

## **3D Mapping And 3D Modelling - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2026 - 2031)**

Market Report | 2026-02-09 | 137 pages | Mordor Intelligence

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### **Report description:**

3D Mapping And 3D Modelling Market Analysis

The 3D mapping and 3D modelling market was valued at USD 8.58 billion in 2025 and estimated to grow from USD 9.75 billion in 2026 to reach USD 18.47 billion by 2031, at a CAGR of 13.62% during the forecast period (2026-2031). This growth trajectory stems from consumer-grade LiDAR in smartphones, generative AI integration into design software, government mandates for infrastructure digital twins, and rising demand for XR-ready content across retail and media. Cloud-native rendering that lowers total cost of ownership for small enterprises and the push for high-definition maps for autonomous vehicles further expand the 3D mapping and 3D modelling market. Competitive intensity increases as vendors pursue vertical integration to secure key sensors and GPUs while simultaneously opening platforms to partner ecosystems for scale.

Global 3D Mapping And 3D Modelling Market Trends and Insights

Smartphone LiDAR Commoditises Real-Time 3D Capture

LiDAR sensors embedded in mainstream smartphones remove the traditional cost and skills barriers associated with professional spatial data collection. Apple's VCSEL-based time-of-flight array now sits inside millions of iPhones and iPads, producing millimeter-grade point clouds that once required industrial scanners. Small businesses exploit these hand-held sensors to offer affordable site scans, interior documentation, and immersive AR merchandising without capital outlays for survey-grade hardware. Developers further harness Apple's ARKit to secure real-time occlusion handling, enabling interior design previews and facility

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walkthroughs that enrich the 3D mapping and 3D modelling market. Continuous miniaturization keeps LiDAR modules thin, while FCC and CE certifications guarantee cross-region deployment compliance.

### Integration of 3D Geospatial Layers into Generative-AI Design Suites

Design software now feeds on 3D geospatial context to automate concept creation. Esri has added AI feature extraction inside ArcGIS Pro, turning raw point clouds into semantic building blocks and cutting manual classification by 70%. SketchUp's generative engine then iterates thousands of floor plans that respect solar exposure, wind flow, and zoning rules in seconds. Such AI-assisted workflows suit urban planners pressed for eco-efficient layouts and architects chasing faster approvals. Open IFC and ISO 19650 data standards move these AI-generated concepts into BIM pipelines without rework, amplifying the 3D mapping and 3D modelling market applicability across construction lifecycles.

### High GPU and Sensor Supply-Chain Volatility

Semiconductor shortages send GPU prices soaring and extend lead times beyond 9 months, throttling real-time rendering and deep-learning pipelines that underpin the 3D mapping and 3D modelling market. Automotive LiDAR makers also compete for scarce VCSELs and photodiodes, prompting larger firms to lock multi-year supply deals and forcing small integrators to delay projects or pay premiums. Some enterprises pivot to cloud render farms to cushion hardware gaps, yet those services equally rely on limited H100 clusters, highlighting systemic vulnerability until new foundry capacity matures.

Other drivers and restraints analyzed in the detailed report include:

Mandates for Digital Twins in Public Infrastructure Projects  
XR-Ready 3D Content Boom in Media and Retail  
Large-File Data-Sovereignty Compliance Costs

For complete list of drivers and restraints, kindly check the Table Of Contents.

### Segment Analysis

Software generated 44.96% of overall revenue in 2025, underscoring its role in automating feature extraction, generative modeling, and collaborative workflows. Services, while smaller, is the fastest-growing component with a 14.02% CAGR to 2031 as enterprises outsource photogrammetry, regulatory compliance, and cloud optimization tasks. Hardware retains a leaner slice but benefits from single-photon LiDAR modules that quintuple data-capture speed while cutting maintenance.

Ongoing software advances such as Trimble Business Center v2024.10 slash classification time by 60% through AI algorithms, enabling engineers to focus on higher-value design rather than manual labeling. As workflows migrate to subscription bundles, organizations pay per-project or per-device, smoothing budgets and expanding the 3D mapping and 3D modelling market. Services demand rises where in-house teams lack photogrammetry or data-governance expertise, especially in regulated defense and infrastructure projects. Hardware innovation ensures continuous miniaturization and lower power draw, which unlocks mobile scanning scenarios for field crews and first responders.

3D modelling captured 57.74% share in 2025 as entertainment studios, product designers, and architects prioritized geometric detail and visual storytelling. In contrast, 3D mapping posts the superior 14.78% CAGR owing to infrastructure digitization and autonomous vehicle needs that demand centimeter-level accuracy. The convergence of both streams into digital twin solutions blends geometric richness with spatial exactness, amplifying the 3D mapping and 3D modelling market size at project level.

Mature modelling pipelines leverage Autodesk and Maxon toolsets for procedural generation, while emerging AI features auto-rig

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characters and simulate physics without manual keyframes. Conversely, mapping vendors refine HD-grade road models for autonomous navigation, supporting dynamic objects such as lane closures or pedestrians. Hybrid platforms such as Bentley iTwin combine engineering schematics with textured meshes, allowing asset owners to inspect corrosion, monitor traffic flow, and schedule maintenance in one viewport. Interoperability depends on open 3D Tiles and CityGML schemas that shuttle data between GIS and CAD domains seamlessly.

The 3D Mapping and 3D Modelling Market Report is Segmented by Component (Hardware, Software, and Services), Type (3D Mapping, and 3D Modelling), Application (Projection Mapping, Texture Mapping, Maps and Navigation, and More), End-User Vertical (Entertainment and Media, Healthcare, Automotive and Transportation, and More), Deployment (On-Premise, and Cloud), and Geography. The Market Forecasts are Provided in Terms of Value (USD).

### Geography Analysis

North America held 37.14% of global revenue in 2025, buoyed by Silicon Valley innovation, federal infrastructure spending, and defense contracts that value high-precision geospatial intelligence. Federal agencies commission HD maps for autonomous vehicle corridors, while manufacturers adopt digital twins to streamline production in Detroit and Austin. Early consumer adoption of smartphone LiDAR and fast 5G rollout sustain a receptive user base, keeping the 3D mapping and 3D modelling market at the forefront of innovation in the region.

Asia Pacific is forecast to attain a 14.12% CAGR through 2031, propelled by massive urbanization, smart-factory investments, and government mandates for digital city planning. China's 3D industrial camera revenue climbed to CNY 2.362 billion (USD 0.32 billion) in 2023, signaling strong hardware foundations for mapping suppliers. Japan's precision machining exports adopt metrology-grade LiDAR to verify tolerances, and India's Smart Cities Mission packages drone surveys and BIM deliverables for 100+ municipalities. These multiple demand streams collectively uplift the 3D mapping and 3D modelling market in Asia Pacific.

Europe maintains robust share owing to strict regulations that compel detailed 3D documentation of public assets. The EU's Digital Single Market and Green Deal strategies encourage carbon-reduction analytics on digital twins, expanding the 3D mapping and 3D modelling market among energy utilities and transport operators. Germany's Industry 4.0 initiatives, France's autonomous-vehicle lanes, and the United Kingdom's national digital twin all scaffold consistent demand. GDPR, though a compliance burden, also differentiates providers with proven data-governance capabilities, steering contracts toward vendors with European cloud regions.

### List of Companies Covered in this Report:

Autodesk Inc. Bentley Systems Inc. ESRI Inc. Trimble Inc. Hexagon AB Saab AB Airbus Defence and Space SAS Intermap Technologies Corp. Topcon Positioning Systems Inc. CyberCity 3D Inc. The Foundry Visionmongers Ltd. Golden Software LLC Pix4D SA Maxon Computer GmbH Dassault Systemes SE Pixologic Inc. Matterport Inc. FARO Technologies Inc. Leica Geosystems AG Apple Inc. (ARKit and LiDAR)

### Additional Benefits:

- <ul> The market estimate (ME) sheet in Excel format
- 3 months of analyst support </ul>

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Information, Market Rank/Share for key companies, Products and Services, and Recent Developments)

6.3.1 Autodesk Inc.

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