

Press release

GENCI and CNRS choose Eviden to make the Jean Zay supercomputer one of the most powerful in France

Paris, March 28, 2024

Following the announcement made by the French President at the Vivatech conference in June 2023, the Grand Equipement National de Calcul Intensif (GENCI) and the Centre National de la Recherche Scientifique (CNRS), under the aegis of the French Ministry of Higher Education and Research, have selected Eviden to provide a major extension to the capacity of the Jean Zay supercomputer, funded by the France 2030 Programme. This announcement marks a new step towards sovereign AI.

After a competitive dialogue phase, GENCI and CNRS have selected Eviden to supply a new, NVIDIA-powered computing infrastructure for the French national supercomputing centers. After preliminary works of compute room adaptation, the NVIDIA H100 Tensor Core GPU-based partition of Jean Zay, GENCI's supercomputer operated by the CNRS's Institut de développement et de ressources en informatique scientifique (IDRIS), will be installed by Eviden in April and will be fully available to users in early summer 2024.

This extension to the Jean Zay computer will allow an increase in the peak computing power from 36.85 to 125.9 PFlop/s. In so doing, available computing capacity will be multiplied by 3.5 in double precision (for high-performance computing) and by 13 if reduced or mixed precision is used, as in the case of artificial intelligence. Also, a new storage infrastructure will make it possible to read/write at high speed and make the associated models and datasets available.

In addition to its level of performance, Jean Zay is one of **the most eco-efficient machines in Europe**, thanks to the massive use of accelerated technologies (GPUs) and core warm water cooling of the computing servers. The machine's waste heat is also re-used to help heat more than 1,000 homes on the Saclay area, thanks to a joint investment by CNRS and EPAPS¹.

The acquisition of this extension, carried out with the support of the Ministry of Higher Education and Research, the Directorate General for Enterprise (Ministry of the Economy, Finance and Industrial and Digital Sovereignty) and the General Secretariat for Investment, in charge of France 2030, has benefited from funding from France 2030. IDRIS will operate a

¹ Établissement public d'aménagement de Paris-Saclay (Paris-Saclay public development establishment)



computing machine of exceptional power and functionality, open to national academic and industrial research communities. They will be able to carry out numerical simulations using high-performance computing, and train or specialize so-called "foundation" or "generative" artificial intelligence models, whether in the field of language processing, vision, multimodality, explainable AI, or in biology, health, materials, new energies and low-carbon mobility, fundamental physics, climate/weather, etc.

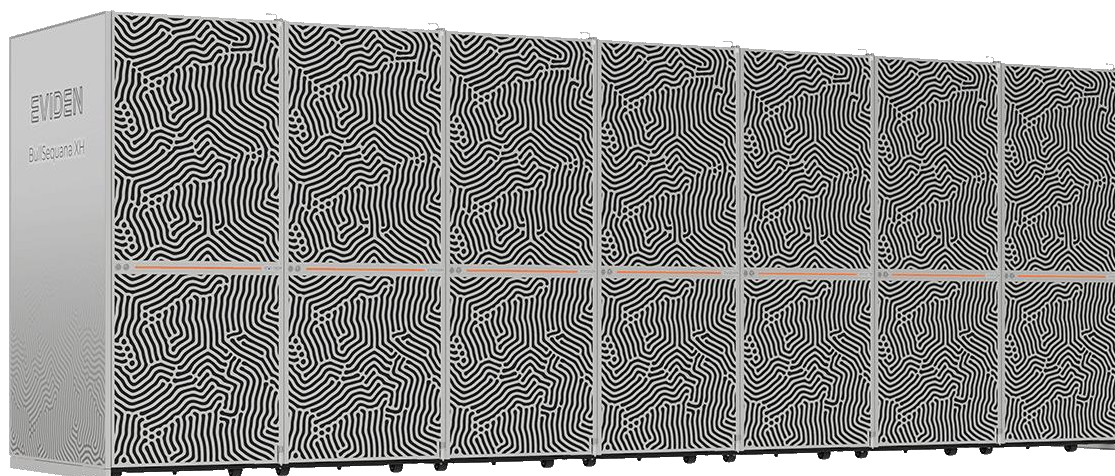
This new evolution is in line with the announcement made by French President Emmanuel Macron on 14 June at the Vivatech 2023 conference, to support the development of sovereign artificial intelligence, in particular generative AI. To this end, GENCI has been awarded €40m. This exceptional grant also includes an additional €10m to strengthen and extend the human resources of the French National Artificial Intelligence Research Programme (PNRIA) and to support AI communities. The goal is to guarantee the long-term quality of the service provided by the CNRS network of AI support engineers, which helps AI communities to carry out their projects at Jean Zay.

This new availability of computing resources available to scientific communities will help to boost the capabilities of the French AI sector in the face of international competition.

Configuration

In total after this extension, Jean Zay will be equipped with 1,456 NVIDIA H100 GPUs, in addition to the 416 NVIDIA A100 Tensor Core GPUs and 1,832 NVIDIA V100 Tensor Core GPUs remaining from the old configuration. Jean Zay's increased power will be provided by 14 Eviden BullSequana XH3000 compute racks featuring 364 dual-processor Intel Sapphire Rapids 48-core servers, 512 GB of memory and four NVIDIA H100 80GB SXM5 GPUs, each interconnected by four high-speed NVIDIA ConnectX-7 400Gb/s InfiniBand network adapters.

The storage environment will be completely overhauled, offering a first level of 4.3 PB of flash technology (read/write speeds of over 1 TB/s) and a second level of 39 PB of fast disk technology (read/write speeds of over 300 GB/s), both under Lustre and supplied by DDN.



Eviden BullSequana extension to Jean Zay supercomputer

Quotes

Bruno Le Maire, French Minister for the Economy, Finance and Industrial and Digital Sovereignty

“France's position as a world leader in artificial intelligence will depend in particular on its access to the public and private computing power needed to develop competitive models. The extension of the Jean Zay supercomputer is the first step in the deployment of a global strategy aimed at developing computing power in France that is accessible to researchers, start-ups and digital companies, in support of the development of our AI ecosystem under sovereign conditions.”

Sylvie Retailleau, French Minister for Higher Education and Research

“I would like to congratulate the GENCI and CNRS teams on this new step, which will enable the Jean Zay extension to be implemented very quickly. By enabling Jean Zay to become the largest supercomputer dedicated to AI in France, this investment is essential to meet the new needs, both existing and future, for research and innovation in AI. It will help to raise the profile of France's role in this field, complementing the key roles played by the CEA and Inria in terms of digital infrastructure and AI.”

Bruno Bonnell, Secretary General for Investment, in charge of France 2030

“We are delighted with this decisive step, which will enable France to equip itself with a competitive and attractive state-of-the-art computing infrastructure, essential if we are to consolidate our position in the frantic race for artificial intelligence. It will turn the advances made by our dynamic research ecosystem into real industrial successes. With France 2030, our ambition is to combine sovereignty and technology.”

Philippe Lavocat, CEO of GENCI



“With the extension of the Jean Zay supercomputer and the choice of Eviden following the procedure conducted jointly by GENCI and IDRIS, France has acquired a major asset that will enable it to put the best computing technologies, combined with artificial intelligence, at the service of science and innovation. The €40m funding is equivalent to what has already been invested in the entire current Jean Zay machine. With more than 1,000 AI projects already using this supercomputer's capabilities by 2023, the new sovereign infrastructure will be a key factor in fostering major breakthroughs in academic and industrial research.”

Antoine Petit, Chairman and CEO of CNRS

“The Jean Zay supercomputer is a key factor in France's attractiveness and contribution in terms of AI research at the highest international level. The French government has entrusted the CNRS with the responsibility of hosting and operating this research infrastructure, via its Institut du développement et des ressources en informatique scientifique (IDRIS), confirming its role as a key player in AI research. The exceptional capabilities provided by the new Jean Zay extension represent a tremendous opportunity for the entire French scientific and industrial community. They will also enable us to meet the challenges posed by foundation models, both concerning scientific research and innovation and technology transfer.”

Emmanuel Le Roux, SVP, HPC, AI and Quantum Director at Eviden, Atos Group

“We are delighted to have been chosen by GENCI to develop one of the most powerful supercomputers in France, dedicated to supporting French AI research. Thanks to this collaboration, which brings together the best of our experts, France's academic and industrial research communities will have all the power they need for their work. This collaboration will help to foster the emergence of both new AI models and new computing technologies dedicated to AI.”

John Josephakis, Global VP of Sales and Business Development for HPC and Supercomputing at NVIDIA

“The NVIDIA accelerated computing platform supercharges systems such as Jean Zay with the extreme performance required to advance the next generation of scientific research. Jean Zay, powered by NVIDIA H100 and using our advanced AI software and networking, will bring exascale AI and HPC performance to help solve the greatest scientific challenges faced by society.”

About

GENCI

Created by the public authorities in 2007, GENCI (Grand Équipement National de Calcul Intensif) is a major research infrastructure. This public operator aims to democratise the use of digital simulation through high performance computing associated with the use of artificial intelligence, and quantum computing to support French scientific and industrial competitiveness.



GENCI is in charge of three missions:

- To implement the national strategy for the provision of high-performance computing resources, storage, massive data processing associated with Artificial Intelligence technologies and quantum computing, for the benefit of French scientific research, in conjunction with the 3 national computing centres (CEA/TGCC, CNRS/IDRIS, France Universités/CINES).
- Supporting the creation of an integrated ecosystem on a national and European levels
- Promoting digital simulation and supercomputing to academic research and industry

GENCI is a civil company 49% owned by the State represented by the Ministry in charge of Higher Education and Research, 20% by the CEA, 20% by the CNRS, 10% by the Universities represented by France Universités and 1% by Inria.

CNRS

A major player in basic research worldwide, the National Centre for Scientific Research (CNRS) is the only French organisation active in all scientific fields. Its unique position as a multi-specialist enables it to bring together all of the scientific disciplines in order to shed light on and understand the challenges of today's world, in connection with public and socio-economic stakeholders. Together, the different sciences contribute to sustainable progress that benefits society as a whole.

About Eviden²

Eviden is a next-gen technology leader in data-driven, trusted and sustainable digital transformation with a strong portfolio of patented technologies. With worldwide leading positions in advanced computing, security, AI, cloud and digital platforms, it provides deep expertise for all industries in more than 47 countries. Bringing together 47,000 world-class talents, Eviden expands the possibilities of data and technology across the digital continuum, now and for generations to come. Eviden is an Atos Group company with an annual revenue of c. € 5 billion.

About France 2030

² Eviden business is operated through the following brands: AppCentrica, ATHEA, Cloudamize, Cloudreach, Cryptovision, DataSentics, Edifixio, Energy4U, Engage ESM, Evidian, Forensik, IDEAL GRP, In Fidem, Ipsotek, Maven Wave, Profit4SF, SEC Consult, Visual BI, Worldgrid, X-Perion. Eviden is a registered trademark. © Eviden SAS, 2024.



Presented on 12 October 2021 by the President of the French Republic **France 2030**:

- ✓ **Translates a dual ambition: to transform key sectors of our economy** (energy, automotive, health, aeronautics and space) over the long term through technological and industrial innovation, and to **position France not just as a player, but as a leader in the world of tomorrow**. From fundamental research, to the emergence of an idea, through to the production of a new product or service, France 2030 supports the entire life cycle of innovation, right through to its industrialisation.
- ✓ **Is unprecedented in terms of its scale: €54 billion** will be invested to ensure that our businesses, universities and research bodies are able to successfully make the transition in these strategic sectors. The aim is to enable them to **respond competitively to the ecological and attractiveness challenges of the world to come**, and to develop the future champions of our sectors of excellence, thereby **strengthening French sovereignty and independence in key sectors**. To this end, 50% of spending will be devoted to decarbonising the economy, and 50% will be earmarked for emerging players, bringing innovation that has no adverse impact on the environment (in line with the *Do No Significant Harm* principle).
- ✓ **Will be implemented collectively**: the plan is designed and deployed **in consultation with local and European economic and academic players**, who have helped to determine its strategic directions and key actions. **Project leaders** are invited to submit their applications via open, demanding and selective procedures in order to benefit from government support.
- ✓ **Is managed by the General Secretariat for Investment** on behalf of the Prime Minister and implemented by the French Environment and Energy Management Agency (**ADEME**), the French National Research Agency (**ANR**), **Bpifrance** and the Caisse des Dépôts et Consignations (**CDC**).

For more information : <https://www.france2030.gouv.fr>

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