



**MINISTÈRE
DE L'ENSEIGNEMENT
SUPÉRIEUR,
DE LA RECHERCHE
ET DE L'ESPACE**

*Liberté
Égalité
Fraternité*

HPC et AI Factory France

Direction Générale de la Recherche et de l'Innovation (DGRI)

Service de la Stratégie de la Recherche et de l'Innovation (SSRI)

Département Services et Infrastructures Numériques (A7)

Stratégie numérique ESR « infrastructures »

Tenir compte des espaces :

- ◉ **Européens** : considérer l'influence majeure de l'organisation européenne sur l'organisation nationale
- ◉ **Régionaux** : établir des passerelles vers les initiatives régionales
- ◉ **Communautaires** : établir des passerelles vers les initiatives des différentes communautés

**Besoin
« recherche »
dimensionnant**

PEPR stratégies nationales
d'accélération
IA CLUSTERS
PEPR exploratoires
EQUIPEX+
IR*/IR

**Considérer le poids et
les besoins des
infrastructures de
recherche**

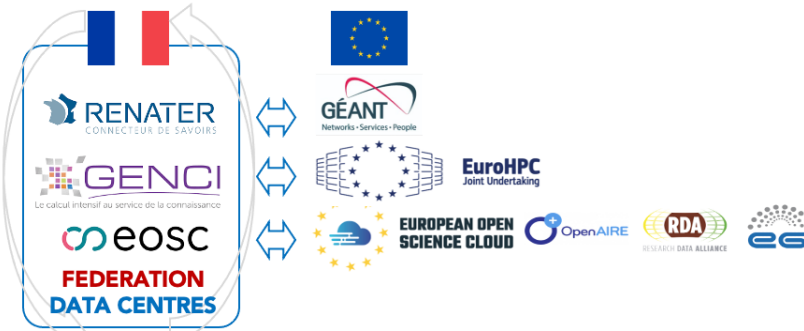
**Des
partenariats
multiples**

**Mobiliser des moyens
Développer des
compétences
Garantir la sécurité**

**Vision
cohérente**

Articuler les offres de service pour

- ◉ **Le réseau**
- ◉ **Le calcul, le traitement**
- ◉ **Les données, le cloud**
- ◉ **L'hébergement**



HPC et AI Factory France (AI2F)

GENCI opérateur de référence pour le calcul (HPC, IA, Quantique)

Merci à Michaël Krajecki, Stéphane Requena et Cédric Auliac pour les diapositives qui vont suivre



GENCI, A FRENCH HPC RESEARCH INFRASTRUCTURE

Serving yearly >2200 projects in HPC and AI (academia, industry) in 2024



EuroHPC
Joint Undertaking



France
Universités



TGCC/CEA - Ile de France

- Hosting Site for the **2nd Exascale system (EuroHPC)** called Alice Recoque within the Jules Verne consortium (FR, NL, GR)
- Hosting Site for the **1st hybrid HPC + Quantum computing infrastructure** (HQI, HPCQS, EuroQCS-France)

IDRIS/CNRS - Ile de France

- **1st FR converged HPC/AI system (#AIForHumanity)**
- Bring **sovereign** computing facilities / services to AI research community
- **3800 GPUs in 2025**

CINES/FU - Montpellier

- **> 70 PF** with AMD next gen GPUs (>1500) & CPUs (>100k)
- Used for **HPC and now AI workloads**

>1400 AI projects in 2024



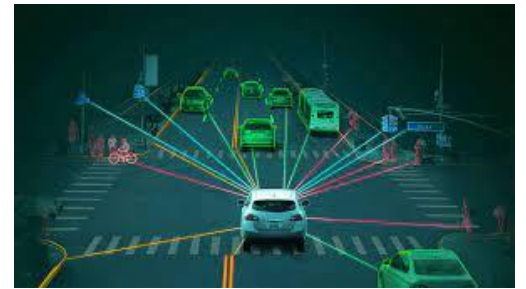
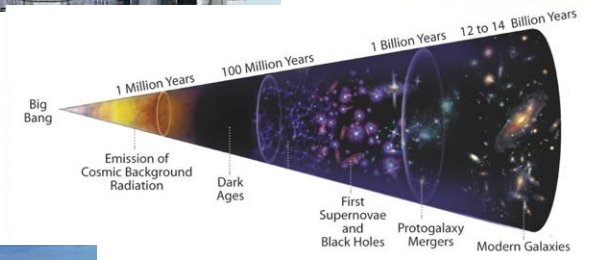
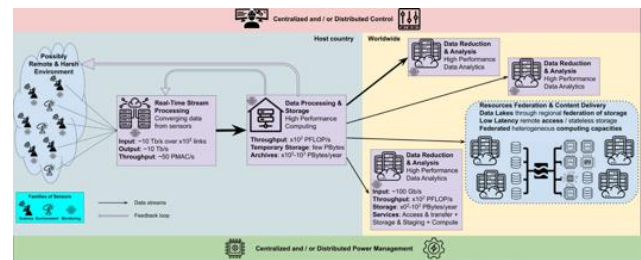
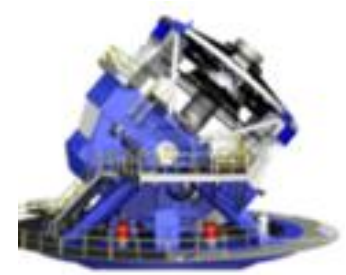
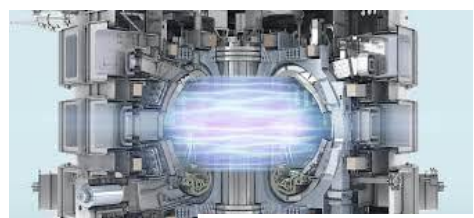
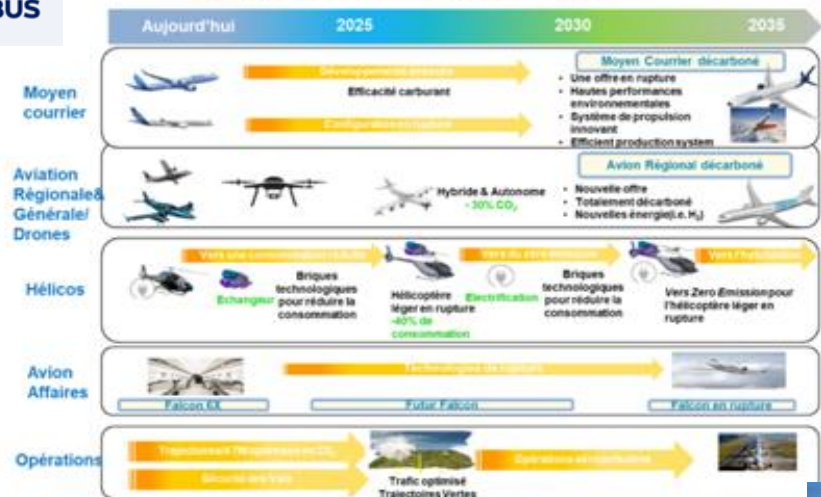
EXASCALE SERVING HPC NEEDS IN SCIENCE AND INDUSTRY

A major stake for European research and innovation



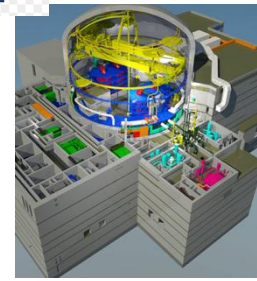
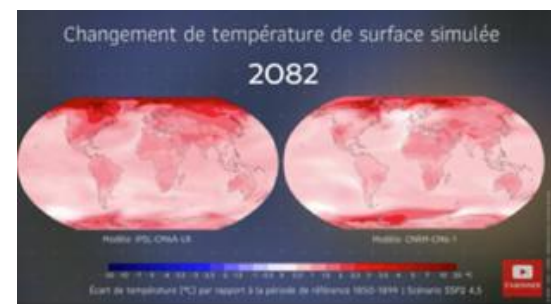
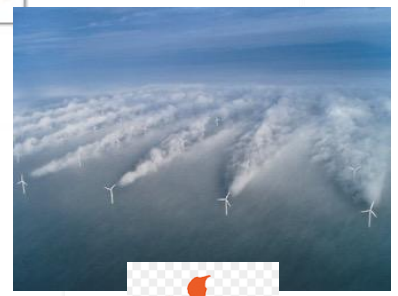
AIRBUS

Vision programmes aéronautiques de la filière



SAFRAN

Simulations at Safran – On the road to mastering high-fidelity models



Le Chat, Mistral Large





JULES VERNE : THE FRENCH LED (POST) EXASCALE CONSORTIUM

Organization of the french application

- GENCI *Hosting Entity*
- CEA *Hosting Site*
- SURF (NL) as member of consortium
- GRNET (GR) as member of the consortium



Name of the consortium : Jules Verne

Name of the supercomputer : Alice Recoque



Full TCO over 5 years : **554 M€** (50% EuroHPC, 50% consortium)

- French public contribution (MESR, France2030...)
- French research institutions (ONERA and IFPEN)
- French Industrial partners (ongoing)
- NL and GR contribution, **other countries (ongoing discussions) + AI Antennas**





ALICE RECOQUE WILL SHAPE THE EUROPEAN POST EXASCALE ERA



EuroHPC
Joint Undertaking

Addressing societal, industrial and scientific challenges (such as universe sciences, climate change, health, new energy, innovative materials, transport or smart cities/systems) via large scale numerical simulations, massive data analysis using artificial intelligence ([AI Factory France](#)) and quantum computing (QC)

- An accelerator of European Science and Innovation
open to all scientific and industrial collaborations, supporting new services including Cloud based supercomputing / visualisation, containerisation or [urgent computing for fast decision making and Digital Twins \(DTs\)](#)
- A converged HPC/HPDA/AI system with a [modular, balanced and energy efficient architecture](#)
based on accelerated, scalar and HPDA partitions within a tiered data centric infrastructure integrating state-of-the-art [post-Exascale quantum accelerators](#) and related services for specific workloads
- A system fully embedded inside the [digital continuum](#)
ready for secured end-to-end workflows from instruments / edge devices to long term sovereign storage
- A system with [European Technology and Skills](#)
integrating European hardware / software technologies in terms of computing, storage, network, infrastructure, middleware, applications with global support of AST to engage/support communities.



A system ready to harness European technologies and the best breed
of opensource software in a highly secure environment



ALICE RECOQUE

Exascale impact on infrastructure @ CEA-TGCC

Slab reinforcement (2.8T/m²)

- Adaptation work finished in Q4 2024
 - 67 micro piles drilled below the facility (18m depth)
 - Steel structure on top of the micro piles



Warm water cooling network (+20MW)

- Adaptation work finished in Q2 2025
 - 8 cooling tower of 2,5 MW each @ 35°C outside temperature and 40% outside humidity
 - Excepted inlet/outlet temperatures : 35°C / 50°C



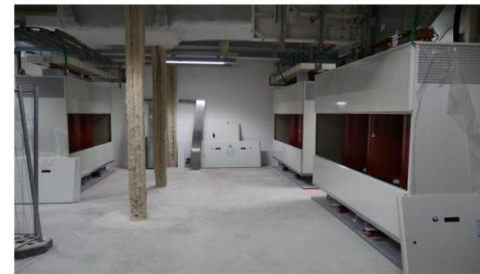
IT rooms preparation

- Main rooms ready since Q3 2024
 - Dismantling of Joliot-Curie phase 1 system required to finish : Q2 2026
 - Remaining work handed over to the Supplier of the Alice Recoque system
 - Strengthened floor tiles
 - Power and cooling distribution



Electrical power (+24MW)

- Adaptation work finished in Q2 2025
 - 6 transformers 20kV / 410V of 4.2 MVA each
 - 6 low voltage switchboards (6.5 kA max)



transformers



low voltage switchboard

PRESS RELEASE | 18 November 2025 | European High-Performance Computing Joint Undertaking | 5 min read

Contract Signed for Alice Recoque, Europe's New Exascale Supercomputer

The procurement contract for Alice Recoque, the new European exascale supercomputer to be located in France, has been signed by the European High Performance Computing Joint Undertaking (EuroHPC JU) and the selected vendor, Eviden.



EuroHPC
Joint Undertaking



What are « IA Factories »?

AI-optimized supercomputers



Associated resources & services





Where do they stand?



DEPLOYING EUROPEAN WORLD CLASS AND TRUSTWORTHY AI COMPUTE POWER

The European Union is investing in AI supercomputers and developing AI capacity, skills and talent across Europe.

19

AI Factories

15

new AI-optimised supercomputers
located across the EU

13

AI Factory Antennas
linked to AI Factories across Europe

3

AI access modes tailored to users
allocating compute power for free

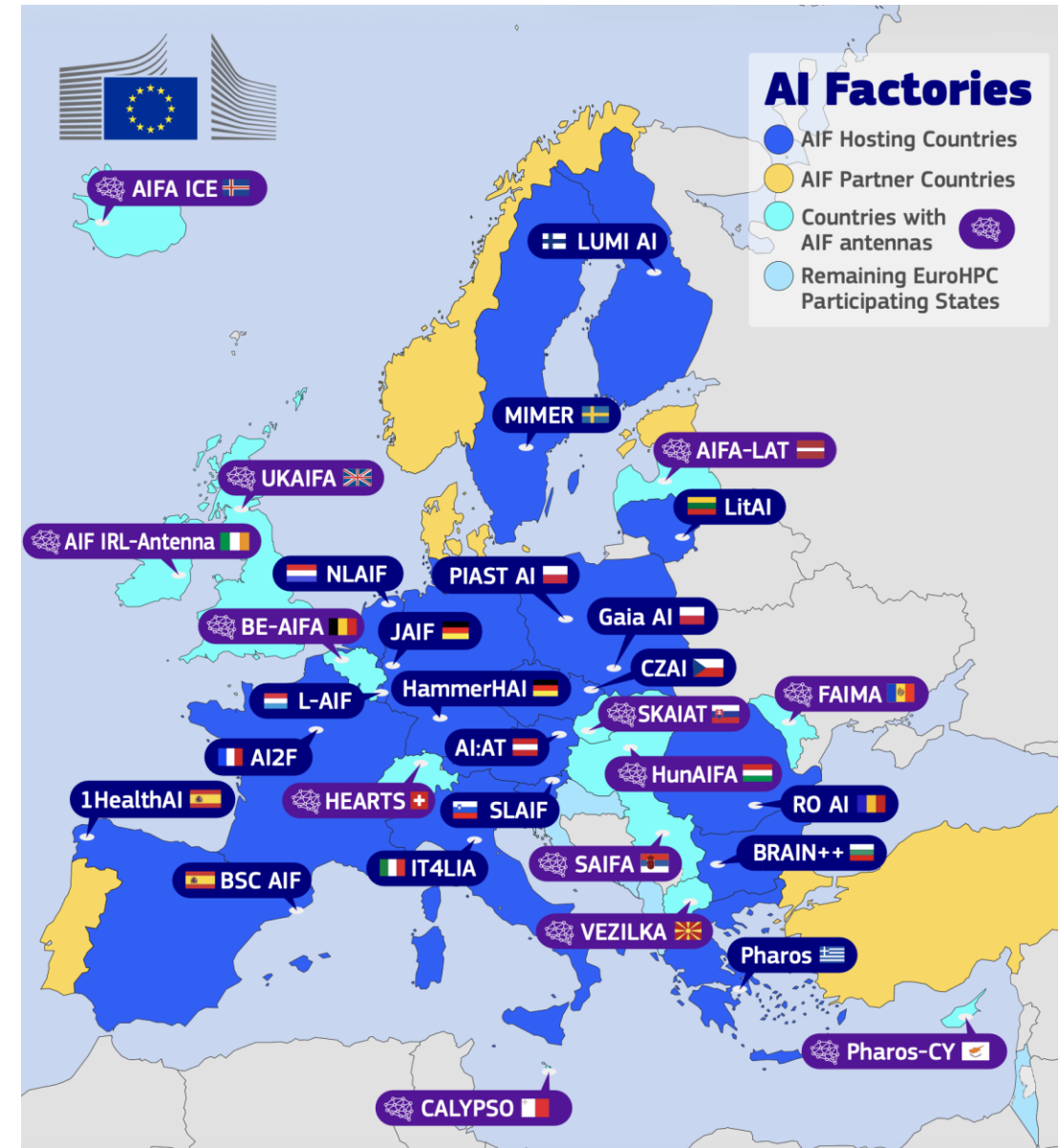
40+

key industrial sectors covered
by AI Factories

Budget : €2.6 billions from 2021 to 2027



EuroHPC
Joint Undertaking





Federating the French AI ecosystem



SNIA with 2.8 B€



Public compute facilities and support services (PNRIA):
Jean Zay, Adastra and soon, Alice Recoque



9 IA clusters for focussed R&D and massive training/education on AI



Major initiatives/projects such as:
P16, PEPR IA and NumPEX, Communs numériques, DeepGreen, LaborIA, ...



French Tech, Tech pour Toutes, Osez IA, Cafés IA, Académie de l'IA + all the AI associations and think tanks



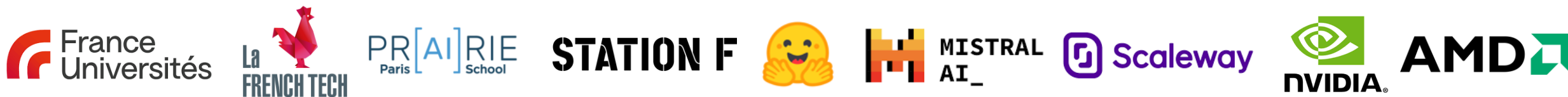


The consortium

- 16 partners:



- Over 40 potential associated stakeholders:



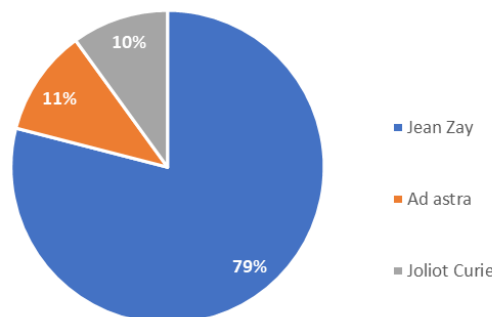


Access to GENCI' AI Supercomputers (1)

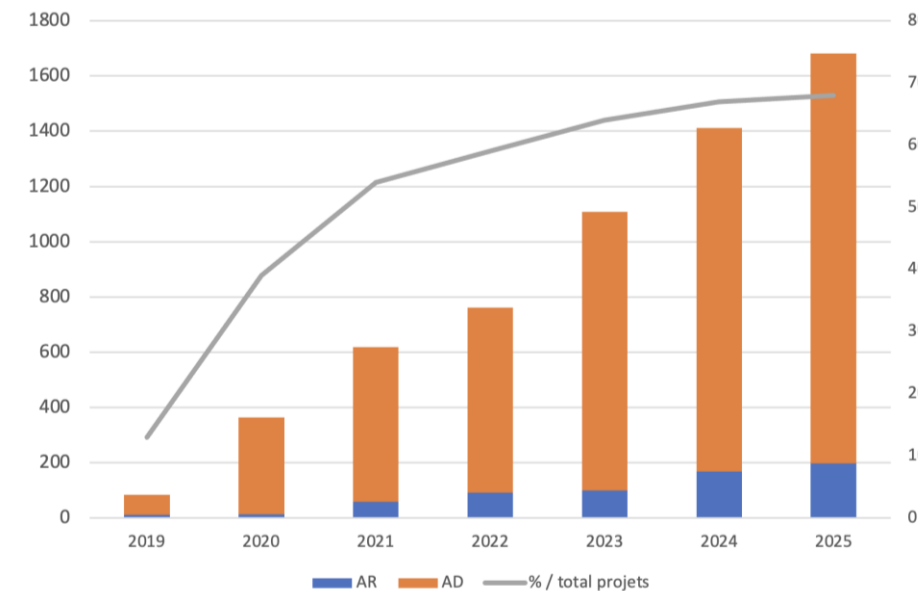
Steady increase of the AI demand since 2019

928 AI projects since Oct. 2025 (April 2026 figures)

- = 68% of the total number of projects (HPC/QC combined)
- Dynamic access mode = 88% Vs Regular access mode = 12%
- 79% are conducted on Jean-Zay



- AI research (NLP, vision, robotics, ...) = 70% Vs AI for Science (physics, Chemistry, biology...) = 30%
- 88 % from academia Vs 12 % from industry





Technical user-support



Technical user support	Access modes
Transverse user support (IA & data science) & Application-specific user support (e.g. Health, Robotics) • Consulting (L1 & L2): user assistance (project scoping, technical AI guidance, data quality & governance) • Hands-On Technical Support (L3): hands-on work on AI pipelines (multi-GPU optimization, scaling, fine-tuning) • Collaborative Development (L4): long-term embedded partnership to build tailored AI solutions	A. Ongoing support (via AI2F contact form or support teams email addresses) B. Call for projects (led by AI2F partners)



A large portfolio of users among public bodies...



Direction interministérielle
du numérique



Pôle d'Expertise
de la Régulation Numérique







Developing the Public-Private continuum

Speed-up / simplify the transition

from R&I on public Infrastructures to commercial / operational deployment on private Infrastructures



PoC: seamless deployment of an inference endpoint at Scaleway from IDRIS

- Use cases brought by 2-3 startups of the ecosystem
- First phase with GENCI / IDRIS / Scaleway
- Possibly a second phase will replicate this approach with other(s) French/European NCP & AIF



Preparing the future through technology watch

Regular meetings with HPC/AI vendors and SW/HW partners

- NVIDIA (Participation in GTC 2026 and dedicated meeting) & AMD
- New Fabless AI chip designers

VSDRA®



AXELERA
ARTIFICIAL INTELLIGENCE



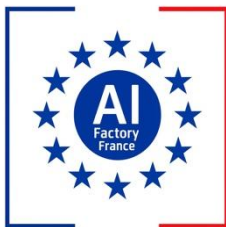
SpiNNcloud



semidynamic^s

SIPEARL

- + Interconnect and software solutions designers



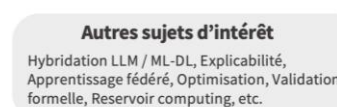
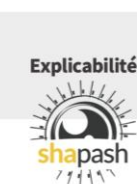
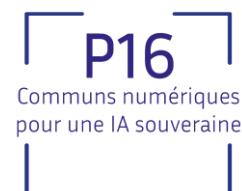
Data & Software Resources

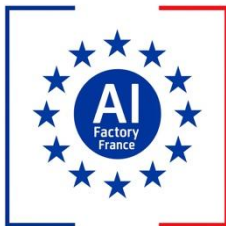
Data & Models Services

- Computing centers expose > **400 Public models and datasets** : NLP, vision, robotics, climate modelling, weather forecast (Meteofrance), healthcare, astrophysics/cosmology, ...



Software Services





Training & Education

Professional Training (Up Skilling)



EUROPEAN
DIGITAL
INNOVATION
HUB
BRETAGNE⁰³



Les sessions de formation dispensées à l'IDRIS

Intitulé du cours	Date de début	Durée	Statut
Architectures du deep learning	04.02.2026	2 jours	Annulé
Atelier de lancement en deep learning	06.02.2026	1 jour	Annulé
Deep Learning Optimisé sur Jean Zay	03.03.2026	4 jours	Confirmé
MPI	17.03.2026	4 jours	Annulé
OpenMP	25.03.2026	3 jours	Annulé
C++ Scientifique Moderne	01.06.2026	3 jours	Annulé
Programmation Hybride MPI/OpenMP	04.06.2026	2 jours	Annulé
Workshop Jean Zay	11.06.2026	2 jours	Annulé
OpenMP / MPI	15.06.2026	5 jours	Annulé
MPI	22.09.2026	4 jours	Annulé
Workshop Jean Zay	01.10.2026	2 jours	Annulé
OpenMP	14.10.2026	3 jours	Annulé
Deep Learning Optimisé sur Jean Zay	20.10.2026	4 jours	Annulé
Introduction pratique au deep learning	02.11.2026	2 jours	Annulé
Architectures du deep learning	04.11.2026	2 jours	Annulé
Atelier de lancement en deep learning	06.11.2026	1 jour	Annulé
Vectorisation SIMD	18.11.2026	1 jour	Annulé
Développement HPC	19.11.2026	1 jour	Annulé
Introduction à OpenACC et OpenMP GPU	25.11.2026	3 jours	Annulé
PETSc	03.12.2026	2 jours	Annulé



INSTITUT DU
DÉVELOPPEMENT ET DES
RESSOURCES EN
INFORMATIQUE
SCIENTIFIQUE

Initial Education

