

**HEMUS 2024 - RESEARCH AND INNOVATION FOR SECURITY,
DEFENCE AND SPACE
6-8 JUNE 2024, PLOVDIV, BULGARIA**

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Present-day issues of tackling climate change and building resilient regions to accelerate the transition towards a climate-neutral and sustainable Europe foster the synergies between space and security and defense industries. On the one hand, the challenges in light of the current geopolitical tension and the EU's adopted priorities to strengthen the European defense industry in line with the accelerated green and digital transition significantly scaled up the pervasiveness of emerging and disruptive technologies across civil, security, and defense sectors. On the other hand, climate change continues to exert a growing impact on societies, culminating in new risks to humanity, as space technologies have become an essential component of almost every national defense strategy, interacting with and enhancing operations in every domain.

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In line with these challenges, the 2024 Belgian Presidency of the Council of the EU set as key priorities: accelerating twin green and digital transitions and making use of innovation, as well as strengthening the EU's capability to act in the field of security and defense. With the EU Space Law and the EU Space Strategy for Security and Defence planned for adoption, the foundations of a new ecosystem - Security-Defence-Space will be laid, which will help to achieve strategic autonomy of Europe in these sectors.

Within these contexts, the Center for National Security and Defence Research – Bulgarian Academy of Sciences (CNSDR-BAS) and the Bulgarian Defence Institute “Prof. Tsvetan Lazarov” jointly organized, under the auspices of the Belgian Presidency of the Council of the EU: HEMUS 2024 – Research and Innovation for Security, Defence, and Space (June 6-8, 2024). The Research and Innovation Week was part of the International Defence Equipment and Services Exhibition "HEMUS-2024" in Plovdiv, Bulgaria, and marked the 155th anniversary of the Bulgarian Academy of Sciences and the 15th anniversary of the Bulgarian Defence Institute. The Week aimed to address two main topics - scientific research and innovation in light of the priorities to strengthen the European defense and global challenges related to the adverse effects of climate change, as well as the role of space technologies towards accelerating the transition to a green, sustainable and secure Europe. Gathered in Plovdiv, Bulgaria, a range of stakeholders, from policy experts, armed forces, space companies, and user communities, discussed how to ensure a safe and resilient future for the rapidly modernizing country.



The first day of HEMUS 2024 – Research and Innovation for Security, Defence, and Space took place on June 6, 2024, mainly focused on the topic “Space for Security and Defence”. The event was officially opened by Col. Borislav Genov, Assoc. Prof. D.Sc. - Director of the Bulgarian Defence Institute gathered significant Bulgarian and international specialists in the field and emphasized the importance of enhancing

connections between Bulgaria's scientific and industrial sectors through national and European initiatives amidst a challenging geopolitical landscape. In his keynote address, the Minister of Defence of the Republic of Bulgaria – Mr. Atanas Zapryanov (Ret. G), emphasized the strategic importance of research and innovation and the contribution of space technologies to guaranteeing security and defense. Collaborating with the Belgian EU Council presidency, Belgian Ambassador HE Mr. Frédéric Meurice highlighted Belgium's legislative achievements and priorities for the implementation of European policies in the field. Cor. Member Stefan Hadjitodorov, Vice-

President of the BAS, emphasized the role of the Academy as a leading national institution in the space sector, whose vocation is to support the development of science and innovation for the benefit of security, defense, and space. Cor. Member Hadjitodorov and Mr. Kamen Iliev – Director of CNSDR-BAS, underscored Bulgaria's historical achievements in space and advocated for continued inter-ministerial cooperation, new funding, and nurturing young talent to bolster Bulgaria's role in international institutions like the European Space Agency (ESA) and the European Union Agency for the Space Programme (EUSPA). Honorary Senator Ms. Dominique Tilmans, president of Eurisy, presented the role of space as an instrument of geopolitics and stressed the need for policy-technology integration, especially regarding satellite data for climate change and security.



The opening was followed by a plenary session: "Enhancing the use of space for security and defense," which focused on the role of the EU in steering the synergy between space and security and defense sectors, as well as the possibilities for Bulgaria's integration into the most important European space programs related to security and defense. The Executive Director of EUSPA - Mr. Rodrigo da Costa, who came for the

first time to Bulgaria to participate in the Research and Innovation Week, underlined the significant role and added value of space technologies for security and economic purposes.

The first day ended with the Bulgarian edition of the workshop series co-organized by EUSPA and Eurisy - "Satellite-based Services for Disaster Risk Management." A range of local service providers, alongside user communities and European policy experts, discussed how satellite technologies, including the components of the EU Space Programme, could most effectively contribute to national disaster risk management efforts.



On June 7, 2024, the Space for Sustainable Future workshop highlighted the importance of space information for dealing with the impact of climate change. The event spotlighted the role of the ESA Accelerators, each created to support accelerating the use of space to address three major societal challenges: Rapid and Resilience Crisis Response, Space for a Green Future, and Protection of Space Assets.

At the heart of the Accelerators initiative, as presented by Christopher Topping,

Rapid & Resilient Crisis Response Accelerator Lead at ESA, is the need to connect with new non-space users and support the development of accessible, affordable, and innovative space-based technologies, fostering local space ecosystems and accelerating the use of space throughout society. The second session was devoted to the use of space technologies for the purpose of the transition to a green future. Prof. Ekaterina Batchvarova - Director of the Climate, Atmosphere and Water Research Institute at BAS, presented the natural and anthropogenic factors of climate change. On behalf of the "Risk-Space-Transfer" Technology Transfer Office (RST-TTO) - BAS, Katya Dimitrova spotlighted RST-TTO's key projects related to climate adaptation and building sustainable regions to accelerate the transition to a climate-neutral and sustainable Europe: Validated Local Risk Actionable Data for Adaptation (VALORADA) and Regions4Climate.



Both workshops - Space for Security and Defence and Space for Sustainable Future, provided the inspiration for the HEMUS Innovation Hackathon: "Space for Green, Sustainable, and Secure Europe (S4GSS)", which was held on June 7-8, 2024. Following the success of the DefIn-

Space Hackathon organized by RST-TTO at HEMUS 2022, for the second time, an innovation competition was held as an accompanying event within the International Defence Equipment and Services Exhibition HEMUS. 8 teams, featuring representatives of higher military schools and universities in Bulgaria, had two days to develop their ideas for a more sustainable, secure and greener future for Europe using space technologies. Through a closely contested battle, the panel of expert judges ranked in first place the team Aurora from the Technical University of Sofia with their idea of providing rapid situational awareness for decision-makers to speed up the coordination of assistance during earthquakes.

HEMUS 2024 - Research and Innovation for Security, Defence, and Space achieved its main purpose to encourage collaborative interactions between science and industry representatives with a view to the exchange of experience and future cooperation in the field of security, defense, and space. Over 30 speakers - representatives of the Bulgarian government, experts from leading European organizations, representatives of science, the public sector, and business presented the latest achievements in space research and technologies related to defense and security to an audience of over 100 participants. Thanks to events such as these, leading experts, researchers, new user communities, and stakeholders can connect with each other, exploring and demonstrating the possibilities of space in addressing key societal challenges.

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