

Semidynamics and SiPearl Announce Strategic Cooperation to Develop EU-Sovereign Rack-Scale AI Compute Platform



Barcelona, Spain and Maisons-Laffitte, France — May, 7 2026 — Semidynamics, an advanced computing company developing memory-centric AI infrastructure for large-scale inference, and SiPearl, the European fabless designer of high-performance energy-efficient CPUs for sovereign supercomputing, AI and data centres, have entered into a strategic partnership to develop a European rack-scale AI compute platform dedicated to large-scale AI inference in the cloud.

The two companies share a common goal: to offer a sovereign high-performance energy-efficient compute solution capable of supporting major European initiatives, both public and private, including AI Factory and Giga Factory programmes. Semidynamics and SiPearl will coordinate their marketing and sales efforts to jointly pursue European procurement opportunities.

Their platform will bring together core European technologies. SiPearl's Arm[®]-based CPU will provide general-purpose compute, orchestration and data plane hosting, while Semidynamics' RISC-V-based GPU/AI inference ASIC will act as the main acceleration engine for AI inference workloads and enable future performance scaling. The companies expect to offer a rack-scale system delivering the density expected from leading global AI platforms. The rack design will be based on Open Compute Project

(OCP) standards, supporting interoperability and alignment with established cloud and data centre infrastructure practices.

Europe's technological sovereignty lies at the heart of this collaboration. With key compute components, including the CPU and accelerator, being developed in Europe, the platform helps to strengthen regional capability in the long term and reduces dependence on non-European "full-stack" ecosystems.

Energy efficiency has always been a key priority in design both for Semidynamics and for SiPearl. The platform will offer excellent performance-per-watt to help customers reduce their operating costs, meet sustainability requirements and lower total cost of ownership.

The architecture of the platform will be designed for high-throughput, high-reliability cloud deployments. It is therefore ideally suited to enterprise inference server clusters and modern AI services that require consistent, large-scale processing power. Target applications include: AI inference in the cloud, notably the deployment of LLMs and retrieval-augmented generation (RAG) pipelines; enterprise-scale inference in areas such as customer service automation and industrial analytics; and sovereign public sector workloads where data control and autonomy are essential.

Under the cooperation, in a first iteration SiPearl will provide its Arm®-based CPU technology and platform support for host compute and orchestration, while Semidynamics will provide its RISC-V-based GPU/AI inference ASIC, accelerator enablement, and the design of the enclosure and rack solution that integrates both technologies. As a second step, further integrations at chiplets level will be disclosed. The companies will jointly manage the reference architecture, marketing materials, and coordinated tender responses.

"SiPearl is thrilled to see the impact of years of work in the European Processor Initiative and the EU sovereign ecosystem come to fruition with this platform. It demonstrates the systematic progress that Semidynamics and SiPearl have made individually and collectively and will showcase the best of both companies, CPU and accelerator," said Philippe Notton, SiPearl's CEO and Founder.

"We are delighted to work with SiPearl and to offer a European CPU as part of our AI inference platform. Combining SiPearl's high-performance CPU with Semidynamics' RISC-V-based GPU/AI inference technology gives Europe a credible path towards sovereign, rack-scale AI infrastructure built around European-controlled compute," concluded Roger Espasa, Semidynamics' CEO.

About SiPearl

SiPearl is the European fabless designer of secure high-performance energy-efficient CPUs for sovereign HPC, AI and data centres. These CPUs will help address strategic challenges in the fields of security, defence, medical research, energy, climate and engineering with a reduced environmental footprint.

Featuring 80 Arm Neoverse V1 cores with 61 billion transistors, SiPearl's first-generation CPU, Rhea1, is currently being manufactured. SiPearl's CPUs will equip Europe's first two exascale supercomputers belonging to EuroHPC JU: Rhea1 will be integrated into the JUPITER machine based in Germany and Rhea2 will be part of Alice Recoque in France.

Supported by the European Union and France, SiPearl employs 200 people in France, Spain, and Italy. Following a €130 million Series A, the company has launched its Series B round.

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About Semidynamics

Headquartered in Barcelona, Semidynamics is an advanced computing company developing memory-centric AI infrastructure. With a team of more than 150 engineers and specialists, the company designs proprietary silicon architectures and vertically integrated systems optimized for large-scale AI inference workloads.

Semidynamics serves a global ecosystem of partners and customers and operates in compliance with applicable export controls and international trade regulations.

More information: www.semidynamics.com

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