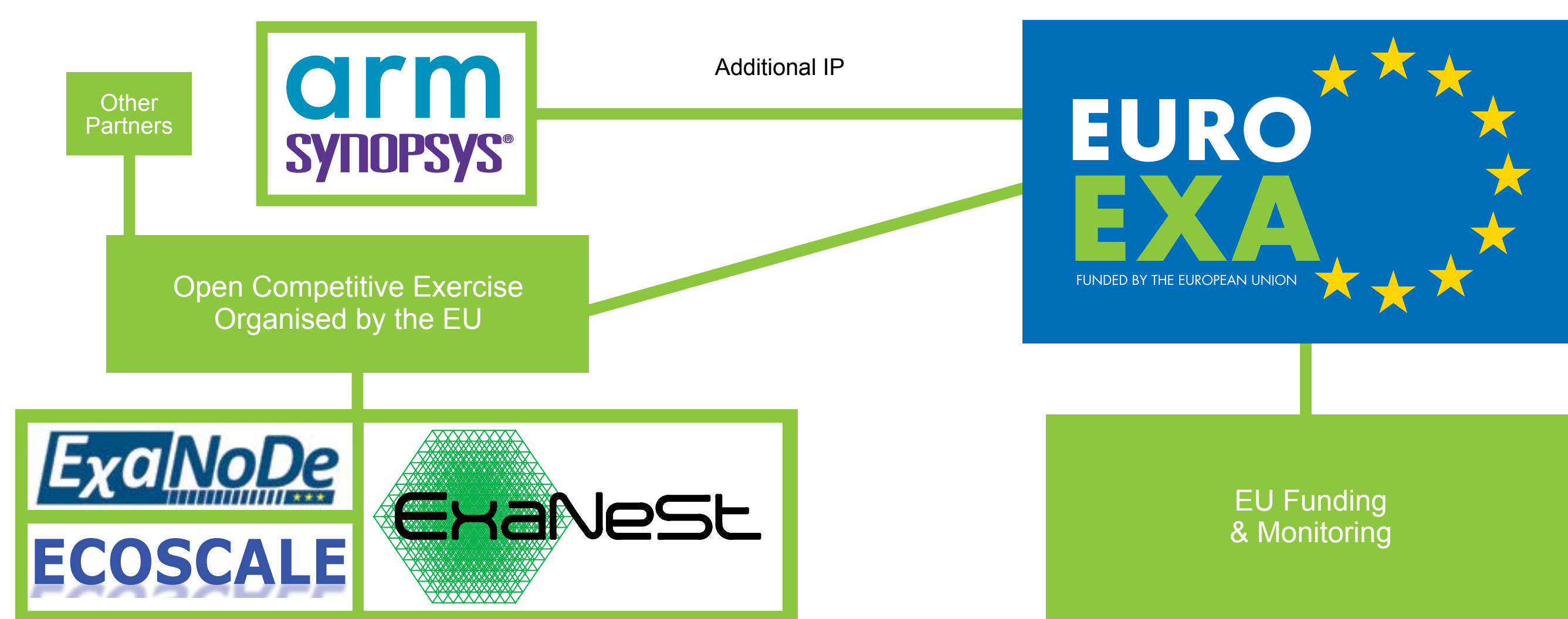


## European co-design for exascale applications

The Horizon 2020 EuroEXA project proposes a ground-breaking design for mind blowing results: Over four times higher performance and four times higher energy efficiency than today's High-Performance platforms.

### What is EuroEXA?



### Who are the partners?



### Vision and Path

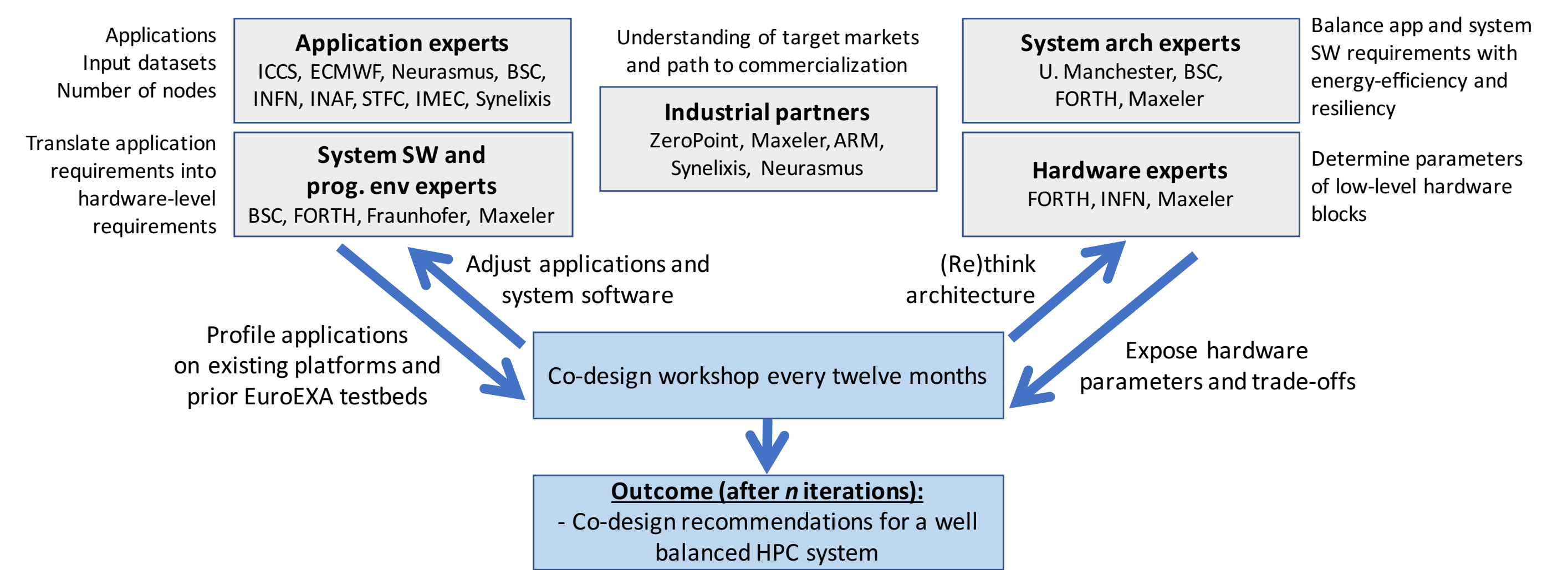
#### Vision

- First testbed architecture will be shown to be capable of scaling to world-class peak performance in excess of 400 PFLOPS with an estimated system power of around 30 MW peak.
- A compute-centric 250 PFLOPS per 15 MW by 2019.
- Show that an exascale machine could be built in 2020 within 30 shipping containers with an edge to edge distance of less than 40m.

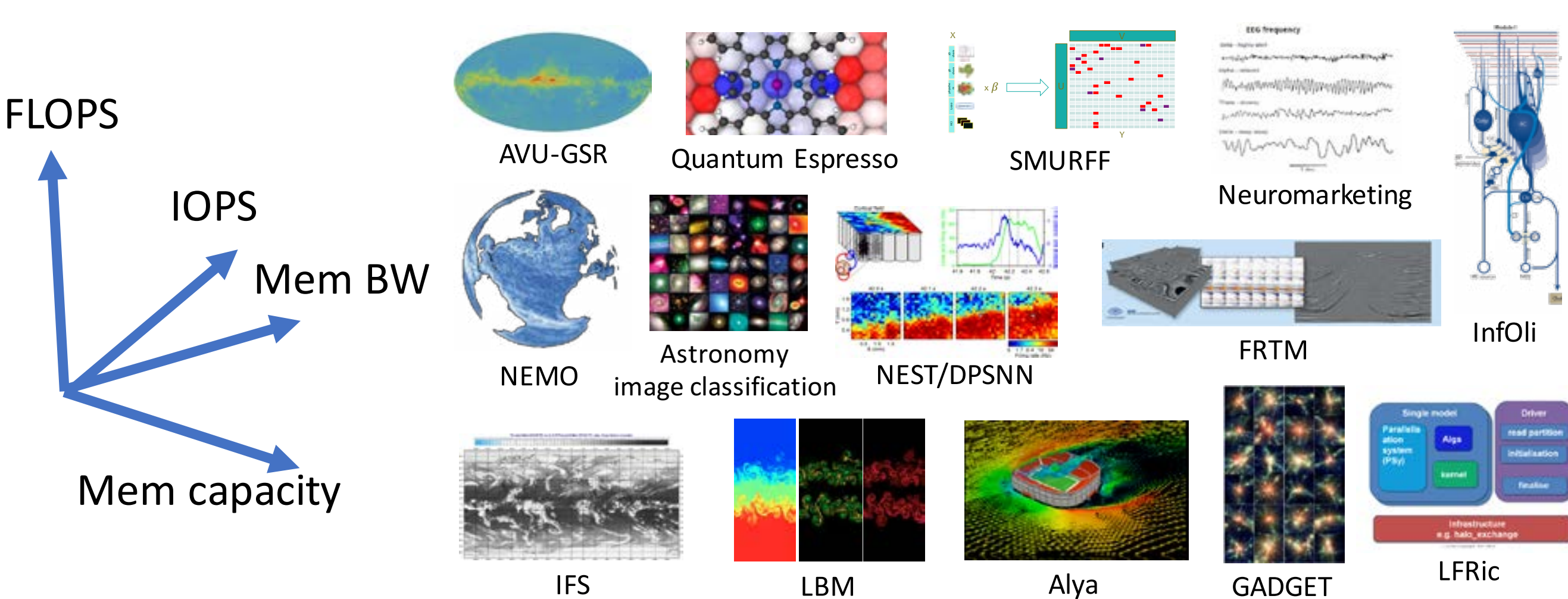
#### Path

- **Testbed 1 – Deployed end 2018**  
50 nodes of new technology for software development
- **Testbed 2 – Due end 2019**  
500 nodes and new infrastructure technologies to test scaling
- **Testbed 3 – Due 2020**  
Test new node and processor technologies that will ultimately project to Exascale.

### Architecture



### Applications



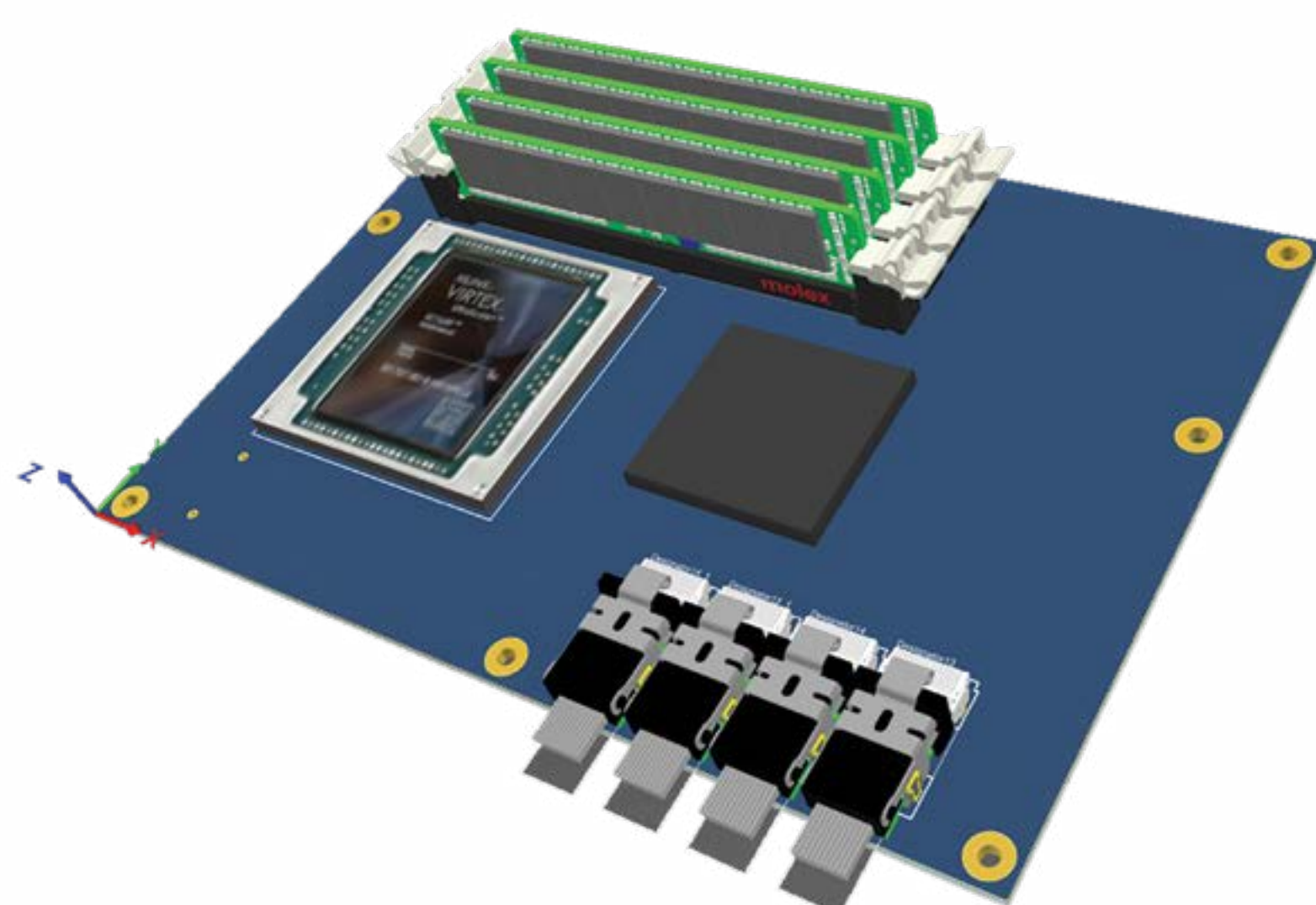
### Testbed 1: Deployed

- 8 x 12cm x 13cm
- 8 x 4 ARM Processors and 8 x 4 FPGA Accelerators
- 8 x M.2 SSD
- 8 x 4 x SODIMMS + Onboard RAM
- 8 x 160Gb/s of I/O
- Daughterboard style



### Testbed 2: Nodes

- Co-Design influenced
- VU9P Xilinx FPGA
- ARM Processor and FPGA for Networking & Storage
- 16GB RAM
- 1TB SSD
- 4x16Gb Uplink I/O
- 20x16Gb Neighbour I/O



### Testbed 2

- 16 Nodes per chassis
- 512 Nodes per cabinet
- 48V DC Distribution
- Shipping Container Data Centre Design
- Total Liquid Cooling
- Hot Water Out – Chillerless Design

