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ETP4HPC Releases 6th Edition of its Strategic Research Agenda

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RECENT DEVELOPMENT

The European Technology Platform for High Performance Computing (ETP4HPC) recently published the 6th edition of its Strategic Research Agenda (SRA 6). Published every two years, SRAs provide a snapshot of recent HPC-AI technology developments. New research domains and thematic trends include AI and foundational models, quantum and HPC, energy efficiency and sustainability, and ecosystem technologies. Perspectives on post-exascale and hardware programs focused on European sovereignty are also provided.

ANALYST COMMENTARY

The HPC-AI ecosystem is a constantly evolving environment. Investments in national and regional HPC-AI capabilities to stay current with the state-of-the-art have been found to be critical for national and regional economic competitiveness. Identifying key macro trends and prioritizing new technologies is essential and matching them with the needs of the user community is crucial for the success of these investments. ETP4HPC, one of three private entities of the EuroHPC Joint Undertaking (JU), is charted to promote European HPC research and innovation. With more than 100 members spanning all facets of industry and EU regions, ETP4HPC consolidates industry requirements and distills them in its bi-annual SRA.

Beyond the common areas from past SRAs and the new research domain areas and thematic trends, SRA 6 also provides guidance relative to multiple AI-related items (e.g., AI for science, services and infrastructure, ecosystem development, lower precision programming, lessons learned from AI in the cloud), and post exascale vision and challenges. Influence from prior SRAs can be seen in the research and innovation projects that led to the modular supercomputing architecture of the Jupiter exascale system at Jüelich. Outcomes of recent EuroHPC research projects (e.g., DEEP-SEA, RED-SEA, IO-SEA) and closed calls for research and innovation grants (e.g., low latency and high bandwidth interconnects, energy efficient technologies for HPC) also reflect the impact from prior SRAs.

The ability to facilitate and coordinate requirements from such a broad and diverse constituency is remarkable. Not only does ETP4HPC represent the voice of industry to the JU, its SRAs aim to provide a comprehensive analysis of the current and future HPC-AI technology and ecosystem, inclusive of all aspects of supercomputing architecture and key macro trends. Consolidating industry perspectives and keeping SRAs fresh with its 2-year publication cadence seems to be a successful model for capturing, prioritizing, providing guidance, and driving innovation for future large-scale investments in EU HPC-AI capabilities.