# Mo-Sys StarTracker

INTRODUCTION

Mo-Sys Engineering has announced new solutions for LED virtual production with the unveiling of its high frame rate (HFR) StarTracker camera tracking system and improvements to its NearTime workflow that extended it to LED volumes.

NearTime for LED is a smart solution to solve multiple challenges when shooting in-camera visual effects (ICVFX) in an LED volume. At its most basic level it is an automated background re-rendering service for improving the quality and/or resolution of Unreal based virtual production scenes, and is used simultaneously alongside a real-time ICVFX shoot, the company explained.
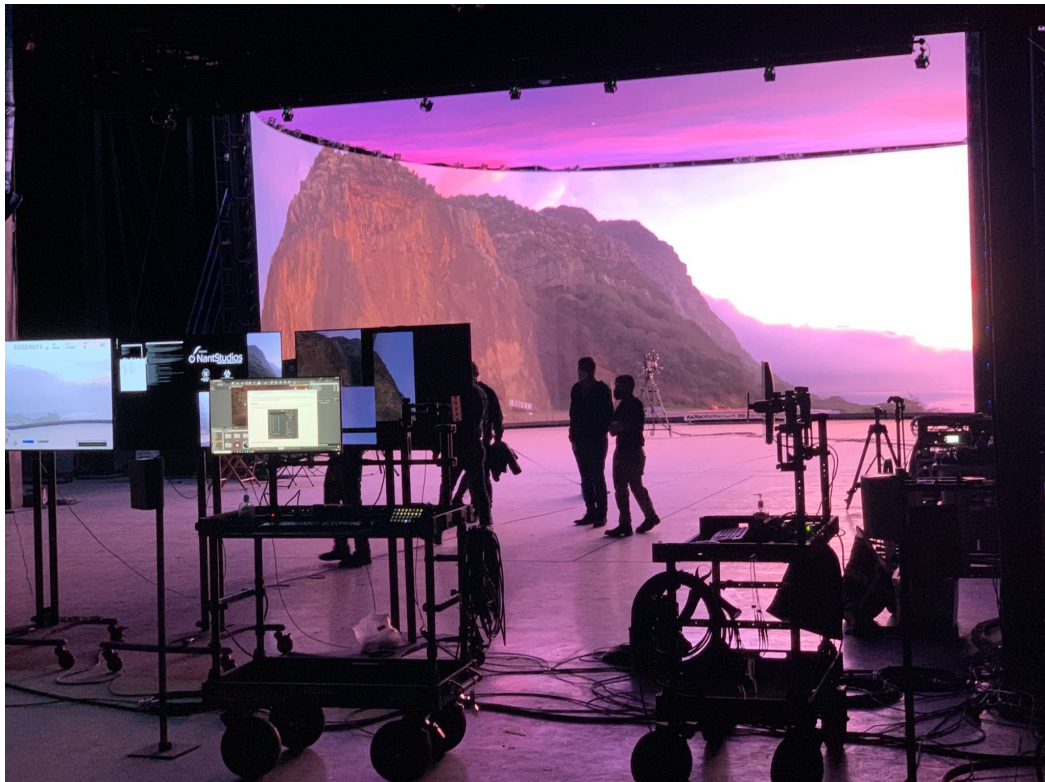
NearTime solves one of the key challenges of LED ICVFX shoots, which is balancing Unreal image quality whilst maintaining real-time frame rates. Currently every Unreal scene created for ICVFX has to be reduced in quality in order to guarantee real-time playback.

Using NearTime with an LED 'green frustrum', the same Unreal scene can be automatically re-rendered with higher quality or resolution, and this version can replace the original background Unreal scene.

Mo-Sys StarTracker

Mo-Sys has also announced a special StarTracker for LED that provides camera and lens tracking up to 240fps for slo-mo shots, as would be typically used for fight scenes in Asian action films.

image - Mo-Sys

StarTracker is an absolute system that always knows where it is that is suitable for both AR and VR. With no technician required, StarTracker could be the perfect optical tracking technology for your next project.

Features and capabilities

The system looks at "stars"; which are small, identical retro-reflective stickers. These stickers are randomly applied to the studio ceiling or the lighting grid, with no additional structure required. Varying in height, the stars do not have to conform to any pattern and are hardly visible to the naked eye. A small LED sensor, mounted on the camera, shines light on the stars. This defines the star map, which allows the StarTracker to report the position and orientation of the camera in real time to the rendering engine.

image - Mo-Sys

Freedom of movement

StarTracker offers unlimited freedom of movement and gives accurate position, rotation and lens data in real-time - this makes it ideal for Steadicam and handheld. You can rotate the studio camera 360 degrees, and move it to any position in the studio, even right to the edge, as long as enough "stars" are in sight of the tracking camera. Whereas other systems are often restricted in their tracking volume, StarTracker can track in studios between 3m to 20m in height.

image - Mo-Sys

Since the camera tracking sensor points up rather than looking into the scene, the tracking is unaffected by studio conditions, such as moving objects, set changes, lighting configurations, reflections and plain green screen environments.

No lighting restriction

As the "stars" can be applied randomly above the lighting grid, they do not restrict the studio lights in any way. Despite using optical tracking, StarTracker is unique in that it is unaffected by studio lighting. This gives you complete freedom to install and adjust lights as needed.

Cost-effective solution

StarTracker is the most cost-effective choice for unrestricted, real-time camera tracking. In fact, it is often the only viable option to track cameras in large areas. Having just one tracking sensor camera and lots of inexpensive "stars", instead of having an array of expensive tracking cameras, makes it cost-efficient. By adding

more stars to the ceiling, the tracking volume can be easily extended at a very low extra cost. You can even employ a single StarTracker system in several studios.

Absolute tracking

StarTracker does not drift, unlike mechanical encoded pedestals that work on dead-reckoning and accumulate error with distance travelled. This excludes them from almost all AR applications. Because StarTracker is always referencing itself to its star map, its position is absolute and drift-free.

Support and maintenance

StarTracker needs minimal maintenance and does not require a tracking operator. In the event of a problem, we can offer fast training and support, be it remote or on-site.

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For more information https://www.mo-sys.com/product/camera-tracking/startracker/