Publishable Summary for the Periodic Report

Ramp-Up Phase (M1-12)

In early 2017, the Ramp-Up Phase (RUP) of the Human Brain Project (HBP) ended with the completion of a Pre-Commercial Procurement (PCP). This procurement of research and development services was started in 2014 with the goal of having suppliers work on enhancements of their future supercomputers in order to make these more suitable for applications from the HBP. The suppliers, which were awarded contracts in this PCP, were requested to focus their research and development efforts on three different areas. Firstly, they should work on the integration of dense memory technologies that provide a much larger memory capacity to store the large amounts of data which are created during simulations, or have been obtained from experiments. Furthermore, the project asked for work on tighter integration of visualisation into future supercomputers. Finally, the PCP aimed for software solutions allowing for a dynamic management of resources. With large-scale simulations, data-analytics and visualisation pipelines using the supercomputers concurrently, users want to be able to change the resources made available for these different applications during their execution.

To evaluate the performance and usability of the newly developed solutions, the contractors were asked to install pilot systems at the Jülich Supercomputing Centre. These are small supercomputers, which have been integrated into the HBP's High Performance Analytics and Computing (HPAC) platform and are now starting to be used by neuroscientists for their research.

Figure 1: Pilot systems delivered within the HBP's pre-commercial procurement. JULIA (left) has been delivered by Cray and JURON (right) by IBM and NVIDIA. Both systems use a shared high-performance storage system (middle).

The PCP is a competitive and multi-phase process. Two contractors were admitted to the third and last phase: Cray and a consortium of IBM and NVIDIA. Both contractors executed all their research and development services in Europe.

The URL of the project public website and contact Information:

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