Multi-Annual Strategic Programme (MASP)

RIAG & INFRAG
from EuroHPC JU

What is the MASP

- Document laying down the mid/long term strategy for EuroHPC JU
  - Created first in 2021
  - Updated every one or two years
  - Latest edition: February 2025

- Recommendations
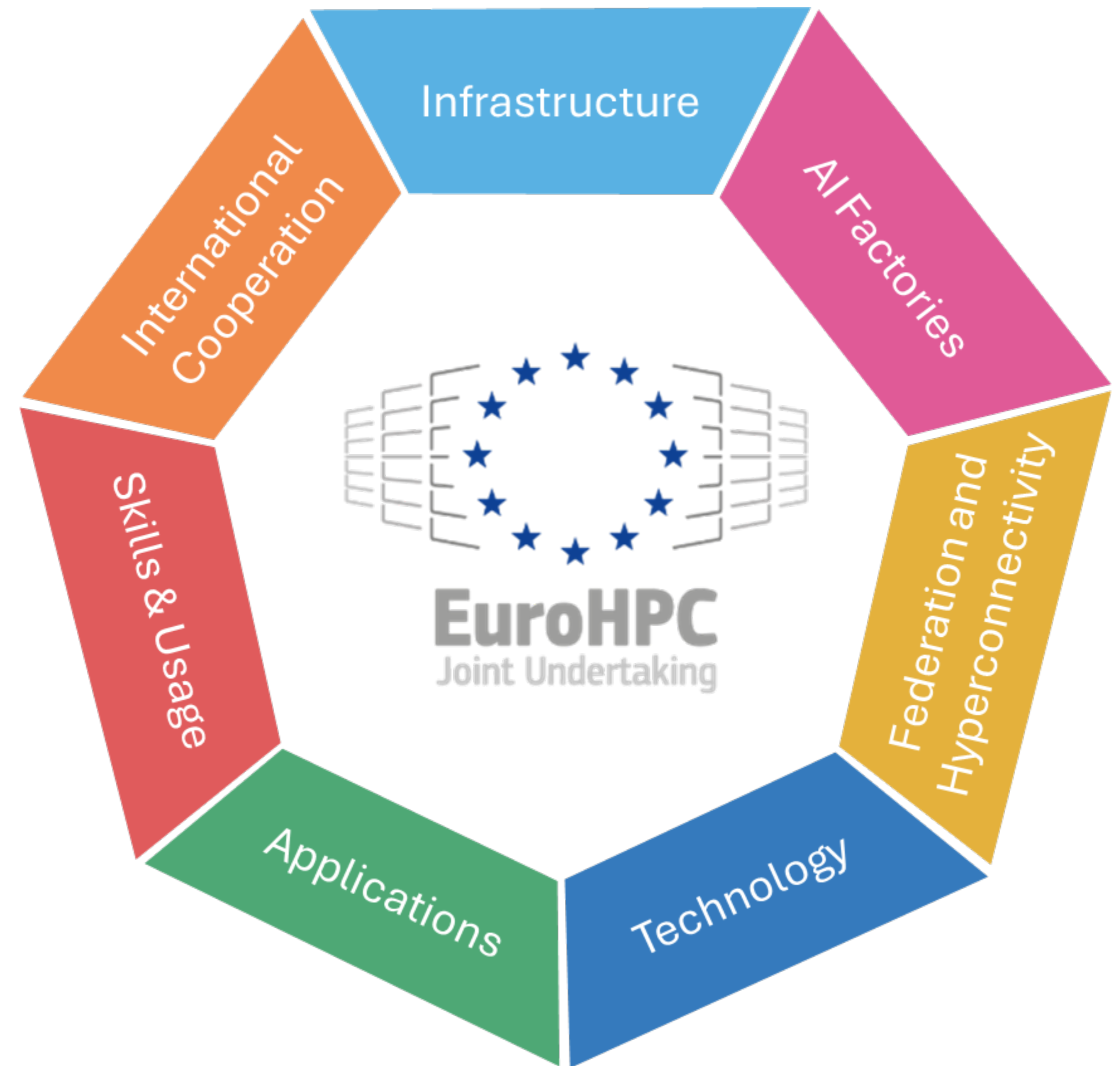 - Global &
  - per Pillar

EuroHPC JU has **created** in 5 years one of the world's **most powerful and versatile** open **infrastructures for HPC, QC and AI**

EuroHPC Joint Undertaking Multi-Annual Strategic Programme (2021 – 2027)
2025 revision by INFRAG and RIAG
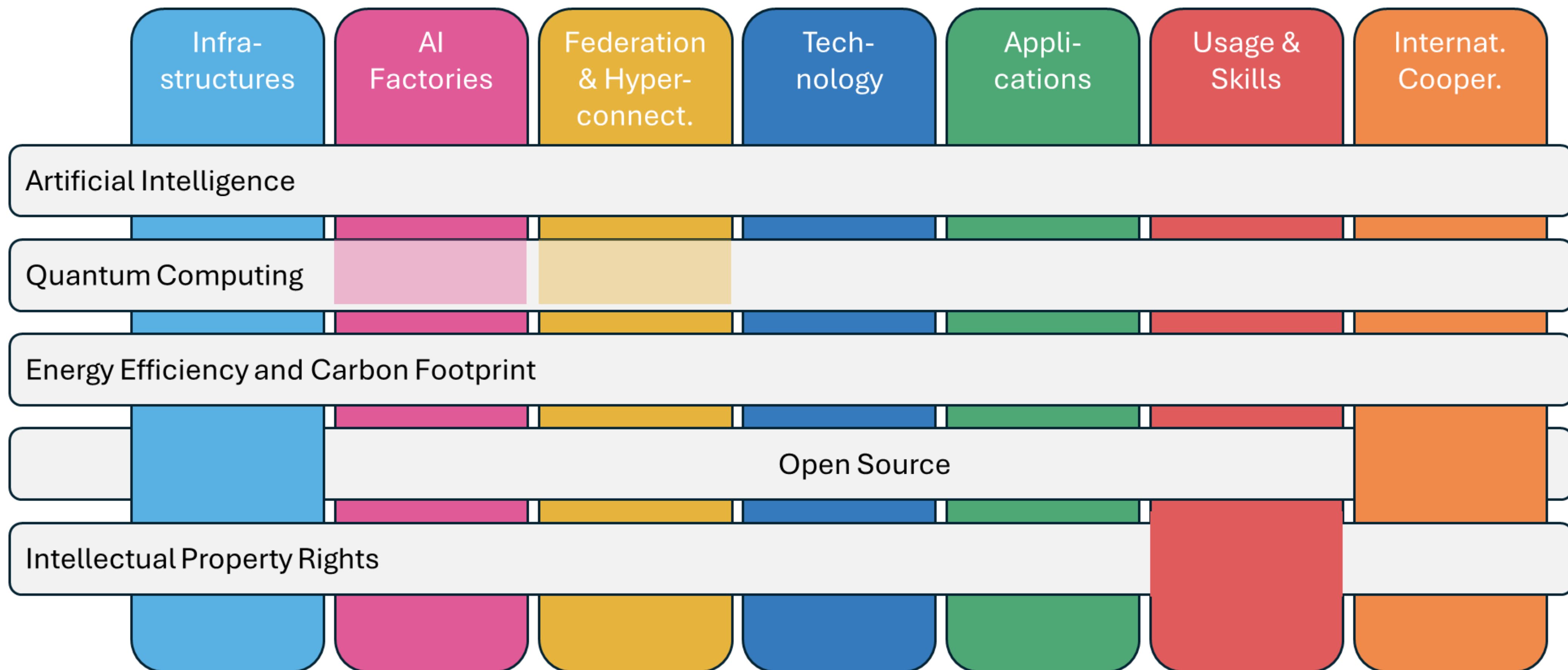
MASP 2025 update   1

https://eurohpc-ju.europa.eu/about/key-documents_en#multi-annual-strategic-programme

EuroHPC Pillars

- Infrastructures

- AI-Factories

- Federation and Hyperconnectivity

- Technology (HW and SW)

- Applications

- Skills & Usage

- International Cooperation

Topics cutting across pillars

Legend: A topic laying over a pillar (e.g. AI over AIFs) is part of it. When the overlap is faded (e.g. QC the AIFs), it means that the overlap does not exist or is very weak right now, but that it should be intensified in the future. Topics laying behind the pillars (e.g. Open Source behind Infrastructures), the overlap is considered insignificant.
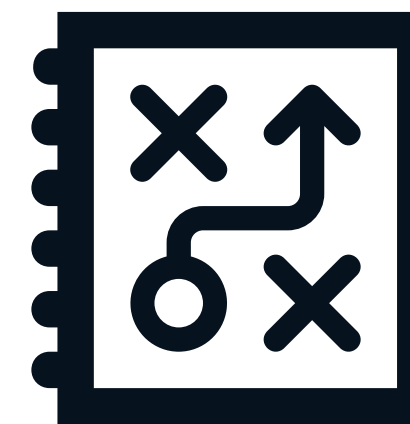
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Global Recommendations

Rebalance distribution of funding across Pillars
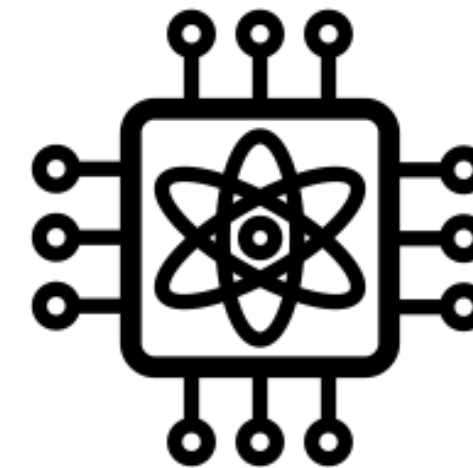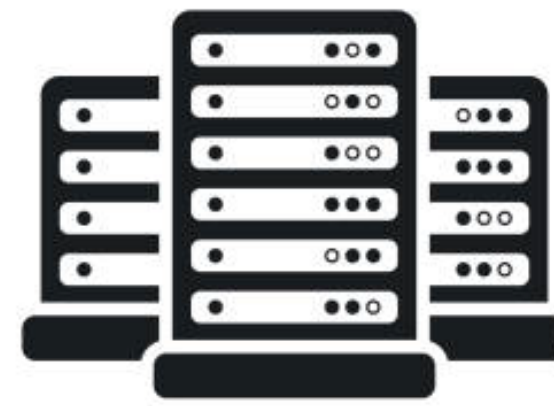
Strengthen **European sovereignty**

Close **cooperation & coordination** btw. **EuroHPC activities** and **those organized by EC**

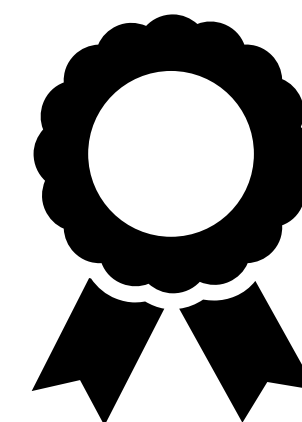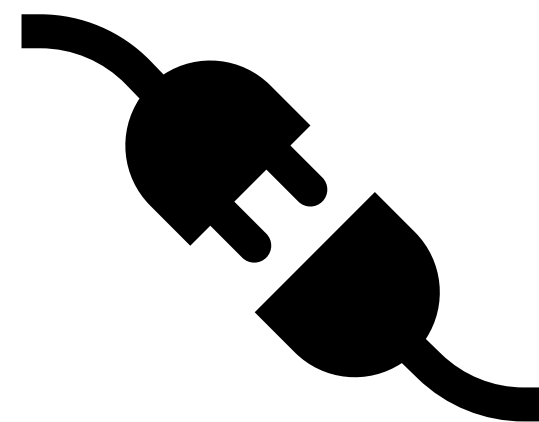**Roadmap** for future **key Science & Industry use cases** and **European post-exascale definition**

Infrastructures

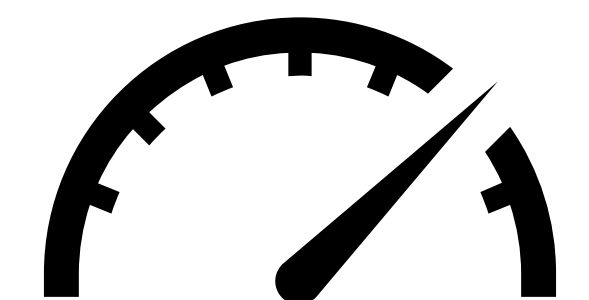**Upgrade mid-range & petascale** systems**, deploy exascale**

Deploy selected **QC systems** and plan for **next generation by 2027**

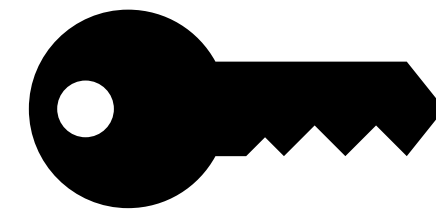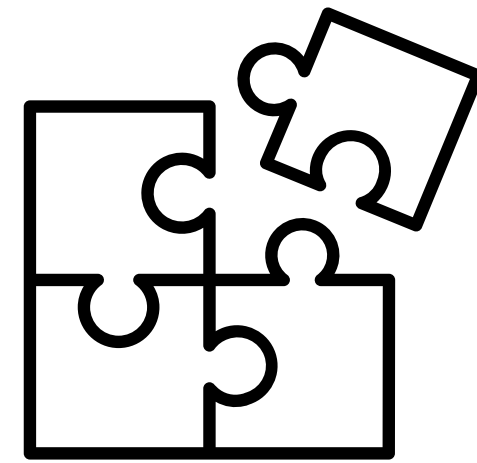Tighten **connection** between **HPC, AI, and QC** infrastructures

Standardisation, benchmarking, certification, and validation activities for **QC**

<u>Beyond 2027</u>: metrics reflecting the real-world impact of EuroHPC activities ➔ **position in Top500** is **<u>not</u>** the **main goal** in infrastructure procurements
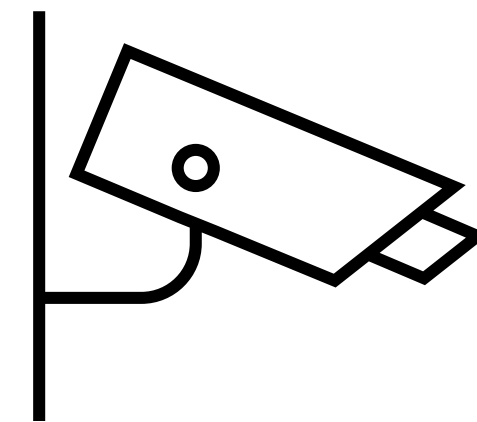
AI Factories

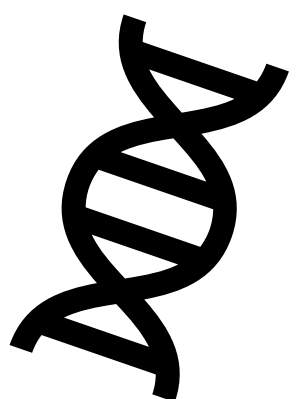**Implement all selected AIFs** in a coherent way

Develop specific access policies fitting the needs of AIFs users

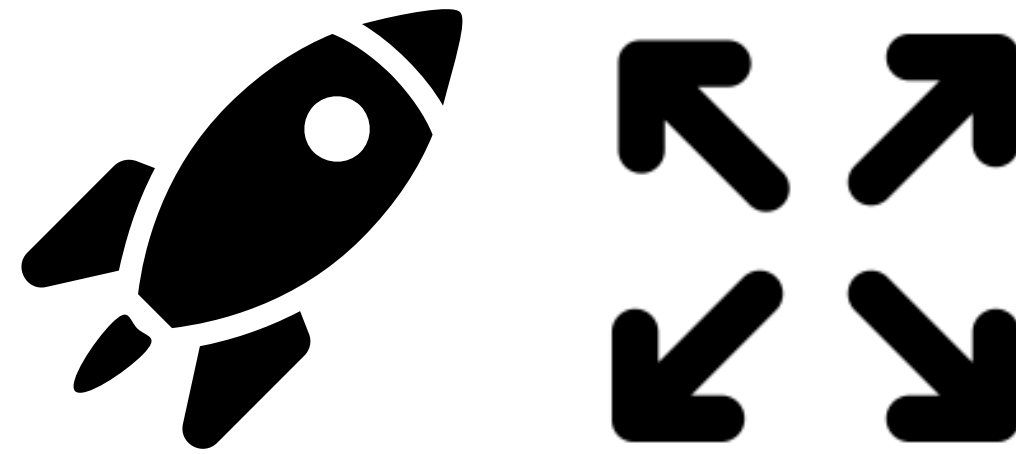Develop **novel AI-optimised architectures and services**

Establish and **reinforce technology watch**

Beyond 2027: **evolution of AI Factories**, learning from first AIFs and Gigafactories, with high **focus on applications and skills**
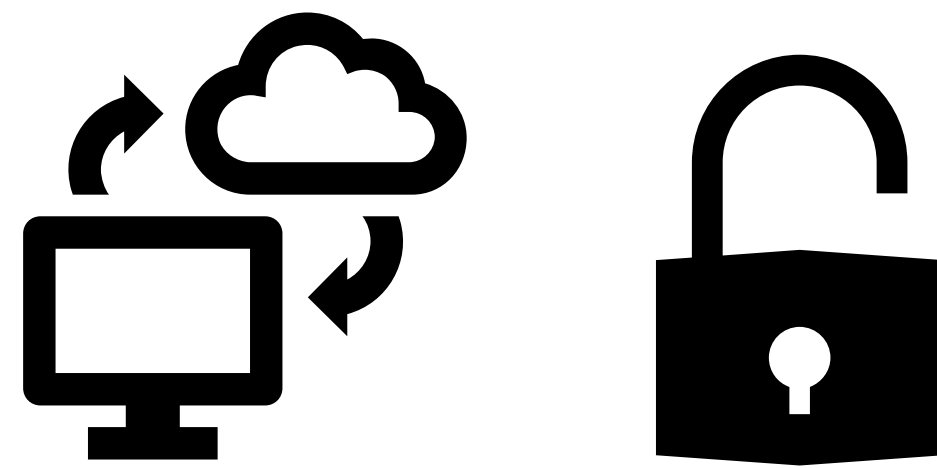
Federation and Hyperconnectivity
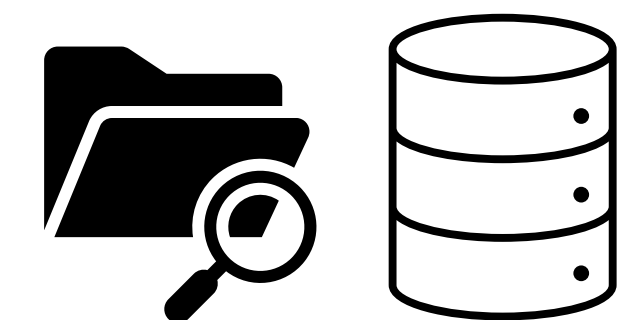
Deploy hyperconnectivity solutions by 2026

Extend federation of HPC systems to **cover** rapidly also **AIFs and QC,** plus **national infrastructures & private cloud providers**

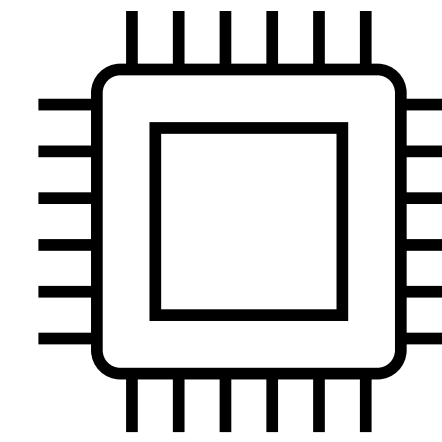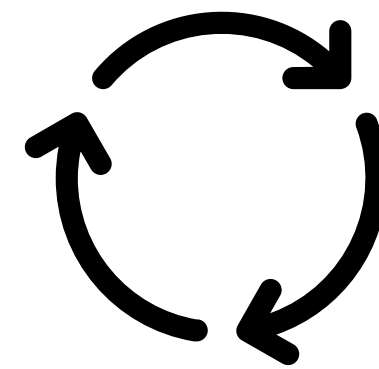**Connect with European data spaces,** repositories, data lakes, and edge data sources

Security task force in sync with the European Unit Agency for Cybersecurity and national security agencies

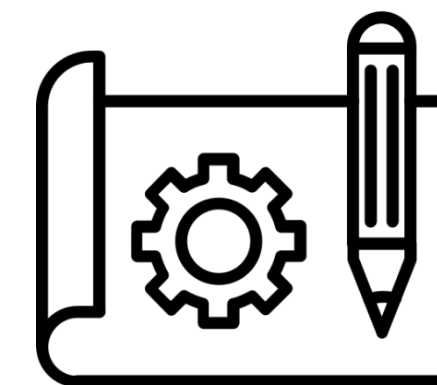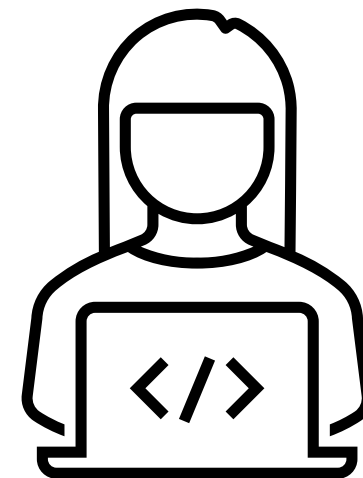**Beyond 2027**: **include data management and storage** topics **in next regulation** of EuroHPC

Technology

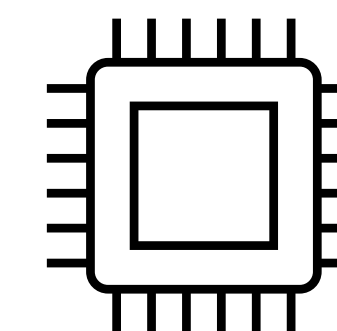Build up **European supply chain** and demand its **use in EuroHPC deployments**

Invest on **European processors** (Arm, RISC-V, accelerators, packaging, chiplets)

Invest continuously on **European SW components** and foster **professional SW development**
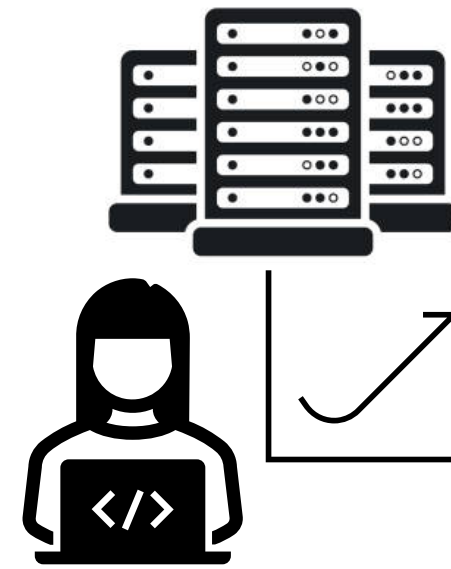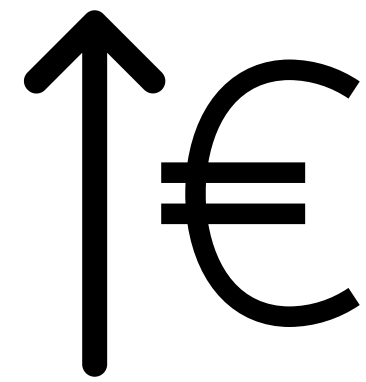
Build **demonstrators for disruptive technologies**

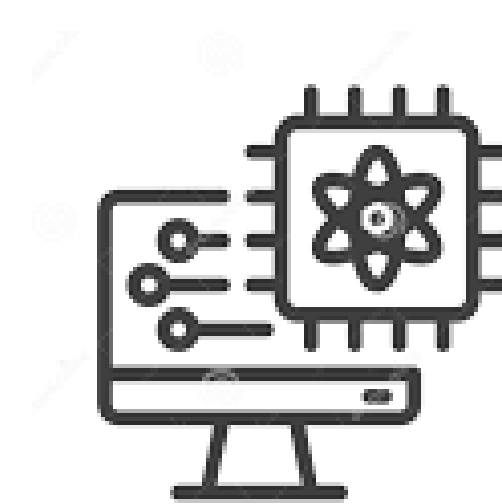**Beyond 2027**: **increase funding and adoption** of **European technology** on production deployments
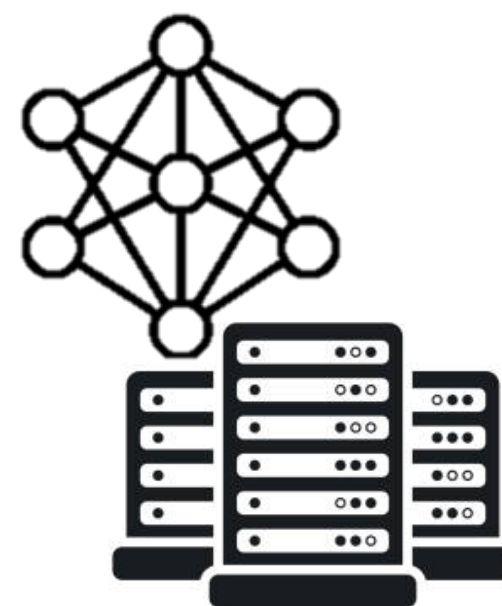
Applications

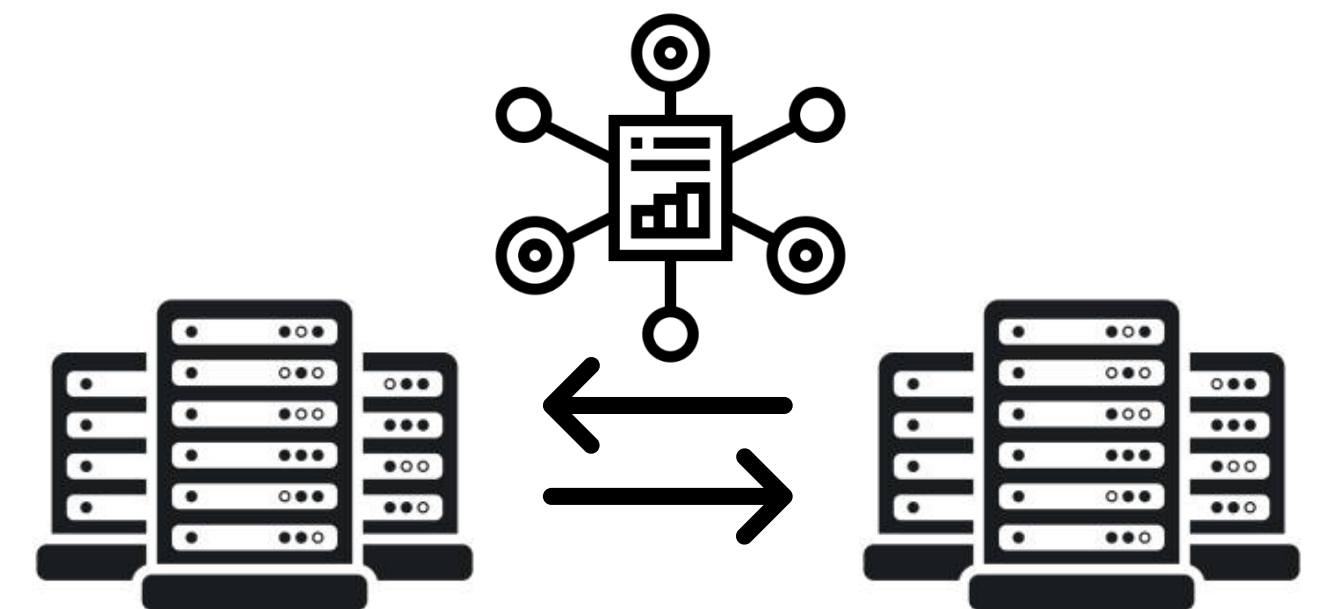**Strengthen funding of the application pillar**

Support effort for **developing**, **porting** and **optimising applications** to predominant HPC architectures, with **HPC experts integrated in scientific application communities**

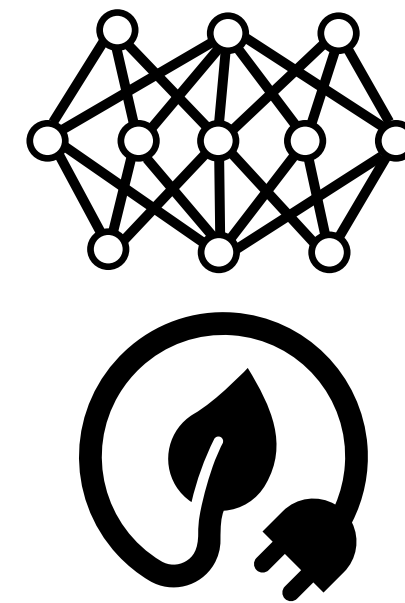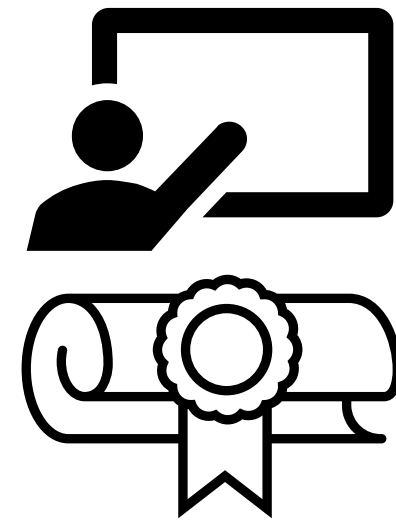**Optimise foundational models** on HPC platforms and support **integration of AI and HPC approaches**

Support the **growth on QC applications**, in both stand-alone and hybrid HPC/AI/QC

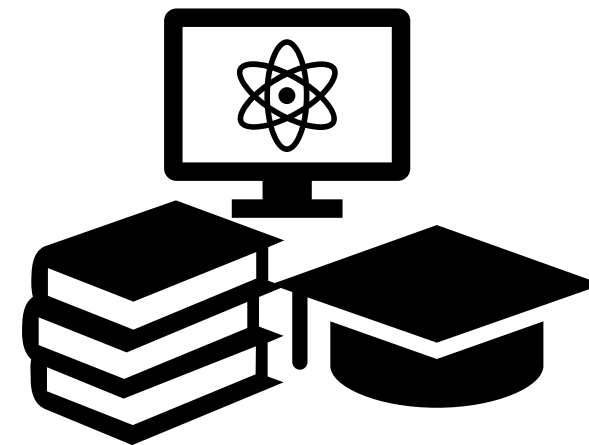<u>**Beyond 2027**</u>: develop and promote **frameworks to facilitate automated porting of domain applications on EuroHPC platforms**

Skills and Usage

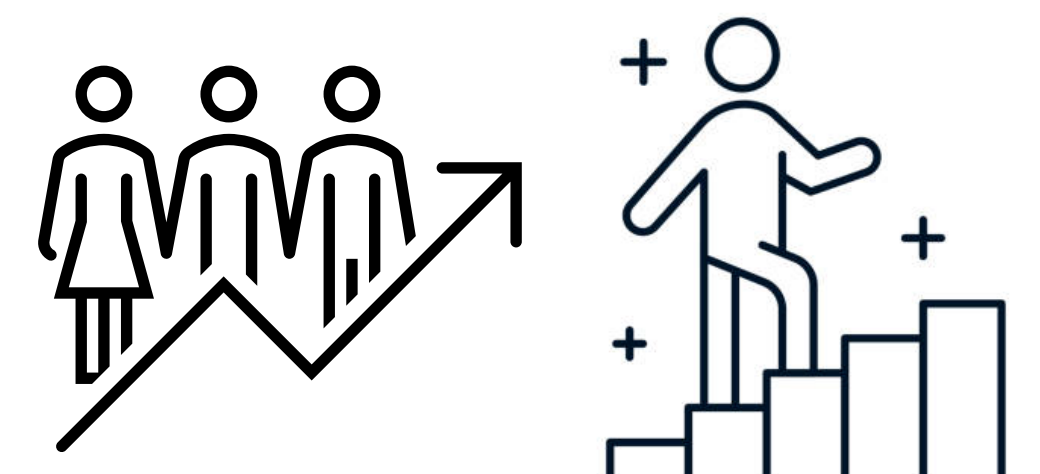**Training** and **education to grow** the pool of **HW, system-SW developers,** and **system admins**

Specific **training and education** for **AI specialists to efficiently use HPC**

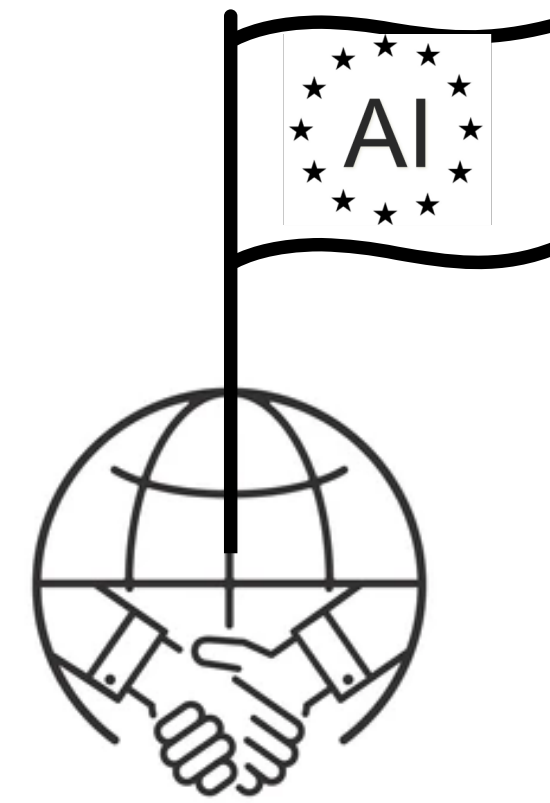Foster **education in QC** and **collaboration** between **HPC/AI and QC**

Continuous investment in **support structures for HPC/AI/QC users**

Beyond 2027: **intensify** investment in **growing a diverse pool of HPC/AI/QC experts**, particularly by developing attractive career paths and long term-perspectives
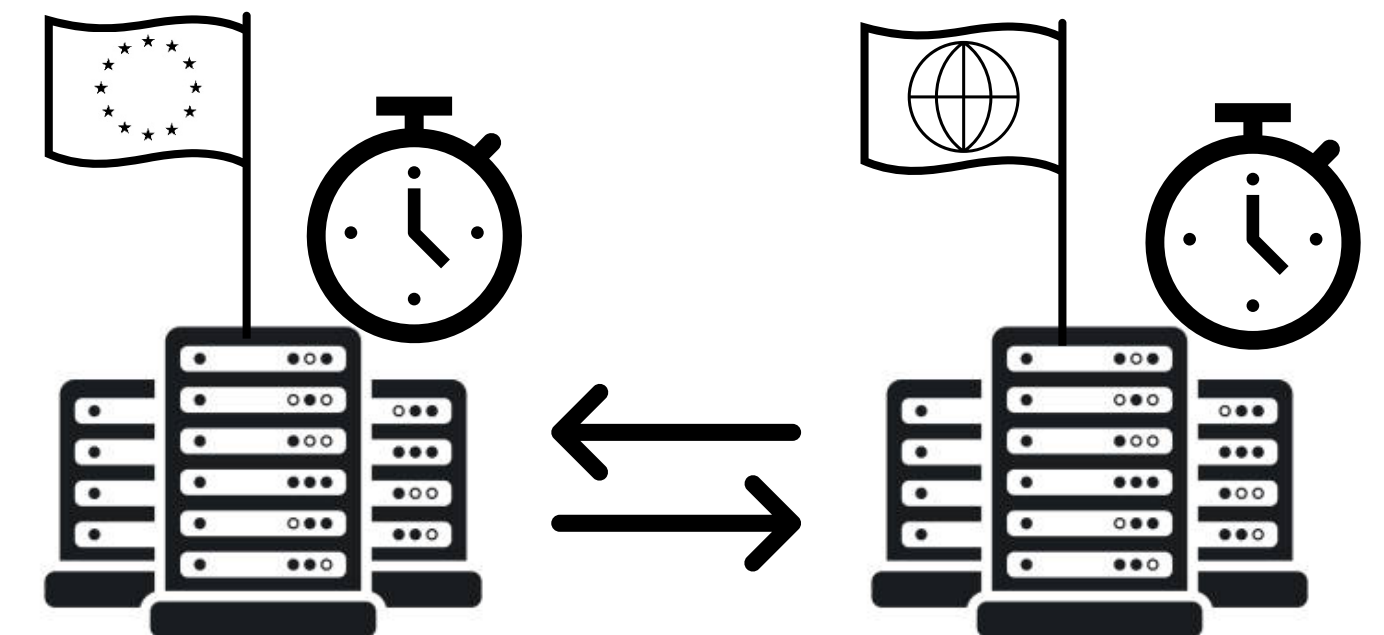
International Cooperation

Extend international cooperation to the regions **Latin America**, **South Korea**, **Singapore** and **Canada**, covering HPC, AI & QC

Support **collaboration with international initiatives** in a manner **coordinated at European level**, particularly in the area of AI (e.g. TPC)

Beyond 2027: means to **exchange compute cycles** with international partners

Thank you for your attention

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