# RADEON™ PRORENDER SIGGRAPH 2019

FAST. EASY. INCREDIBLE.

JULY 30, 2019

AMD RADEON ProRender

AUTODESK® MAYA®

IMAGE CREATED BY SERGHEI NENOV USING AMD RADEON™ PRORENDER FOR MAYA® AND IS USED WITH PERMISSION

AMD RADEON ProRender

# RENDERING IS FOR EVERYONE

## OPEN-STANDARDS RENDERING WITH RADEON™ PRORENDER

ANY GPU

ANY CPU

WINDOWS®

macOS®

LINUX®

IMAGE CREATED BY AMD USING AMD RADEON™ PRORENDER



AMD RYZEN RADEON

# RADEON™ PRORENDER IS EVERYWHERE

FAST. EASY. INCREDIBLE.

## INTEGRATED

- CINEMA 4D by MAXON
- MODO®
- New InstaLOD*
- New ACCA® ACCA SOFTWARE
- New EMOTION*
- New A.L.I.* Technologies

## PLUG-INS

- blender
- AUTODESK® 3DS MAX®
- AUTODESK® MAYA®
- UNREAL ENGINE
- USD
- ptc® Creo

*COMING SOON. IMAGE CREATED BY AMD USING AMD RADEON™ PRORENDER

AMD RADEON™ PRORENDER AT SIGGRAPH 2019

**DEVELOPER PREVIEW AVAILABLE NOW**

AMD RADEON ProRender

# THE FUTURE IS FULL SPECTRUM RENDERING

## APPLICATION SCALING FROM RASTERIZED TO REALITY

**Rasterized**

For Standard Viewport Creation

Vulkan

**Hybrid**

For Advanced Viewport Creation

Vulkan

**Biased Photorealism**

Look Development

Vulkan

**Path Traced Reality**

Final Render

OpenCL

IMAGES CREATED BY AMD USING AMD RADEON™ PRORENDER



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# IMAGE FILTER LIBRARY

Microsoft® DirectML AI-Accelerated Denoising Improves Viewport Interactivity by ~18x*

## KEY FEATURES

### AI-ACCELERATED DENOISING FOR DEVELOPERS

- Uses Microsoft® DirectML or AMD MIOpen Machine Learning Libraries
- Cross-Platform CPU and GPU Support
- Support for Windows® and Linux®

"AMD has made **great use of Microsoft's low-level machine learning API**, DirectML, to implement a **powerful and efficient Denoising filter** within AMD's Radeon ProRender graphics rendering engine."

*Kam VedBrat, Partner Group Program Manager, Microsoft*

*SEE RPS-85 IN ENDNOTES. IMAGE CREATED BY AMD USING AMD RADEON™ PRORENDER

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RADEON™

# IMAGE FILTER LIBRARY

Superior Image Quality Achieved With Microsoft® DirectML AI-Accelerated Upscaling

## KEY FEATURES

### AI-ACCELERATED UPSCALING FOR DEVELOPERS

- Uses Microsoft® DirectML or AMD MIOpen Machine Learning Libraries
- Cross-Platform CPU and GPU Support
- Support for Windows® and Linux®

IMAGES CREATED BY AMD USING AMD RADEON™ PRORENDER



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# INTEGRATION MADE EASY

## FAST AND EASY IMPLEMENTATION WITH THE RADEON™ PRORENDER DEVELOPER SUITE

"As we continue to grow our business and meet new customer demands with our products, adding photorealistic rendering capabilities to InstaLOD Studio XL was a logical next step.
With the next version of InstaLOD Studio XL, and the **partnership with AMD and its Radeon ProRender technology, we continue on our path to disrupt the industry.**"

*Manfred M. Nerurkar, CEO, InstaLOD*

"For our rendering solution, we had three primary requirements. First is that the render needs to be fast and photorealistic. Second is that the solution needed to be hardware-agnostic allowing us to reach a larger install base. Third is that we need a partner who is easy to work with. **AMD and Radeon ProRender met these needs and enabled us to deliver a great solution to the market.**"

*Shane Griffith, Senior Product Manager, MODO*

"At ACCA, we focus on Building Information Modelling solutions that simplify the workflow for our users. **That is what attracted us to Radeon ProRender. It is a powerful rendering technology, was straightforward for our engineers to implement, and easy for our customers to use.**"

*Guido Cianciulli, CEO, ACCA Software*

CREATED BY GLEN JOHNSON USING AMD RADEON™ PRORENDER FOR CINEMA 4D™ AND IS USED WITH PERMISSION

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RADEON™ PRORENDER INTEGRATION

# ACCA® EDIFICIUS

Bring Architectural Ideas to Life and Make Design Decisions With Photorealistic Renders

## KEY FEATURES

### AVAILABLE NOW IN ACCA® EDIFICIUS AIRBIM

- AI-Accelerated Denoising
- PBR Material Library Included
- 360° HDR IBL Background Library Included

IMAGE CREATED BY ACCA® SOFTWARE USING AMD RADEON™ PRORENDER FOR ACCA® EDIFICIUS AND IS USED WITH PERMISSION

ACCA SOFTWARE



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RADEON™ PRORENDER INTEGRATION

# INSTALOD® STUDIO XL

Easily Bring Optimized CAD Data to Life at the Point of Creation, No Additional Tools Needed

## KEY FEATURES

### COMING Q3 TO INSTALOD® STUDIO XL

- Single Click Photorealistic Rendering
- AI-Accelerated Denoising
- Radeon™ Image Filter Library-Based Post Processing Filters

InstaLOD

IMAGE CREATED BY INSTALOD® USING AMD RADEON™ PRORENDER FOR INSTALOD® STUDIO XL AND IS USED WITH PERMISSION

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RADEON™ PRORENDER INTEGRATION

# Z-EMOTION

Ready for the Digital Revolution for the Fashion Industry

## KEY FEATURES

### INTEGRATION PLANNED FOR 2H 2019

- Photo-Realistic Renders Applied to Physically Simulated Cloth (and Mannequins)
- Distortion-Free Layering of Clothing
- Virtual Catwalk Rendering

IMAGE CREATED BY Z-EMOTION USING AMD RADEON™ PRORENDER FOR Z-EMOTION AND IS USED WITH PERMISSION

ZEMOTION



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RADEON™ PRORENDER BLOCKCHAIN

# DISTRIBUTED CLOUD RENDERING

Send Large Rendering Jobs to the Cloud
With the Security of Blockchain

## KEY FEATURES

### A.L.I. TECHNOLOGIES BULLET RENDER FARM*

- Support for All Applications Using Radeon™ ProRender With .rpr File Outputs
- Tokenization Identity for Increased Security
- Live Rendering Capability

*COMING SOON. CREATED BY JAMES LAWLEY USING AMD RADEON™ PRORENDER FOR AUTODESK® 3DS MAX® AND IS USED WITH PERMISSION

A.L.I. Technologies

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RADEON™ PRORENDER INTEGRATION

# MAXON CINEMA 4D™

Unleash Your Creativity With Physically Accurate Production Renders

## NEW FEATURES

### COMING TO MAXON CINEMA 4D™ R21*

- Node-Based Materials and Volume Rendering
- Camera Animation Linear Motion Blur
- Updated Multi-Pass Rendering Options

CINEMA 4D by MAXON

*AVAILABLE THIS FALL. IMAGE CREATED BY YAN GE (IHDT) USING AMD RADEON™ PRORENDER FOR CINEMA 4D™ AND IS USED WITH PERMISSION

AMD RADEON ProRender

## RADEON™ PRORENDER INTEGRATION

# FOUNDRY MODO®

Creatively Explore Your Imagination With Powerful Rendering Options

### KEY FEATURES

#### AVAILABLE NOW IN FOUNDRY MODO® 13

- Hardware-Agnostic GPU-Accelerated Rendering
- AMD Denoising Technology Reduces Render Times

IMAGE CREATED BY MIKE GRIGGS USING AMD RADEON™ PRORENDER FOR MODO® AND IS USED WITH PERMISSION

MODO®

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# RADEON™ PRORENDER PLUG-IN FOR BLENDER™ 2.80

Completely Rewritten from the Ground Up for the Next Generation of Blender™

## KEY FEATURES

### PRODUCTION PLUG-IN AVAILABLE NOW

- Support for Blender™ Native Shader Nodes. Uber Shader Node for "Expert Level" Setup
- Additional Features: AI-Accelerated Denoising, Adaptive Sampling, and Hair Rendering
- Beta With Full Spectrum Rendering Coming Soon

IMAGE CREATED BY JOHANNES WILDE USING AMD RADEON™ PRORENDER FOR BLENDER™ AND IS USED WITH PERMISSION

blender

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RADEON™ PRORENDER PLUG-IN FOR

# PIXAR USD VIEWPORT

Adds Path-Traced Rendering to Applications Integrating a USD Viewport

## NEW FEATURES

### USD HYDRA RENDER DELEGATE UPDATED

- Denoising, Volumes, and Hair Support
- Support for USD 19.05
- USDZ file support

USD

IMAGE CREATED BY AMD USING AMD RADEON™ PRORENDER FOR PIXAR USD HYDRA



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# PRORENDER 2.0

Preview Release of the Next Generation of AMD's Rendering Engine Coming Soon

## KEY FEATURES

### IMPROVED RENDERING PERFORMANCE PLUS

- Out-of-Core for Heavy Geometry
- Enhanced CPU+GPU Rendering
- Flexible and Robust Shader Node System

IMAGE CREATED BY AMD USING AMD RADEON™ PRORENDER

# RADEON™ PRORENDER ROADMAP

## NEW @ SIGGRAPH 2019

- AMD Radeon™ Image Filter Library Enhancements
- AI-Accelerated Denoising Enhancements Across Platforms
- Online Developer Documentation Updates
- Preview Release of Full Spectrum Rendering
- Enhanced Interactivity Performance
- Improved Time to First Pixel
- Vertex Color Mapping

## COMING SOON

- Performance Improvements (Render and Usability)
- Deformation Motion Blur
- Production Release of Full Spectrum Rendering
- Preview Release of Radeon™ ProRender 2.0

## UPCOMING FEATURES

- Performance Improvements (Render and Usability)
- Production Release of Radeon™ ProRender 2.0
- Cloud Rendering Solution
- Thin Film Shader
- Light Baking

**Ongoing Improvements on Windows®, macOS®, & Linux®:**
**CONTINUED OPEN STANDARDS SUPPORT, IMPLEMENTING USER FEEDBACK, PLUG-IN UPDATES**

AMD RADEON™ PRORENDER ROADMAP SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

# FAST AND EASY IMPLEMENTATION

AMD RADEON ProRender

## RADEON™ PRORENDER DEVELOPER SUITE

AVAILABLE NOW AT

**www.amd.com/radeonprorenderdevelopers**

IMAGE CREATED BY YAN GE (IHDT) USING AMD RADEON™ PRORENDER FOR CINEMA 4D™ AND IS USED WITH PERMISSION



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# ENDNOTES

**RPS-85**

AMD Radeon™ ProRender AI-Accelerated Denoising using Microsoft® DirectML is up to 18 times faster at rendering an image for application viewport look development compared to rendering an image without denoising. Testing conducted by AMD labs as of July 2019 on a test system comprising of an AMD Ryzen™ 7 1700X 8-core 3.8 GHz CPU, 32 GB DDR4 RAM, Windows® 10 Pro May 2019 Update using Radeon™ Software Adrenalin 2019 Edition 19.6.3 running on a Radeon™ Pro WX 9100 graphics. The test was conducted using the AMD Internal Radeon™ ProRender viewer application. A Radeon™ ProRender "golden sample" image was rendered as a baseline image to compare the test images to. A RMSE (Root Mean Square Error) result of 12 when comparing the test output to the "golden sample" image is considered acceptable quality for application viewport look development. Using this configuration, with AI-accelerated denoising ON it takes 100 rendering iterations to get to a RMSE of 12.00 compared to the "golden sample". With denoising OFF it takes 1800 rendering iterations to get to a RMSE of 12.00 compared to the "golden sample". Rendering Time Differential: 1800/100 = 18x faster rendering. Scores are based on AMD internal lab measurements and may vary. PC manufacturers may vary configurations, yielding different results. Performance may vary based on use of latest drivers. RPS-85

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