



NORTH ATLANTIC TREATY ORGANISATION
ORGANISATION DU TRAITÉ DE L'ATLANTIQUE NORD



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STO-OCS(2019)0056

5000 TSC FEA 0010/TT-A1678/Ser:0256

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SUBJECT: Calling Notice for the for the NATO 13th Operations Research and Analysis Conference

DATE: 30 July 2019

1. On behalf of the Headquarters Supreme Allied Commander Transformation and the Science and Technology Organization, we are pleased to announce the opening of registration for the 13th NATO Operations Research and Analysis (OR&A) Conference to be held in Ottawa, Canada on 7 to 9 October 2019.

2. As part of the continuous development of a NATO OR&A Community of Interest, the event builds on previous conferences and workshops, bringing together the analysis community from NATO commands and agencies, national defence analysis and research organisations, centres of excellence, academia, and industry. It is our goal to provide an exciting programme with plenty of opportunities for discussion and debate.

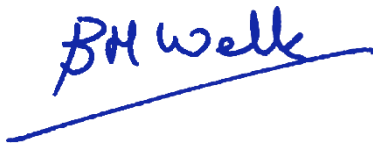
3. The 2019 theme is **“Challenges for NATO OR&A in a Changing Global Security Environment”**. The conference will kick off with a number of keynote addresses and continue in five streams:

- a. Strategic Decision Making;
- b. Wargaming;
- c. Methodology;
- d. Data Driven Analysis;
- e. Analysis in Operations.

4. Registration for the conference can be done through the following (internet) link on the STO events site: <https://events.sto.nato.int/index.php/upcoming-events/event-list/event/17-sy/219-nato-operations-research-and-analysis-conference-2019>. Note that the conference is tethered to the Fall SAS Panel Business Meeting and will take place prior to the panel meeting at the same location and in the same week.

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5. You can login with your credentials if you have an account on the STO events site, otherwise you will have to request for an STO account first. During registration you will be given the opportunity to sign up for training and hands-on activities that run in parallel to the two sessions where papers are presented and presentations held.
6. The conference will run for three full days starting at 0830 on Monday 7 October 2019 and ending at 1600 on Wednesday 9 October 2019. A preliminary conference programme is attached to this calling notice.
7. A General Information Package will be available (password protected) at this meeting announcement on the STO events site after registration is validated. This package contains all information to make travel arrangements, benefit from negotiated hotel rates and online conference fee payment. The presentations will be published at the same location (password protected) one week prior to the conference and only accessible to participants to the conference.
8. Should there be any questions, our point of contact for registration is Mr Jeroen Groenevelt, STO Collaborative Support Office (CSO), Jeroen.Groenevelt@cs0.nato.int, +33 1 55 61 22 77. For questions concerning the programme, presentations and training our point of contact is LTC Vaughn DeLong, ACT, vaughn.delong@act.nato.int +1 757-747-3276.
9. Please submit any question to our POCs above or to the Programme Committee Chairs: Mr Han de Nijs, johannes.denijs@act.nato.int, +1 757 747 3387 and Dr Ana Barros, ana.barros@tno.nl, +31 (0)88 866 10 77.



Dr Bryan Wells
NATO Chief Scientist
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NATO HQ



BGEN Poul Primdahl, Danish Army
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COE Defence Against Terrorism
COE Energy Security

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COE Explosive Ordnance Disposal
COE Human Intelligence
COE Joint Air Power
COE Joint Chemical, Biological, Radiological and Nuclear Defence
COE Military Engineering
COE Military Medicine
COE Military Police
COE Modelling and Simulation
COE Mountain Warfare
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COE Operations in Confined and Shallow Waters
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COS

DCOS SPP, CD, RM, JFD

ACOS REQ, CAP, SPP, JFD, SACT SEE

Information:

List I, II, III, IV, V, VI and VII

13th NATO OPERATIONS RESEARCH AND ANALYSIS CONFERENCE
7-9 October, Ottawa, Canada

Programme

Sunday	
1900-2100	Pre-Registration
Monday	Day 1
0730-0830	Registration
0830-0850	Welcome: <ul style="list-style-type: none"> • Mr Han DE NIJS, Conference Co-Chair, NATO Allied Command Transformation • Dr Ana BARROS, Conference Co-Chair, TNO • Ms. Isabelle DESMARTIS, Assistant Deputy Minister of Science and Technology (S&T), Canada • BGEN Poul PRIMDAHL, Assistant Chief of Staff Requirements Division, NATO Allied Command Transformation • Dr Bryan WELLS, Chief Scientist, NATO Science and Technology Organization • Dr Pavel ZUNA, Director, Collaboration Support Office, NATO Science and Technology Organization
0850-0900	Admin
0900-1000	Keynote 1: Rear-Admiral Jeffery ZWICK - Chief of Force Development for the Canadian Armed Forces
1000-1015	ESRI Training Introduction – Mr Pierre BILODEAU
1015-1030	Break (refreshments)

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1030-1200	<p>Stream – Data Driven Analysis #1 – Lead Mr Matthew MACLEOD (DRDC)</p> <ol style="list-style-type: none"> 1) Mr Yvan GAUTHIER - Advancing Defence Analytics in Canada: Lessons from the Trenches 2) Ms Mihaela RACOTIVA - Delving into the data: exploring the Lessons Learned potential of large data pools 3) Mr Philip ELES - Keeping NATO grounded on its path towards embracing data science and related technologies <hr/> <p>Stream – Strategic Decision Making #1 - Lead Ms Sylvie MARTEL (NCIA)</p> <ol style="list-style-type: none"> 1) Dr Steve GUILLOUZIC - The network of dependencies 2) Dr John STEELE - Linking Strategic Investments & Divestments to Defence Outcomes 3) Ms Louise HOEHL, Mr Glenn RICHARDS - NATO Defence Planning Process Incorporating the New and the Emerging <hr/> <p>Stream – Methodology #1 – Lead Prof Dick DECKRO (USAF)</p> <ol style="list-style-type: none"> 1) Dr David MANDEL - Assessing and Communicating Uncertainty Effectively in a Rapidly Changing World 2) LCol Andrew LEGGE, Dr Maxwell DONDO, Dr Abderrahmane SOKRI - The Cyber Common Operating Picture. An approach to understand the battlespace and inform decision making 3) Dr Zhigang WANG - The first NATO guidelines for conducting surveys in the military context
1200-1300	Break (lunch)
1300-1430	<p>Stream – Wargaming #1 – Lead Mr Han DE NIJS (HQ ACT)</p> <ol style="list-style-type: none"> 1) Ms Sue COLLINS – NATO STO Research Task Group SAS-139 - State of the Art of Analytical Wargaming 2) Mr Matthew STEVENS - What Simulation-Based Trainings Teach Us About Security, Humanitarianism, and Understanding in Urban Refugee Response 3) Ms Dani FENNING - Analytical Wargaming in Support of NATO’s Military Deterrence Response Options <hr/> <p>ESRI Training - ArcGIS solutions for a Changing Global Security Environment – Lead Mr Pierre BILODEAU</p>
1430-1500	Break (refreshments)

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1500-1630	<p>Stream – Data Driven Analysis #2 – Lead Mr Matthew MACLEOD (DRDC)</p> <ol style="list-style-type: none"> 1) Col Andrzej LIS - Bibliometric methods to support strategic analysis of the security environment 2) Mr Ryan VAN WIE, Mr Jacob WALDEN - How varying unit dismounted troop ratios and troop density levels impact district violence 3) Mr Gary HORNE, Mr Wayne STILWELL - Simulation Support for Hybrid Warfare Wargaming and Coalition Decision Makers A Data Farming Approach
	<p>Stream - Operations #1 – Lead Mr Andy BELL (MARCOM)</p> <ol style="list-style-type: none"> 1) Ms Shannon COOPER, Valentin POPONETE - Strategic Risk Assessment in NATO Operations 2) Mr Bruce PENNELL, Mr Valentin Poponete - Crashing through the Stop Lights? Operations Assessment in a Changing Global Security Environment 3) Dr Yazan QASRAWI - Quantifying the extent of permissible dispersion of a Mechanized Brigade Group
	<p>Stream – Methodology #2– Lead Dr Ana BARROS (TNO)</p> <ol style="list-style-type: none"> 1) Prof Dr Armin FUEGENSCHUH - Mission and Trajectory Planning for Unmanned Aerial Vehicles with Mathematical Optimization and Wargaming 2) Dr Nicola FARINA - Multi Agent Path Planning Strategies based on Artificial Intelligence algorithms for Surveillance Missions 3) Mr Alex BOURQUE - Rough order magnitude costing of maritime unmanned systems
1630-1730	<p>Keynote 2: Ms Christine FOX - Assistant Director, Policy and Analysis at Johns Hopkins University Applied Physics Laboratory</p>
1830-2000	Icebreaker

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Tuesday	Day 2
0830-0900	Admin & Recap
0900-1000	Keynote 3: Dr Peter SINGER - Strategist and Senior Fellow at the New America Foundation
1000-1030	Break (refreshments)
1030-1200	Stream – Wargaming #2 – Lead Dr Janis BERZINS (Defence Academy LVA) 1) Mr Rudy BOONEKAMP, Dr Helma VAN DEN BERG, Dr Bob VAN DER VECHT - Eliciting opponent behavior using gamified online research 2) Dr Håvard FRIDHEIM, Dr Stein MALERUD - Wargaming reachback support to military headquarters planning processes
	Stream – Strategic Decision Making #2 – Lead Mr. Sean BOURDON (DRDC) 1) Ir Clara PETERS - From Foresight to Impact for Technologies at Low Technology Readiness Levels 2) Mr Theo HOWARD - NATO's Demographic Dilemma 3) Mr Alf Christian HENNUM, Ms. Mona SAGSVEEN GUTTELVIK – Quantifying the utility of war to explore a small state deterrence capability
	Stream – Methodology #3 – Lead Prof Dick DECKRO (USAF) 1) Dr Peter DOBIAS, Dr Kendall WHEATON - Use of graph theory to quantify political preference values 2) Dr Altan OZKIL, Dr Andrew STARKEY, Mr Levent Berke ÇAPLI - Artificial Intelligent Based Best Course of Action Tool for Multi-Domain Operations
1200-1300	Break (lunch)
1300-1430	Stream – Wargaming #3 – Lead Ms Katie MAULDIN (JALLC) 1) Dr Pilar CAAMAÑO SOBRINO, Dr Alberto TREMORI, Mrs Lucia GAZZANEO, Mr Wayne BUCK - Best practices on the combination of qualitative and quantitative modelling 2) Dr Abderrahmane SOKRI - An analytical wargaming approach to cyber deterrence 3) Mr Wouter NOORDKAMP, Mr Koen VAN DER ZWET – OR game theory analysis potential for military application

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	<p>Stream – Operations #2 – Lead LTC Bjorn SEITNER (DEU MOD)</p> <ol style="list-style-type: none"> 1) LTC Sten ALLIK - Analysing Unmanned Combat Systems with Autonomous Functions (UCSAF) operational impact. Challenges and preliminary outcomes 2) Dr Kerry MALONE - Sensing in a Networked Environment Lessons learned from Automation and Autonomy 3) Mr Gregory HUNTER, Mr J. CHAN, Mr Mark REMPEL - Assessing the impact of infrastructure on Arctic operations
	Introduction to Elicit – Lead Dr Dave ALBERTS
1430-1500	Break (refreshments)
1500-1530	Keynote 4: Dr Stephen DOWNES-MARTIN - Research Fellow at the US Naval War College
1530-1600	Awards
1600-1610	ESRI Training Summary – Mr Pierre BILODEAU
1610-1630	Conference Closure
1645-1715	SAS-129 Cyber Game Preparation
Wednesday	Day 3
0830-1600	<p>Wargame Workshop 1 - A Multi-Domain Wargame - participate in a hybrid between conventional wargame, matrix gaming (argument games), and serious games Lead Dr Altan OZKIL, Mr Berke CAPLI</p> <p>Wargame Workshop 2 - Wargaming Best Practices course - examine the use of wargames and otherserious game techniques for operations analysis and capacity-building Lead Prof Rex BRYNEN</p>
	<p>0930-1000 Break (refreshments)</p> <p>1130-1230 Break (lunch)</p> <p>1400-1430 Break (refreshments)</p>