rom. Please take note that the RTA reserves the rights to print in the Proceedings any paper or material presented at the Meeting. Once RTA receives the full version of accepted papers together with their proper Clearance Certificate, these papers will be available on the RTO website under a Login and password, prior to the meeting.

## MEETING ANNOUNCEMENT, ENROLMENTS

A Meeting Announcement as well as a General Information Package on Alaska including Hotel Booking Forms will be distributed by RTA in March 2006.

Enrolments will be made on: [www.rta.nato.int](http://www.rta.nato.int) (Ref: IST-056)

## IMPORTANT DATES

- December 2005:** Submission of Abstracts
- February 2006:** Notification to Authors by Chairman of Technical Programme Committee
- March 2006:** Authors to receive full «Instructions to Authors» package from RTA
- March 2006:** Authors to start national procedure to obtain the «Presentation/Publication Release and Clearance Certificate» (*this document will be attached to the «Instructions to Authors» document*)
- April 2006:** Provisional manuscript to Chairman of Technical Programme Committee and to the IST Panel for Peer review
- May 2006:** Submission of «Presentation/Publication Release and Clearance Certificate» to RTA
- May 2006:** Submission of manuscripts to RTA (electronic by e-mail (Word & Pdf), and paper copy by mail)
- May 2006:** Submission of the Oral Presentation (by E-mail to RTA)

## TECHNICAL PROGRAMME COMMITTEE

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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.

## **QUESTIONNAIRE**

For consideration of a paper submitted for  
the Information Systems Technology Panel Specialists' Meeting on:  
**CHARACTERISING THE IONOSPHERE**  
**(IST-056/RSM-002)**  
(NATO UNCLASSIFIED / Partners for Peace (PfP) Invited)  
**ALASKA (United States), 12 -16 June 2006**

### **Please attach a copy of this Questionnaire to each copy of abstract**

*On each Abstract, authors should be listed in the order they will appear on the programme. 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).*

***(Please use the TAB key to scroll from one section to the other)***

### **PART 1**

#### **TITLE OF PAPER:**

Anticipated Security Classification: *(Please choose as appropriate):*

- ORAL PRESENTATION:
- FINAL MANUSCRIPT:

#### **TECHNICAL CONTENT**

*(Please tick the appropriate boxes):*

What is the nature of the work reported in the paper?

#### **A. EXPLORATORY DEVELOPMENT**

- a. Theoretical research study
- b. Theoretical system or subsystem design

#### **B. ADVANCED DEVELOPMENT**

- a. Theoretical study with comparison with practical results
- b. Experimental investigation

#### **C. PROTOTYPE DEVELOPMENT or PRELIMINARY DEVELOPMENT**

#### **D. ENGINEERING DEVELOPMENT**

- a. Full scale system development
- b. System trials

[Click here to download](#)

Or paste this link into your web browser <http://www.rta.nato.int/Questionnaire/IST056-Questionnaire.pdf>

## ADMINISTRATIVE INFORMATION

(Ref.: Specialists' Meeting (IST-056/SM-002) on "Characterising the Ionosphere" to be held in Alaska, United States, 12-16 June 2006)

For each paper you are submitting, please send a copy of the abstract and of the completed Questionnaire (PARTS I and II) to the Technical Programme Committee Chairman and IST Panel Assistant, early enough to reach them by:

**21 December 2005**

**Electronic submission is preferable**

**US AUTHORS: SEE INSTRUCTIONS IN ANNEX B**

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**SPECIAL NOTICE TO U.S. AUTHORS  
AND  
NON-U.S. CITIZENS AFFILIATED WITH U.S. ORGANISATIONS**

(Ref.: Specialists' Meeting (IST-056/RSM-002) on "Characterising the Ionosphere" to be held in Alaska, United States, 12-16 June 2006)

**ABSTRACTS OF PAPERS FROM THE U.S. MUST BE SENT ONLY TO THE FOLLOWING  
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- 1. ALL U.S. AUTHORS MUST SUBMIT ONE ELECTRONIC COPY TO THIS P.O.C. BY  
12 DECEMBER 2005**

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

- 2. ALL U.S. AUTHORS MUST INCLUDE THE FOLLOWING STATEMENT IN A COVERING  
LETTER TO THE P.O.C.:**
  - 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/PFP Unclassified; AND**
  - THE ABSTRACT DOES NOT VIOLATE ANY PROPRIETARY RIGHTS.**

**This letter or email stating that the above conditions have been met must accompany the abstract  
submittal to the Programme Committee Acting Chairman and the appropriate RTA Panel  
Assistant.**