

CONFIDENTIAL / THE LOOM

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A loom gathers myriad color strands into a beautiful fabric. The only limit is imagination. What if we could weave any number of pixels and sources of pixels in the real world of our studios, just the same way—put our images anywhere, everywhere with perfect flexibility?

Loom can do this.

It is designed to assimilate pixels from an arbitrary number of sources to create a free-form mural in 3D space, distributed across any number of displays in any position or orientation. It can, quite literally, transcend physical boundaries, weaving all threads of our content within a single, virtual, coordinated space.

A NEW STRUCTURE

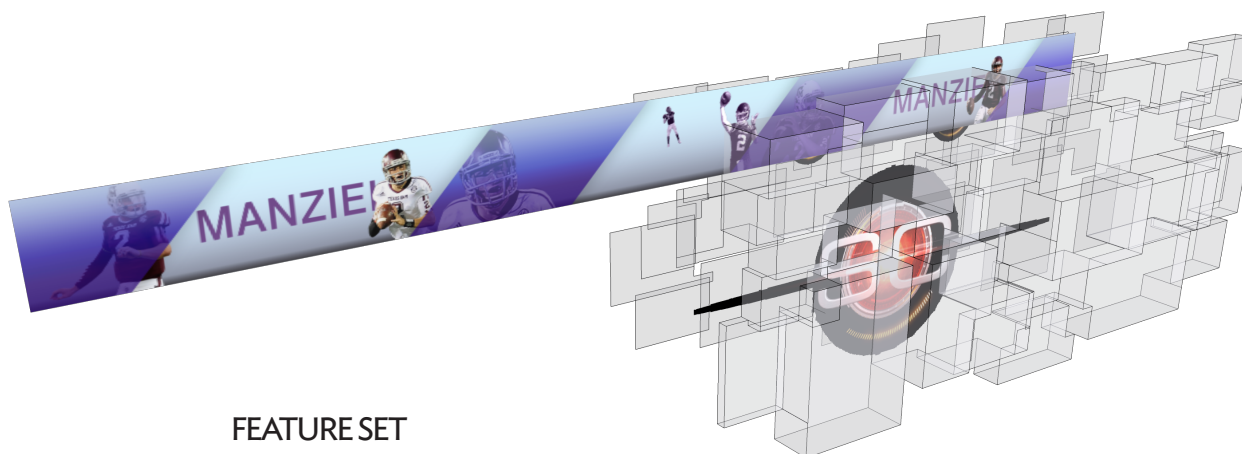
- a breakthrough unified backplane for pixels visible in physical and virtual displays
- an intelligent, high-performance renderer driving each display
- all spatially unified and aware

DESIGN

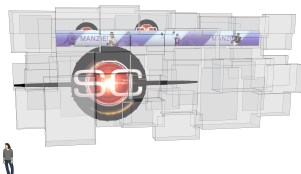
- we lean on the GPU, currently the most rapidly improving, parallelizeable, and scaleable type of computing hardware
- simple, commodity hardware controlled by a bullet-proof, industrial operating system
- elite performance through minimalism, massive parallelization and linear scalability of system components
- designed for seamless integration with our current production workflows, using cross-platform APIs for inter-communication, such as PBus, GPI, MOS, among others.
- designed for many user interfaces and provide an easy, expressive, fully cross-platform scripting capability
- Loom is designed for any and all content whether it comes from disk, from net streams, from SDI or anywhere else.
- a simple mandate: Give our productions expressive power and freedom to compose with any pixels, anywhere, in realtime.
- designed from the ground up to be linearly expandable
- standard network and sdi plant protocols, only



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FEATURE SET



- any number of displays can be controlled by the Loom, in any conceivable orientation, location, regardless of whether or not the displays are projectors, monitors, LED walls, or virtual cameras. Displays, physical or virtual, are completely decoupled from any dependencies on routing or rendering (eg. the Loom can see a Viz source of pixels just as it sees a file animation from disk or an SDI stream from brainstorm)
- Bezel-less treatment of all sources
- use content of any framerate, size or resolution at the same time, whether it be 4k or 2k or some custom format
- build with full uncompressed SDI sources as well as files from disk, animation sequences, MOV's, web streams over rtsp --- all exist on par with eachother in the Loom
- realtime spanning of an arbitrary number of physical displays
- full physical display orientation flexibility in realtime
- all 2D Transformations, realtime, any source, any physical display or combination of
- all 3D Transformations, realtime, any source, any physical display or combination of
- every pixel is spatially aware (rooted in a shared 3-space world)
- No physical monitor limitations
- Router integration
- no display is bound to specific sources
- one screen-space for all displays
- all router sources (R-OUTS) made available anywhere, anytime, in any number
- full-range alpha blending on any number of sources on any number of displays for realtime layering, keying, fades, transitions, etc.
- anywhere, anytime, full variable opacity without any unique routing requirement
- animations on sources and within sources
- capable of using 3-d gestures in space to manipulate scene content (eg. pointing at a source in a display, "grabbing" it, and dropping it in another display. Or, controlling transitions from one source to another via touch, for example.)

BULLET-PROOF INDUSTRY STANDARDS

- Linux
- OpenGL 3+

COST

- free operating system
- commodity hardware



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