Houdini

A DECADE OF INNOVATION
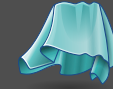
New Node GUI

For a fast and fluid experience, the new network editor has been redesigned from scratch to include custom node shapes, alignment and layout tools, 'dot' nodes and much more.

- Radial Menus
- Smooth and Polyfill
- Terrain Generation
- Biharmonic Skin Capture
- Invisible Rigs
- Muscles
- Hair & Fur Grooming
- Ocean Tools

Vellum Fast Cloth
- Vellum Multi-solver
- Vellum Grooming
- Material Based Destruction
- White Water Solver
- Retime Pyro FX
- Auto Seam for UVS
- Advanced Terrain Erosion
- New Timeline for Animation
- 3DS Max support in Engine
- GLTF Import/Export
- Denoiser Support

SOLARIS/KARMA

A suite of look development, layout and lighting tools that empower artists to create USD-based scene graphs that go from asset creation to final render. Supports Karma and third party renderers.

- Guided RBD Simulation
- SOP Level setup for Pyro FX
- New Sparse Solver
- Adaptive FLIP Fluids
- Vellum Cloth Tools
- FEM Soft Bodies
- Bend, Bevel, Sweep

PyroFX Fast Minimal Solver
- New Curve Tool with Bezier Handles
- Rounded Corners
- First Person Navigation
- Python State Info Panels
- Scene Import tools
- Groom Physics Brush
- Debris Source tool
- Vellum Fluids
- Vellum Plasticity
- Muscles
- Secondary Motion
- Mocap support
- Material X support for Karma

KINEFX | Powered by APEX

APEX is a new graph architecture for fast/dynamic rig execution using a unified motion "solver" environment with a focus on animator workflow and performance.

- Feathers
- Cloud tools
- Karma Render Stats
- Material Gallery
- Solaris Clone workflow
- Quad Remesh
- LIDAR tools
- Ripple Solver

Autorig Builder
- Otis solver for Muscles
- Shot Sculpting
- Sparse GPU Pyro solver in Copernicus
- Solaris Shot Builder
- Live Rendering
- Gaussian Splats
- Texture Baking
- Pyro 3D Recipes
- Unsubdivide
- Silhouette Extraction
- New HeightField Erosion node
- Node setups for training ML datasets
- Metahuman Plug-in

Timeline: 2016 — 15.5 — 16 — 2017 — 16.5 — 2018 — 17 — 17.5 — 2019 — 18 — 2020 — 18.5 — 2021 — 19 — 2022 — 19.5 — 2023 — 20 — 2024 — 20.5 — 2025 — 21 — 2026

VR Camera
- Delta Mush
- New Poly Tools
- Topobuild
- Locomotion Controls | Crowds
- Agent CHIPv| Crowds
- Terrain Adaptation | Crowds
- Triplanar UV Projection VOP

Bubbles
- Narrow Band FLIP
- Grooming
- Round Edge Shader
- Polyreduce
- Advanced UV Packing
- Hotkey Manager
- Game Control Support

TOPS/PDG

A procedural architecture designed to distribute tasks and manage dependencies to better scale, automate, and analyze content pipelines

- Distributed FLIP Sims
- Vellum per point constraints
- GPU accelerated volumes
- New Selection tools
- Interactive RBD Constraints
- Multi node outputs

KINEFX

A procedural character solution designed to make motion editing and retargeting easier and more flexible

- Interactive Vellum Brush
- Topotransfer
- Path Deform
- Scatter and Align
- Mask by Feature
- Network Radial Menus
- Viewport FOG effects

KARMA XPU

Karma XPU takes advantage of the GPU and CPU simultaneously to ensure full use of all computers resources. Karma XPU is the faster renderer and is production-ready for a wide range of uses.

- Curve Orientation Handles
- Tangent Fields
- Smooth Motion for Capture Data
- Dashbox
- Encino Waves for Oceans
- Shallow Water sims

COPERNICUS

A robust 2D and 3D GPU image processing framework, Copernicus can be used for tasks such as creating procedural texture maps, creating NPR/toon shading and generating Slap Comps that work with Karma renders.

- Quick Surface Materials
- Stage Manager
- Animation Layers
- AutoRig Components
- Native ML training framework
- RBD Car Rig
- New Sculpting tool