REDEFINING VIZ
SOLIDWORKS 2026

SOLIDWORKS® 2026 is transforming visualisation for product designers and engineers, delivering seamless new workflows between SOLIDWORKS and SOLIDWORKS Visualize®, enhanced output, and optimised support for AMD silicon, including the powerful new AMD Ryzen™ AI Max+ PRO processor in the latest HP Z Workstations

SOLIDWORKS Visualize image courtesy of Adi DR.PAX Pandzic

With SOLIDWORKS 2026, design visualisation is entering a new era. Both the core CAD platform and its companion rendering tool, SOLIDWORKS Visualize 2026, introduce powerful new capabilities that dramatically streamline visualisation workflows for product designers and engineers.

Tighter integration between SOLIDWORKS and SOLIDWORKS Visualize enables far more efficient rendering, including direct photorealistic output from SOLIDWORKS itself. Consistent, physically-based materials and lighting across the broad Dassault Systèmes software portfolio also ensure predictable results as designs progress from early

concepts through to final presentations.

At the same time, advances in workstation hardware are proving just as transformative. Integrated graphics — where the GPU is built into the CPU — were once widely regarded as unsuitable for professional CAD and visualisation, with discrete GPUs considered essential. That assumption is now being challenged.

Advanced new AMD Ryzen™ AI Max+ PRO processors feature integrated AMD Radeon™ GPUs with performance levels once reserved for discrete solutions. They also offer addressable memory capacities that exceed most workstation-class GPUs, enabling the handling of massive CAD and viz datasets.

These GPUs are not only powerful

and energy efficient but also optimised for the advanced graphics features in SOLIDWORKS 2026, and are now supported by the 3DS Stellar® rendering engine in SOLIDWORKS Visualize 2026.

This convergence of next-generation software and hardware marks a significant turning point. Product designers and engineers using the latest HP Z Workstations — such as the slim 14-inch HP ZBook Ultra G1a laptop and the compact HP Z2 Mini G1a desktop — can now access advanced visualisation capabilities without the need for a discrete GPU. The result: lower cost, reduced power consumption, and sleeker, more portable space-saving systems.

VISUALISE AS ONE

SOLIDWORKS 2026 unifies RealView and Visualize through shared DSPBR materials, lighting and workflows, delivering consistent real-time and photorealistic rendering results

SOLIDWORKS CAD image courtesy of Adi DR.PAX Pandzic
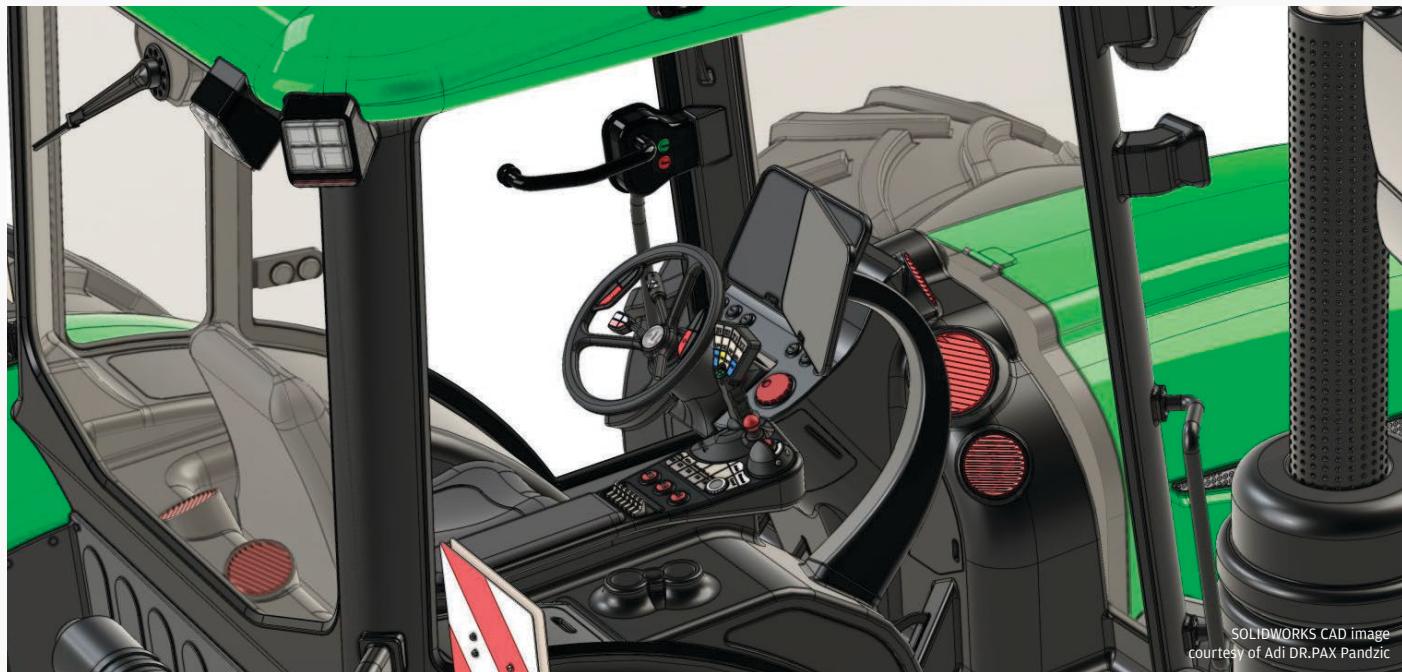
SOLIDWORKS and SOLIDWORKS Visualize are no longer loosely coupled companions; with the 2026 release they behave much more like two faces of a single visual workflow, joined by common materials, shared lighting logic and much tighter integration.

At the heart of this shift is the Dassault Systèmes® physically-based rendering (DSPBR) material model, now deployed across the portfolio and standardised as an open specification on GitHub. DSPBR spans everything from high-gloss plastics to effects such as clear coat and metallic flakes to cover a wide range of appearances, using a mathematically defined, parameter-rich PBR model that can be reused consistently in multiple applications.

That same material model is now supported directly in SOLIDWORKS 2026. RealView®, the realistic real-time viewport rendering mode, gains access to a substantial subset of DSPBR parameters – including roughness, metallic and PBR texture inputs – while Visualize exposes the full set in its dedicated viewport. The result is a continuous visual story: what the user sees in SOLIDWORKS with RealView enabled is now much closer to what appears in Visualize, with the same underlying material definition driving both. Previously, Visualize approximated DSPBR materials when a SOLIDWORKS file was opened in Visualize.

The SOLIDWORKS lighting pipeline has also been upgraded. Where SOLIDWORKS previously treated HDR environments mainly as static backdrops, they now contribute true image-based lighting, with scenes affecting the way models are lit and shaded in RealView. That behaviour mirrors Visualize's approach, helping to close the gap between interactive viewport previews and final ray-traced output. Users still drag and drop appearances inside SOLIDWORKS just as they always have, but now those familiar actions drive a far more capable material and lighting engine under the hood.

OPTIMISED WORKFLOW

The other major piece of the puzzle is workflow integration between SOLIDWORKS and Visualize. Historically, users had to treat Visualize as a separate application: save out a SOLIDWORKS model, then open it independently in Visualize or import through a one-way link. In 2026 this has been rethought. The dedicated Render Tools tab in SOLIDWORKS now provides direct access to Visualize-driven rendering. With Visualize installed and licensed, users can push a button in SOLIDWORKS to either launch a Visualize project or trigger a background photorealistic render without ever opening the Visualize UI.

For many day-to-day tasks, this means SOLIDWORKS users can stay entirely inside their primary CAD environment while still benefiting from Visualize's higher-fidelity engine. The system spins up a headless instance of Visualize in the background, hands over the scene via a more efficient API-based export, and returns the rendered image once complete. This echoes the convenience once provided by PhotoView 360® – render directly from the SOLIDWORKS interface – but with the quality, material system and performance of the modern Visualize pipeline.

For users who need deeper control, the same tools can still launch a full Visualize session with the scene already prepared using the DSPBR materials and environments set up in SOLIDWORKS.

CONSISTENT RENDERING

These developments give users a spectrum of workflows, from quick, high-quality stills rendered directly from CAD to richer visualisation and animation in Visualize, while preserving material and lighting consistency from RealView through to final output. In short, designers and engineers gain a coherent suite of tools that optimise the SOLIDWORKS visualisation pipeline like never before.

SOLIDWORKS RealView image courtesy of Dassault Systèmes SOLIDWORKS
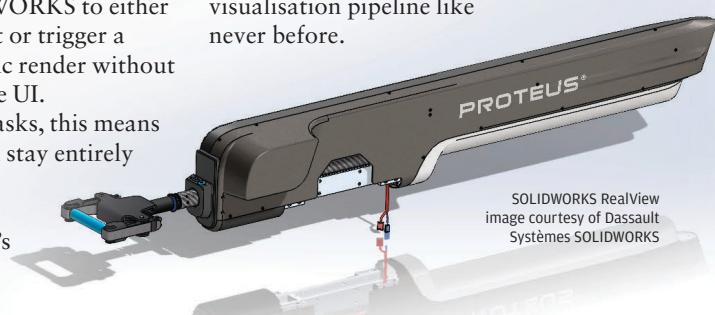
STELLAR OPPORTUNITIES

The 3DS Stellar engine in SOLIDWORKS Visualize 2026 ensures a consistent visual pipeline, while the
AMD Ryzen™ AI Max+ PRO processor can handle the largest assemblies by tapping into a massive pool of memory

SOLIDWORKS Visualize image
courtesy of Adi DR.PAX Pandzic

The evolution of rendering in SOLIDWORKS Visualize has reached a pivotal moment with the rise of the 3DS Stellar rendering engine, a technology that underpins a consistent visual pipeline across Dassault Systèmes' portfolio of products, including CATIA®, 3DEXCITE® DELTAGEN®, XStudio and other 3DEXPERIENCE® applications. This unification ensures that rendering behaviour, materials, and lighting are consistent across design, engineering, and marketing workflows, rather than each product maintaining an isolated engine.

Stellar's journey in the SOLIDWORKS ecosystem began as the successor to NVIDIA® Iray® in SOLIDWORKS Visualize a few years back. Stellar was introduced to take Iray's place as the primary photorealistic rendering engine, offering comparable or better image quality while giving Dassault Systèmes direct control over its future roadmap.

FAST VS. ACCURATE RENDERING
Within SOLIDWORKS Visualize 2026, Stellar offers two distinct render modes: 3DS Stellar Fast and Accurate.

"Fast" is Stellar's real-time ray-tracing engine, built from the ground up for interactive visualisation, material iteration, scene setup, client reviews, and live presentations. Powered by the vendor-
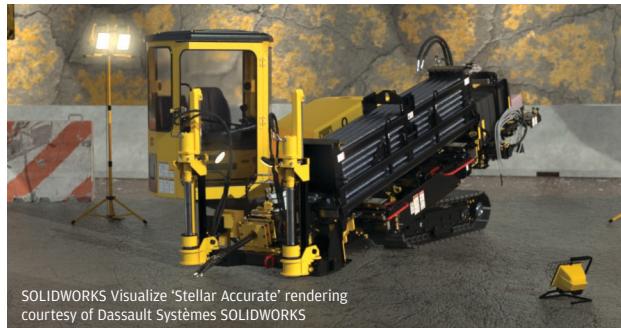
SOLIDWORKS Visualize 'Stellar Accurate' rendering
courtesy of Dassault Systèmes SOLIDWORKS

agnostic Vulkan® graphics API, Fast mode can now harness the power of AMD GPUs (AMD RDNA™ 2 architecture and newer), enabling highly efficient ray tracing on modern hardware such as the AMD RDNA 3.5 architecture-based AMD Radeon™ 8060S GPU integrated into the AMD Ryzen™ AI Max+ PRO 395 processor.

One of the processor's key advantages is its ability to give the integrated GPU direct and fast access to up to 96 GB of system memory — far more than the fixed on-board memory available on equivalent discrete GPUs. As a result, systems such as the HP Z2 Mini G1a and HP ZBook Ultra G1a can comfortably render massive SOLIDWORKS assemblies. By contrast, when a discrete GPU's dedicated memory becomes full, data must be offloaded to system memory. This process can introduce latency, reduce interactivity, increase render times, and in some cases cause application instability or crashes.

The engine also taps into the AMD AI-driven upscaling and frame prediction technologies, including AMD FidelityFX™ Super Resolution. By rendering at lower internal resolutions and reconstructing higher-resolution images, 3DS Stellar Fast maintains responsiveness even with complex models, while still delivering a sharp, detailed viewport.

"Accurate", based on 3DS Stellar Physically Correct, is the classical photorealistic, path-traced mode designed for final-quality imagery. Prioritising fidelity over interactivity, it ensures every reflection, contact shadow, and fine detail holds up in print or high-resolution marketing output. With the AMD Ryzen™ AI Max+ PRO processor, Accurate mode is accelerated by up to 16 powerful "Zen 5" architecture-based CPU cores.

Both modes share the same material and lighting model, so transitioning from "Fast" to "Accurate" is about adding polish rather than switching to a visually different engine. The shared DSPBR material system ensures consistent behaviour for appearances, roughness, metallicity, and other PBR-style controls. Environment-based lighting — HDRIs and image-based lighting — also feeds both modes in the same way, narrowing the gap between what is seen during interactive work and the final highest quality rendered output.

INTEGRATED GRAPHICS, REDEFINED

Integrated graphics just got serious. Powered by the **AMD Ryzen™ AI Max+ PRO** processor, the **HP ZBook Ultra G1a** and **HP Z2 Mini G1a** deliver impressive performance for CAD, viz and AI – without the need for a discrete GPU

For 3D CAD workflows, designers and engineers have traditionally relied on workstations with a separate CPU and discrete GPU. Processors with integrated graphics have often fallen short — lacking the 3D performance, application-specific optimisations, and software certifications required for professional use.

But the AMD Ryzen™ AI Max+ PRO processor at the heart of the new HP ZBook Ultra G1a mobile and HP Z2 Mini G1a desktop workstations is redefining what's possible with integrated graphics.

At the top of the range, the AMD Ryzen™ AI Max+ PRO 395 processor features a powerful AMD Radeon™ 8060S GPU, delivering performance that rivals that of a mid-range discrete GPU. It enables a smooth, responsive viewport in SOLIDWORKS, even when working with very large assemblies with RealView enabled, and can also handle demanding

visualisation workflows in SOLIDWORKS Visualize, bringing complex projects to life.

This leap in capability is powered not only by the AMD RDNA 3.5 graphics architecture, but also the ability to allocate large amounts of system memory to the GPU — far more than the fixed on-board memory of most comparable discrete GPUs.

In the BIOS, users can choose from 512 MB, 4 GB, 8 GB, all the way up to 96 GB. However, dedicating large amounts of memory to the GPU isn't always necessary. In some workflows the GPU can dynamically borrow additional memory from the system when needed, without the severe performance penalties that occur when discrete GPUs exceed their onboard memory and must fall back on slower system RAM.

The processor's large memory pool also unlocks new possibilities in AI workloads. When the system is configured with 128 GB,

the GPU can run colossal 128B parameter Large Language Models (LLMs) – roughly the size of ChatGPT 3.0 – well beyond the limits of most fixed-memory GPUs.

For designers and engineers, more memory also unlocks practical creative advantages in other AI-driven workflows. Text-to-image tools like Stable Diffusion, which are increasingly used for ideation in product development, can benefit directly. With fast, direct access to a large pool of GPU memory, it becomes feasible to generate high-resolution images — far beyond the practical pixel limits imposed by GPUs with restricted memory.

Finally, the AMD Ryzen™ AI Max+ PRO 395 processor also comes with a Neural Processing Unit (NPU), which is designed to handle mainstream AI tasks very efficiently. It is capable of dishing out 50 TOPS[1] of AI performance, meeting Microsoft's requirements for a Copilot+ PC.

Footnote 1: Trillions of Operations per Second (TOPS) for an AMD Ryzen processor is the maximum number of operations per second that can be executed in an optimal scenario and may not be typical. TOPS may vary based on several factors, including the specific system configuration, AI model, and software version. GD-243.

HP ZBook Ultra G1a — 14-inch mobile workstation

The HP ZBook Ultra G1a with AMD Ryzen™ AI Max+ PRO processor is an extremely powerful 14-inch mobile workstation. It offers noteworthy upgrades over other 14-inch models, including significantly more high-performance cores (up to 16) and substantially improved graphics.

It's not just about performance. It's also the thinnest ZBook ever, just 18.5mm in profile and weighing as little as 1.50kg. The HP Vaporforce thermal system keeps it running cool and there is very little fan noise

even when the processor is running flat out.

The power efficient laptop boasts an ultra long battery life and is charged with a 100 W or 140 W USB Type-C slim adapter. For video conferencing, there's a 5 MP IR camera with AutoFrame, Spotlight, Background Blur, and virtual backgrounds all powered by the NPU with 50 TOPS[1] of AI performance. Additional highlights include a top-tier 2,880 x 1,800 OLED panel (400 nits), up to 4 TB of NVMe TLC SSD storage, and support for Wi-Fi® 7.
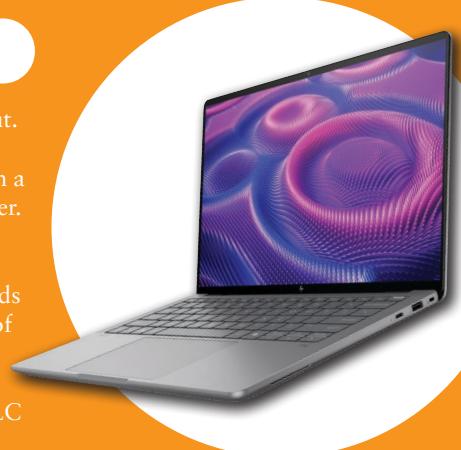
HP Z2 Mini G1a — mini desktop workstation

Despite its space-saving form factor, the HP Z2 Mini G1a is a very powerful desktop workstation. Like its laptop sibling, it features the same AMD Ryzen™ AI Max+ PRO processor. However, with a 300W internal power supply, the ultra compact desktop workstation can deliver significantly more sustained power to the processor, resulting in optimised performance in multi-threaded CPU and graphics-intensive workflows.

One of the most compelling use cases for the Z2 Mini G1a is in rack-mounted deployments, where multiple units serve as a centralised remote workstation resource managed by HP Anyware. Each designer or engineer connects to their own dedicated workstation via a 1:1 session, ensuring both simplicity in deployment and predictable, high-performance access.

Up to five workstations can be installed side by side in a 4U rack space, offering impressive density and scalability for teams.

Product features and availability may vary. For complete details & disclaimers, please visit www.hp.com/zbookultra