**Follow up to the European Parliament non-legislative resolution on** **Critical technologies for security and defence: state of play and future challenges**

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**2. Reference numbers:** 2022/2079 (INI) / A9-0120/2023 / P9\_TA(2023)0131

**3. Date of adoption of the resolution:** 9 May 2023

**4. Competent Parliamentary Committee:** Committee on Industry, Research and Energy (ITRE)

**5. Brief analysis/ assessment of the resolution and of requests made in it**:

***The growing importance of critical technologies for security and defence***

The Parliament recognises that cutting-edge digital technologies, structured support for innovation and stable supply of critical raw materials and technologies are vital for Europe’s defence sector. The Parliament is concerned about the lack of investment in new, disruptive technologies despite the general acknowledgement that Russia’s war against Ukraine has repeatedly demonstrated the effectiveness of these technologies. The Parliament emphasises the need for better dual-use of existing civilian technologies and for cross-fertilisation among civilian, military and dual-use innovation in the field of critical technologies.

***The risks of overdependence and insufficient financing***

The Parliament is concerned about the insufficient level of financing for defence and security and fears that the current Multiannual Financial Framework (MFF) will not be able to provide sufficient resources to boost EU defence collaboration to an appropriate level. The Parliament regrets that the combined defence research and technology spending of the Member States in 2020 amounted to only 1,2 % of their total defence spending. The Parliament underlines the need to increase investments in ‘green’ defence by dedicating a higher share of EU-financed research and development (R&D) to carbon-neutral fuels and propulsion systems for defence users, to sustainable security and defence technologies and to measures that reduce the dependence of the EU’s security and defence industries on fossil fuels.

***The opportunities offered by newly established EU instruments***

The Parliament strongly supports the Commission’s recent initiatives in this area. The Parliament welcomes the Commission’s proposal to overcome the current division between civil, defence and security research, development and innovation and calls on the Commission to better connect EU civil, defence and security programmes and instruments with the relevant stakeholders. The Parliament welcomes the establishment of the observatory of critical technologies. The Parliament welcomes the creation of the EU defence innovation scheme and the ongoing work with various tools relating to defence and new and dual-use technologies in order to help innovative start-ups and small and medium-sized enterprises (SMEs) overcome high technological, administrative, financial, regulatory and market entry hurdles. The Parliament calls on the Commission to further develop existing funding schemes and alternatives to significantly increase funding for critical technologies for security and defence under the current MFF, by closely aligning the various EU research and innovation programmes.

**6. Response to requests and overview of action taken, or intended to be taken, by the Commission:**

***The growing importance of critical technologies for security and defence***

Observatory of critical technologies (paragraph 6)

The Commission set up the observatory of critical technologies (OCT) in 2021 with the aim to: (i) identify critical technologies in the interplay between the civil, space, and defence industries; (ii) identify and monitor risks associated with strategic dependencies (technologies and their associated value chains and actors); and (iii) perform technology watch to identify emerging critical and potentially disruptive technologies with a significant potential impact on space and defence innovation and EU strategic interests. The Commission will present its first classified report to Member States in the second half of 2023. It will focus on two selected cases: autonomous systems and semiconductors for defence. Further critical technologies will be selected for analysis in the future.

Encouraging Member States to review all their defence programmes and policy tools with a specific focus on critical technologies (paragraph 7)

In 2022, the Commission established a dedicated expert group with Member States in support of the observatory of critical technologies. In addition, the Commission set up a group with industrial experts on critical technologies, as a subgroup on the expert group on aerospace and defence. Finally, the Commission is working closely with the European Defence Agency to ensure the alignment and cross-feeding of respective work on critical technologies.

EU procurement directives with regard to barriers for start-ups and small businesses (paragraph 12)

The Commission attaches great importance to enhancing the participation of SMEs in the defence sector as they are a critically important part of supply chains and key enablers of innovation and growth, able to conduct essential research, technology and innovation activities.

The Commission issued in 2018 a recommendation on cross-border market access for sub-suppliers and SMEs in the defence sector. The recommendation has been largely implemented by the Member States. The Commission, together with the Member States, is regularly examining and exchanging good practices on different aspects concerning the involvement of SMEs in defence procurement as part of the work of the Commission’s expert group on Defence and Security Procurement. The continued substantial participation of SMEs in the European Defence Fund (EDF) and its preparatory programmes is testament to the Commission’s efforts to this end.

Sustainable security & defence technologies, resilience of industry and ‘green defence’ (paragraphs 23 and 24)

The Commission, together with the High Representative, tabled a Joint Communication on climate change, environmental degradation, security and defence in June 2023. It will build on the EU climate change and defence roadmap (November 2020) and the Concept for an integrated approach to climate change and security (October 2021) while taking into account the Commission’s contribution to European defence of February 2022 and the EU’s Strategic Compass on Security and Defence call to Member States to develop national strategies to prepare the armed force for climate change.

***The risks of overdependence and insufficient financing***

Promoting circularity and increasing research on new materials so as to minimise dependence on non-EU countries (paragraph 9)

The Commission has co-funded the Incubation Forum for Circular Economy in European Defence (IF CEED) project through the EU LIFE Programme. IF CEED is run by the European Defence Agency (EDA) and pursues project ideas based on circularity principles in several fields, for example critical raw materials, additive manufacturing, materials for textiles, ecodesign and green procurement, SCIP ((Substances of Concern In articles as such or in complex objects (Products)). A dedicated project circle addresses relevant Critical Raw Materials for EU defence, such as titanium, tungsten, antimony, including to foster their circularity in different sections of the supply chain. In addition, the defence and aerospace section (i) was one of the focus areas of the 2023 Commission’s foresight study on ‘critical raw materials for strategic technologies and sectors in the EU’ and (ii) featured prominently in the 2023 Critical Raw Materials Act.

Fostering investment in technologies for the defence industry (paragraph 14)

The Commission is increasingly taking ambitious steps in support of the defence industry, starting with the implementation of EDF and its precursor programmes. The Commission presented the action plan on synergies between civil, defence and space industries in February 2021, the roadmap on critical technologies for security and defence as well as a contribution to the European defence in February 2022, a defence investment gaps analysis in May 2022, a proposal for the European Defence Industrial Reinforcement through common Procurement Act (EDIRPA) in July 2022 and a proposal for an Act in support of ammunition production (ASAP) in May 2023. In this respect, the Commission appreciates the progress made so far on the legislative negotiations and looks forward their quickly adoption. Both proposals are in the final phase of legislative negotiations: while the provisional agreement on EDIRPA has been reached, the one on ASAP as expected before the summer. In addition, the Commission presented sectorial proposals which those of predominantly civilian in nature are also of significance to the defence industry: the Chips Act, the Critical Raw Materials Act, the Union secure connectivity programme IRIS2, ((Infrastructure for Resilience, Interconnectivity and Security by Satellite) or the Maritime Security Strategy.

Pooling national resources for R&D in defence and security (paragraph 16)

After two rounds of EDF funding, all major defence industrial companies are participating and SMEs already account for up to 45% of the entities participating in selected projects. So the EU industrial base already expands into the defence sphere, involving the entire EU industrial value chain. The Commission aims to achieve a right balance by providing funds for flagship defence R&D initiatives to reduce the number of platforms and systems currently in operation in Europe, as well as providing funds to support new competitive and collaborative defence initiatives throughout the entire cycle of research and development. In both cases, the longer term aim of the Commission is for Member States to jointly procure these systems as well as invest in their further research and development. In this respect, the EDF aims to become a driver for pooling of national R&D resources.

In addition, Commission services are contributing to several Permanent Structured Cooperation (PESCO) projects, a Member State-driven initiative launched in 2017 that offers opportunities to enhance defence cooperation between Member States (i.e. defining common requirements for future capabilities) including in critical technologies. Out of the 60 PESCO projects (before the adoption of the 5th wave, which added 11 new projects), 49 are partly funded or requested funding from the European Defence Industrial Development Programme (EDIDP), the European Defence Fund (EDF) or the Connecting Europe Facility (CEF).

***The opportunities offered by newly established EU instruments***

Better connecting EU civil, defence and security programmes and instruments (paragraph 3)

The Commission performed a detailed analysis of opportunities and constraints from synergies between existing EU programmes and instruments. A summary of this analysis was presented in November 2022 with the progress report on the action plan of synergies between civil, defence and space industries. In addition, the Commission took specific action by proposing the use of a mix of EU financing instruments for IRIS2 and ASAP. Finally, the Commission is currently working intensively with the European Investment Bank in order to identify areas for joint support of dual use innovation and infrastructure. The STEP (Strategic Technologies for Europe Platform) proposal of June 2023 envisages a more strategic approach to critical technologies across a number of existing funding instrument, including the EDF as regards deep and digital technologies, by creating mechanisms for complementary funding under different programmes under the system of ‘sovereignty seals’ (e.g. interaction of directly managed programmes like EDF with indirect or shared management programmes like the Recovery and resilience Facility or the cohesion funds).

EU Defence Innovation Scheme (paragraph 11)

The Commission announced the EU Defence Innovation Scheme (EUDIS) in Spring 2022 and committed to dedicating approx. EUR 1.5 billion under the European Defence Fund during the current MFF. In 2023 the Commission delivered a tailored set of innovation support measures focused on SMEs, including start-ups. These measures are integrated in the EDF Work Programme 2023 in the form of calls and support actions. EUDIS measures encompass a different approach in organising R&D calls (in the form of technological challenges, calls with financial support to third parties, spin-in calls to tap into the dual-potential of results generated in civil funded EU R&D programmes, open R&D R&D calls for SMEs and disruptive technologies) and support actions in the form of SME business coaching, organisation of defence hackathons and by enabling access to equity funding for innovative defence SMEs and mid-caps through the European Investment Fund.

Additional SME innovation support services may be put in place before 2027. This tailored approach, focusing on smaller market players aims to build a stronger EU defence innovation ecosystem throughout the EU and contribute to the EU Member States’ and Norway’s military capability development. EUDIS represents approximately 20% of the annual EDF budget. The total budget for 2023 is EUR 224 million.

Defining appropriate Technological Readiness Level (TRL) (paragraph 17)

The Commission believes that for best possible degree of interoperability and subsequent common procurement of defence equipment by the Member States, the TRL should be at least 8, which refers to a stage in the development of the critical and disruptive defence technology where it is considered to be near completion and ready for deployment on the battlefield.

‘Multiple helix models’ for innovation (paragraph 19)

Multi-helix models for innovation are framework models that emphasise the collaboration and integration among various stakeholder in the innovation process. The triple helix model is well known and well established e.g. used by Dutch Ministry of Defence (MoD). This primarily involves: academia, industry, and the end-user (MoD). The Commission is considering deploying the multi-helix model under EUDIS while expanding the concept by adding additional strands to the helix, such as other industrial sectors or the civil society.

Further developing existing funding schemes and alternatives to increase funding for critical technologies under the current MFF (paragraph 20)

The Commission is continuously seeking to maximise the benefits of existing funding schemes. Concrete examples include the setup of EUDIS as part of EDF with close to EUR 2 billion funding during the lifetime of the current MFF (of which EUR 1,46 billion from EDF, EUR 90 million from co-funding by Member Sates and EUR 400 to 500 million of leverage from the InvestEU programme and the European Investment Fund (EIF); the ongoing work with the European Investment Bank seeking to identify opportunities for joint funding. In addition, with EDIRPA, the Commission proposed simplified financing procedures (through innovative use of financing not linked to cost) to incentivise cooperation of Member States in defence procurement. With the Economic Security Strategy Communication of June 2023, the Commission committed to explore options to ensure adequate targeted support for R&D of dual-use technologies. Finally, the Commission has proposed to increase support for actions related to deep and digital technologies for defence and aerospace with its June 2023 proposal for the MFF mid-term revision; this proposal boosts EDF funding by EUR 1,5 billion over the remaining MFF period, linked to the provisions in the STEP (Strategic Technologies for Europe Platform) proposal covering critical technologies.