EUPEX in a nutshell

European Pilot for Exascale
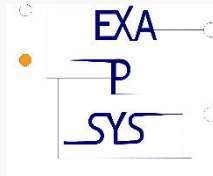
EUₚEX

# EUPEX factsheet

> **European Pilot for EXascale**

> A 5-year project starting 1st January 2022

> A balanced consortium of 17 European academic and commercial stakeholders

> Funded by EuroHPC JU

- And France, Germany, Italy, Greece, United Kingdom, Czech Republic, Croatia

- Total budget: 40.76 M€

Covering the full spectrum of required supercomputing technologies with European solutions

EUPEX objectives

Co-design	Co-design a modular Exascale-pilot system
Deploy	Build and deploy a pilot hardware and software platform integrating European technology
Demonstrate	Demonstrate the readiness and the scalability of the pilot technology in general and the MSA in particular, towards Exascale
Applications	Prepare applications and European users to efficiently exploit the future Exascale machines

The EUPEX way

> **Leveraging the best of the assets developed in previous H2020 projects**

> **The first HPC platform integrating the full spectrum of European HPC technologies**

- architecture (e.g. OpenSequana, Modular Supercomputer Architecture developed by the DEEP projects)
- processors (e.g. SiPearl's Rhea processor)
- interconnect (e.g. Eviden's BXI enhanced in RED-SEA)
- system software (e.g. ParTec's ParaStation Modulo, IO-SEA storage software)
- development tools (e.g. Bull energy + dynamic power optimizers, ScoreP/Scalasca, PMIx, MERI, COUNTDOWN…)
- applications (e.g. CINECA's LiGen, ECMWF's Integrated Forecasting System (IFS))

> EUₚₑₓ

x96

Up to 96 Rhea nodes
+ BXI switches
in one OpenSequana rack

MSA GPP module

x32

Up to 32 GPU nodes
+ BXI switches
in one OpenSequana rack

MSA GPU module
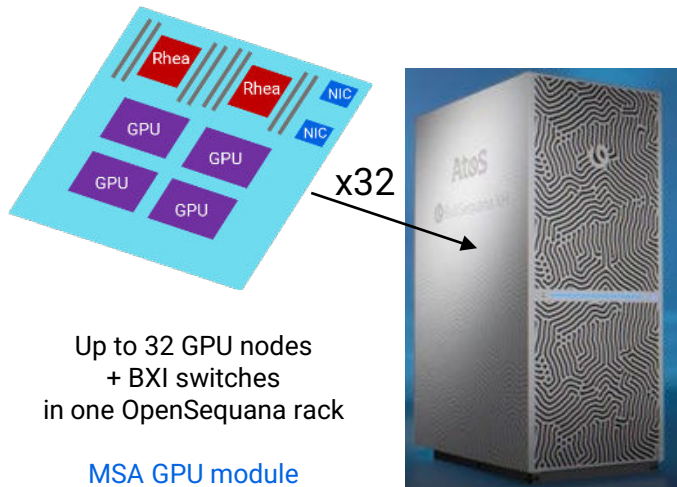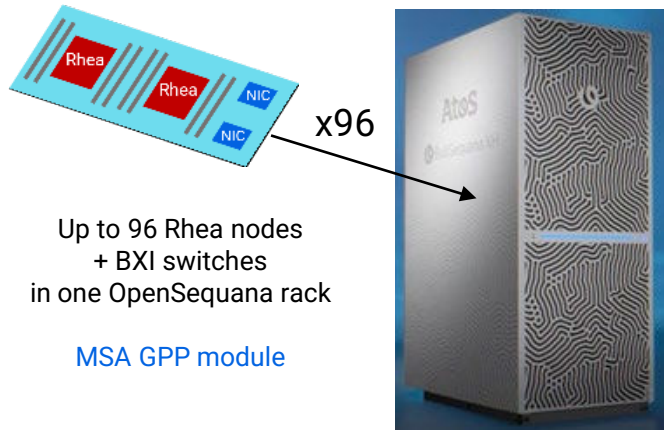
The EUPEX pilot system

> **Modular**

- OpenSequana-compliant hardware platform
- matching HPC software ecosystem implementing the Modular Supercomputing Architecture
- to integrate and manage efficiently a variety of hardware modules and to handle heterogeneous workflows

> **Large enough to be a proof of concept**

- for a modular architecture relying on European technologies, and in particular on EPI technology
- to demonstrate the Exascale readiness of the applications selected for co-design

> **Production-grade**

- technical choices guided by the maturity of the European solutions available

EUPEX Early Access Programme (EAP)

> EUPEX will open its target Pilot system to interested organisations

> As this Pilot system is only planned for Summer 2025
  - **Phase 1: Access to main Alpha system (CEA Irene A64FX partition)**
    Includes access to planned EUPEX software stack
  - Phase 2: Access to Pilot system once ready

> **Phase 1 now open** for
  - EuroHPC Centres of Excellence (CoEs)
  - Selected EuroHPC research projects (on request)

> Contact us!
  - https://eupex.eu/early-access-program/#getting-started-with-the-eap

EUPEX Presentation

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