



SCIENCE AND TECHNOLOGY ORGANIZATION
INFORMATION SYSTEMS TECHNOLOGY PANEL



CALL FOR PAPERS

NATO Science and Technology Organization

INTERNATIONAL CONFERENCE ON MILITARY COMMUNICATIONS AND INFORMATION SYSTEMS (ICMCIS)

to be held in
Skopje, North Macedonia
16–17 May 2023



DEADLINE FOR RECEIPT OF PAPERS:

15 February 2023

(U.S. Authors please check the Annex)

This Conference is Public Release, open to NATO Nations, NATO bodies and STO Enhanced Opportunity Partners (Australia, Finland, Japan and Sweden), Partnership for Peace Nations, and Singapore

You can also find this Call for Papers at: events.sto.nato.int and [ICMCIS.eu](https://icmcis.eu)

Collaboration Support Office

IST Panel Executive Officer
Lt. Col. Marek DOBEK
Tel: +33 (0)1 55 61 22 14
Mobile: +33 670 61 78 43
Email: marek.dobek@csso.nato.int

IST Panel Executive Assistant
Mrs. Armelle DUTRUC
Tel: +33 (0)1 55 61 22 82
Mobile: +33 675 086 634
Email: armelle.dutruc@csso.nato.int

BP 25 - F-92201 Neuilly-sur-Seine Cedex - France
Tel: +33 (0)1 55 61 22 80/82 - Fax: +33 (0)1 55 61 22 98/99 - E-Mail: ist@csso.nato.int

Last Modified (1/18/23)

ICMCIS 2023



A. INTRODUCTION

The International Conference on Military Communications and Information Systems (ICMCIS) will take place on **16 and 17 May 2023** in **Skopje, North Macedonia**, in conjunction with the 51st IST Panel Business Meeting. Held as an STO Information Systems Technology (IST) Panel activity (IST-200 RSY), ICMCIS 2023 will be organised by the General Mihajlo Apostolski Military Academy in Skopje, with support from the National Research Institute, Poland (NASK) and the NATO Communications and Information Agency (NCIA).

ICMCIS 2023 will feature a special focus on Information Communication Technology (ICT) solutions for multi-domain operations (MDO). Authors are invited to submit papers addressing challenges related to this theme, or on any of the topics listed at section C and in expected format in Section F. All papers will be peer reviewed by at least three reviewers. ICMCIS 2023 will obtain support from the Institute of Electrical and Electronics Engineers (IEEE), as it has since 2012, for publication of top accepted papers in IEEE Xplore. **Papers from previous conferences have also been indexed in the Web of Science Core Collection.**

There is also an opportunity to submit 'position' papers from which the Program Committee will make a selection that is considered suitable for presentation at the conference.

Authors of selected papers will need to provide final versions and associated presentations by the dates noted in Section H and in accordance with the detailed instructions for the presentation, publication of papers, release forms, etc. (see *, section E, and F).

Attendance at and contribution to the event will require registration (section G). All sessions will be **PUBLIC RELEASE** and the event is open to NATO Nations, STO Enhanced Opportunity Partners, Partnership for Peace Nations, and Singapore.

*IMPORTANT

Authors of selected papers are to provide their complete manuscript (PDF file) and the source document (MS Word or Latex) via EasyChair, respecting the deadlines mentioned in section H, as well as the Publication Clearance Certificate (Form 13).

Note: The Meeting Proceedings published will be [Public Release](#).

B. BACKGROUND

The ICMCIS is the largest conference in Europe on military CIS. It provides a forum for exchanging ideas and knowledge on the development and implementation of advanced (ICTs) for military systems (see section C for details). ICMCIS 2023 will feature a special **focus on ICT solutions for multi-domain operations, ranging from big data analytics to interoperable secure resilient communication networks.**

The ICMCIS strives for high scientific quality of the papers by triple peer reviews and IEEE technical sponsorship. The IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity. Its journals are the preferred publication route for many universities to gain higher recognition, and citations of their high-quality research.

ICMCIS 2023



C. TOPICS

ICT is envisioned to play a critical role in MDO allowing Joint Forces to make Intelligent Informed Decisions (IID) at a higher pace and better scale than of adversaries/ peer competitors. Authors interested in submitting a manuscript for this special session are encouraged to consider challenges related to interoperability, data/information fusion and resilience across domains and IIDs making for effective Command and Control (C2). A more detailed description of MDO and its challenges is available at the ICMCIS website.

ICMCIS importantly covers important science topics and technologies relevant for defence related to military information exchange, processing, storage, protection, and presentation. Papers addressing high quality research in the following, or related are encouraged:

- AI for Military Decision Support and Autonomous Systems,
- Big Data Analytics and Visualization,
- Robotic Process Automation,
- Scarce Data,
- Quantum Computing and Algorithms,
- VR/AR/XR/Tele-existence/Real Avatars,
- Data-Centric Architecture/Security,
- Distributed Resilient Infrastructure (Tactical cloud; edge computing, heterogeneous MANET; SDN/NFE for tactical networks, cognitive radio, and cognitive networks),
- NextG: 5G-and-Beyond Wireless Communication Technology
- Internet of Military Things,
- Counter/adversarial-AI and AI for Cyber,
- Homomorphic Encryption,
- Quantum-Safe Cryptography,
- Trust Architectures/Digital Trust,
- ICT Supply Chain Security (Devices and materials),
- EM Spectrum Management & Sharing,
- C4I test beds, Modelling and Simulation of Information Infrastructures,
- Ethical, Legal, Societal and Environmental Aspects of Technology Design/Human Machine Teaming.

D. OBJECTIVES

The objectives of ICMCIS are:

- Provide a forum to identify and gain input on and resolution of issues associated with NATO Command, Control and Communications (C3) Policy and focus for NATO collaborative research as through the IST Panel Programme of Work (PoW);
- Provide an overview of current NATO C3 activities as well as wider state-of-the-art research, pertaining to both the development and effective employment of ICT-solutions;
- Provide a forum for sharing ideas and knowledge on the development and implementation of advanced information and communications technologies (ICTs) for defence and military systems.

ICMCIS 2023



E. PAPERS

ICMCIS is open for both scientific papers and position papers. All papers for ICMCIS should be PUBLIC RELEASE and submitted in the following format:

| | |
|--|--|
| IST-200 RSY | |
| International Conference on Military Communications and Information Systems (ICMCIS) | |
| <i>TITLE OF ABSTRACT/PAPER</i> | |
| Title/Rank, Full Name of Author/Co-Author(s), Company/Affiliation, e-mail address | |
| Scientific/ position paper | |
| LENGTH | - 6 pages minimum, 10 pages maximum for the paper, prepared in line with the instructions for authors |
| CONTENT | - Introduction/relevance to the Conference topics* - Rationale - Related work - Description of methods employed and results obtained - Conclusions |
| <small><i>*All authors must include the following line to their abstract: "This paper was originally presented at the NATO Science and Technology Organization Symposium (ICMCIS) organized by the Information Systems Technology (IST) Panel, IST-200 RSY – the ICMCIS, held in Skopje, North Macedonia, 16-17 May 2023".</i></small> | |

Word and LATEX template are available at the ICMCIS website.

Authors' names, complete mailing addresses and emails must be included with the paper. Submissions without name(s) and complete address of author(s) will not be considered. Papers should be submitted to EasyChair NLT 15 February 2023. This date is important and must be met to ensure consideration.

The paper must also contain a declaration from the author(s) that there are no restrictions regarding the presentation, during the event nor on the publication of the paper in the Meeting Proceedings and IEEE Xplore.

When applicable, authors are requested to indicate young scientist contributions (age < 36yr).

| |
|---|
| <p><i>Presentations, Papers and Publication Release Forms from U.S. authors or authors affiliated to U.S. organizations must be sent ONLY to NATO S&T Organization U.S. National Coordinator</i></p> <p><i>(osd.pentagon.ousd-atl.mbx.usnatcor@mail.mil)</i></p> |
|---|

F. MEETING PROCEEDINGS/ PUBLICATION CLEARANCE

All papers will be peer reviewed i.a.w. IEEE review guidelines and checked for plagiarism. The selection of papers will be based on the following evaluation criteria: **Military relevance and significance, Scientific value, Originality, Technical quality (Construction / Readability/ legibility)**. All authors will be notified soon after the paper submission date, whether or not their papers have been selected with constructive feedback summary from the evaluation. When applicable, authors are encouraged to update their paper based on the review recommendations before submitting the camera-ready copy. Only papers that meet the criteria and associated quality will be accepted. For papers that just fail to meet the criteria and are thus rejected, the authors will be given the opportunity for a poster presentation.

ICMCIS 2023



After the paper selection is completed, all authors will be informed before **31 March 2023**, and successful authors will be requested to provide the following **NLT 28 April 2023**:

- Presentation (25 min + 5 min Q&A),
- Updated paper in accordance with peer review comments,
- STO Publication Release Form,
- Biography (100 words) for all (co-)authors,
- Digital portrait picture for all (co-)authors.

*All papers require signed STO Publication Release Forms.
STO Symposium Presentation/Publication Release and Clearance Certificate
Authors are responsible to get authorisations for publications in
accordance with their national procedures.*

The Meeting Proceedings, containing an abstract of the conference, position papers and (poster) presentations, will be published on the NATO STO website after all content is checked and the administrative conditions are met. Accepted papers will be submitted for inclusion in IEEE Xplore. Papers from previous conferences have also been indexed in the Web of Science Core Collection.

G. REGISTRATION AND FEES

All authors and visitors must register at the STO events website available as per dates in section H, following these steps

- Create account (if not existent) at <https://events.sto.nato.int/>;
- When account is accepted (may take some days), register to the event;
- Payment instructions will be given after accepted registration;
- Pay for the event as by received instructions;
- Registration is completed when payment has been confirmed.

Applicable fees are indicated on the ICMCIS website. Registration is complete and valid only when payment has been received. The fee covers for: access to ICMCIS, proceedings, ice breaker (Monday 15 May), lunch (2x), diner (Tuesday 16 May), coffee breaks during the event.

NOTE: Authors submitting papers / posters / demonstrations and other attendees must ensure their own financial support for participation to the ICMCIS.

H. PRELIMINARY SCHEDULE

| | | |
|--------------------|------|---|
| 3 February | 2023 | ONLY USA: Deadline for U.S. authors to submit paper to the U.S. National Coordinator |
| 15 February | 2023 | Papers due in electronic form |
| 31 March | 2023 | Notification of Acceptance |
| | | Online registration opens for visitors |
| 01 April | 2023 | Camera ready copy |
| 28 April | 2023 | ICMCIS |
| 16-17 May | 2023 | |

ICMCIS 2023



I. PROGRAMME COMMITTEE

Any questions on the technical aspects of the scientific programme should be addressed to the chairs or Programme Committee Members as listed below.

Co-chairs

| | |
|--|--|
| Steering Committee Mr Antoine SMALLEGANGE Antoine.smallegange@tno.nl TNO | Program Committee Ms Latasha SOLOMON Latasha.i.solomon.civ@army.mil DEVCOM ARL |
| Science Committee Prof Mitko Bogdanoski mitko.bogdanoski@ugd.edu.mk Military Academy General Mihailo Apostolski, Dean | |

Members of the programme committee

| | |
|--|--|
| Prof Bob MADAHAR bkmadahar@mail.dstl.gov.uk DSTL | Ass. Prof. Dimitar BOGANITOV dimitar.bogatinov@ugd.edu.mk Military Academy General Mihailo Apostolski, |
| Prof. Marek AMANOWICZ marek.amanowicz@nask.pl NASK | Goce STEVANOSKI goce.stevanoski@ugd.edu.mk Military Academy General Mihailo Apostolski, |
| Michael STREET michael.street@ncia.nato.int NCIA | Dr Michael GERZ michael.gerz@fkie.fraunhofer.de Fraunhofer FKIE |

Steering committee

| | |
|---|---|
| Marek AMANOWICZ Research and Academic Computer Network (NASK) | Mariusz MALINOWSKI IEEE Poland Section |
| Markus ANTWEILER Fraunhofer FKIE | Józef MODELSKI Past IEEE Division IV Director |
| Gian Luca FORESTI University of Udine | Milica PEJANOVIĆ-DURIŠIĆ Institute of Security |



| | |
|--|---|
| Patrice GUIVARCH DGA Maîtrise de l'information | Marek ROŻYCKI Military Communication Institute |
| Anthony ISENOT Defence Research and Development Canada | William SCANLON Tyndall National Institute |
| Frank JOHNSON Norwegian Defence Research Establishment | Bart SCHEERS Royal Military Academy |
| Wolfgang KOCH Fraunhofer FKIE | Antoine SMALLEGANGE TNO |
| Sławomir KULA IEEE Communications Society COM-019 | Milan SNAJDER NINOX a.s. |
| Jerzy ŁOPATKA Military University of Technology | Michael Street NCIA |
| Risto MÄÄTTÄ Finnish Defence Research Agency | Marek SUCHAŃSKI Military Communication Institute |
| Bob MADAHAR Defence Science and Technology Laboratory | Niranjan SURI Army Research Lab |
| Prof Mitko Bogdanoski Military Academy General Mihailo Apostolski, | Michal TURČANIK Armed Forces Academy |

J. POINT OF CONTACT

Questions on the administrative aspects of this event and requests for further information on STO activities should be addressed to the IST Panel Executive Assistant, Mrs. Armelle Dutruc (armelle.dutruc@cs0.nato.int).

K. ADDITIONAL INFORMATION

Additional information, Instruction to the authors, templates, payment instructions, updates on the event, paper on Multi Domain Operations, can be found on the ICMCIS website: <https://icmcis.eu>. Please check frequently for updates.

The Global Information Package with travel, accommodation and administrative details will be made available by CSO upon acceptance of the registration to the event.

Registration to the event will be made available at <https://events.sto.nato.int>.

ICMCIS 2023



ANNEX A

SPECIAL NOTICE TO U.S. AUTHORS

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

Ref.: IST-200 RSY, Skopje, North Macedonia, 16-17 May 2023

Papers from the U.S. must be sent ONLY to the following POC:

NATO STO 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

Email: usnatcor@osd.mil

All U.S. Authors must submit one electronic copy to this POC by 3 February 2023

The POC will forward all U.S. abstracts as required by the TECHNICAL program committee.

In addition to their papers, 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 documents 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.