

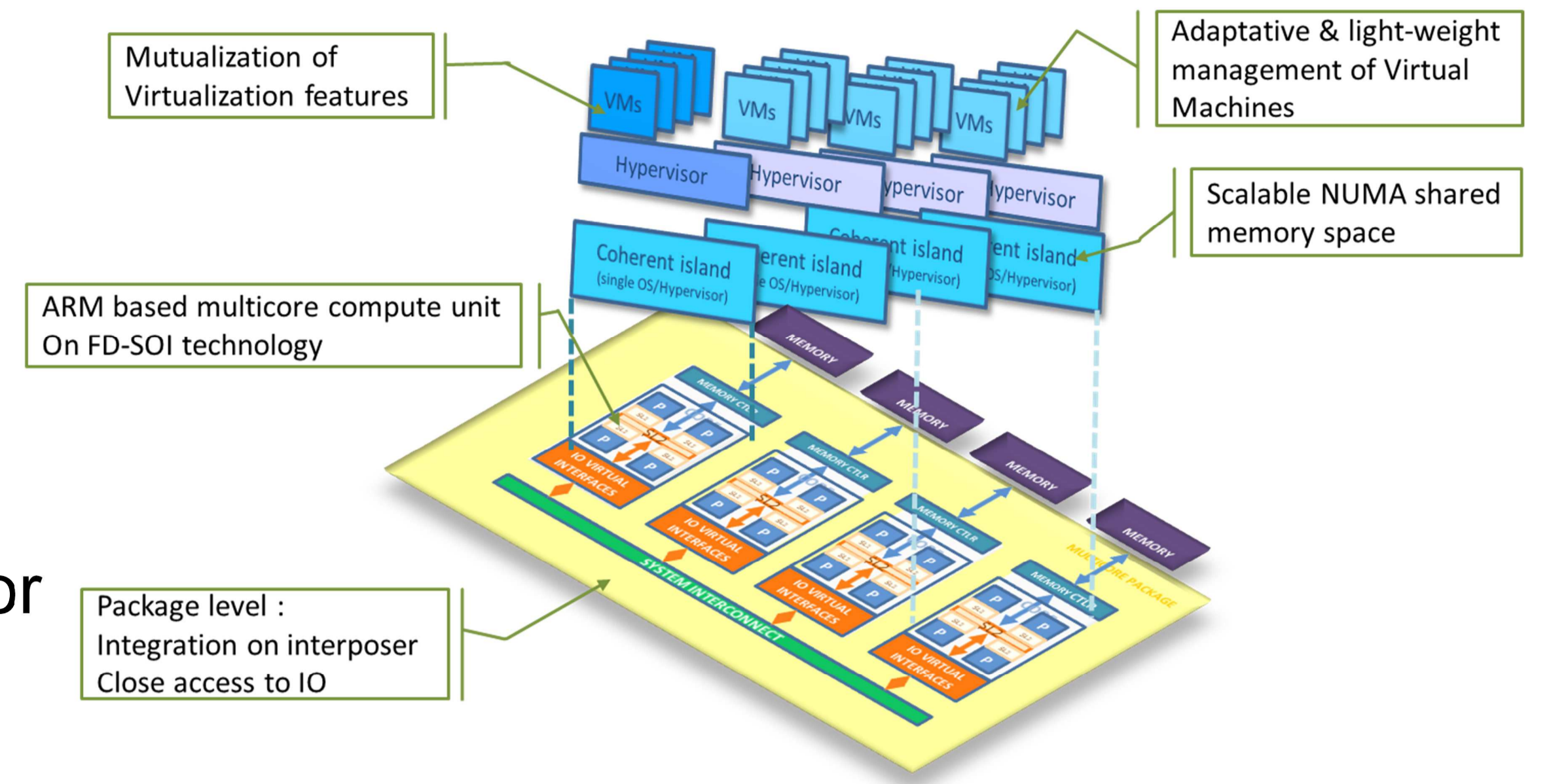


Building a European Ecosystem for Scalable, Low-Power, Low-Cost, High-Performance Computing



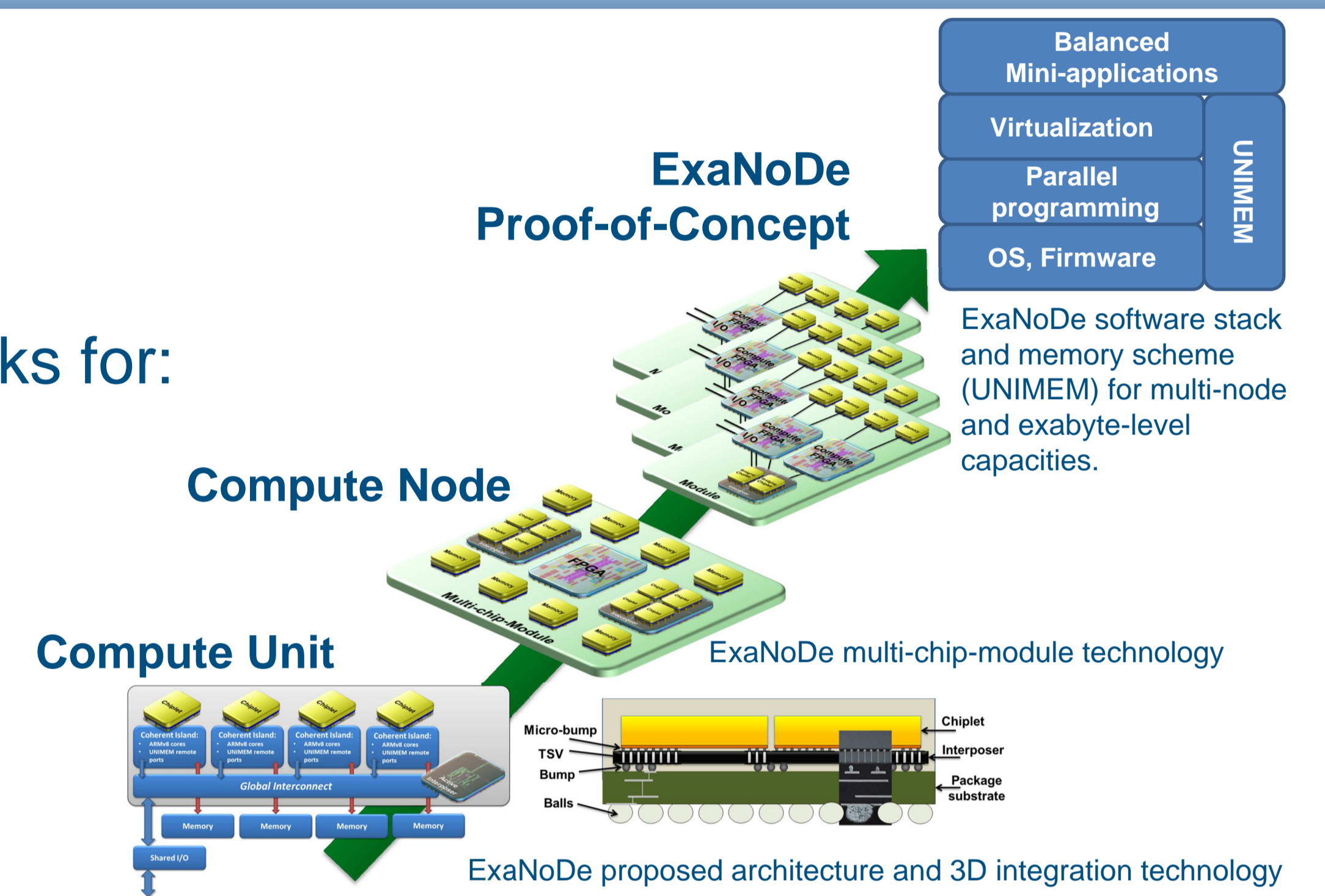
redesigns the enterprise server:

- Lower cost through system integration
- Energy efficiency : low-power 64 bit ARM processor and more efficient software
- Mutualization (sharing) of I/O resources



ExaNoDe: highly modular scale-out architecture and building blocks for:

- highly efficient,
 - highly integrated,
 - high-performance,
 - heterogeneous
- compute element aimed towards exascale computing.

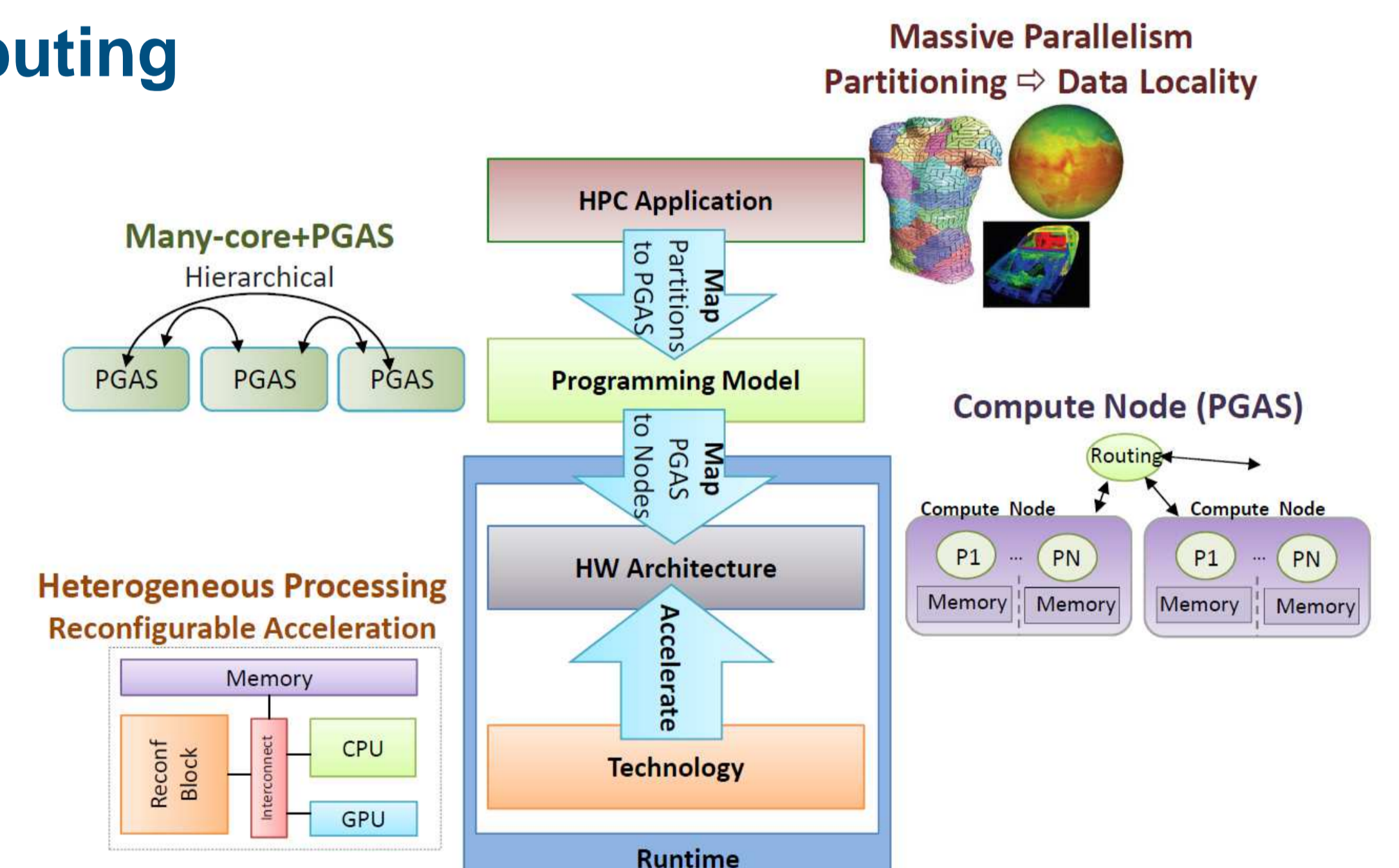


Energy-Efficient Heterogeneous COmputing at exaSCALE – www.ecoscale.eu

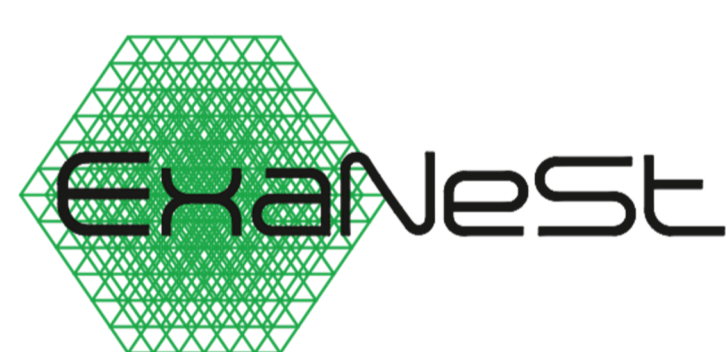


Life.augmented

- Reconfigurable Acceleration:** Distributed shared reconfigurable logic, Remote coherent accesses, Transparent to user
- High-Level Synthesis:** OpenCL kernels
- Runtime System:** Reconfiguration at runtime, Locality Management, Task Scheduling



European Exascale System Interconnect and Storage - www.exanest.eu



Storage, Interconnect, Cooling

- Storage:** fast, distributed in-node non-volatile memory
- Interconnect:** low-latency, unified compute & storage traffic
- Packaging:** advanced, liquid-cooled
- App's:** real, scientific and datacenter
- Prototype:** 1000+ ARM cores from EuroServer: ARM nodes with UNIMEM address space & shared I/O from ExaNoDe: Chiplets, Si Interposer with ECOSCALE: Heterogeneous ARM + FPGA's

Iceotope Ltd: Fully Immersed Cooling Technology



EuroLab-4-HPC: Foundation for a Centre of Excellence in HPC Systems www.eurolab4hpc.eu

Objectives

- joining HPC system research around a long-term research agenda
- defining a curriculum to foster future European HPC technology leaders
- accelerating commercial uptake of new HPC technologies
- building an HPC ecosystem with researchers and other stakeholders, e.g., HPC system providers and venture capital
- forming the foundation and vision for a self-sustainable CoE

