

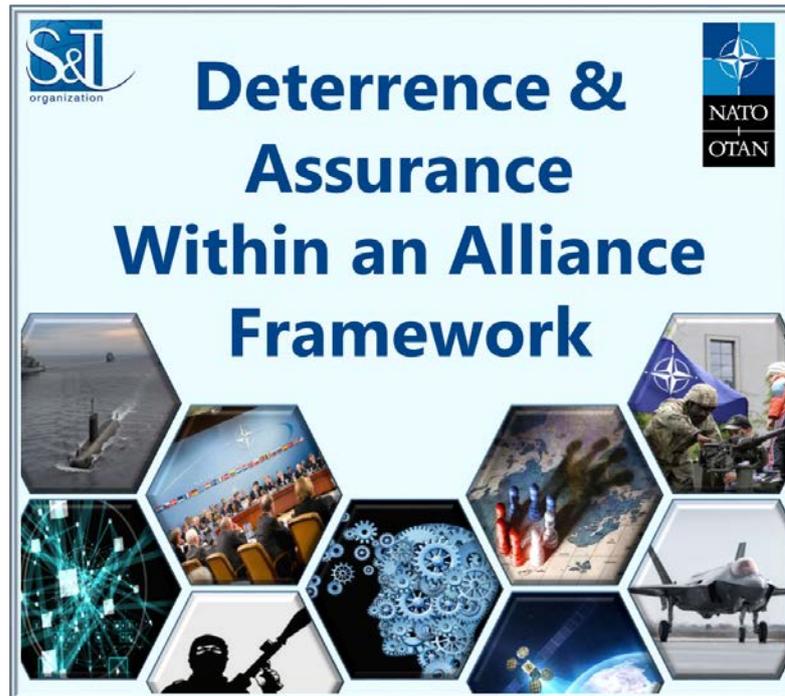
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SCIENCE AND TECHNOLOGY ORGANIZATION
SYSTEM ANALYSIS & STUDIES PANEL



SYSTEM ANALYSIS & STUDIES (SAS) PANEL CALL FOR PAPERS



SAS-141 SYMPOSIUM:

DETERRENCE AND ASSURANCE WITHIN AN ALLIANCE FRAMEWORK

This Symposium is open to
NATO Nations, NATO Bodies, Australia, Finland and Sweden
and will be conducted at a **Public Releasable** level.

To be held in cooperation with King's College, London
London, United Kingdom
17-18 January 2019

DEADLINE FOR RECEIPT OF ABSTRACTS:
7 September for US Authors
21 September 2018 for Authors from other Nations

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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 programs 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 specializing 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 recognized 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 SYSTEM ANALYSIS AND STUDIES (SAS) PANEL

The System Analysis and Studies (SAS) Panel conducts studies, analysis and information exchange activities that explore how operational capability can be provided and enhanced through the exploitation of new technologies, new forms of organization or new concepts of operation. Such studies will, where appropriate, give explicit consideration to financial and other resource issues. The Panel will be

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responsive to requests for such studies from a variety of sources, including nations, the Science and Technology Board (STB), the Military Committee, the Conference of National Armament Directors (CNAD), the Main Armaments Groups, Allied Command Operations (ACO), Allied Command Transformation (ACT), the NATO Communications and Information Agency (NCIA), the NATO Industrial Advisory Group (NIAG), and industry. The Panel can also perform studies of a more purely technological nature if such studies are not appropriate for another NATO body.

The Panel will undertake activities to develop and promote improved analysis methods and techniques to support defence decision making. This aspect of the Panel's work will focus particularly on the methods required to address the new issues thrown up by the evolving strategic environment and the responses that both individual nations and NATO as a whole are making to it. Activities may include information exchange on OA modelling concepts and best practice, research into new methodological approaches and the development and exchange of models.

THE SYSTEM ANALYSIS AND STUDIES (SAS) RESEARCH SYMPOSIUM - 141

The SAS-141 Research Symposium, in cooperation with King's College London, aims at gathering information on NATO's concepts of Deterrence and Assurance (D&A) so as to underpin new approaches to planning, education and training. This will enable comprehensive planning, execution and assessment of D&A activities, ensuring that the Alliance remains effective in the face of evolving threats. The symposium and follow-on activities will not only have utility for military planning, education, training, and capability development, but may also lead to significant benefits in terms of force posture, costs, and ultimately conflict prevention.

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SYMPOSIUM INFORMATION

A. BACKGROUND:

Deterrence and Assurance (D&A) are often discussed as part of strategic military planning and decision making related to Force Posture, Readiness and Operations. In the current security environment, they play a revived role in how nations conceive of conflict prevention and underpin the Alliance's core tasks.

The events of 2014 heightened awareness of deterrence and assurance among NATO nations. Whereas the Alliance had previously been focussed on out-of-area operations, instability along NATO's eastern and southern borders re-focussed attention on security closer to home. At the political and operational levels, greater attention is now being devoted to ways and means of countering a range of adversarial behaviours. Age-old theories of deterrence are being re-visited, while contemporary theories incorporating new vocabularies and domains are being offered up as a way of helping the Alliance navigate through a rapidly-evolving security environment.

B. MILITARY RELEVANCE

When the symposium is completed a Technical Activity Proposal will be presented to the SAS Panel for a 3-year research study to derive necessary amendments to the Alliance's concepts of D&A which will underpin new (inter-agency) approaches to planning, education and training.

This will enable comprehensive planning, execution and assessment of D&A activities, ensuring that the Alliance remains effective in the face of evolving threats

C. OBJECTIVES:

The aim is to develop a thorough understanding of D&A in a **contemporary** context, and provide recommendations for how these concepts are used as part of military planning, education and training at the Alliance and/or national levels. To achieve this goal, the group will:

- Review national and Alliance understandings of D&A concepts, and evaluate them against the theoretical work in the area, with reference to emerging threats as well as various policy and operational challenges;
- Identify a way forward to address gaps in contemporary understanding of existing D&A concepts, with a view to proposing amendments and developing methods for planning and assessment at the Alliance and/or national levels.

D. TOPICS:

The symposium will produce a collection of papers with the accompanying Technical Evaluation Report which will provide valuable insights, lessons learned, best practices, and research analysis and insights to support a contemporary understanding of D&A. Several policy and operational issues are apparent.

On the policy side, there are conceptual challenges arising from the inter-relationships between deterrence, defence and assurance. How do these work - individually and collectively - in the context of new security challenges, including the blurring of the line between peace and conflict? Should allies seek greater coherence between NATO and national deterrence postures, including better alignment of bi-lateral arrangements? There is insufficient understanding of "cross-domain" deterrence and how to manage it, including the integration of nuclear, conventional, cyber and other non-kinetic effects. How

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does resilience – both military and societal - contribute to deterrence? How should allied defence ministries address the challenges of co-ordination and communication with other government agencies on deterrence-related activities?

On the operational side, how can deterrence and assurance be better managed and its effects assessed? How can desired effects be achieved and under what conditions? Can non-state actors be deterred? How can the allies improve training and education on deterrence and assurance? How should new developments in deterrence theory and practice influence NATO strategy and capabilities?

Areas of research for 17-18 January 2019 may include, *inter alia*:

Classical elements of deterrence and assurance

- Nuclear, conventional deterrence and their inter-relationships
- Extended deterrence
- State / near-peer adversaries
- Role of assurance, reassurance and confidence-building measures
- What we have learned - case studies (recent/post-Cold War) of deterrence success and failure; implications for theoretical development

Contemporary challenges in deterrence and assurance

- Contribution of resilience to deterrence and assurance, including societal resilience
- Cross-domain / integrated deterrence, including cyber, information & space domains
- What is 'rationality' and can it accurately predict behaviour
- Vertical / horizontal escalation
- Inter-agency challenges
- Tailoring deterrence to the threat
- 'Grey zone' conflict and the challenge of hybrid threats

Achieving deterrence effects in the 21st Century

- Understanding the adversary and net assessments
- Assessing effectiveness of deterrence and assurance
- Alliance political / military decision making

Preparing and planning for future deterrence and assurance

- Capability development & defence planning
- Burden & risk sharing, including the role of smaller allies

E. PARTICIPATION:

Participation is open to NATO Nations, NATO Bodies, Australia, Finland and Sweden.

F. PROGRAMME COMMITTEE:

Name	Represents	Roles
RUDD, David (Mr.)	Canada	Programme Committee Chair*

G. ABSTRACTS, PAPERS AND MEETING PROCEEDINGS INFORMATION

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Papers are solicited that draw from historical perspectives, leadership experience, and research insights, and should contribute to a clearer, shared understanding of how national contributions to alliance activities can be linked to collective military objectives.

Authors are invited to submit completed papers or extended abstracts that should provide an explicit statement of the content of the paper and its relevance to the symposium. Abstracts should be between 200-500 words in English; diagrams may be included. The programme committee is looking specifically for **new and innovative** ideas about deterrence and assurance.

Contributions from military operations and industry communities are welcome. An indication of symposium topic(s) into which the paper would most logically fit would be of assistance to the Programme Committee who will adjudicate the submitted papers.

Please use the Symposium Paper Template available at the NATO STO website to draft your paper <https://www.sto.nato.int/Pages/support-for-authors.aspx>.

The Papers should be accompanied by a signed Publication Release Form also available at the NATO STO website. Without this form signed no material will be published on the NATO STO website <https://www.sto.nato.int/Pages/support-for-authors.aspx>.

Abstracts should be submitted electronically in PDF or MS Word format to the Programme Committee Chair, Mr. David Rudd, no later than 21 September 2018 and no later than 28 August 2018 for US Authors and U.S. affiliated.

Abstracts must be in the following format:

- TITLE OF THE PAPER
- Name of Author/Co-Author(s)
- Company/Affiliation
- Complete address
- Length 200-500 words
- Language English
- Classification **Public Releasable**
- Content Scope of the contribution and relevance to NATO

Authors will be notified of the Programme Committee decision by 15 October 2018.

H. CLASSIFICATION:

The symposium will be conducted at a **Public Releasable** level.

I. PARTICIPATION:

Participation is open to other NATO Nations, NATO Bodies, Australia, Sweden, and Finland.

J. PRELIMINARY SCHEDULE

- U.S. Abstract submission: 7 September 2018
- Abstracts submission: 21 September 2018
- Abstracts acceptance notification: 1 October 2018
- Opening registration: 1 October 2018
- US Paper submission: 15 November 2018
- Final paper submission: 30 November 2018

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- Presentation submission: 5 January 2019
- Closing registration: 5 January 2019

If you have any questions, please contact any of the undersigned.

Sincerely,

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ANNEX 1

SPECIAL NOTICE FOR U.S. AUTHORS AND NON-U.S. AUTHORS AFFILIATED WITH U.S. ORGANIZATIONS

Abstracts of Papers, Papers and Publication Release Forms from the U.S. must be sent ONLY to the following P.O.C.:

NATO S&T Organization U.S. National Coordinator
OASD(R&E)/International Technology Programs
4800 Mark Center Drive, Suite 17D08
Alexandria, VA 22350-3600
Tel: +1 571-372-6539 / 6538

E-MAIL: OSD.PENTAGON.OUSD-ATL.MBX.USNATCOR@MAIL.MIL

1. All U.S. Authors must submit one electronic copy to this P.O.C. by **7 September 2018**.

The P.O.C. will forward all U.S. abstracts to the Programme 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;
 - If work is sponsored by a government agency, identify the organization and attest that the organization is aware of the submission;
 - The abstract is technically correct;
 - The abstract is **PUBLIC RELEASABLE**
 - The abstract does not violate any proprietary rights.

In addition to their abstract, all U.S. Authors must provide the P.O.C. with:

- (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 US P.O.C. After review and approval, the US P.O.C. will forward all U.S. abstracts to the SAS Panel Office, who will send them to the Programme Committee.

U.S. authors are encouraged to address questions and concerns to the P.O.C. as early as possible. Delays in meeting P.O.C. deadlines will impact the timely submission of your abstract.