Editorial

Defence and Security Research, Technologies, and Innovation

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A B S T R A C T

This introductory article in the *Journal of Defence & Security Technologies* (JDST) outlines JDST goals, concept, scope, editorial and ethical requirements. JDST is a peer-reviewed, open-access journal, published four times a year, with the ambition to serve as a forum for presenting novel research results and a professional discussion on the linkages among defence and security policy, R&T, and innovation.

K E Y W O R D S

R&T policy, innovation, open-access.

You hold in your hands or read on the screen the first issue of the *Journal of Defence & Security Technologies* (JDST), published by the Bulgarian Defence Institute "Prof. Tsvetan Lazarov."

There are hundreds, possibly thousands of scientific journals presenting new research results and advances in technology, and many of their publications are relevant to the field of defence and security. And yet, the core of the editorial team decided to launch JDST, aiming to position it as a forum where:

- Research results of a verified quality will reach the intended audience quickly, and will be accessible to interested readers free of any charges, following best practice for open access journals;

- Discussions on developments in science and technology will relate to the formulation of defence and security policies and provide clear linkage to respective operational requirements and capability needs;
- A prominent place is reserved for studies on the nexus of technologies and innovation in defence and security sectors (Figure 1).

We believe that this combination will make the *Journal of Defence and Security Technologies* distinct and attractive to readers and authors alike.

The initial scope of JDST includes ten thematic areas:

1. *Research and technology (R&T) policy and management*, including technology monitoring, foresight, R&T policy, acquisition management, life cycle management, costing, quality assurance, certification, standardization, and knowledge management;

2. *Mechanical and electrical systems, structures and materials*: weapon systems and platforms, mechanical systems and structures with defence applications, smart and nano-materials for defence, advanced materials for ballistic protection, electrical systems and structures;

3. *Propulsion and power systems*: advanced propulsion systems, advanced energetics materials, fusing systems and technology, ammunition and missile technology, power systems;
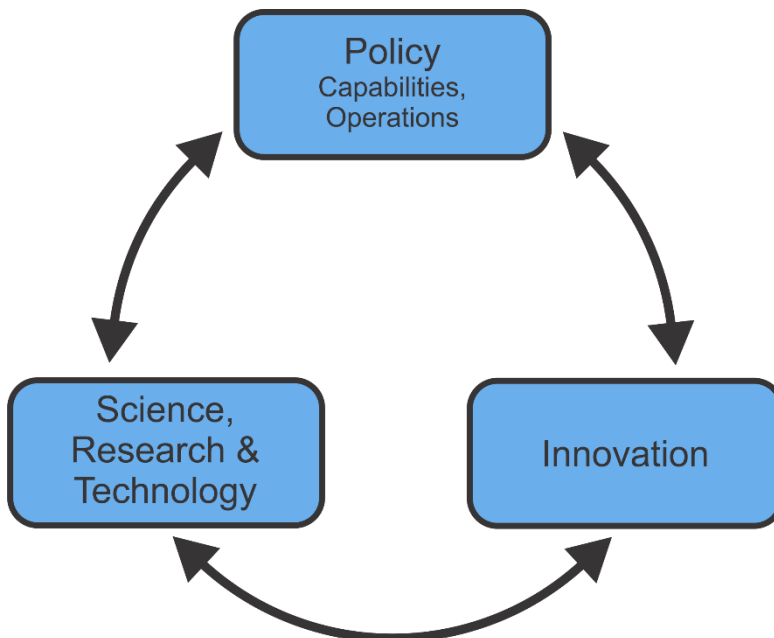

Figure 1: JDST Coverage.

4. *Dynamics and control systems*: fluid (aero, hydro, gas) dynamics, internal ballistics, external ballistics and flight dynamics, terminal ballistics and protection, guidance and navigation, avionics, weapon systems' control, battle management systems, air traffic control and management, unmanned/ autonomous systems, embedded systems (IoT);

5. *CBRNE and counter-IED*: chemical, biological, radiological and nuclear threats and responses, explosive materials, countering improvised explosive devices;

6. *Sensor technologies and systems*: optics and thermos-optics, radar technologies and systems, navigation systems, acoustic sensors and systems, laser sensors and lidar systems, data and information fusion;

7. *Communications and information systems*: waveforms and signal processing, networking protocols and performance, communications, computer architectures and systems, computer and mobile networks, information systems and applications, cloud and mobile computing, software engineering;

8. *Cyber security and cyber defence*: cyber threats and vulnerabilities, assessment of cyber risks, advanced persistence threats, applied cryptography (incl. homomorphic, quantum and post-quantum cryptography), steganography, cyber security operational concepts, cyber security models and architectures, situational awareness, cyber security of supply chains, cyber forensics, security of industrial control systems, cyber security systems and tools;

9. *Modelling, simulations and gaming*: theoretical aspects of modelling and simulation (M&S), M&S architectures, complex systems modelling, M&S technologies, M&S tools and standards, simulation environments and languages;

10. *Decision support*: operations research and operational analysis, defence economics, decision support systems.

JDST is an open-access peer-reviewed publication. Each accepted paper appears online as soon as it is prepared according to all journal requirements, and is immediately citable and accessible free of any charges to interested readers and without requiring registration of any sort.

The journal publishes papers in English or in Bulgarian. Contributions in the Bulgarian language include an extended abstract in English.

JDST adheres to a sound and transparent ethics policy. Everyone contributing to the *Journal of Defence & Security Technologies*—author, reviewer, or editor— needs to acquaint themselves, accept and adhere to the respective ethical responsibilities.

The journal is published in regular and special issues, dedicated to a particular theme. This first issue is focused on technologies in support of law enforcement agencies. Several of the contributions reflect research results in the HOMER (Homemade Explosives and Recipes Characterisation) project, http://homer-project.eu, supported by EU's Seventh Framework Programme [1]. Una Williamson

from the Police Service of Northern Ireland is a guest editor for this special issue, and Associate Professor Nikolai Stoianov from the JDST Editorial Board serves as her co-editor.

If you are interested to contribute a paper, act as a reviewer for JDST, or suggest a special issue on a particular theme, please get in touch with us via the contact form on the journal website, www.jdst.eu.

Together, we can make the *Journal of Defence & Security Technologies* a success!

REFERENCES

[1] U. Williamson, N. Stoianov, "Technologies in Support of Law Enforcement: Characterisation of Homemade Explosives and Recipes," *J. Def & Sec Technol.*, vol. 1, no. 1, pp. 9-10, 2017.