According to the European Commission, "in the digital decade, high-performance computing (HPC) is at the core of major advances and innovation, and a strategic resource for Europe's future" [https://digital-strategy.ec.europa.eu/en/policies/high-performance-computing]. This is why there is such strong interest and significant funding allocated to the development of HPC infrastructure and HPC services. A key condition for the effective use of these resources is the dissemination of HPC competences among all stakeholders of the HPC ecosystem, including experts (specialists developing and delivering services) and users representing three main groups: researchers, the business sector, and public institutions.

The first chapter of this TASK Quarterly collection of articles presents the EuroHPC JU initiative, which aims to create a unified high-performance computing infrastructure across Europe, offering researchers access to powerful computational resources for scientific and industrial advancements. The article discusses different types of EuroHPC JU calls (e.g. for high-impact innovative research, code and algorithm development and optimization, AI application testing, ethical artificial intelligence, and data-intensive applications). Poland is both a beneficiary and an active partner in EuroHPC JU projects (such as PLGRID), which enables Polish users to utilize local and European-scale HPC resources.

The subsequent chapters of this TASK Quarterly issue are largely dedicated to the EURO CC^2 project, which is an example of a multidimensional initiative funded by the European Union and focused on building a "European network of 33 national HPC competence centres to bridge existing HPC skills gaps while promoting cooperation across Europe" [https://www.eurohpc-ju.europa.eu/research-innovation/our-projects/eurocc_en]. EURO CC^2 runs from January 2022 to March 2026, as a continuation of the EuroCC project launched in 2020, and its objectives are implemented by National Competence Centres located in each partner country.

Poland is one of the project members and established the National Competence Centre in HPC in 2020. Its mission is to promote knowledge about supercomputers and HPC technologies, provide user training, ensure access to computing resources, and deliver expert support for researchers, businesses, and the public sector in the areas of HPC, HPDA (High-Performance Data Analytics), and AI [https://cc.eurohpc.pl/].

Chapter two describes the structure of the Polish NCC, the HPC infrastructure of each partner, and the main areas in which Polish supercomputing centres collaborate under the EURO CC^2 framework. Examples of proof-of-concept (PoC) projects are also presented as essential instruments enabling SMEs and public stakeholders to test and validate HPC-enabled workflows in a controlled, low-risk environment before committing significant financial or organizational resources.

Chapter three investigates the coopetition model of collaboration within the Polish NCC and examines how mutual dependence, mutual interests, and the perception of mutual benefits create a foundation for joint activities focused on end users. The mutual reputation of NCC partners, based on high employee competences, positive previous relationships, and trust, has led to strong coopetition and contributed to increased marketing activities, diversification of services, and the delivery of a wide range of training initiatives.

One of the challenges faced by the Polish NCC was the knowledge gap among potential HPC users. Chapter "High Performance Computing – a Gentle Introduction for Non-Specialists" addresses this

issue by introducing the principles of parallel processing and HPC services available to external users in an accessible manner. Six specific application areas of HPC technology (AI, weather forecasting, business applications, physical simulations and astronomy, molecular modelling and drug discovery, and materials science) may stimulate interest in NCC services among non-expert users.

Specific business use cases are discussed in Chapter 5, "How Supercomputing Technology Can Be a Game-Changer for SMEs". The authors describe the main benefits (such as enhanced R&D processes, modelling and simulation, analysis of industrial and market data, prototyping, and cost reduction) as well as challenges (e.g. lack of awareness, skills, and experience in advanced computational techniques and HPC technologies) that determine HPC adoption by small and medium-sized enterprises. The Fortissimo Plus and EURO CC^2 projects are presented as initiatives supporting the SME sector and start-ups through training activities, PoCs, and grants enabling the use of supercomputing resources.

The final article complements the range of Polish NCC activities by presenting training initiatives addressed to three main categories of participants: students in disciplines that can directly benefit from HPC infrastructure, researchers affiliated with academic and research institutions in Poland, and representatives of commercial entities, primarily small and medium-sized enterprises.

The collection of articles of TASK Quarterly provides guidance on which projects can be used to support the development and implementation of HPC in various domains. It highlights opportunities for developing competences required by both creators and users of HPC technologies and may also serve as an inspiration for the development of different cooperation models among stakeholders within the HPC ecosystem. As the EuroCC project will continue for the next three years, familiarity with the scope of activities of the Polish NCC also constitutes an invitation for target user groups to engage with its offer and to enhance their research and business activities through the application of HPC.

<div align="right">Beata Krawczyk-Bryłka, PhD</div>