Séminaire NAFEMS Teratec IA et Simulation Numérique

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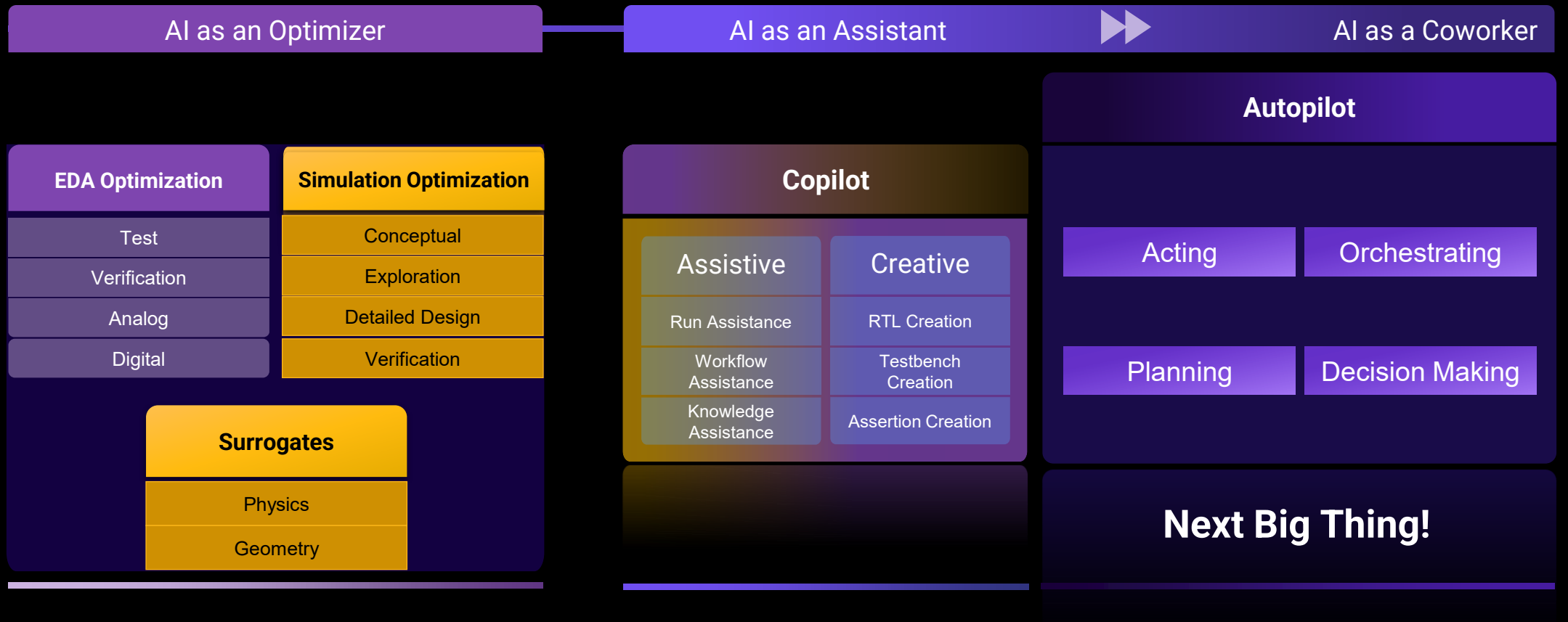
Re-Engineering the Future

Three Key Investments

Synopsys + Ansys: Re-Engineering Engineering with AI



Reinforcement Learning & Deep Learning

AI for Design Exploration

Generative AI / LLMs

Assistive and
Creative Capabilities

Agentic

Autonomous Tasks

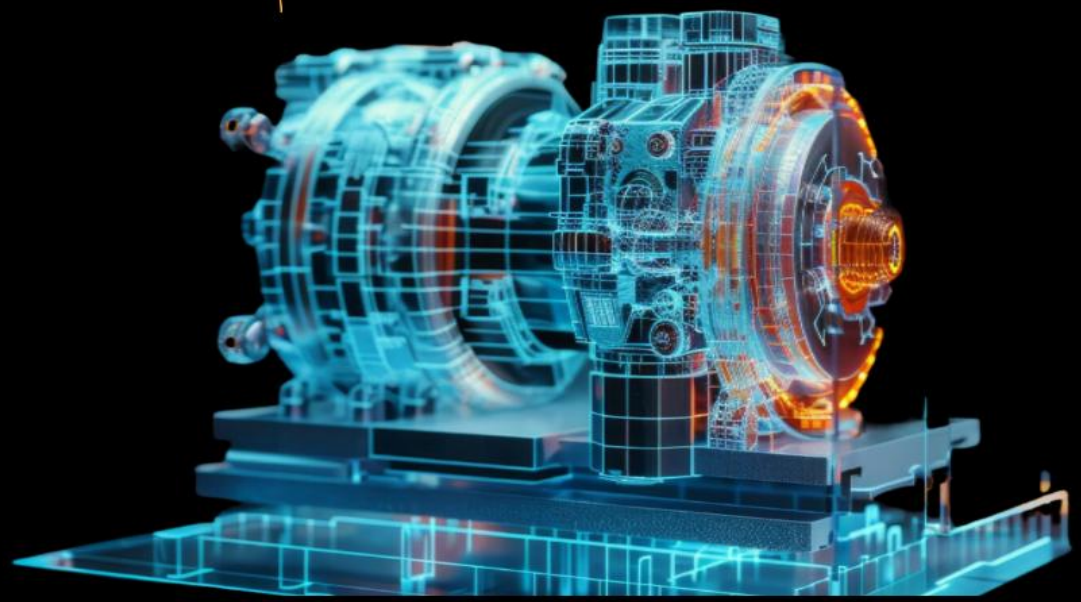
Digital Twin 4 Pillars

1/ Accuracy

Adhere as closely as possible to physics behavior

3/ Flexibility

Model multiple scenarios without overfitting to any one



2/ Adaptability

Adapt to changing environments and conditions

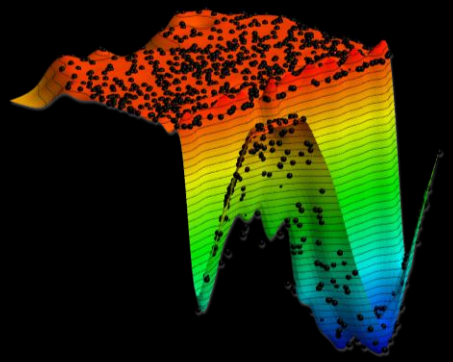
4/ Scalability

Rapidly build and deploy adaptable Digital Twins

AI-Assisted Physics

The agents act, the engines power the physics work

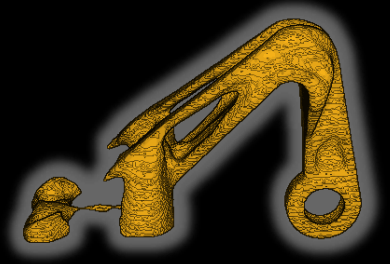
Parametric Surrogates



Speed engine

Predict physics quantities as a function of discrete parameters

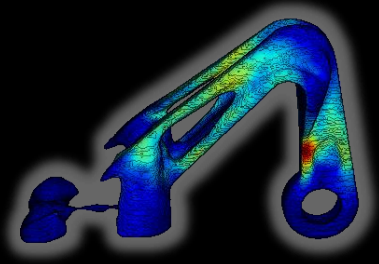
Generative AI for Geometry



Design creation engine

Generates novel geometries, not just parametric sweeps

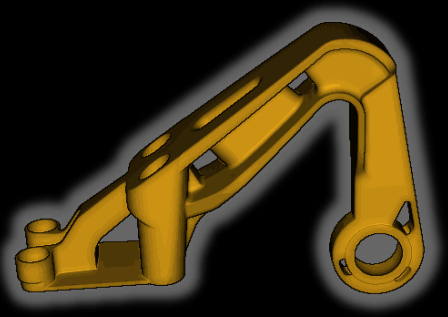
Geometry-Based Surrogates



Shape inference engine

Predicts physics quantities from shape, not just parameters

AI-Driven optimization

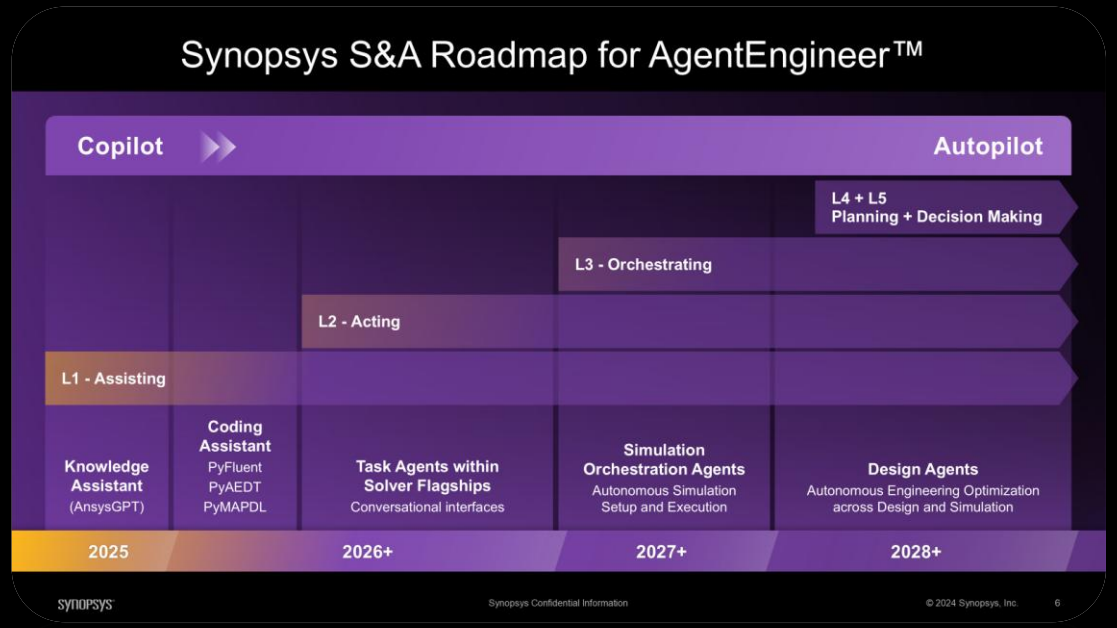


Multi-objective exploration engine

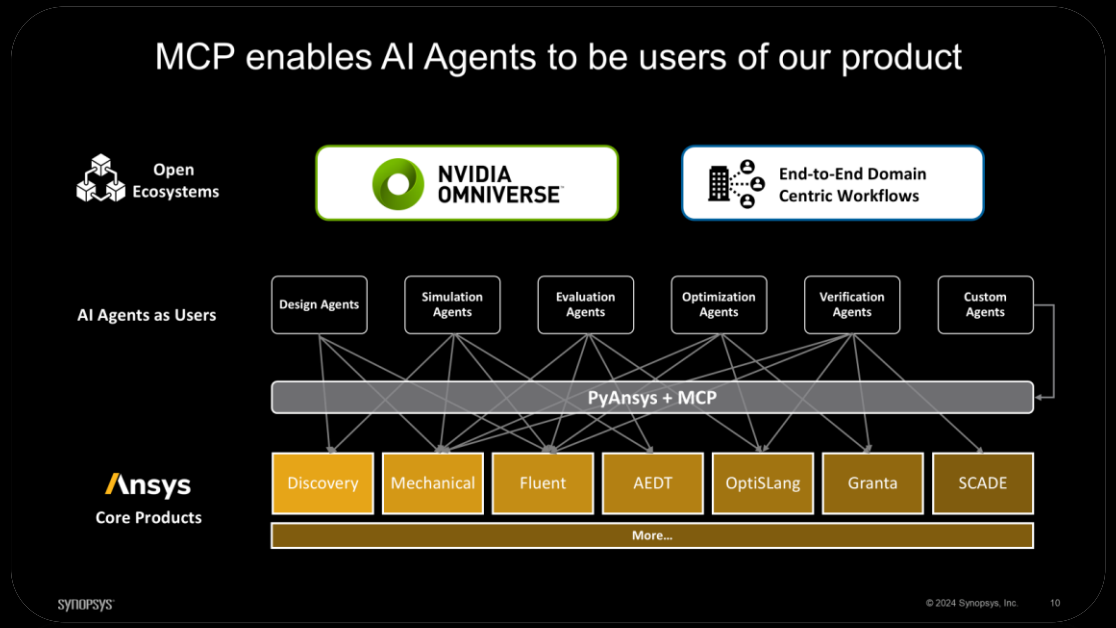
Handles shape and discrete variables to find optimal design

Agentic AI: AI as Coworkers

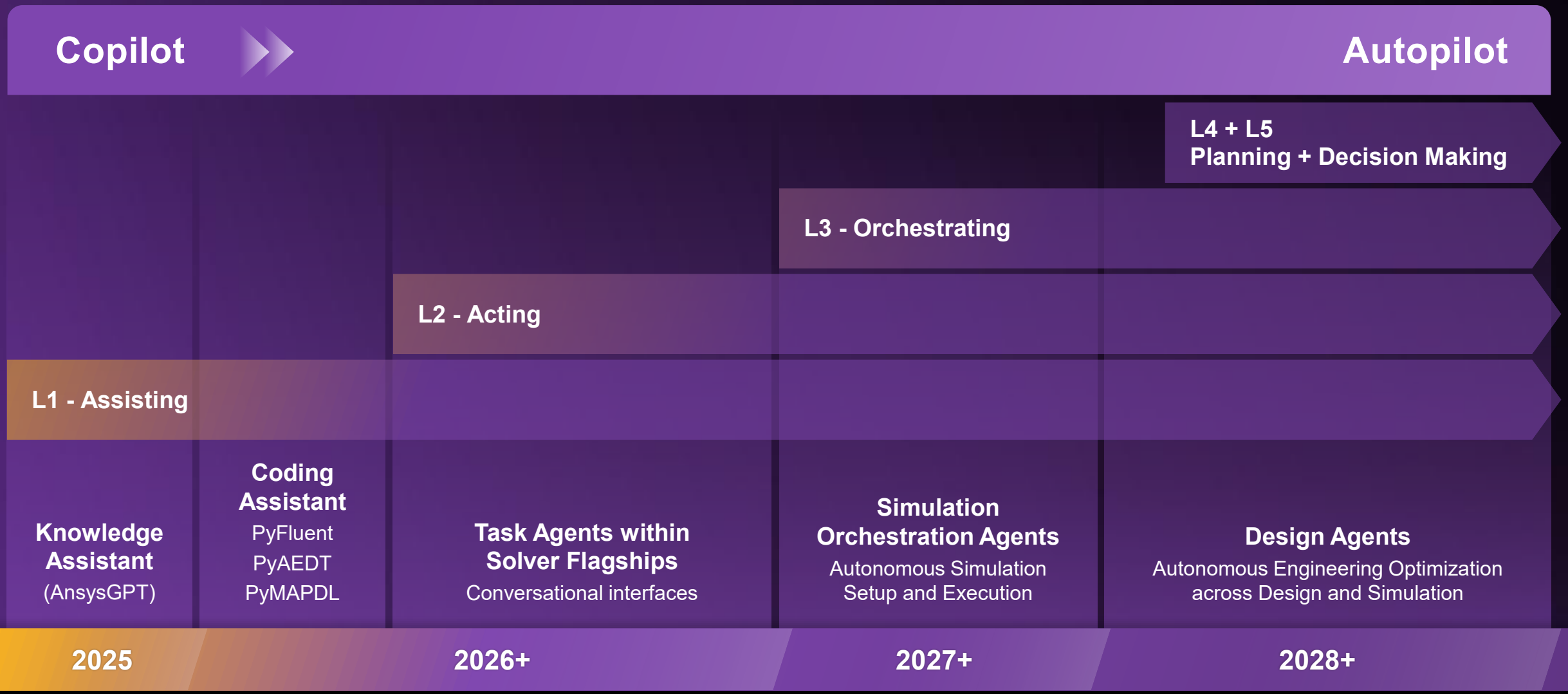
Synopsys Built AgentEngineers™



Customer + 3rd Party Agents



Synopsys S&A Roadmap for AgentEngineer™

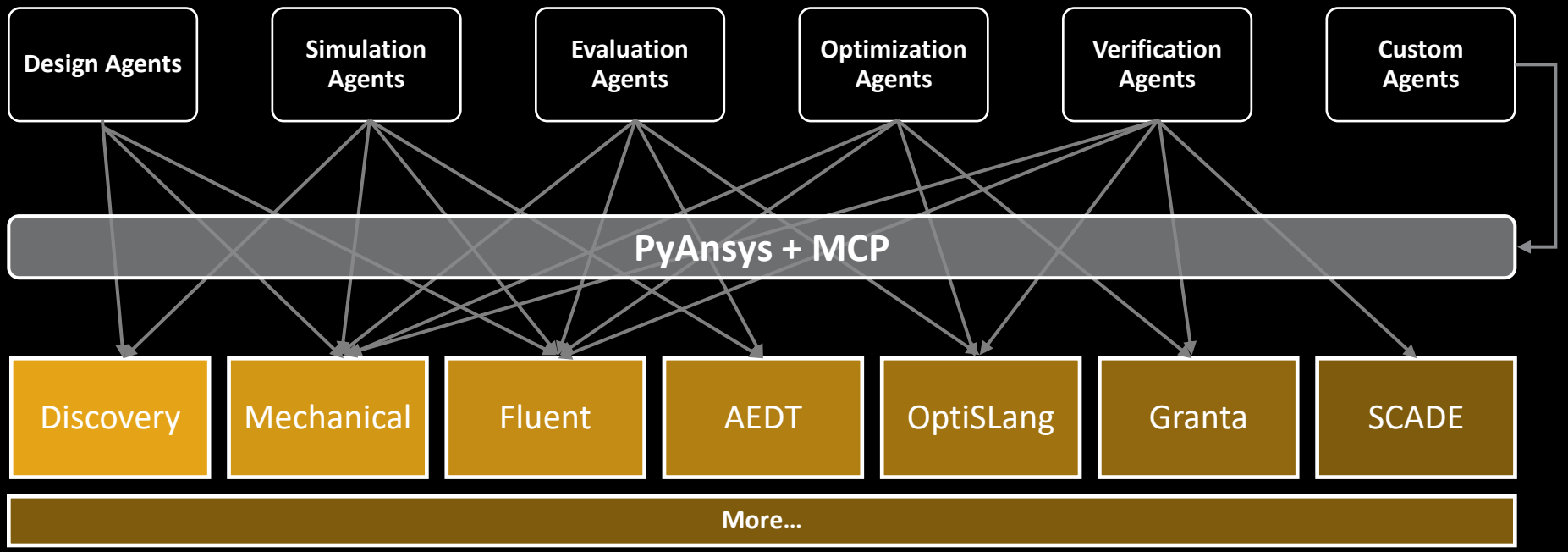


MCP enables AI Agents to be users of our product

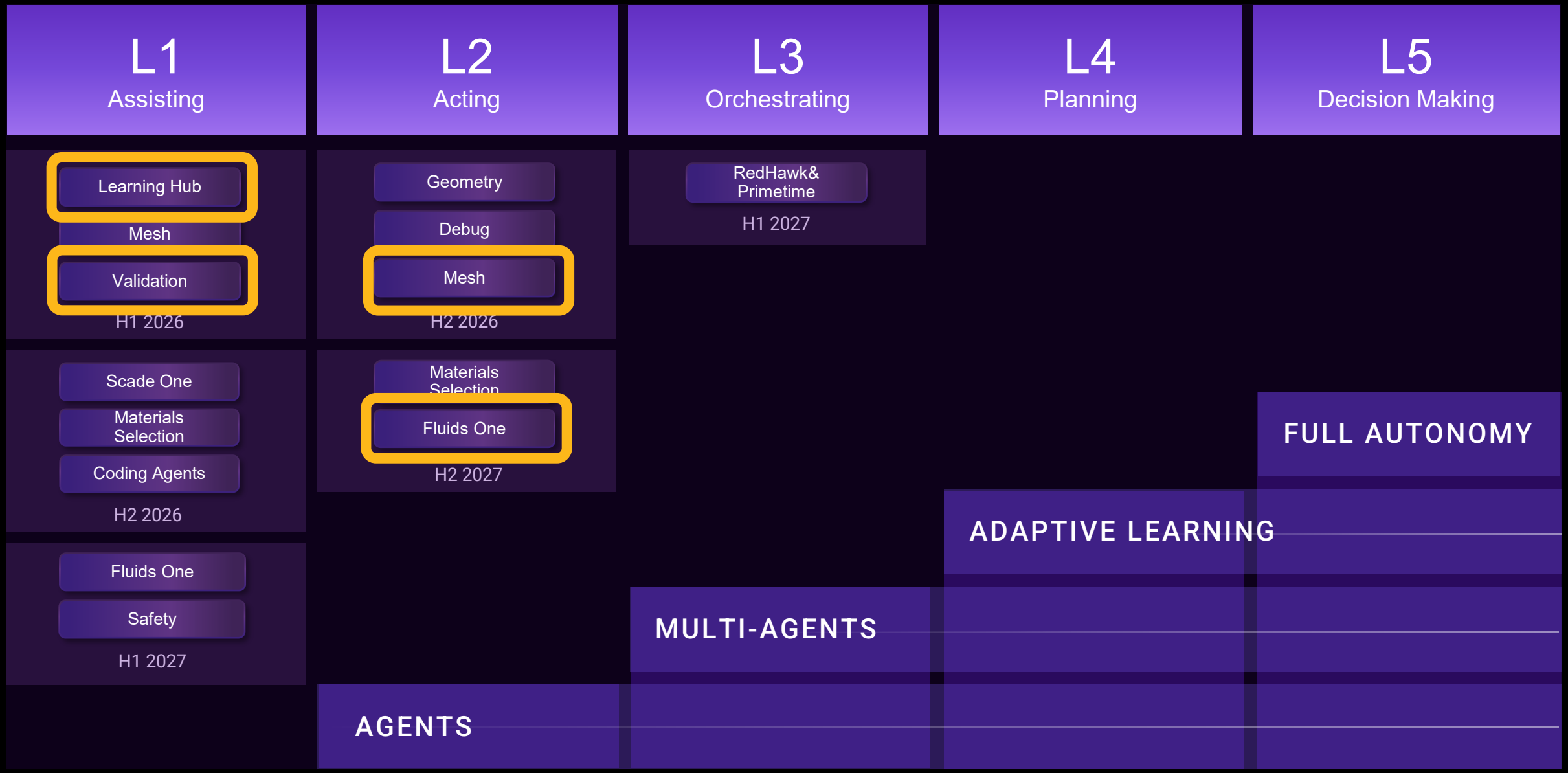
Open Ecosystems

NVIDIA OMNIVERSE™

End-to-End Domain Centric Workflows



Select Simulation Agentic AI Roadmap Targets



L1
Assisting

LEARN
guided by an AI assistant

Ansys
ALH Premium

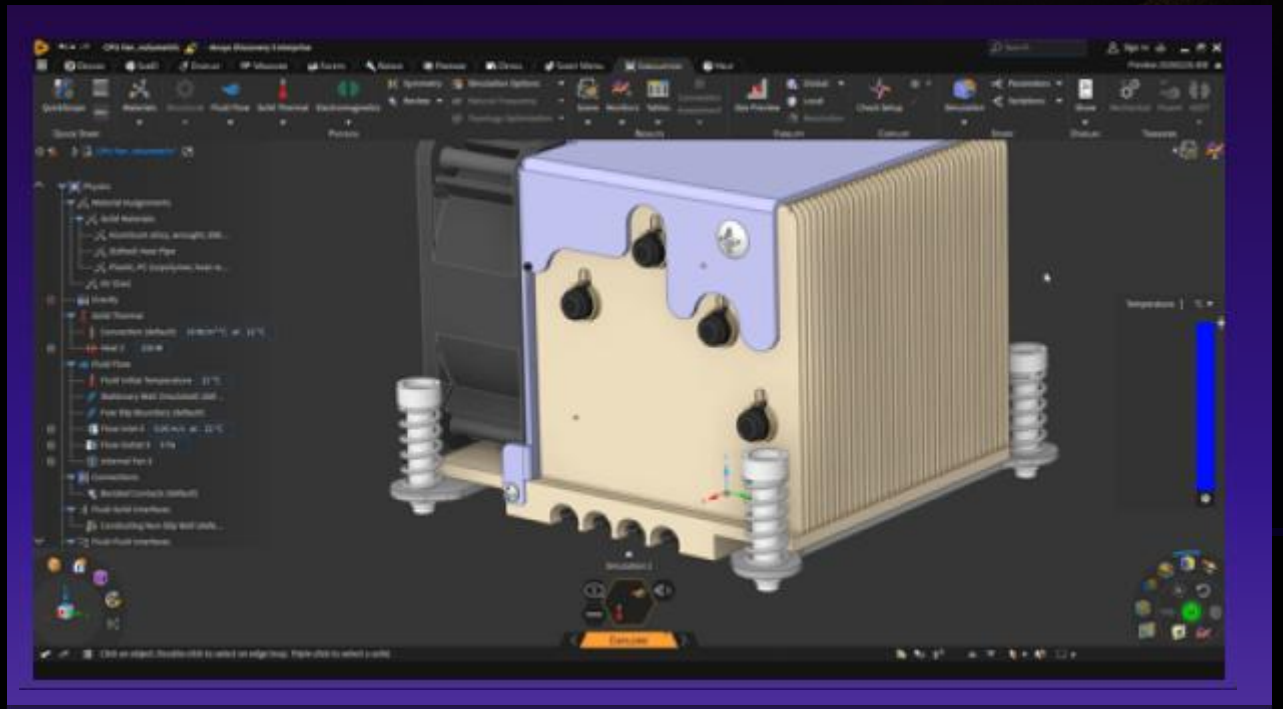
Faster ramp-up of your employees with simulation best practices

L1
Assisting

EXPLORE
guided by an AI agent

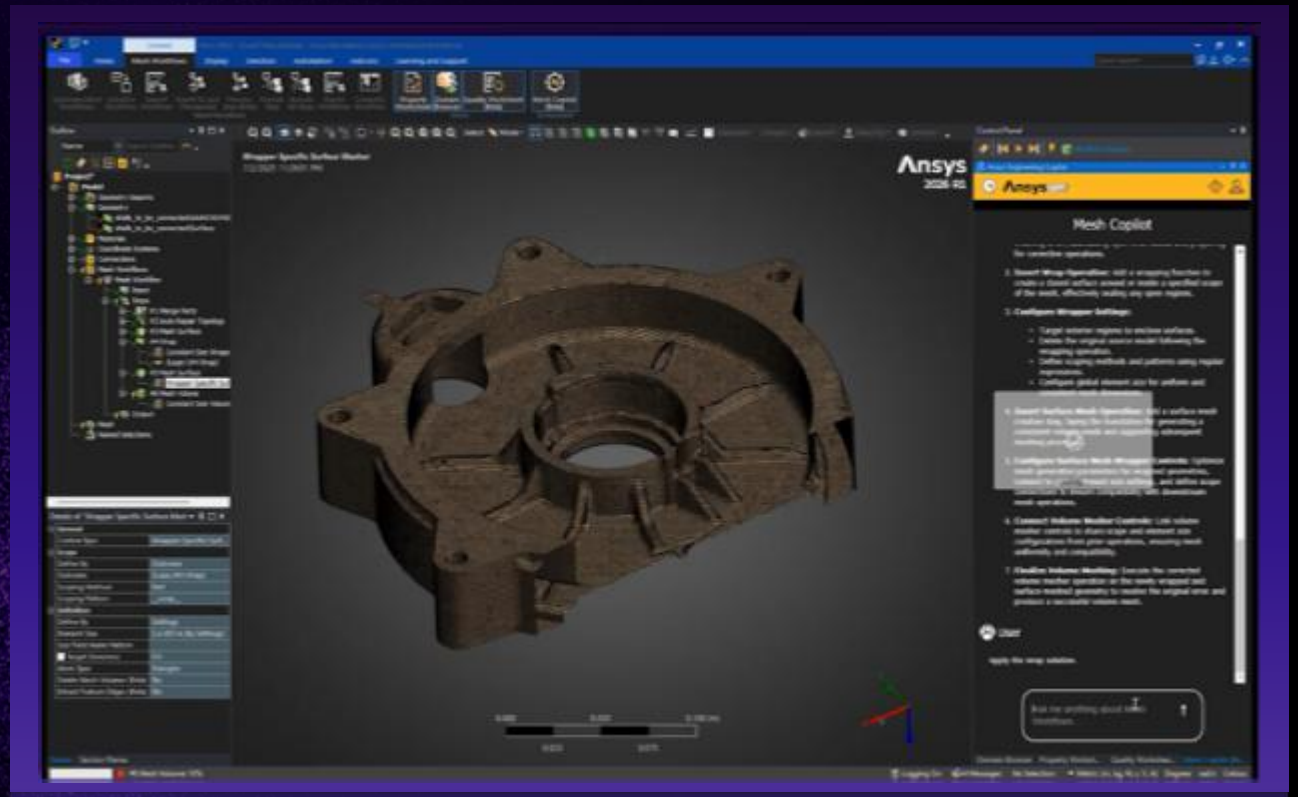
Ansys
DISCOVERY

AI Becomes a Co-engineer: Suggesting + Correcting Best Practices



L2
Acting

AI-POWERED
intelligent meshing



Guide Engineers Through Proven Remediation Steps

Ansys
MECHANICAL

increase confidence in model readiness

reduce setup time

detect + diagnose meshing failures

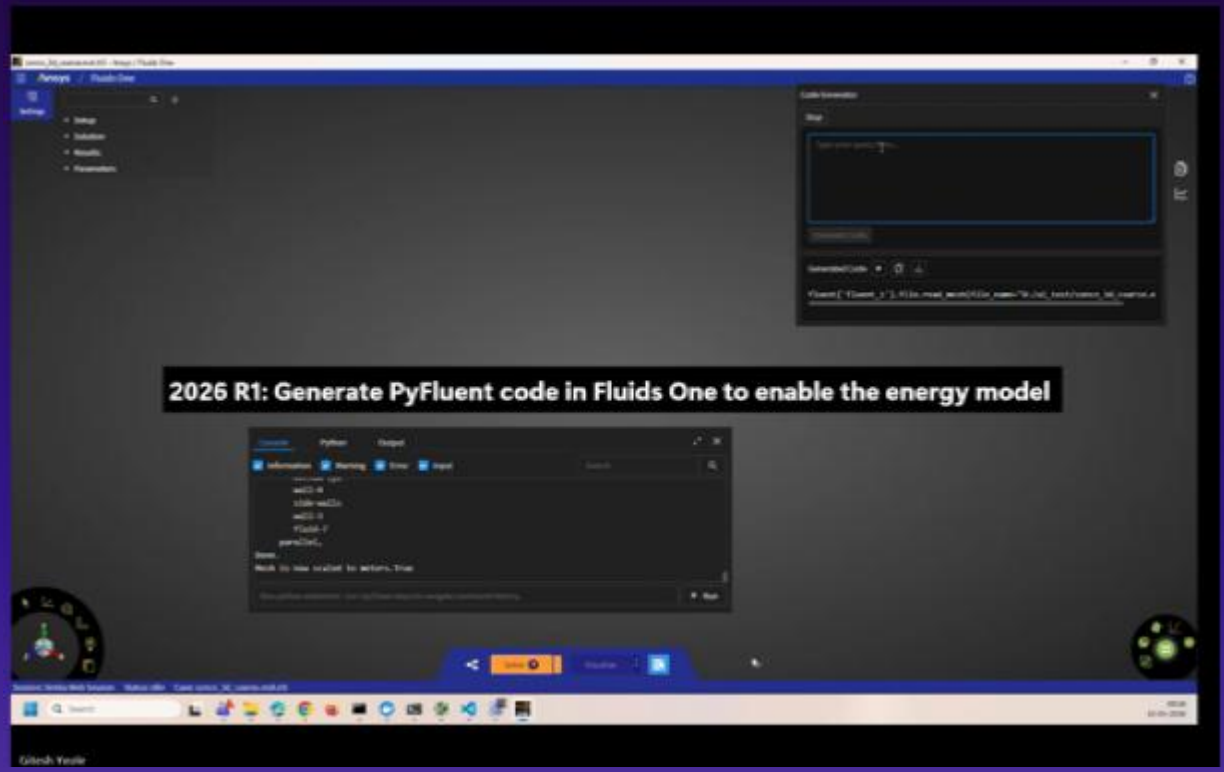
L2
Acting

CONNECT

To your existing AI ecosystem

Ansys
FLUIDS ONE

Control Ansys tools from your platform



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Thank you