EON AI Ventures

EON 3D Objects

Unifying Complexity: A Clear Guide to Our Complete Product Ecosystem and Future Innovations

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SECTION 1: EXECUTIVE SUMMARY

This white paper introduces a transformative approach to consolidating and presenting EON Reality's suite of products and technologies through a **comprehensive product portfolio overview**. This initiative delivers a unified, clear structure that aligns all product offerings under one cohesive framework. Simultaneously, we explore the technical capabilities of **EON 3D Objects**, a cutting-edge production module designed to create **interactive, componentized 3D assets**, addressing critical challenges in workforce training, safety simulations, and technical assessments.

A Unified Product Portfolio Overview

In today's rapidly evolving landscape, where **AI acceleration is outpacing traditional training methods**, clarity and precision are paramount. The newly developed product portfolio overview provides a **single source of truth** for EON Reality's offerings across academic, enterprise, consumer, and internal domains. By unifying disparate resources, scattered across presentations, documents, and individual expertise, this initiative ensures a **shared language** across sales, product, and leadership teams, fostering alignment and consistency.

Key benefits of this new portfolio structure include:

- **Clarity in communication**: Simplified explanations of how products fit together, enabling teams to confidently address customer needs.
- **Strategic alignment**: A clear reference point for identifying product gaps, overlaps, and opportunities for innovation.
- **Customer-centric positioning**: A streamlined narrative for proposals and presentations, enhancing the ability to showcase value to enterprise clients.

This initiative reflects EON Reality's commitment to **transforming workforce capability for the AI era** by bridging the gap between expert knowledge and workforce performance.

EON 3D Objects: A Technical Breakthrough

At the core of this paper is **EON 3D Objects**, a technology module that leverages advanced AI tools to generate **high-fidelity, interactive 3D assets** from text prompts and reference images. Built on **Hunyuan 3D Studio 1.2** and powered by a suite of advanced technologies such as **PartGen 1.5**, **Hunyuan3D-DiT**, and **Hunyuan3D-Paint**, this solution delivers unprecedented precision and scalability.

Key features of **EON 3D Objects** include:

- **Brush Interaction**: Users can manually refine segmentation boundaries for precise control over components.

- **8-View Input**: Comprehensive input options (front, back, left, right, top, bottom, and 45° angles) ensure accurate geometry for complex objects.
- **Sculpt-Level Quality**: High-fidelity textures and fine-grained detail suitable for industrial applications.
- **Auto-Segment and Generate Parts**: Automated component segmentation and independent part generation streamline workflows for reducing time-to-competency.
- **Batch Processing and API-Based Automation**: Scalable solutions for programmatic integration into enterprise systems.

These capabilities address critical needs in industries like Oil & Gas and manufacturing, where traditional AI-generated 3D environments often fail to provide **properly segmented, interactive objects** suitable for advanced training scenarios, such as **maintenance training**, **safety simulations**, and **technical assessments**.

Tangible Benefits and Outcomes

The integration of **EON 3D Objects** into enterprise workflows delivers measurable outcomes:

- **Reduced time-to-competency**: By automating complex asset creation, workforce training cycles are significantly shortened.
- **Improved knowledge retention**: High-fidelity, interactive training environments enhance learning outcomes.
- **Increased safety**: Accurate, componentized simulations mitigate risks associated with real-world operations.
- **Cost efficiency**: Features like **batch processing** and **API-based automation** optimize resource allocation and reduce operational costs.

Additionally, the advanced capabilities of **EON 3D Objects**, such as 1536^3 resolution for detailed segmentation and rapid 8-20 second generation times, demonstrate its ability to meet the stringent demands of enterprise applications.

The Bigger Picture

Together, the **product portfolio overview** and the **EON 3D Objects module** represent a significant leap forward in EON Reality's mission to **accelerate workforce readiness for the AI era**. By combining a unified product narrative with cutting-edge technical solutions, EON Reality empowers enterprises to transform their operations, ensuring **100% readiness for high-stakes environments** where generic AI solutions fall short.

This white paper serves as both a guide and a call to action, urging enterprises to leverage EON Reality's tools to **bridge the gap between knowledge and performance**, unlocking new levels of efficiency, safety, and capability.

SECTION 2: THE PROBLEM/CHALLENGE

In a world where **enterprise transformation** hinges on **AI-driven innovation**, fragmented communication and unmet technical needs can create significant barriers to success. EON Reality recognized two critical challenges impeding its ability to deliver maximum value to its enterprise clients: the lack of a coherent product narrative and the inability of traditional AI-generated assets to meet the high-stakes demands of industries like Oil & Gas.

The Challenge of Clarity in a Growing Ecosystem

As EON Reality's portfolio expanded, so did the complexity of presenting its offerings to diverse stakeholders. Questions such as "What exactly do we offer?" or "Which product fits which customer?" remained difficult to answer due to the absence of a unified framework. This lack of clarity led to:

- **Inconsistent positioning**: Product messaging varied depending on individual interpretations, causing confusion among customers and internal teams.
- **Inefficient onboarding**: New team members struggled to grasp the full scope of EON's capabilities, delaying their ability to contribute effectively.
- **Missed opportunities**: Without a shared language, identifying gaps and aligning on future directions became increasingly challenging.

These issues underscored the urgent need for a **comprehensive product portfolio overview**—a single source of truth that could align sales, product, and leadership teams while enhancing customer engagement.

The Technical Gap in AI-Generated 3D Assets

Parallel to these communication challenges, EON Reality faced technical limitations in delivering **interactive 3D environments** for enterprise applications. While **generic AI-generated assets** can meet 80% of most needs, industries with **high-stakes operations** demand **100% accuracy**, especially for training scenarios involving **maintenance**, **safety**, and **technical assessments**.

For example:

- **Oil & Gas industries** require 3D environments where components are not only visually accurate but also interactively segmented for hands-on training simulations.
- Existing AI solutions often fail to provide **properly separated, interactive components** with meaningful internal structures, undermining their utility for such applications.
- Customers like Exxon and Aramco expressed dissatisfaction with the inability of traditional 3D technologies to address these unique demands.

Addressing the Gaps with EON 3D Objects

EON 3D Objects was specifically designed to tackle these challenges, incorporating advanced features that set it apart from generic solutions:

- **PartGen 1.5** ensures precise segmentation at 1536^3 resolution, a significant improvement over previous standards (1024^3 resolution).
- **Brush Interaction** and **Brush Refinement** provide manual control for refining component boundaries, enabling the creation of **sculpt-level quality** assets.
- **8-View Input** enhances the accuracy of 3D geometry, particularly for complex industrial equipment.
- **Batch Processing and API-Based Automation** allow for scalable, programmatic integration, addressing the needs of enterprises with large-scale asset requirements.

These innovations directly respond to the critical customer objection that AI-generated environments lack the **interactivity and precision** required for **maintenance training**, **safety simulations**, and **technical assessments** in high-stakes industries.

The Cost of Inaction

Without solutions like **EON 3D Objects** and a **unified product narrative**, enterprises risk:

- **Prolonged training cycles**: Delays in workforce readiness due to inadequate training tools.
- **Reduced safety**: Increased risk of operational errors stemming from incomplete or inaccurate simulations.
- **Lost productivity**: Inefficiencies caused by fragmented workflows and poorly integrated systems.

The Path Forward

EON Reality's dual approach of a **comprehensive product portfolio overview** and the advanced technical capabilities of **EON 3D Objects** positions it as the **bridge between AI capability and workforce readiness**. By addressing both communication and technical challenges, EON Reality ensures enterprises are equipped to meet the demands of the **AI era**, delivering measurable outcomes in safety, efficiency, and operational excellence.

SECTION 3: THE SOLUTION

In an era where enterprise demands are accelerating and traditional methods of workforce training struggle to keep pace, **EON Reality** has introduced a comprehensive and unified **product portfolio overview**. This document serves as a single source of truth, offering a

detailed and structured representation of the organization's capabilities across academic, enterprise, consumer, and internal products. The clarity it provides is instrumental in aligning internal teams, empowering customer conversations, and guiding future innovations. However, the portfolio is not just about documentation—it also highlights the cutting-edge solutions driving enterprise transformation, such as the **EON 3D Objects** module.

The **EON 3D Objects** module stands out as a transformative innovation, leveraging advanced AI-driven pipelines to generate **componentized, interactive 3D assets**. These assets are specifically designed to address high-stakes enterprise needs, including **maintenance training**, **safety simulations**, and **technical assessments**. By utilizing Tencent's **Hunyuan 3D Studio 1.2** and the **PartGen 1.5** segmentation tool, EON 3D Objects ensures unparalleled precision and quality in asset creation, enabling enterprises to bridge critical knowledge gaps as they modernize their workforce capabilities.

At the core of this solution is the ability to capture and translate complex geometries into **interactive 3D models**. Through advanced features such as **8-view input**, the system reconstructs high-fidelity meshes that encompass every angle—front, back, left, right, top, bottom, and even 45° perspectives—to ensure comprehensive detail. The **Hunyuan3D-DiT** engine further enhances this fidelity by generating **sculpt-level textures** that are critical for technical accuracy in high-stakes environments.

The solution also addresses one of the most significant barriers to adopting AI-generated assets: the lack of meaningful internal segmentation. The **PartGen 1.5** tool provides **segmentation resolution at 1536^3**, a significant improvement over the previous standard of 1024^3. This ensures that each asset is not only visually accurate but also functional for enterprise use cases, such as detailed maintenance workflows. Through **brush interaction** and **brush refinement**, users can precisely define component boundaries, making the assets versatile for a wide range of applications.

For enterprises that require large-scale asset production, **EON 3D Objects** supports **API-based automation** and **batch processing**, enabling seamless programmatic integration into existing systems. These capabilities ensure that businesses can scale their efforts without compromising on quality or operational efficiency. For example, the **fal.ai API** powers **3D generation** at rapid speeds of 8 to 20 seconds per asset, with costs as low as **$0.375 per generation** or **$0.16 + $0.15 per view** for multi-view models. This combination of speed, cost efficiency, and precision makes the module an invaluable tool for enterprises looking to streamline their training and simulation efforts.

The **product portfolio overview** and the **EON 3D Objects** module together represent a strategic alignment of vision and execution. While the overview provides clarity and direction for both internal teams and customers, the 3D Objects module delivers the tangible, AI-driven capabilities needed to meet the demands of the modern enterprise. By providing tools that are both innovative and practical, EON Reality is fulfilling its mission of **"Transforming Workforce Capability for the AI Era."**

SECTION 4: KEY FEATURES/CAPABILITIES

The unified **product portfolio overview** offered by EON Reality consolidates a wide range of offerings into a single, easy-to-understand framework. This document not only bridges gaps between academic, enterprise, consumer, and internal tools but also highlights the interconnected nature of EON's product ecosystem. Among these offerings, the **EON 3D Objects** module emerges as a standout solution, incorporating cutting-edge features and capabilities that redefine what is possible in enterprise training and simulation.

Key Features of the EON 3D Objects Module

1. **8-View Input for Complex Geometries**

The **8-view input** capability ensures comprehensive asset creation by capturing every angle of a subject. This includes front, back, left, right, top, bottom, and two 45° perspectives, enabling the generation of **high-fidelity 3D meshes** that accurately replicate real-world objects. This feature is particularly beneficial for creating detailed assets used in **technical assessments** and **safety simulations**, where precision is paramount.

2. **Brush Interaction and Refinement**

The **PartGen 1.5** tool introduces **brush interaction** and **brush refinement**, empowering users to fine-tune segmentation boundaries with pixel-level accuracy. These features ensure that every component of a 3D asset is correctly defined and functional, making it suitable for **maintenance training** and other high-stakes applications where detail and usability are critical.

3. **Sculpt-Level Texture Fidelity**

The use of **Hunyuan3D-DiT** and **Hunyuan3D-Paint** enables the generation of **sculpt-level quality textures**, providing unparalleled detail and realism. This capability is essential for industries such as oil and gas, where accurate visual representation can significantly impact training efficacy and operational safety.

4. **High-Resolution Segmentation**

With a resolution of **1536^3**, the **PartGen 1.5** segmentation tool surpasses the previous standard of 1024^3, delivering finer and more detailed segmentation. This enhancement ensures that each component of a 3D asset is not only visually distinct but also functionally independent, supporting a wide range of enterprise use cases.

5. **Batch Processing and API-Based Automation**

For enterprises requiring large-scale asset production, the module supports **batch processing** and **programmatic integration** through APIs such as **fal.ai**. These features enable the automatic generation and segmentation of 3D assets, reducing the time and effort required for

manual intervention. With generation times as low as **8-20 seconds per asset** and costs starting at **$0.375 per generation**, this capability offers an efficient and scalable solution.

6. **Independent Part Generation**

Using the **X-Part** tool, the module can generate fully independent parts for each segmented component. This functionality is critical for creating **interactive 3D assets** that can be used in **maintenance workflows** or as standalone training modules. By producing assets with meaningful internal components, the module addresses a key pain point for enterprises requiring more than just generic, monolithic 3D models.

7. **Exportable GLB with PBR Materials**

The system outputs assets in **GLB format with PBR (Physically Based Rendering) materials**, ensuring compatibility with modern rendering engines and simulation platforms. This feature enhances the visual realism and technical accuracy of the assets, making them ideal for high-stakes enterprise environments.

Broader Portfolio Capabilities

The **product portfolio overview** connects these advanced features of the **EON 3D Objects** module to a broader ecosystem of tools, ensuring that every product is clearly positioned and easily understood. By providing a unified view of its offerings, EON Reality enables stakeholders—from sales teams to leadership—to confidently communicate the value of its solutions. This alignment ensures that enterprises can select the right tools for their needs while benefiting from a coherent and interconnected product ecosystem.

The **EON 3D Objects** module, with its advanced features and seamless integration into the broader portfolio, exemplifies EON Reality's commitment to innovation and practicality. By focusing on measurable outcomes such as **knowledge retention**, **time-to-competency**, and **safety**, the company is fulfilling its role as **"the bridge between what your experts know and what your entire workforce can do."**

SECTION 5: HOW IT WORKS

EON 3D Objects is designed to transform text prompts and reference images into **componentized, interactive 3D assets** through a robust four-stage pipeline. This process ensures precision, scalability, and versatility for various industrial applications such as **maintenance training**, **safety simulations**, and **technical assessments**. The workflow is optimized for both **interactive workflows** via **Hunyuan 3D Studio 1.2** and **batch processing** through API-based automation, enabling seamless integration into broader **EON systems**.

Stage 1: Asset Specification & Prompt Design

The process begins with **asset specification and prompt design**, where subject matter experts (SMEs) or team members define the requirements for the 3D asset. This includes crafting detailed text prompts and uploading reference images to guide the generation process. The flexibility of this stage allows users to specify the complexity and fidelity of the assets, ensuring that the output aligns with the intended use case.

For example:

- A training simulation for industrial equipment may require detailed internal components.
- A safety simulation may demand precise segmentation and high-resolution textures.

This initial stage sets the foundation for the subsequent steps, ensuring that the final 3D asset meets exacting standards.

Stage 2: 2D Image Generation

Once the asset requirements are defined, **2D image generation** is performed using advanced AI technologies like **Nano Banana** and **ChatGPT Image**. These tools generate high-fidelity canonical views of the asset, either as a single hero image or a comprehensive **8-view input** (front, back, left, right, top, bottom, and two 45° angles). The **8-view input** significantly enhances the accuracy of the 3D reconstruction process, particularly for geometrically complex objects.

This stage ensures that the generated images capture the necessary detail for accurate 3D modeling, reducing the risk of errors in downstream processes.

Stage 3: 3D Mesh Reconstruction

The generated 2D images are then processed using **Hunyuan3D 3.1**, a state-of-the-art **3D mesh generation** engine, to create textured 3D models. These models are output in the **GLB format with PBR materials**, ensuring high visual fidelity and compatibility with industry-standard platforms.

Key features of this stage include:

- **Sculpt-Level Quality**: The reconstructed models feature high-fidelity textures and fine-grained details, essential for industrial and enterprise applications.
- **Face Count Control**: Users can specify a target face count ranging from 40,000 to 1,500,000 triangles to balance performance and detail.
- **Rapid Processing**: The 3D mesh generation takes only **8-20 seconds** on NVIDIA A100 GPUs, offering unparalleled efficiency.

By delivering highly detailed and customizable 3D models, this stage enables industries to meet their specific operational requirements.

Stage 4: Part Segmentation & Component Generation

The final stage involves **part segmentation** and **component generation** using the **PartGen 1.5** system. This system leverages AI-driven segmentation to break down the 3D model into individual components, ensuring that each part is meaningful and usable in professional contexts.

Key capabilities include:

- **Auto-Segment**: PartGen 1.5 automatically detects and segments components at a resolution of **1536^3**, a significant improvement over its predecessor's **1024^3** resolution.
- **Brush Interaction**: Users can manually refine segmentation boundaries using a paint-based brush tool, ensuring precision for critical areas.
- **Generate Parts**: The **X-Part** feature creates independent meshes for each component, making them ready for integration into broader simulations or training modules.

This stage is particularly valuable in applications such as **maintenance training**, where understanding the internal structure of equipment is essential.

Integration Options

EON 3D Objects supports two primary integration paths:

1. **Interactive Workflows**: Using **Hunyuan 3D Studio 1.2**, users can manually control segmentation boundaries and refine models in real-time. This path is ideal for high-stakes applications requiring meticulous detail.

2. **Batch Processing**: For programmatic integration, APIs such as **fal.ai** and **AIML API** enable automated processing of large asset catalogs. This path supports cost-efficient scaling, with processing costs as low as **$0.375 per generation**.

By combining cutting-edge technology with flexible integration options, **EON 3D Objects** empowers organizations to create high-quality 3D assets tailored to their needs.

SECTION 6: BENEFITS/OUTCOMES

The introduction of **EON 3D Objects** as part of EON AI Ventures' unified product portfolio offers transformative benefits for industries seeking to leverage AI-powered solutions. By addressing critical challenges such as knowledge retention, workforce readiness, and operational efficiency, this system delivers measurable outcomes across various enterprise applications.

Enhanced Productivity and Scalability

EON 3D Objects streamlines the creation of **interactive 3D assets**, enabling organizations to scale their asset catalogs efficiently. The **batch processing** capabilities, powered by **API-based automation**, allow enterprises to generate thousands of assets with minimal manual intervention. This is particularly beneficial for industries with extensive training or simulation needs, as it reduces the time and cost associated with asset production.

Key metrics:

- **$0.375 per generation** for standard 3D models.
- Processing times as low as **8-20 seconds**, ensuring rapid turnaround.

These efficiencies enable organizations to focus resources on higher-value activities while maintaining high standards of quality.

Precision and Customization

The **PartGen 1.5** system and its associated features, such as **Brush Interaction** and **Generate Parts**, allow users to achieve unparalleled precision in asset segmentation. This is critical for applications like **maintenance training** and **safety simulations**, where understanding the internal structure and functionality of equipment is essential.

The ability to customize segmentation boundaries and generate independent components ensures that assets are not only visually accurate but also functionally meaningful. This level of detail addresses common objections about the usability of AI-generated assets in high-stakes scenarios.

Improved Knowledge Retention and Workforce Readiness

By producing **high-fidelity, interactive 3D assets**, **EON 3D Objects** supports immersive training experiences that enhance knowledge retention. The **Sculpt-Level Quality** of the models ensures that trainees can explore realistic simulations, bridging the gap between theoretical knowledge and practical skills.

The system also accelerates **time-to-competency**, enabling workforces to quickly adapt to new technologies or processes. This is particularly valuable in industries facing a wave of retirements, where capturing and transferring expertise is a top priority.

Addressing Industry-Specific Challenges

EON 3D Objects is designed to meet the rigorous demands of industries such as energy, manufacturing, and aerospace. By generating **componentized, interactive 3D assets**, the system overcomes traditional limitations of AI-generated environments, such as the inability to provide meaningful internal components.

For example:

- In the energy sector, the system supports **maintenance training** by creating detailed replicas of complex machinery.
- In manufacturing, it enables **safety simulations** that prepare workers for high-risk scenarios.

These capabilities not only enhance operational safety but also reduce the likelihood of errors and downtime.

Unified Communication and Alignment

As part of EON AI Ventures' unified product portfolio, **EON 3D Objects** brings clarity and alignment across teams. Sales, product, and leadership teams now have a shared language and reference point for positioning the product, ensuring consistent communication with customers.

The system also supports strategic decision-making by providing a clear view of capabilities, gaps, and future directions. This alignment enhances the organization's ability to respond to evolving market needs and customer expectations.

Long-Term Impact

By addressing immediate operational challenges and enabling long-term scalability, **EON 3D Objects** positions enterprises for success in the AI era. The system not only bridges the gap between expertise and workforce readiness but also lays the foundation for future innovations in **3D asset generation**.

In summary, **EON 3D Objects** is more than a tool—it's a transformative solution that empowers industries to thrive in a rapidly changing landscape.

SECTION 7: CONCLUSION

EON AI Ventures has demonstrated an unwavering commitment to transforming workforce capability through a unified product portfolio that is both robust and forward-thinking. By consolidating its offerings into a clear and comprehensive framework, the company has established a strong foundation for driving innovation and addressing the evolving needs of enterprise clients. This unified approach not only enhances internal alignment but also empowers customers to leverage cutting-edge tools for creating scalable, interactive, and high-fidelity training solutions tailored to high-stakes operations.

At the heart of this transformative vision lies **EON 3D Objects**, a powerful module designed to generate **componentized, interactive 3D assets** from text prompts and reference images. Combining advanced technologies such as **Hunyuan3D-DiT**, **Hunyuan3D-Paint**, and **PartGen 1.5**, this solution delivers unparalleled levels of detail and control. Key features, including **Brush Interaction**, **8-View Input**, and **Sculpt-Level Quality**, enable subject matter experts to create precise, high-fidelity assets for critical applications such as **maintenance training**, **safety simulations**, and **technical assessments**. These capabilities directly address enterprise challenges, such as the need for accurate, interactive environments that reflect real-world complexities.

One of the standout advancements is the integration of **Hunyuan 3D Studio 1.2**, which streamlines asset creation through **interactive workflows**. This platform allows users to refine segmentation boundaries using **Brush Refinement** tools and generate **independent parts** with the **X-Part** feature, ensuring that every component is well-defined and usable in a variety of training scenarios. The ability to export **GLB files with PBR materials** further enhances the realism and functionality of the generated assets, making them ideal for high-stakes operational training.

For organizations requiring scalability and efficiency, **API-Based Automation** provides a seamless path for **batch processing** and programmatic integration into existing systems. With precise cost structures—such as **$0.375 per generation** for single-view assets and **$0.16 + $0.15 per view** for multi-view assets—enterprises can optimize their training investments without compromising on quality. The ability to handle complex geometries, supported by a resolution of **1536^3**, ensures that the final outputs meet the rigorous demands of technical training and operational readiness.

This unified portfolio not only addresses the immediate needs of enterprises but also positions EON AI Ventures as a leader in the field of AI-powered workforce transformation. By bridging the gap between **what experts know** and **what the entire workforce can do**, the company is driving measurable outcomes such as improved **time-to-competency**, enhanced **knowledge retention**, and increased **operational safety**. The inclusion of tools like **PartGen 1.5** and **X-Part** ensures that even the most intricate components are accurately represented, paving the way for more effective training and automation solutions.

EON AI Ventures' comprehensive approach to product development also fosters collaboration and alignment across teams. The unified portfolio serves as a **single source of truth**, providing sales, product, and leadership teams with a shared language and strategic reference point. This clarity reduces inefficiencies, eliminates redundancies, and enables the company to respond rapidly to market demands. For customers, this means a more coherent and credible value proposition, backed by advanced technologies and a proven track record of success.

Looking ahead, the company’s focus on future-oriented innovations ensures that its solutions will remain relevant and impactful in an ever-changing technological landscape. By leveraging platforms like **Hunyuan 3D Studio 1.2** and advanced modules such as **EON 3D Objects**, enterprises can build upon these foundations to drive further innovation and achieve their strategic goals. The scalability of features like **Batch Processing** and **API-Based Automation** ensures that organizations can adapt to increasing demands without sacrificing quality or precision.

In conclusion, EON AI Ventures has set a new standard for enterprise transformation in the AI era. The company’s unified product portfolio—anchored by cutting-edge tools like **PartGen 1.5**, **Hunyuan3D-DiT**, and **X-Part**—empowers organizations to capture the expertise of their workforce and translate it into actionable, scalable solutions. By addressing critical challenges such as the impending retirement of seasoned experts and the increasing complexity of training needs, EON AI Ventures is not just accelerating workforce readiness but also redefining what is possible in high-stakes operational environments. Stakeholders are encouraged to embrace this comprehensive framework, using it as a foundation for future growth, innovation, and collaboration.