

**HPC User Forum  
8-11 April 2024**

**Developments in the European Union – EuroHPC**

**Leonardo Flores Añover  
Senior Expert**

**DG CNECT, HPC & Quantum Technology Unit - European Commission**

- EuroHPC update
- AI Factories

# The EuroHPC Joint Undertaking 2021-2027

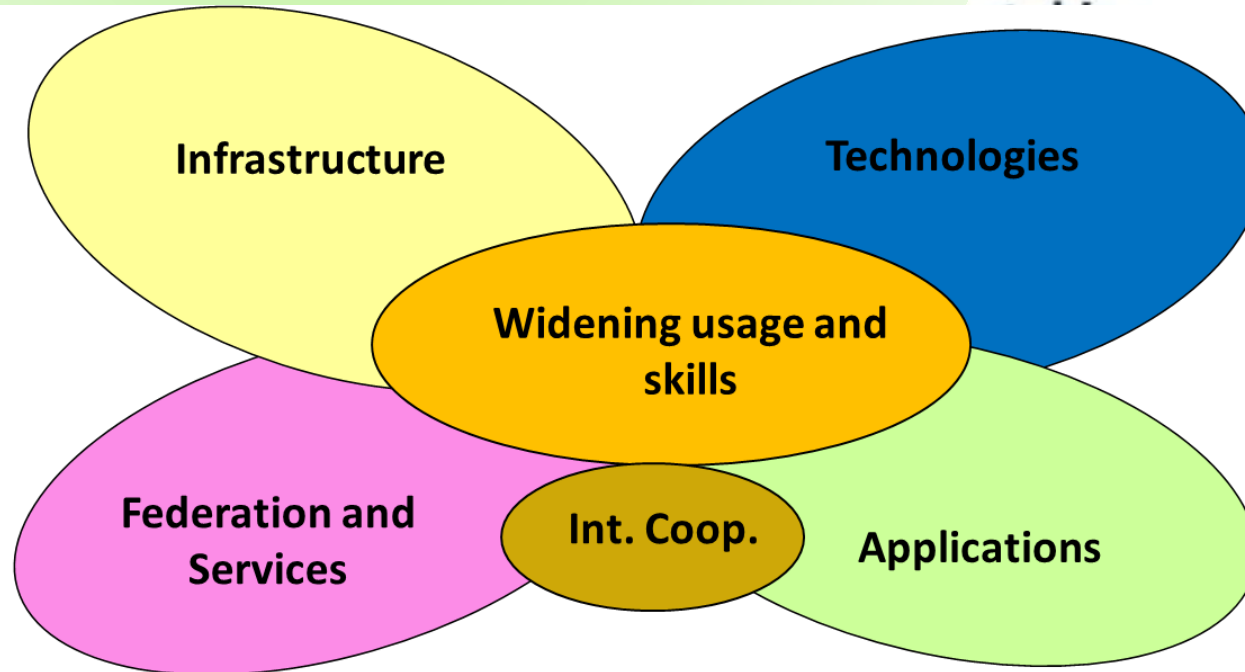


## Mission:

- World-leading HPC, QC, data infrastructure and services
- Technology supply chain
- Applications
- HPC use and skills
- INCO

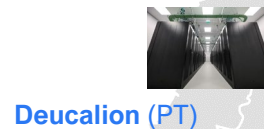
A legal and funding agency (EUR 7 billion 2021-2027)

- 34 Participating States (All EU MS) + EU + 3 Private Members (ETP4HPC, BDVA & QuIC)



# HPC Infrastructure Status 2019 - 2023

- Top-world computing capacities for scientific, industrial or public users available across Europe
- more than 1.2 exaflops - theoretical computing power



MareNostrum 5 (ES)



Meluxina (LU)



Vega (SI)



Leonardo (IT)

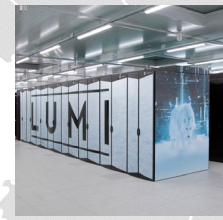
Discoverer (BG)



Karolina (CZ)



Lumi (FI)



# Applications and use

- 15 HPC Centres of Excellence and many other projects for application ecosystem
- National Centres of Competence (NCCs) in EuroHPC Participating States
- EuroHPC Access:
  - Extreme Scale Access: 2.8 billion core hours
  - Regular Access: 22 million node hours
  - Specific Industry Access for AI call
  - EPICURE – Application support service
- Education/Skills: EUMaster4HPC



# Technology

- Supporting EU critical technological sovereignty
- European Processor Initiative (EPI):
  - EUPilot and EUPEX pilots integrating technology developed in the EU
  - Rhea (SiPearl) – powering JUPITER
  - EPAC - first European RISC-V acceleration



Moving ahead...

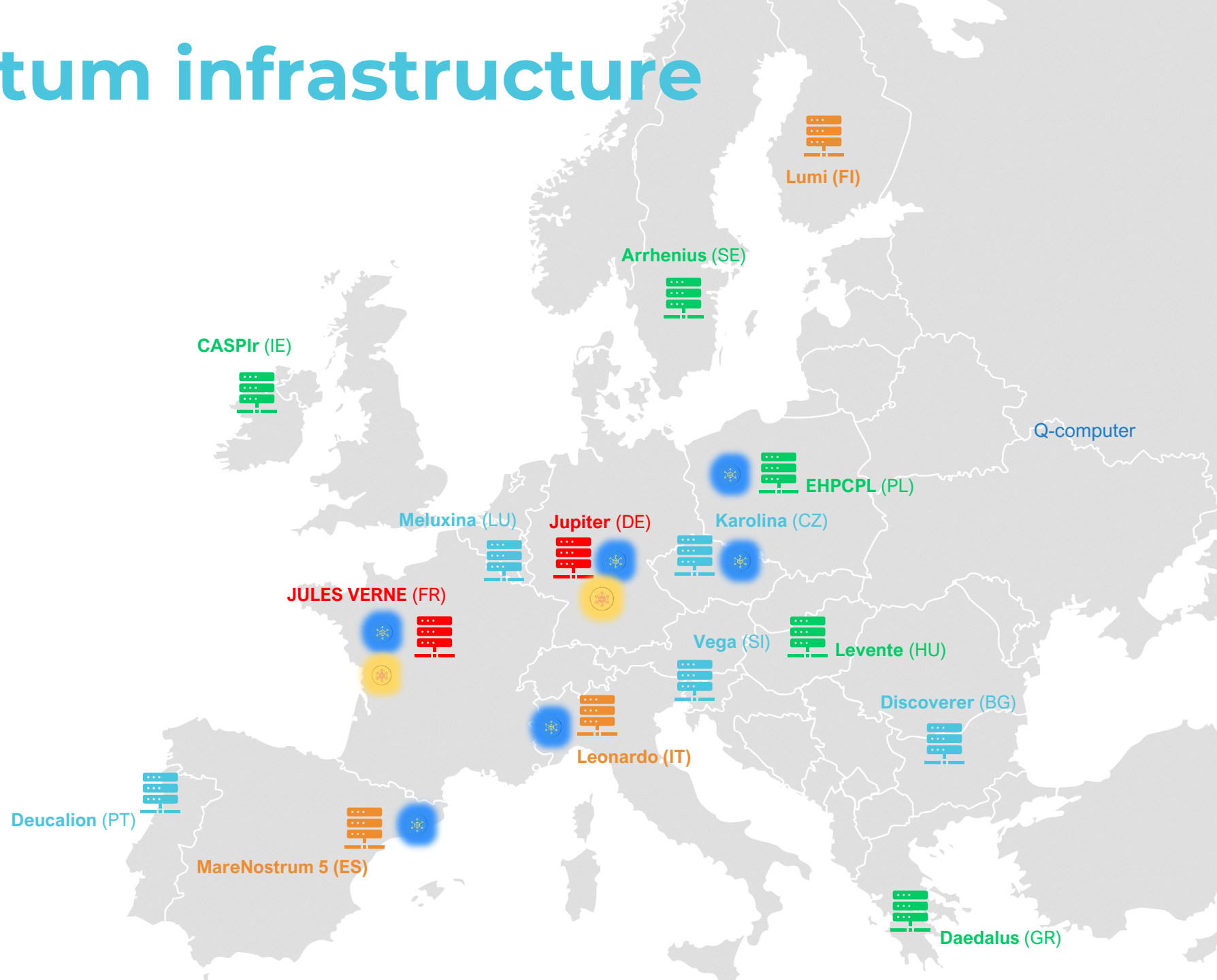
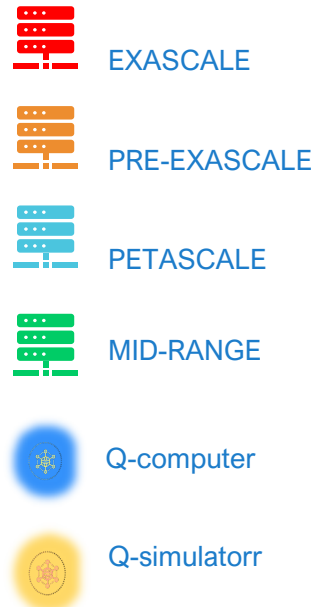
# Full ecosystem development

- Exascale, mid-range and Industrial-grade supercomputers
- Quantum Excellence Centres
- EU technology and integration in future supercomputers: DARE Framework Programme Agreement (RISC-V processors)
- HPC for AI ecosystem
  - Improve the access for AI users
  - AISC - Support centre for AI
  - HPC SW ecosystem for AI
- AI Factories

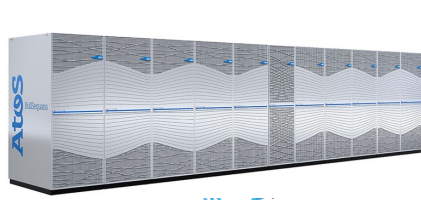


# HPC – Quantum infrastructure

## 2024 - 2025



# TIMELINE OF UPCOMING SYSTEMS



**LEONARDO**



**MN5**  
MARENÖSTRUM



**LUMI**

DEUCALION

**JUPITER**

**AI Factories**

**DAEDALUS**  
Arrhenius

**JULES VERNE**



2023

2024

2025

2026-2027

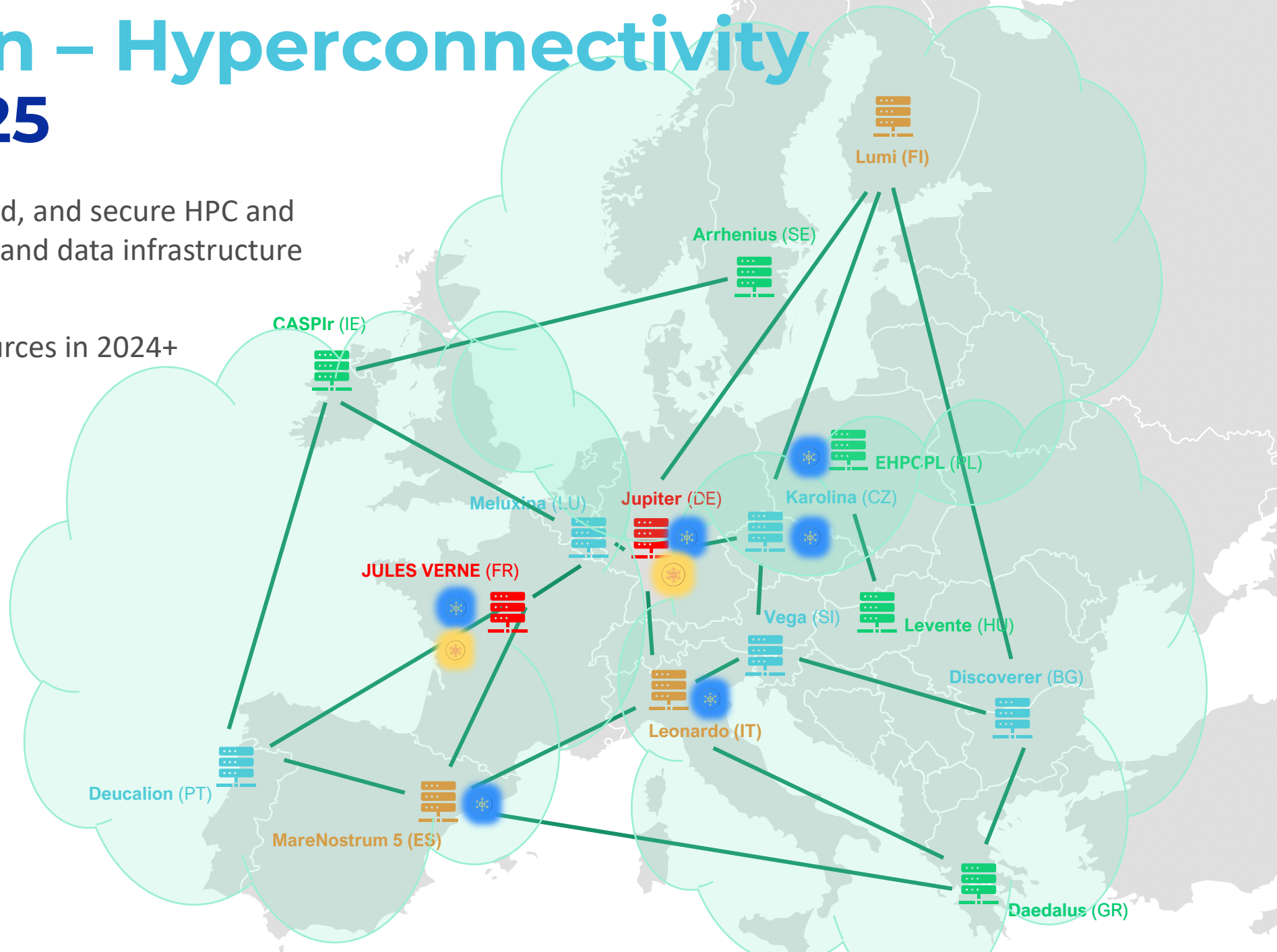
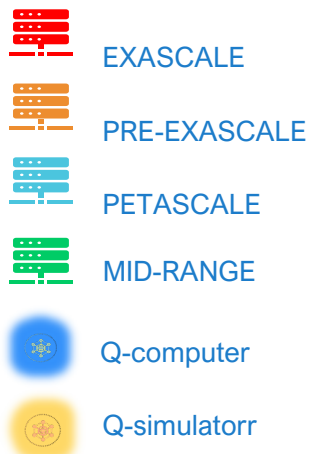
Other Mid-range

Industrial Systems

# Federation – Hyperconnectivity

## 2024+ / 2025

- A hyper-connected, federated, and secure HPC and quantum computing service and data infrastructure ecosystem
- Federation of EuroHPC resources in 2024+
- Hyperconnectivity in 2025

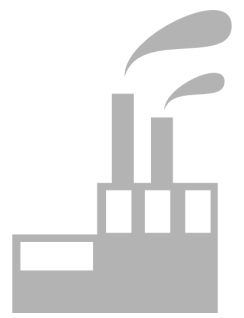
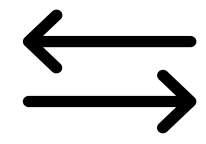
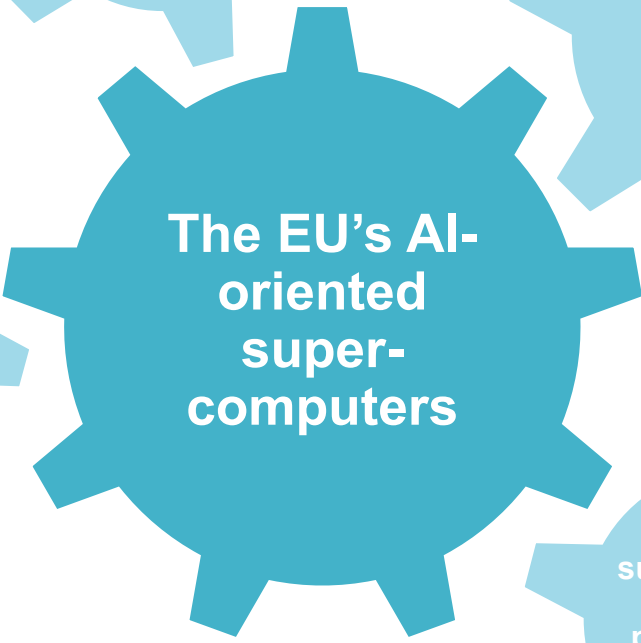


# Political context: AI Act

- AI Innovation package – AI Factories

# AI Factories

One Stop-Shop



# Thank you



© European Union 2020

Unless otherwise noted the reuse of this presentation is authorised under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license. For any use or reproduction of elements that are not owned by the EU, permission may need to be sought directly from the respective right holders.

