

Launch of SiPearl, designing the microprocessor for the European exascale¹ supercomputer

Created by Philippe Notton, SiPearl is the company that is bringing to life the European Processor Initiative (EPI) consortium project, designing the high-performance, low-power microprocessor for the European exascale¹ supercomputer. This new generation of microprocessors will help ensure Europe's technological sovereignty on the strategic markets for high performance computing, artificial intelligence and connected mobility.

Maisons-Laffitte, France, 21 January 2020 – SiPearl, the company that will enable Europe to set out its technological sovereignty for high-performance microprocessors, is moving into its operational phase. It is now the 27th member of the European Processor Initiative (EPI) consortium, alongside research institutes, universities, supercomputing centres and leading names from the IT, electronics and automotive sectors².

SiPearl will bring their joint project to life by developing and marketing the next generation of high-performance, low-power microprocessors. As a natural candidate to equip the future European exascale¹ supercomputer, SiPearl and its solutions will help drive the development of the European market for high performance computing (HPC), as well as its strategic applications such as artificial intelligence and connected mobility.

High performance computing equipment, a crucial market for Europe

High performance computing is a branch of IT that is focused on engineering and scientific modelling and simulation tasks that require such high levels of resources that they cannot be processed with general-use computers and instead require supercomputers. High performance computing is crucial for meeting a growing range of increasingly complex strategic challenges. Historically used for research, weather forecasting, oil and gas prospecting, defence, chemicals and finance, etc., it has become essential for supporting the deployment of artificial intelligence, connected mobility, smart cities, bioengineering, cybersecurity, personalised medicine...

- **Europe, dependent on non-European technologies for processing strategic data**

However, for processing data for these strategic sectors, Europe faces two major issues:

- **It is dependent on non-European technologies.** While it uses more than one third of the world's high performance computing resources, Europe produces less than 5% of them, and none of the microprocessors that equip its supercomputers are European³.
- **Its facilities have significantly lower capabilities than those in the United States and China.** Number 6 in the global rankings, Europe's most powerful supercomputer is seven times slower and its energy efficiency is two times lower than the world number 1⁴ - the Oak Ridge supercomputer in Tennessee.

- [Europe's response to ensure its independence on the high performance computing market](#)

To secure its independence and leadership on the global high performance computing market, the European Union responded by launching two flagship initiatives in 2017. While the EuroHPC joint undertaking aims to deploy a world-class high performance computing infrastructure in Europe, the EPI consortium was selected to draw up, maintain and lead the roadmap for developing a range of high-performance, low-power microprocessors in Europe to equip supercomputers in particular.

[SiPearl, created within the EPI to bring the joint project to life](#)

As part of the EPI consortium, with support from its members, which are its stakeholders and potential users, and backing from Europe⁵, SiPearl was created in June 2019 by Philippe Notton to develop and bring to market the range of microprocessors set out with the joint roadmap.

- [Dedicated high-performance, low-power microprocessor for three strategic applications](#)

Drawing on its know-how, combining performance, sovereignty and security, SiPearl will integrate the best technologies from its partners and its proprietary technologies, working closely with the EPI members, to design and market its range of microprocessors with a view to:

- Driving high performance computing's transition to exascale.
- Equipping the first open acceleration platform enabling artificial intelligence startups to develop their proprietary solutions with very limited licensing costs,
- Supporting the deployment of connected mobility thanks to secure end-to-end data processing from the network edge to the cloud: from vehicles to smart cities and the cloud.

"By delivering supercomputing power, energy efficiency and backdoor-free security, the solutions that we are developing with support from the EPI members will enable Europe to gain its independence and, more importantly, to ensure its technological sovereignty on the market for high performance computing, which has become one of the key drivers for economic growth", explains Philippe Notton, SiPearl's CEO.

- [The driving force behind SiPearl, Philippe Notton, a senior executive with deep semiconductor expertise](#)

During his career, Philippe Notton (49, Supélec Engineer, Executive MBA from ESSEC & Mannheim) has built up outstanding expertise in the multimedia, semiconductor and security fields. Starting from scratch, he successfully led the set-top box division of the Taiwan-based MStar Semiconductor to become number 3 worldwide and number 1 in Asia for pay-television semiconductors. In 2017, after heading up STMicroelectronics' Consumer division, he joined the Atos Group to set up the European Processor Initiative consortium.

To lead SiPearl, Philippe Notton is surrounding himself with a team of experienced professionals with complementary areas of expertise in various fields, including high performance computing, research and development, chip design and IT architecture. Various key appointments will be announced over the coming weeks.

[About SiPearl](#)

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This new generation of microprocessors will enable Europe to set out its technological sovereignty on the strategic markets for high performance computing, artificial intelligence and connected mobility.



SiPearl will develop and market its solutions through close collaboration with its 26 partners from the EPI² - scientific community, supercomputing centres and leading names from the IT, electronics and automotive sectors - which are its stakeholders and future clients.

SiPearl is supported by the European Union⁵.

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¹ One billion billion calculations per second.

² The EPI's members are: Atos, Barcelona Supercomputing Center, BMW Group, French Alternative Energies and Atomic Energy Commission (CEA), Chalmers, Cineca, E4 Computer Engineering, Elektrobit, ETH Zürich, Extoll, FORTH, Fraunhofer ITWM, Genci, Infineon Technologies, Jülich, Kalray, KIT, Menta, Prove & Run, Semidynamics Technology Services, SiPearl, ST Microelectronics, SURFsara, Technico Lisboa, University of Bologna, University of Pisa, University of Zagreb.

³ Source: 2019 Hyperion Research, supercomputer and high performance server market.

⁴ Source: 54th ranking of the world's top 500 most powerful supercomputers – November 2019.

⁵ This project has received funding from the European Union's Horizon 2020 research and innovation program under specific grant agreement no.826647.