EON AI VENTURES

EON Genesis 3D Library

The World's Largest Validated Library for Immersive Learning, Training & Performance

Library-First. Validated. Scalable.

95 Environments

475 3D Objects

19 Industry Segments

∞ Scalable via Batch

White Paper + Technical Specification | March 2026

EON AI Ventures

Why Content Has Been the Most Expensive Layer

Custom 3D = Weeks & $50K+

A single environment costs $20K–$50K with specialized artists. Objects require modeling, texturing, rigging — weeks per asset.

No Compound Value

Every customer requires custom content. Knowledge is not reused. Expertise is not preserved. The investment depreciates.

Isolated Pockets of Excellence

Immersive training exists in silos. Organizations that invest heavily create impressive results — but the content has no second life.

Doesn't Scale

When everything is bespoke, there is no flywheel. Quality is inconsistent. Deployment takes months, not days.

The Breakthrough: Library-First Infrastructure

Instead of "How do we build this?" → "What already exists — and how do we reuse, extend, or combine it?"

Cost Compression

Equipment costing millions becomes instantly accessible in validated, interactive 3D form. Costs amortized across thousands of learners rather than dozens.

Standardization

Training becomes repeatable, auditable, and consistent across locations and cohorts. Same validated assets everywhere — Lagos to London.

Acceleration

Time-to-training drops from months to minutes. When environments and objects already exist, the remaining work is scene composition and annotation.

Full Generative Capability Retained

The library doesn't replace the ability to generate from scratch. Genesis retains full generative power — any user can describe any environment or object in natural language and produce it in minutes. The library reduces the need to generate, not the capability to do so.

Library Architecture: Four Layers

Environments, objects, scene composition, and knowledge injection — each layer adds value.

3D Environments

Photorealistic Operational Spaces

- Generated via Gaussian Splat technology
- Photorealistic, navigable 3D spaces
- Wide-angle perspective for navigability
- Equipment at realistic operational distances
- Two-step pipeline: AI image → 3D Gaussian Splat
- 5 environments per segment in initial release

3D Objects

Interactive, Component-Aware Equipment

- Not static meshes — interactive, componentized assets
- Auto-segmented into constituent parts
- Pivot points, interaction behaviors, metadata
- E.g. centrifugal pump = casing + impeller + shaft + bearings + seal + motor
- 25 objects per segment in initial release
- GLB format with embedded component data

Scene Composer

Combining Environments & Objects

- Place objects within environments
- Drag-and-drop, scale, rotate, arrange
- Surgical robot in an operating room
- CNC machine on a factory floor
- No rebuilding content required
- Training-ready scenes in minutes

Knowledge Injection

Annotations, SOPs & Procedural Intelligence

- Auto-annotation with labels, warnings, specs
- SOPs linked directly to 3D components
- Procedural logic embedded in assets
- Assets carry operational intelligence
- Distinguishes from conventional 3D asset libraries
- Equipment becomes training capital

19 Industry & Education Segments

Each segment: 5 environments + 25 interactive objects. Purpose-built for high-hazard, high-value training.

16 INDUSTRY VERTICALS

Energy & Power	Data Centers	Electric Vehicles	Robotics & Automation
Smart Manufacturing	Maritime & Shipping	Mining Operations	Oil & Gas
Construction	Aerospace	Defense & Military	Healthcare
Agriculture	Hospitality	Logistics & Warehousing	Finance & Banking

3 EDUCATION CATEGORIES

- Higher Education — Labs, workshops, simulation centers
- TVET (Technical & Vocational) — Trades, automotive, electrical, welding, HVAC
- K–12 — STEM engagement, robotics, science labs, maker spaces, safety drills

Initial Release: 95 environments + 475 interactive objects | Each validated for realism, interactivity, metadata, and segment appropriateness

Segment Examples: Training Missions Enabled

Each segment library powers real-world procedural training. Examples from 6 priority segments.

Energy & Power

5 environments • 25 objects

- LOTO safety procedures
- Switchgear fault ID
- Turbine maintenance
- Emergency response

Data Centers

5 environments • 25 objects

- Server rack installation
- Cooling fault diagnosis
- Power failover & UPS
- Incident escalation

Oil & Gas

5 environments • 25 objects

- Well control & BOP
- Process unit startup
- Pipeline inspection
- Permit-to-work

Healthcare

5 environments • 25 objects

- Surgical instrument ID
- MRI safety screening
- Medication verification
- Critical care response

Smart Manufacturing

5 environments • 25 objects

- CNC programming
- Additive manufacturing
- SPC quality inspection
- Lean / Kanban operation

Construction

5 environments • 25 objects

- Crane load planning
- Excavation safety
- Concrete QC
- Site safety inspection

TECHNICAL SPECIFICATION

EON 3D Objects Enhancements Required

Fundamental components for specification. Based on product session with Marcin.
7 enhancements from immediate priority to near-term development.

Current State: Object generation + environment generation + preview/storage complete

Current State & Quality Strategy

Phase 1 complete. Key quality issue: backside artefacts. Solution: Edit Mode with multi-pass regeneration.

PHASE 1 COMPLETED

- Import objects into the platform
- Batch generation via text description
- Generate environments from text description
- Preview 3D objects in-app + full screen
- Store generated objects in system

KNOWN QUALITY ISSUE: 3D ARTEFACTS

Backside of image-generated objects can be deformed, incorrect, or hallucinated. Front is typically good, but reverse side lacks sufficient visual data from single-angle generation.

IMMEDIATE PRIORITY — only enhancement needed for functional announcement.

Solution: Edit Mode with Multi-Pass Regeneration

1 Assemble List — Define objects to generate

→

2 Generate Prompts — AI creates image prompts

→

3 Generate Images — Produce ref images

→

4 Generate 3D — Create 3D object + env

→

5 Review (Edit Mode) — Go through one by one

→

6 Approve or Repass — Good → approve
Bad → repass

→

7 Multi-Angle Regenerate — Side/front/back images → rehash

Seven Input Sources

How 3D objects and environments enter the system — from text prompts to physical capture.

Text-to-3D Generation	User provides text description. System generates 3D objects and environments.	Active
Image-to-3D Generation	User provides image as input. System generates 3D from visual reference.	TBD
Batch Generation	Both text and image inputs support batch generation of multiple objects simultaneously.	Active
EON Pre-Existing Libraries	Import from existing EON libraries built up over 25 years of development.	Near-Term
Sketchfab Import	Import objects from Sketchfab, a major repository of 3D models.	Near-Term
CAD Repository Import	Import from CAD site with 16M+ engineer contributions. Requires format conversion to GLB.	Near-Term
Physical Environment Capture	David's Apple app: video scan → Gaussian Splat. Currently Apple-only. Web version TBD.	Near-Term

Seven Enhancement Components

Prioritized from immediate to near-term. Methods include Marcin/dev work and Claude Code sessions.

#	Component	Method	Priority
1	Edit Mode / Multi-Pass Regeneration	Marcin / Dev	IMMEDIATE
2	Object Part Separation	Claude Code	Next Week
3	Library Imports: EON + Sketchfab	Dev / Integration	Near-Term
4	CAD Import + Format Conversion	Dev / Integration	Near-Term
5	Physical Environment Capture	Code Archive + Claude Code	Near-Term
6	Genesis 2.0 Integration Architecture	Claude Code	High
7	WebXR Investigation + Fallback	Claude Code	High

Key Architecture Decision: Genesis 2.0 Integration

Option A — Full Merge

Merge EON 3D Objects and Genesis 2.0 into one unified platform.

Option B — Separate + Data Exchange

Keep apps separate, send data back and forth between them.

System Architecture: Input to Experience

INPUT SOURCES	Text-to-3D | Image-to-3D | Batch | EON Libraries | Sketchfab | CAD Repos | Physical Capture
QUALITY CONTROL	Preview → Edit Mode → Approve/Repass → Multi-Angle Regeneration → Validation
LIBRARY (STORAGE)	Approved objects + environments stored | Separated parts | Metadata | Segment tags
INTEGRATION LAYER	EON 3D Objects ↔ Genesis 2.0 | Full merge or API exchange | Auto-flow, no manual import
EXPERIENCE / PUBLISHING	Genesis 2.0 "kitchen" | Desktop ✓ | Headset (WebXR) | Phone (WebXR) | AR glasses | Fallback: native plugin

From Hundreds to Millions: Batch Methodology

Five-stage pipeline with quality gates. Flywheel effect: more assets → better models → lower cost per asset.

1 Segment Prioritization

ID industries where new assets create the most value, based on demand and skills gap data.

2 Structured Input Preparation

Define as structured lists with segment classification, naming conventions, and metadata.

3 Batch Generation

Automated generation runs for environments (Gaussian Splat) and objects (3D mesh + part segmentation).

4 Quality Validation

Realism checks, interactivity verification, naming/metadata validation, segment-appropriateness review.

5 Library Publication

Validated assets added with full metadata, segment tags, and reuse permissions. Immediately available.

Quality Gate: Assets failing validation are regenerated or flagged for manual review — never published in a degraded state.

Marketplace Vision

A new economy for verified immersive training assets. Knowledge-enriched, appreciating digital capital.

Environments

Validated 3D spaces licensed, customized, and reused across organizations.

Objects

Interactive equipment with annotations, SOPs, interaction templates, and procedural logic.

Complete Training Scenes

Pre-configured combinations of environments, objects, and missions. Deploy immediately.

Knowledge Enrichment: The Critical Differentiator

Assets are not just visual — they carry operational intelligence. A 3D pump with maintenance SOPs, safety annotations, and procedural logic is worth orders of magnitude more than a 3D pump alone. This creates a new form of digital capital: reusable, verifiable, and appreciating over time.

Library Growth Roadmap

Q1–Q2 2026

Deepen to 25–50 objects per environment. Education sub-segments. Marketplace beta.

Q3–Q4 2026

Scale to 100+ objects per environment. Launch marketplace with creator ecosystem.

2027+

Millions of validated assets via continuous batch. Global standard for immersive content.

Enterprise & Education Outcomes

Measurable improvements across deployment speed, cost, standardization, safety, and compliance.

Enterprise ROI

- Faster deployment — months → days using pre-built assets
- Lower cost per learner — amortized across thousands
- Higher standardization — same assets at every site, every shift
- Reduced incident risk — immersive practice = fewer errors
- Audit readiness — every interaction logged for compliance

Education Outcomes

- Access to equipment regardless of physical infrastructure
- Students practice on equipment they'll encounter in the workplace
- Safe environment for practicing dangerous procedures
- Scale practical training to larger class sizes
- Industry-aligned graduates ready for the job

Learn → Train → Perform Competency Model

LEARN	Explore environments, inspect objects, engage with annotations and SOPs
TRAIN	Mission-based skill development — perform procedures, operate equipment, practice decisions
PERFORM	Competency verification via DO (demonstrate) + SAY (explain) + SHOW (identify)

EON AI VENTURES

Library-First. Validated. Scalable.

The Genesis 3D Library is not a feature of Genesis 2.0.
It is the platform's most durable competitive advantage —
and its most important contribution to the future of human capability.

95 Environments | 475 Objects | 19 Segments | 7 Input Sources | 5-Stage Pipeline

From hundreds to millions of validated assets.
Knowledge-enriched digital capital that appreciates over time.
The world's largest validated library for immersive training.

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