

DEEP-EST Project Completes Hardware Installation of Extreme Scale Booster

June 24, 2020

June 24, 2020 — The hardware prototype of the DEEP-EST project was completed with the installation of the Extreme Scale Booster in mid May 2020. Based on JSC's Modular Supercomputing Architecture (MSA), the DEEP-EST prototype interconnects via a high-speed Network Federation of three compute modules: a general-purpose Cluster Module (CM), a focused Data Analytics Module (DAM), and an Extreme Scale Booster (ESB) module.

The first two modules (CM and DAM) installed at JSC back in 2019 are designed to be used for application workloads with high requirements in terms of single-thread performance and management of large data volumes. The power-efficient ESB now provides an additional 75 nodes, each hosting one Intel Xeon CPU and one NVIDIA V100 GPU, to address the needs of highly scalable codes and adapt them to the computer architectures likely to be used in the Exascale era.

Integrated by the partner MEGWARE, the full DEEP-EST system features state-of-the-art high-performance technologies for compute (CPU), acceleration (GPGPU, FPGA), memory (volatile, non-volatile), SSD storage, I/O and network fabrics to support modern HPC, Data Analytics, and AI workloads. It also utilizes MEGWARE's innovative direct liquid (warm water) cooling technology for high energy-efficiency, thus supporting the European Green Deal strategy. Technical details on the DEEP-EST system can be found at <https://fz-juelich.de/ias/jsc/deep-est-system>.

The DEEP-EST prototype is available to project partners and also to external users through the Early Access Program, including those performing COVID-19 related research activities.

JSC is the coordinator of the DEEP-EST project, an EU funded Horizon 2020 research project with 16 international partners, aiming at the development and demonstration of Exascale-ready hardware and software technologies. The project results will be fundamental to shaping the future of the JSC production environment. For more details on the DEEP-EST project, please visit <https://www.deep-projects.eu>.

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