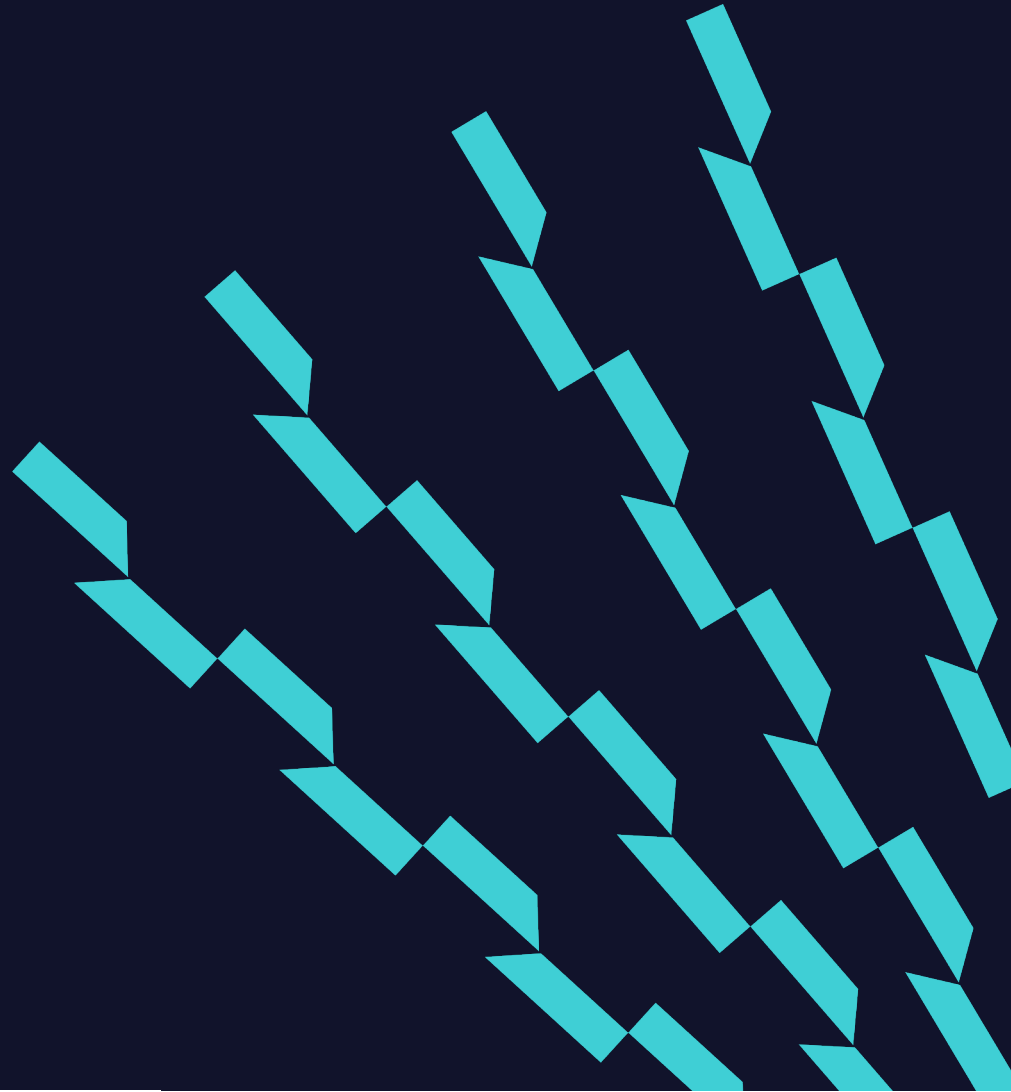


ECLAIRION
AI infrastructure factory

HPC augmented by AI @ECLAIRION

HPC
USER FORUM

Arnaud LEPINOIS
CEO
a.lepinois@eclairion.com
30 octobre 2025





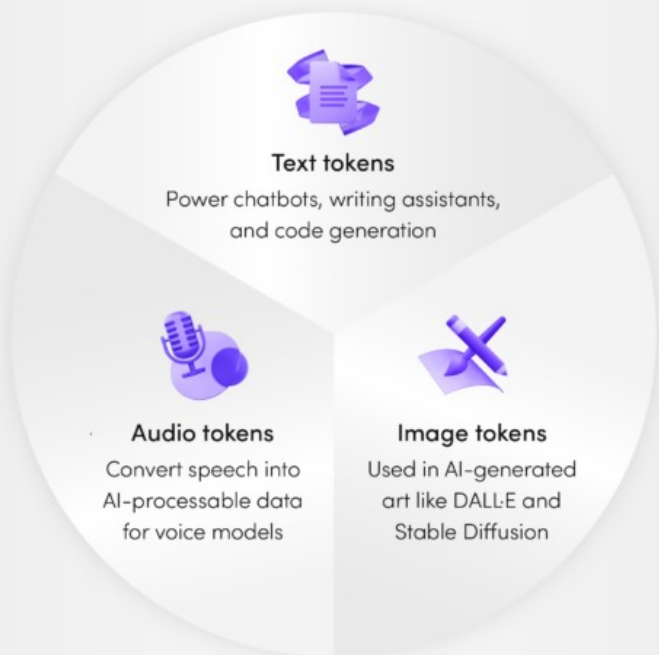
"Every company will have two factories — one for making physical things, and one for making intelligence. AI factories transform electricity into intelligence, producing tokens, models, and digital agents."

— Jensen Huang, CEO of NVIDIA

AI Factory => Token generation



Types of tokens in Generative AI



HPC & AI = Massive Compute

Shift from CPU-based
to GPU/TPU
infrastructure

Rack power:
20kW → 1MW

Advanced power
distribution & liquid
cooling required

Standard datacenters
cannot meet these
demands

We need a new generation of
purpose-built AI Datacenter.

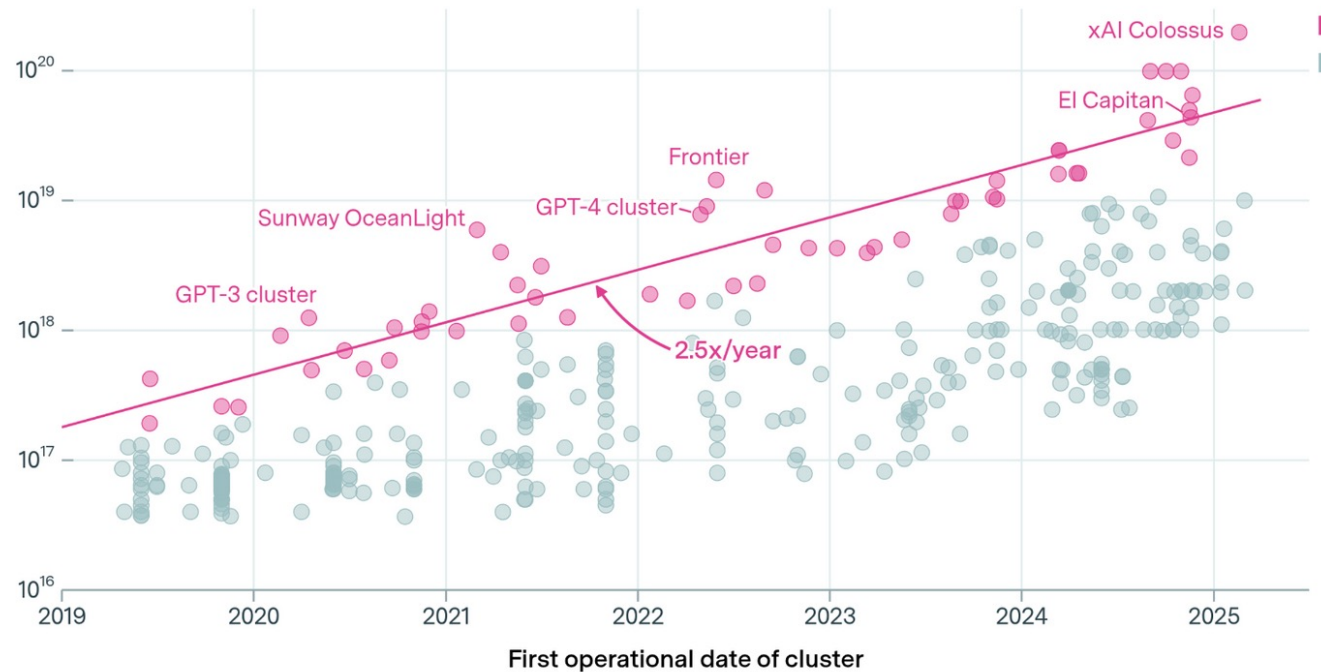
**“THE PERFORMANCE OF LEADING AI
SUPERCOMPUTERS HAS DOUBLED
EVERY 9 MONTHS”**

EPOCH AI

Trends in AI Supercomputer

The performance of leading AI supercomputers has doubled every 9 months

Performance (16-bit FLOP/s)



CC-BY

■ Leading AI supercomputers
■ Other AI supercomputers

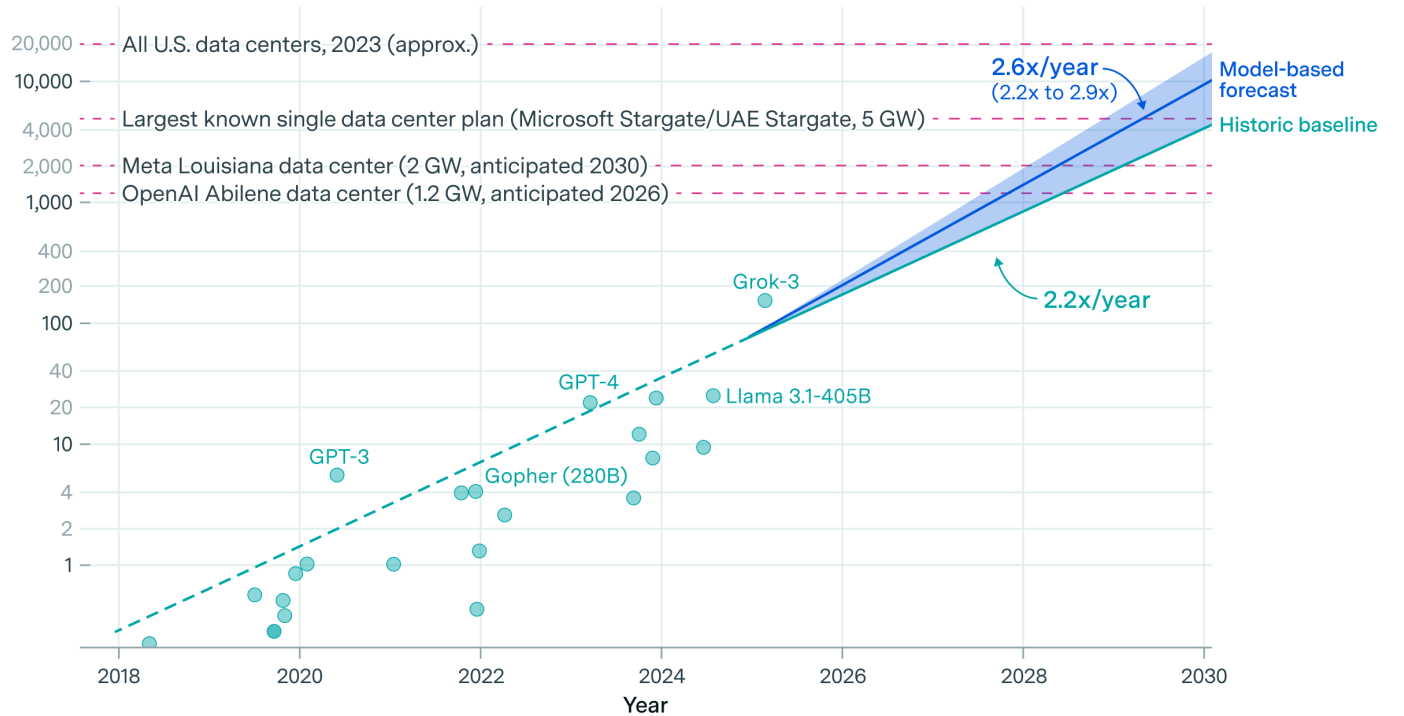
Trends in AI Supercomputer

How Much Power Will Frontier AI Training Demand in 2030?

Projected power growth for frontier AI training

≡ EPOCH AI

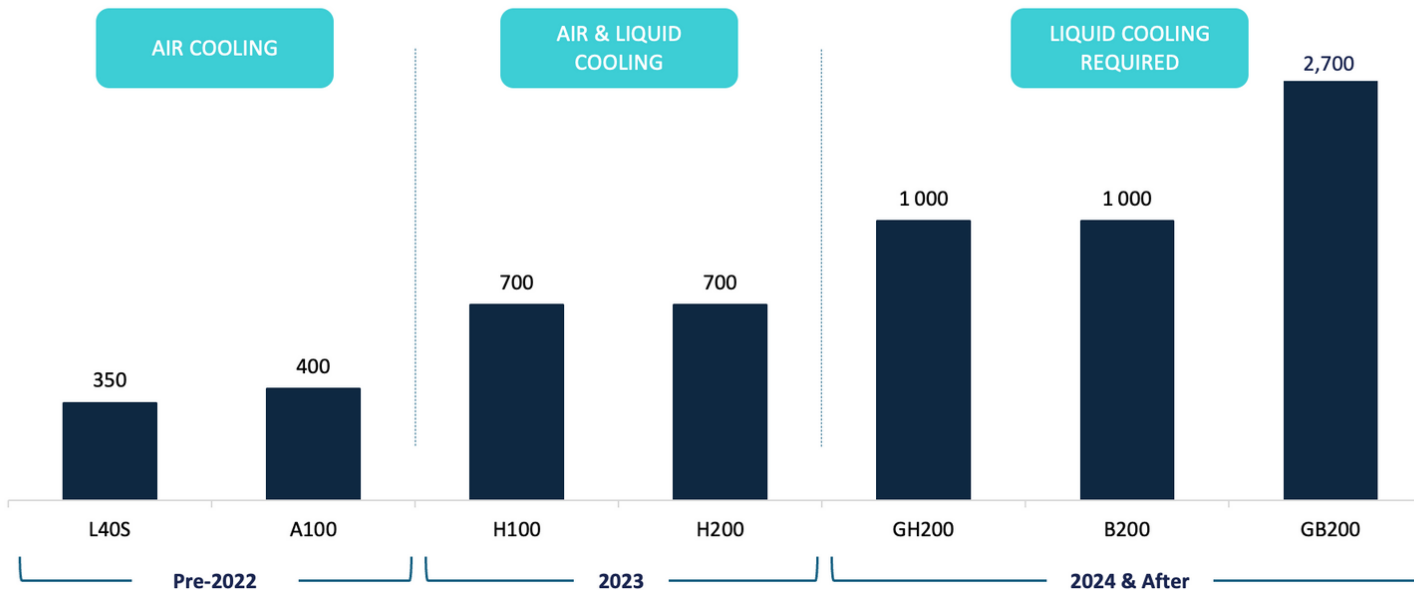
Power (MW)



The largest individual frontier training runs in 2030 will likely draw 4-16 gigawatts (GW) of power

Rise in GPU Power Driving Up the Density Power Requirement & Mandating Alternative Cooling Deployment

THE EVOLUTION OF NVIDIA CHIP TDP¹ & COOLING REQUIREMENTS (WATT)



8x in 2 years

Nvidia chip power consumption has increased 8x in 2 years

Top-end GPUs imply higher power-density and necessitate advanced cooling systems such as Direct Liquid Cooling ("DLC")

(Source: Nvidia, Altman Solon)

¹ Thermal Design Power: maximum amount of heat generated by the GPU that the cooling system is designed to dissipate under typical load conditions. It provides an estimate of the power consumption of the GPU under normal workloads.



Explosive Growth in Rack Density

Liquid cooling, 1MW racks

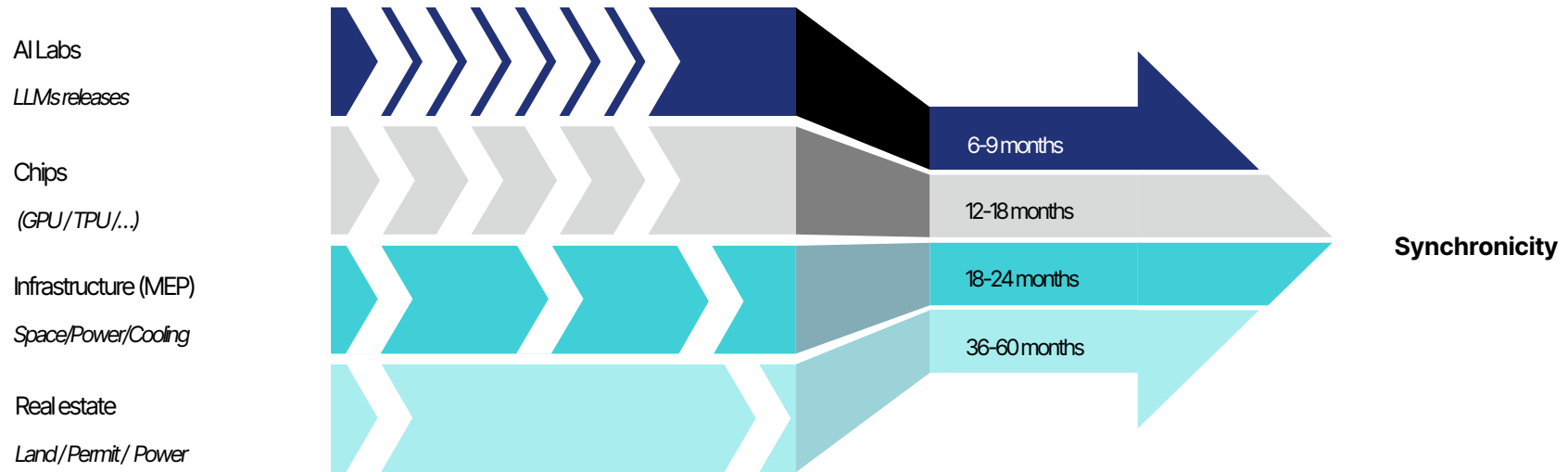


Why do we need purpose-built AI datacenter ?



The multi-speed race to scale HPC & AI deployment

The success of tomorrow's AI Factories will hinge on our ability to orchestrate industrial cycles operating at unprecedented and uneven speeds.



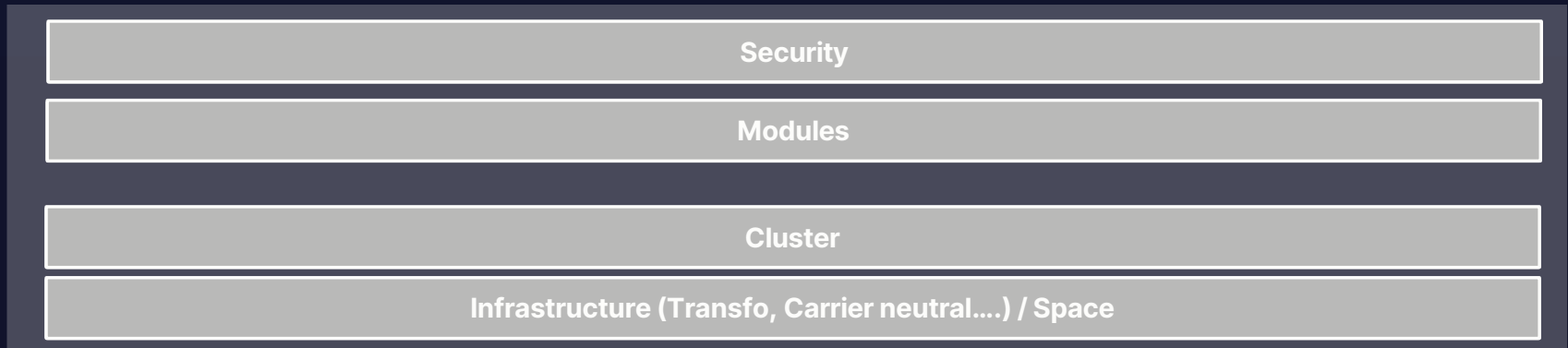
To tackle these challenges effectively :

- **Modular and scalable site design** (anticipating future power and density requirements)
- **Strategic partnerships** between chip manufacturers, energy providers, construction firms, and equipment suppliers
- **Industrialization and supply chain planning** (factory-based construction models)
- **Regulatory flexibility and faster grid connections** (streamlining permits and shortening lead times)
- **Circular and sustainable approach** (factoring in energy costs and carbon footprint early on)

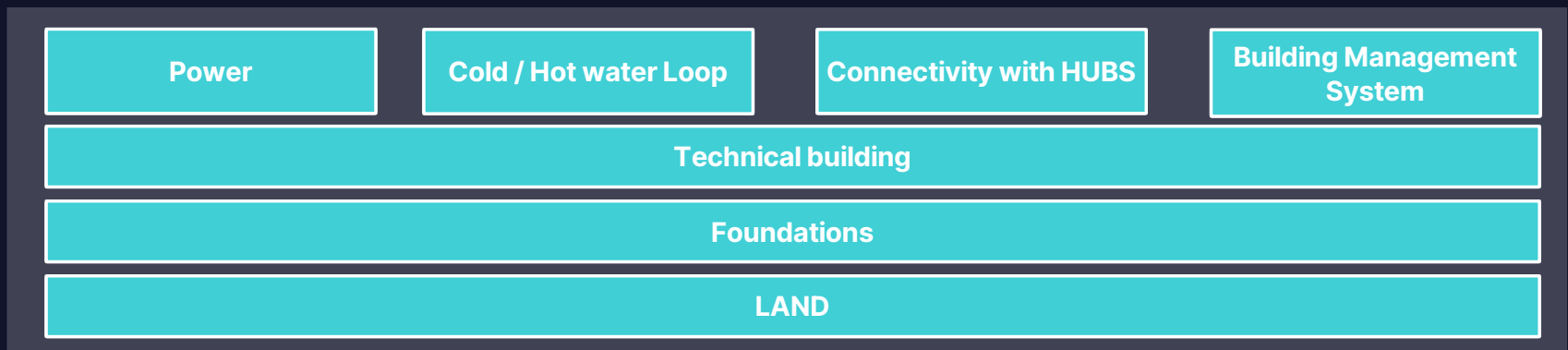


ECLAIRION Custom Design approach with customers

Co-Design



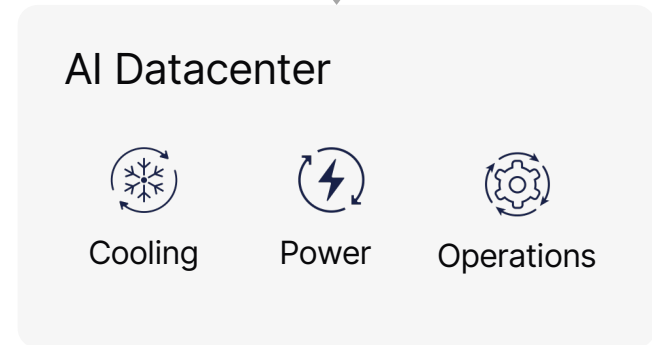
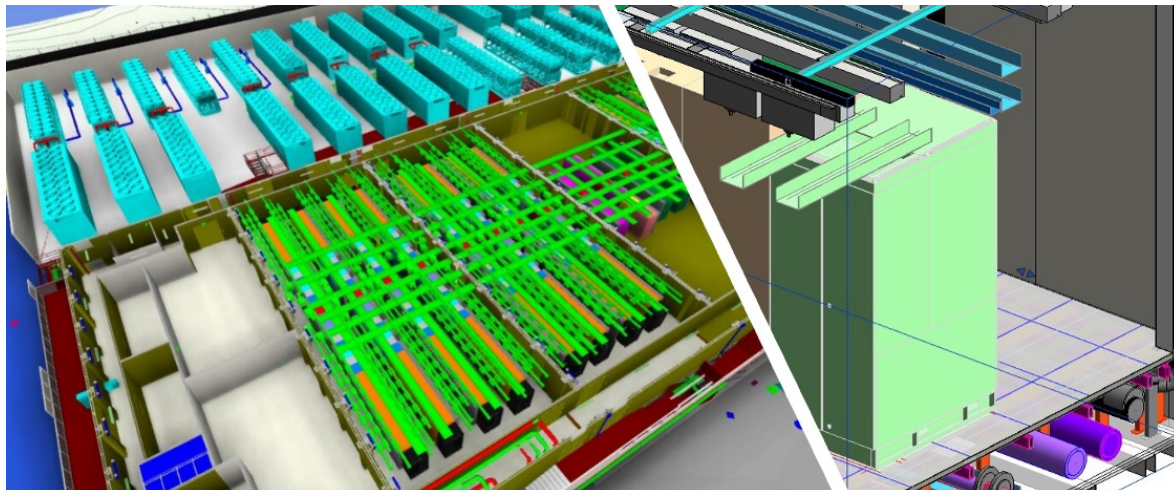
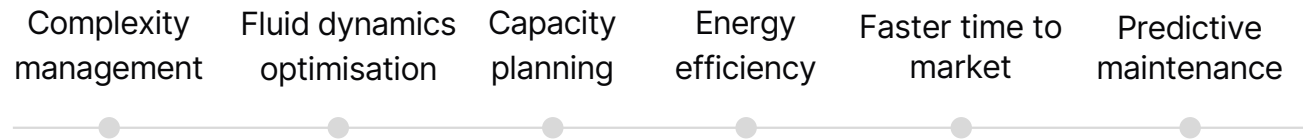
Base





A new design that requires a fundamentally new approach

Digital twins play a key role in that transformation





Supercomputing in action...



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