

Press Release

C-DAC partners with MosChip and Socionext for design of HPC Processor AUM based on Arm architecture

[New Delhi, India. July 01, 2024] --- C-DAC Partners with MosChip® Technologies, and Socionext Inc. for the design and development of a High-Performance-Computing (HPC) Processor SoC based on the Arm® architecture and built on TSMC 5nm technology node.

Centre for Development of Advanced Computing (C-DAC) is the premier R&D organization of the Ministry of Electronics and Information Technology (MeitY), Govt. of India for carrying out R&D in IT, Electronics and associated areas. C-DAC was established to develop and deploy the state-of-the-art supercomputing technology in India.

National Supercomputing Mission (NSM), funded by Ministry of Electronics and Information Technology (MeitY) and Department of Science and Technology (DST), was launched to make India one of the world leaders in supercomputing and to enhance India's capability in solving grand challenge problems of national and global relevance. As part of this, C-DAC is developing and deploying HPC systems at leading R&D and academic institutions across the country.

C-DAC is working towards complete indigenization of supercomputing technology. Towards this, C-DAC has developed indigenous compute node RUDRA, Trinetra-Interconnect and System Software stack. Further for complete indigenization of HPC system development, C-DAC is designing an indigenous HPC Processor **AUM**. Keenheads Technologies, an Indian Startup, has been engaged by C-DAC as Program Management Consultant (PMC) for the project.

C-DAC is collaborating with the consortium of MosChip Technologies, India and Socionext Inc., Japan for design & development of this indigenous HPC Processor **AUM**, based on the high-performance Arm Neoverse™ V2 CPU platform, and incorporates advanced packaging technology. This approach allows them to retain ownership of unique differentiators, providing a significant competitive edge.

"MeitY's strategic policies have been instrumental in the growth of the National Supercomputing Mission. We have achieved significant milestones, including the installation of advanced supercomputers, enhancements in computational capabilities, and breakthroughs in research. Our indigenization efforts have reached more than 50% with server nodes, interconnects, and system software stack. Now for complete indigenization, we are aiming to develop indigenous HPC Processor **AUM**. Government of India and MeitY are committed to driving India towards a technologically sovereign advanced future, harnessing supercomputing for national development and global leadership", said Shri S. Krishnan, Secretary, MeitY.

"Today's announcement is a significant achievement in chip design. It demonstrates India's capability in indigenous development in the field of high-performance computing. These ventures in consortia mode in

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partnership with industry are the need of the hour” said Dr. Praveen Kumar S, Head of Scientific Divisions (HOD) Department of Science and Technology.

“The collaboration between C-DAC and MosChip & Socionext to develop cutting-edge HPC processor, which is designed to meet the evolving demands of High-Performance-Computing and related applications, exemplifies the growing synergy between R&D and Industry. This joint effort marks a significant milestone in technological advancement, leveraging C-DAC’s expertise in Supercomputing technology and MosChip’s and Socionext’s capabilities in semiconductor design and manufacturing. The collaboration aims to design, develop and produce indigenous HPC processor that not only meets global standards but also propels India to the forefront in supercomputing arena. This collaboration is also a significant step forward in our efforts to bolster India’s position in the global semiconductor landscape.”, said Shri E Magesh, Director General, C-DAC.

"We are honoured and excited to join forces with C-DAC and MeitY on this pioneering project to design and develop a HPC Processor SoC in TSMC 5nm node. This collaboration leverages our cutting-edge silicon design expertise and underscores our commitment to strengthening India's technological prowess. Our team of silicon and system design experts ensure that we deliver solutions that meet the highest standards of performance and reliability. We are committed to supporting C-DAC and MeitY in their goal of making India one of the world leaders in Supercomputing," said Shri Srinivasa Rao Kakumanu, Managing Director and CEO, of MosChip Technologies.

"Socionext is pleased to collaborate with C-DAC and MosChip in the development of HPC Processor **AUM**, in support of India’s indigenous Supercomputing Infrastructure and ecosystem, supporting a range of applications of national interest," stated Shri Hisato Yoshida, Deputy President, Head of Solution SoC R&D, and Global Development Group at Socionext. "The combined expertise of C-DAC, MosChip and Socionext in advanced Supercomputing technology and Silicon developments will yield a remarkable indigenous HPC SoC, delivering an exceptional energy efficient high-performance processor to propel India's national supercomputing mission to new heights."

“We are proud to be part of C-DAC’s efforts in advancing India’s HPC capabilities,” said Guru Ganesan, President, Arm-India. “Arm Neoverse V2 is playing a pivotal role in transforming data centers and will deliver the scalable, efficient computing needed to meet the goals set forth by India’s National Supercomputing Mission.”





About MosChip: MosChip® is India's first fabless semiconductor company with 25 years of experience in designing semiconductor IP, products, and first-time right silicon with 200+ SoC tape-outs.

About Socionext: Socionext Inc. is a global SoC supplier and a pioneer of a unique "Solution SoC" business model and creating feature-rich custom SoCs using cutting-edge technology.

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