Theme: New Computing

- Sub theme: Power efficient System S/W and H/W

Memory Coupled Compute (MCC) involves more closely coupling memory with compute for bandwidth and energy advantages. This GRO is targeted at creating innovative technologies and business opportunities in the MCC space. It further involves investigating tightly coupling general purpose cores with accelerators. The goal is to explore architectures for AI and HPC including researching the software and hardware system structure of high-performance and low-power system for large-scale AI applications, super-large data, and simulation. We are looking for new ideas to bring innovation in both the hardware and software space. All topics in this space are welcome, but in particular, we are interested in the following list of topic

1) Software and hardware techniques for efficiently and productively utilizing many-core systems with tightly coupled accelerators and HBM.

2) Optimizing OpenMP and MPI programming model for many-core system for tightly coupling general purpose cores with accelerators

3) Security and power-aware compute node for MMC

4) Supporting RISC-V/ARM Software Eco

5) Novel power delivery techniques to address the challenges induced by memory-coupled computing

※ Participants are encouraged to propose new ideas outside the topics listed above in the space of memory-coupled computing.

※ Funding: Up to USD 150,000 per year