

EVENT REPORT
AI SUMMARY

3DEXPERIENCE® DISCOVERY DAY 2026

Stockholm, SWEDEN
12 November 2026



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SUMMARY

Across the programme, industrial and physical AI, high-fidelity simulation and virtual twins were presented as the next step in engineering and complex-system management. Speakers showed how combining decades of modelling know-how with modern agents can compress the journey from problem to solution, moving from months of iteration to hours. At the same time, they stressed that these capabilities only deliver real value when anchored in concrete business challenges, secure data foundations and architectures that preserve sovereignty, trust and regulatory compliance.

One keynote traced how engineering evolved from physical crash tests and hand-built prototypes to pervasive virtual modelling. Today, physics-based solvers and immersive platforms simulate full product behaviour, letting teams explore vast design spaces, create synthetic data and train specialised machine-learning models that predict outcomes with high accuracy early in development. Building on this, participants advocated industry "world models" and domain-specific engineering companions that embed standards, physics and reasoning, minimising hallucinations while keeping proprietary methods inside protected lifecycle platforms for safer decisions.

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Another strand focused on "physical AI" and the hardware-software ecosystem enabling it. GPU vendors, cloud providers and partners supply libraries and tools that power virtual engineering companions, design agents and high-performance simulators. Parallel computing and transformers now excel at perception and text, but extending AI into three-dimensional, embodied tasks remains hard because real-world training data are scarce. Speakers highlighted capturing demonstrations and generating synthetic data in high-fidelity virtual factories, supported by open, sovereign agent shells and secure deployment options worldwide.

Case studies showed organisations using AI and systems engineering to handle rising complexity. Manufacturers pair fast surrogate models with traditional simulation, trading a little accuracy for tenfold gains in screening designs. Renewable-energy engineers use AI to stretch scarce expertise yet remain wary of black-box recommendations that touch safety. A mining group introduced model-based systems engineering and an architecture backbone linking mines, logistics, projects and strategy, replacing fragmented spreadsheets with decision-ready models and institutionalised system analysis as a core capability enterprise-wide.

Sovereignty emerged as a central concern, especially in European critical programmes. Telecom leaders framed control over AI-enhanced networks, data location and operational competence as vital to public services and defence. Nuclear organisations balance global reactor designs with domestic regulation, localised supply chains and shared digital twins that give stakeholders a single source of truth. Medtech and systems integrators use reusable templates and rigorous quality frameworks while mapping platform dependencies, guarding semantic knowledge layers and maintaining exit strategies from powerful external vendors.

Across domains, the message was pragmatic rather than utopian. Organisations should start from concrete engineering and business challenges, pair physics-based models with trustworthy agents, and treat internal design, simulation and operations data as strategic assets. Secure architectures, sovereign deployment choices and human-in-the-loop workflows become preconditions for scaling AI responsibly. Success depends as much on culture, skills and governance as on algorithms, enabling companies to turn rising complexity into faster innovation without sacrificing safety, quality or public trust.



TAKEAWAYS

Engineering-centred AI for faster decisions

Frame AI initiatives around concrete engineering or business challenges, then apply industrial AI, simulation, and virtual twins to compress development cycles, iteratively explore design spaces, and deliver decision-ready insight rather than experimental prototypes.

Synthetic data and physical AI for design

Combine high-fidelity physics-based simulation, design-of-experiments, and synthetic data with existing CAD and production records to train physical AI models, screening options quickly while reserving traditional simulation and expert review for final safety-critical decisions.

Architecture backbone and virtual threads for truth

Build an architecture backbone and source of truth that link strategy, projects, assets, and simulations across the value chain, creating virtual threads so stakeholders share consistent data, assumptions, KPIs, and regulatory evidence.

Specialised agents as trusted engineering companions

Develop specialised AI agents and engineering companions on secure, open platforms that integrate with core design systems, encode proprietary rules and certifications, minimise hallucinations, and consistently keep human experts in the decision loop.

Sovereign, secure and responsible AI adoption

Treat sovereignty, security, and regulation as strategic enablers: retain competence in-house, map dependencies and exit strategies, govern energy and compute use, and design AI programmes that preserve trust, safety, intellectual property, and flexibility.

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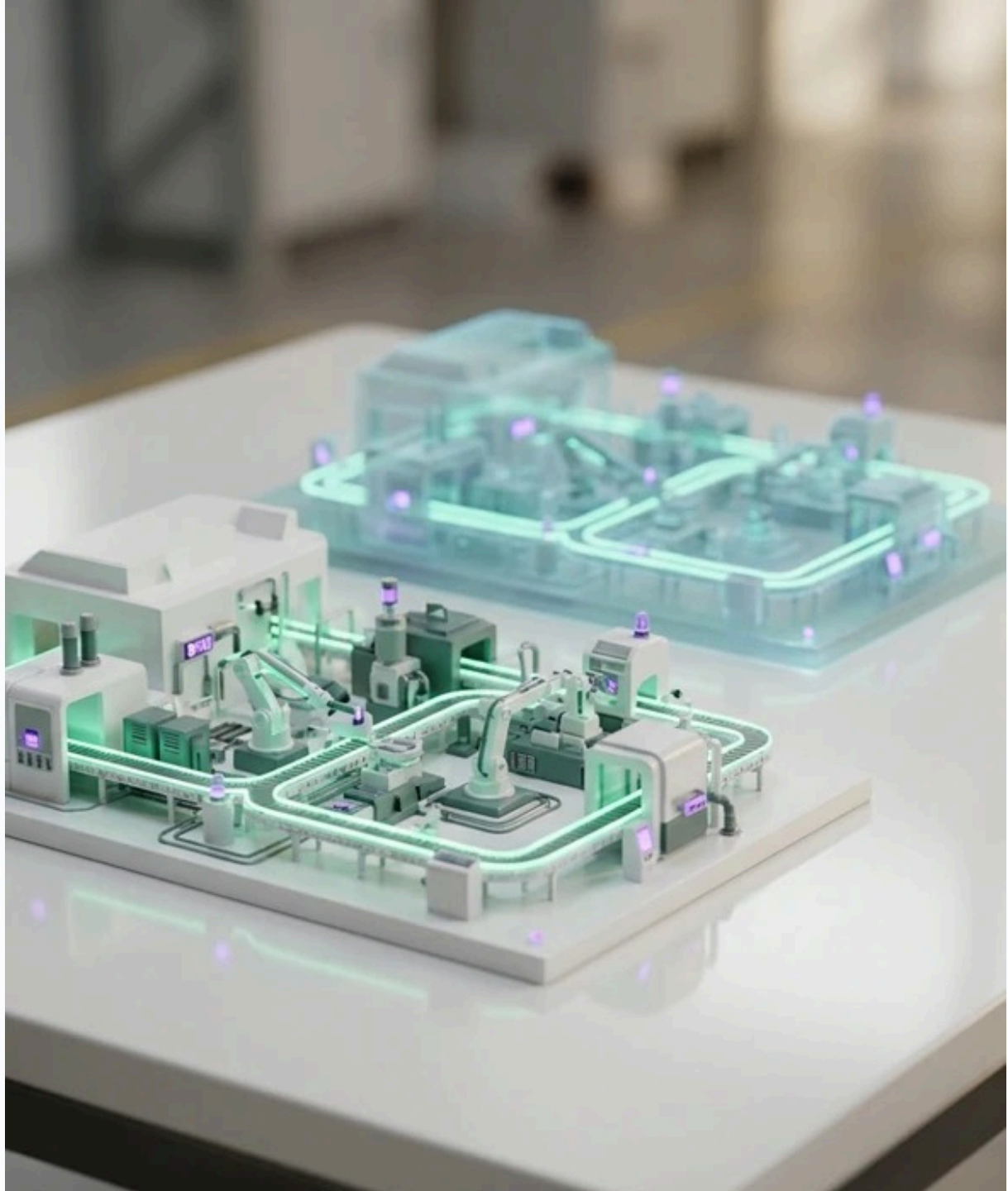
TOPICS

Artificial intelligence was portrayed as an accelerator for engineering, product design and robotics, progressing from 1D and 2D perception to 3D, physical AI and world models. Speakers described GPU-driven breakthroughs, physics-based simulation, deterministic training environments and agents integrated with virtual twins, alongside risks relating to energy demand, regulation, workforce change and data protection.

Data was treated as a strategic asset that underpins AI and decision models, demanding clean, reliable datasets and strong governance. Participants emphasised sources of truth, integrated toolchains and controls such as masking and sandboxing to safeguard sensitive and cross-border information, while proprietary engineering knowledge and scarce physical recordings were protected as intellectual property.

Model-based approaches were positioned as essential for turning complexity into decision-ready insight. A structured sequence built business cases, piloted decision-focused models, established trustworthy data foundations and created a UAF architecture backbone. Enterprise and block-based models, physics-aware world models and virtual twins generated synthetic data, supported automation and enabled AI agents and virtual companions.



TOP 3 TOPICS UNPACKED: WHAT WAS SAID ABOUT ...?

ARTIFICIAL INTELLIGENCE

Artificial intelligence was presented as an accelerator of engineering, product design and robotics, moving from 1D and 2D understanding to 3D, physical AI and world models. Speakers described GPU-enabled breakthroughs, simulation-driven synthetic data, physics AI for safer mining and sensor testing, deterministic training environments, and AI tools that drastically cut simulation time.

Artificial intelligence was also framed as transformative yet risky for organisations. Discussion covered AI agents and virtual companions, integration with virtual twins, data governance, sovereignty and intellectual-property protection, energy demands, deployment in regulated environments, and changing workforce expectations as coding assistance, automation and industrial AI reshape business models and competitiveness.

DATA

Data was presented as a strategic asset requiring trustworthy foundations, governance and sovereignty. Participants described building clean, reliable datasets as a precursor to decision models, single sources of truth and integrated toolchains. Strong controls, masking and sandboxing protect sensitive operational, telecom and cross-border data while still enabling collaboration, innovation and evidence-based management.

Data for AI training included proprietary engineering knowledge, operational logs and scarce physical recordings, which were treated as core intellectual property. Speakers highlighted synthetic data from simulation, world models and virtual factories to overcome gaps, train physical AI agents, secure full value chains, and create durable competitive advantages in highly regulated industries.

MODEL

Model-based approaches were presented as essential for turning complexity into decision-ready insight. A structured sequence built business cases, piloted decision-focused models, established trustworthy data foundations and created a UAF architecture backbone. Enterprise and block-based systems models supported multi-plant mining scenarios, producing comparable KPIs, traceable investment rationales and a single, trusted source of truth.

Industry world models were described as semantic and physics-aware, embedding company rules, safety standards and method know-how while protecting intellectual property from generic large models. Physically aware AI and virtual twins generated synthetic training data, accelerated product and sensor design, supported automation, and enabled agents and virtual companions to reason within sovereign environments.



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Virtual Worlds for Real Life

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