EPI2 (SGA2)
BRIEF PRESENTATION

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EUROHPC SUMMIT WEEK

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European Processor Initiative

EuroHPC Joint Undertaking

THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN HIGH PERFORMANCE COMPUTING JOINT UNDERTAKING (JU) UNDER FRAMEWORK PARTNERSHIP AGREEMENT NO 800928 AND SPECIFIC GRANT AGREEMENT NO 101036168 EPI-SGA2. THE JU RECEIVES SUPPORT FROM THE EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME AND FROM CROATIA, FRANCE, GERMANY, GREECE, ITALY, NETHERLANDS, PORTUGAL, SPAIN, SWEDEN, AND SWITZERLAND.

EPI2 FACTSHEET

- **SGA2: Phase two of European Processor Initiative Project**
- A 3-year project starting 1st January 2022
- A balanced consortium of 27 key European academic and industrial stakeholders
- Funded by EuroHPC JU (50%)
  - And France, Germany, Italy, Spain, Sweden, Portugal, Netherland, Croatia
  - Total budget: 70 M€

Continuing & enhancing the work performed with first EPI phase (SGA 1), with gen 2 general purpose processor & accelerators

KEY OBJECTIVE: HIGH-END GPP AND ACCELERATORS FOR EXASCALE

Exascale Systems

EU PEX Pre-Exascale Pilots THE EUPILOT Pilot using Independent Local & Open Technologies

SGA1: GPP & Accelerator test chips

SGA2: GPP V1 Go to Market Accelerator Demonstrator

Next project(s) GPP V2 Go to Market Accelerator V1 Go to Market

Centres of Excellence in HPC Applications

2019 – 2021 | 2022 - 2024 | 2025 -

SGA2 OBJECTIVES:

Complete & re-use – as far as possible – EPI1 outcomes

1. **Finalize the deployment of the first generation of processor** developed in SGA1.
2. **Develop the second generation of General Purpose Processor (GPP)**
3. **Develop the second generation of accelerators** and related software stack
4. **Develop an open Common Platform (CP) standard** (Hardware and Software)
5. **Focus on the industrialisation & commercialisation path** of the developed IPs and innovations
6. **Enable the long-term economical sustainability and scalability**

& prepare EU exascale solutions

KEY CONCEPTS

General Purpose processors:
Enable legacy & programmability

Bytes per flops optimisation

Accelerators:
Computing force

GFlops optimisation

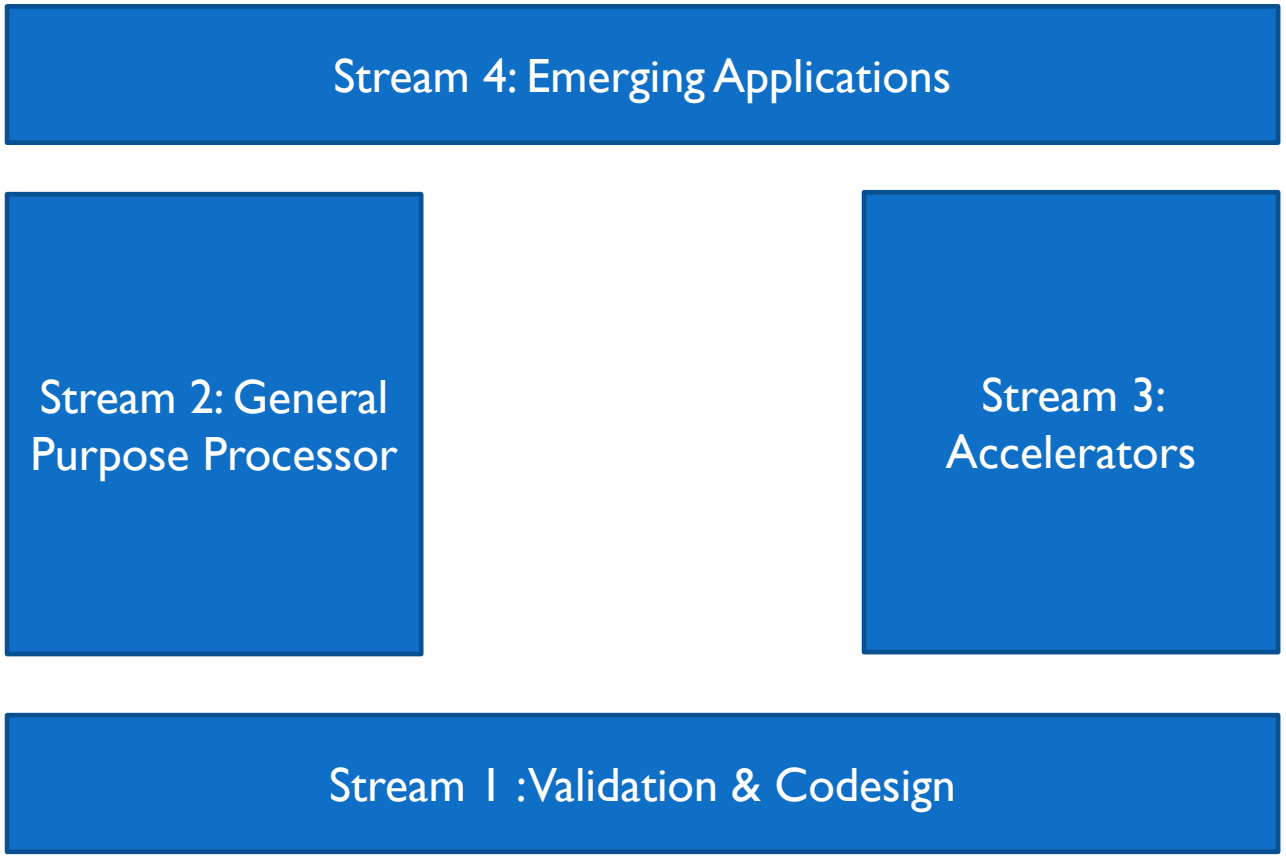
Need to optimize interworking

D2D level – chiplet concept
UCIe / hw CP

Board level
PCIe / CXL / Sw CP

Different constraints / optimisations

OUR FOUR PILLARS



EXPECTED IMPACTS (1/2)

- Strengthening scientific leadership as well as the competitiveness and innovation potential of European industry, **contributing to a sustainable exascale HPC supply ecosystem in Europe and ensuring European technological autonomy in this field**
- **Provide European industry with a competitive edge in processor technology** with potential for a wide range of applications (…)
- **Leveraging the efforts on the European low power processing technologies** (in particular the European Processor Initiative) and contributing to the realisation of future exascale system architectures based on such technologies
- **Creation, promotion and exploitation potential of European IP**
- **Maturity of solutions and potential for exploitation in future European exascale HPC systems**

Get ready for exascale

EU/JU EXPECTATIONS (2/2)
EUROHPC JU'S OVERALL AND SPECIFIC OBJECTIVES

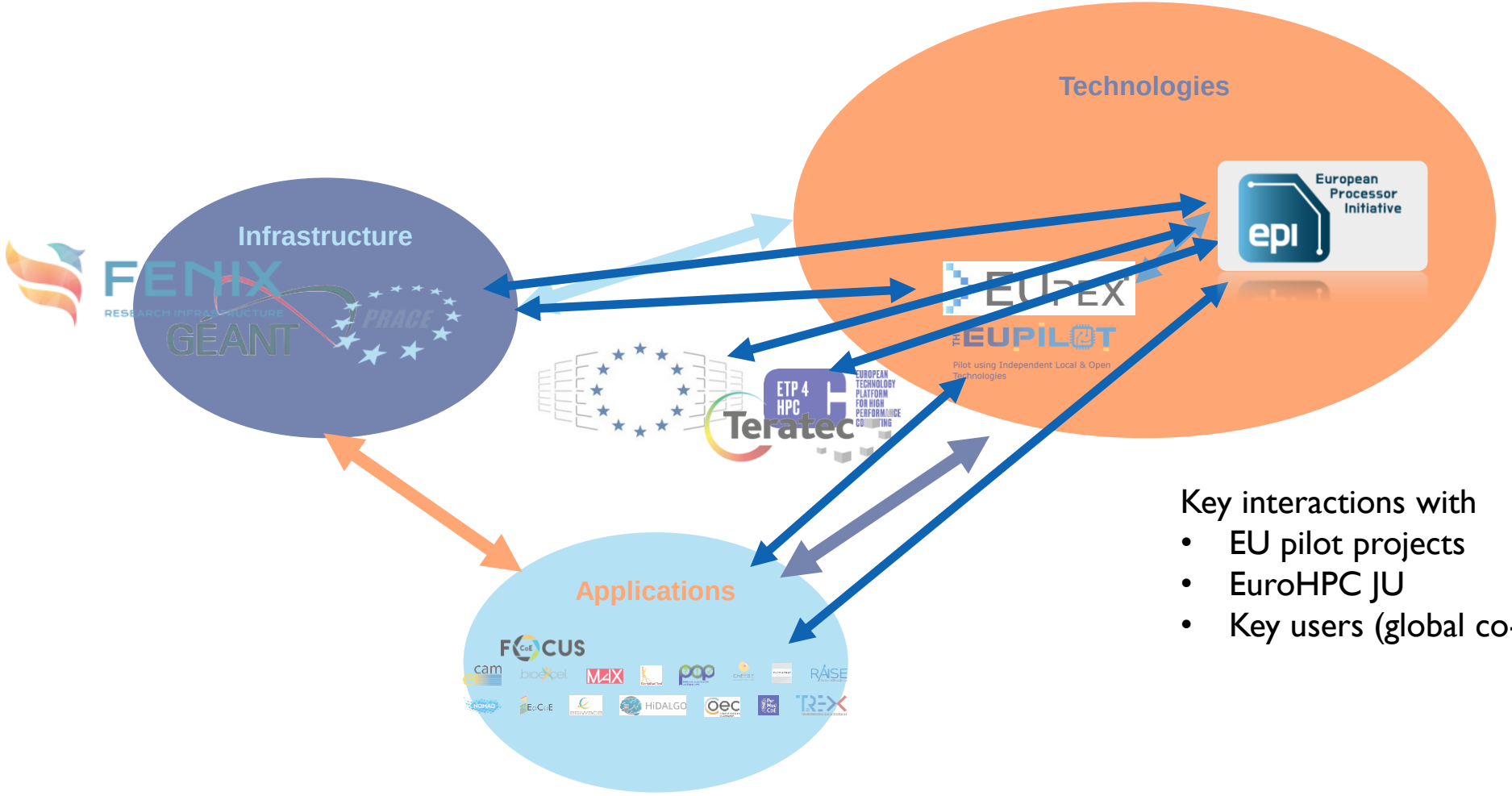
"to provide the EU research, scientific & industry communities with the **best available and competitive High-Performance Computing** and data infrastructure and to support the development of its technologies and its applications across a wide range of fields"

"to support an ambitious research and innovation agenda to develop and maintain in the Union a world-class High Performance Computing ecosystem, Exascale and beyond, covering all scientific and industrial value chain segments, including **low power processor and middleware technologies**, algorithms and code design (…), for the next generation supercomputing era"

"to promote the uptake and systematic use of research and innovation results generated in the Union by users from science, industry, including SMEs, and the public sector"

Get ready for exascale

EPI2 ROLE IN EUROPEAN HPC ECOSYSTEM: TECHNOLOGY PROVIDER



Key interactions with

- EU pilot projects
- EuroHPC JU
- Key users (global co-design)