



# Ship full-resolution 3D rendering without building an engine.

Unlimited Detail™ rendering embedded into your platform. CPU-based. Terabyte-scale. No GPU required. One integration gives every downstream user real-time point cloud rendering on standard hardware.

**PROVEN AT SCALE:** Leica Geosystems (30,000+ users) • Lockheed Martin • US Navy • Queensland Government

## THE CHALLENGE

Your customers capture more spatial data every year, but rendering hasn't kept pace. GPU-dependent engines force expensive hardware into every deployment. Cloud-only architectures lock out classified environments. File-size ceilings mean analysts see decimated data - not the full capture. Building your own engine is a multi-year, multi-million dollar bet with no guarantee of matching the performance Nuclideon delivers today.

## THE SOLUTION

udSDK embeds Nuclideon's Unlimited Detail™ engine into your product as a shared library. Your platform controls the camera, UI, and workflow. udSDK controls the point cloud rendering. Both parties protect their core IP. The data the sensor recorded is the data the user sees - at full resolution, on standard hardware, with zero cloud dependency.

## PLATFORM CAPABILITIES

<p><b>Unlimited Scale</b></p> <p>Renders point cloud datasets exceeding 200TB with no file-size ceiling. Full resolution at every zoom level, from 100 million points to 100 billion.</p>	<p><b>Zero GPU Dependency</b></p> <p>CPU-native architecture. Runs on standard laptops, embedded systems, thin clients, and cloud VMs without GPU provisioning. Infrastructure costs drop.</p>	<p><b>Air-Gap Ready</b></p> <p>Fully offline. No cloud dependency, no call-home licensing, no data exfiltration risk. Operates on classified networks, disconnected field sites, and vessels at sea.</p>
<p><b>Cross-Platform</b></p> <p>Windows, macOS, Linux. Deploys on-prem, AWS, Azure, private cloud, or air-gapped. Native integrations for Unreal Engine, Unity, C/C++, and Python.</p>	<p><b>Direct Engineering Support</b></p> <p>Your integration engineers talk to the team that built the engine. Paul Fox, CTO, and the Nuclideon technical team support every SDK partnership directly.</p>	<p><b>Weeks, Not Years</b></p> <p>Evaluation to embedded integration in 4-12 weeks. Documented APIs, reference architectures, and a proven integration pathway from the Leica deployment.</p>

## BUILD VS. BUY

	Build It Yourself	Licence udSDK
<b>Timeline</b>	3-5 years to production grade	4-12 weeks to integration
<b>Investment</b>	\$5M+ fully loaded engineering cost	From \$25K/year, scales with deployment
<b>Performance</b>	No guarantee - starting from zero	200TB+ on standard CPUs, proven at scale
<b>Opportunity</b>	12-18 months of senior engineering diverted	Your team stays on your core product
<b>Air-Gap</b>	Unknown - separate architecture work	Production-ready - US Navy deployed
<b>Support</b>	Internal only	Direct from the team that built the engine



## PROVEN AT SCALE

### Leica Geosystems (Hexagon)

Licensed the Unlimited Detail engine under a perpetual worldwide agreement. Leica embedded it into JetStream, their flagship point cloud rendering product. The LGS file format derived from Euclidean's UDS format became the data standard for Leica's entire scanner lineup: BLK360, RTC360, BLK2GO, BLK2FLY, and ScanStation P-series. 30,000+ survey professionals ran on this engine for close to a decade.

### US Navy & Lockheed Martin

Deploy the engine through C2 Horizons across defence programmes including Lockheed Martin's, Classified environments. Air-gapped networks. Government-issue hardware. Zero GPU infrastructure required.

### Queensland Government

Adopted the platform for spatial digital twin programmes, validating the technology in civilian government infrastructure applications at scale.

## WHO THIS IS FOR

<p><b>Defence &amp; Intelligence</b></p> <p>Air-gapped deployment, classified environment compatibility, real-time rendering of terrain and infrastructure at scale. C2/C4ISR and TAK system integration without disrupting accreditation.</p>	<p><b>GIS &amp; Survey Platforms</b></p> <p>Reality capture, infrastructure asset management, and spatial analysis at enterprise scale. Full-scan resolution with built-in rendering - no engine build required.</p>
<p><b>Mining &amp; Exploration</b></p> <p>Full-resolution geological, terrain, and survey data across the mine lifecycle. Fleet and asset management dashboards with real-time spatial context on commodity hardware.</p>	<p><b>Digital Twin &amp; Spatial AI</b></p> <p>Enterprise-grade rendering for companies building 3D spatial analysis infrastructure. BIM, design review, and linear asset management for road and rail.</p>

## TECHNICAL SPECIFICATIONS

- Delivery Format:** Shared Library (Compiled DLL with C Headers)
- Max Dataset Size:** No ceiling - 200TB+
- Rendering:** CPU-native, No GPU dependency
- Platforms:** Windows, macOS, Linux, Javascript
- Integrations:** Unreal Engine, Unity, C++, C#, Python
- File Formats:** UDS, LAS/LAZ, E57, OBJ + more
- Connectivity:** Flexible - Offline, Air gapped or SaaS
- Storage Options:** Streams data from local files, network files or via HTTP, HTTPS, FTP and SFTP protocols
- Source Code:** Escrow Option for business continuity
- Support Model:** Direct engineering support

## LICENSING

- Per-seat pricing starting from \$25,000/year. Licences scale with deployment size and distribution rights.
- Minimum 2-year term.** Year 1 priced for integration and rollout. Year 2 steps to the full production rate. Both agreed before day one.
- Adoption ramp.** Large enterprise deals include structured pricing: lower Year 1 while your team builds, contracted Year 2 upfront.
- Air-gapped premium.** Classified and fully offline deployments carry a 15% per-seat premium.
- Contract values range from \$25K/year to \$1M+ for enterprise-wide SDK deployments with broad distribution rights.

## SEE IT ON YOUR DATA

We demonstrate the engine on your data, your hardware, in a 20-minute call. Bring a dataset from your use case. We run it through udSDK live. If the engine fits, we talk integration. If it doesn't, you've spent 20 minutes.

[Book a live demo](#) → [nuclideon.com](https://nuclideon.com) | [udsdk@nuclideon.com](mailto:udsdk@nuclideon.com)