



# MELS Studio

## Highlights

**Location**  
Montreal, Canada

**Industry**  
Film Production

**Application**  
Virtual Production

**Partners**  
ARRI  
Epic Games  
Disguise  
Solotech

## MELS Integrates OptiTrack with Cutting-Edge Virtual Production Stage

In Montreal, Canada, MELS Studios and Postproduction features 20 studios tailored to meet the needs of film and television projects of all sizes. With state-of-the-art technical facilities and expert technical teams, MELS provides film industry partners with services that span from soundstage and equipment rental to visual effects and sound to picture post-production and distribution.

In 2020, MELS entered the fast-evolving area of virtual production with the launch of a virtual stage, powered by Unreal and equipped with an LED video wall. After more than a year of operating the virtual stage, MELS announced the completion of a high tech studio that takes their virtual production capabilities to new heights. The 10,000-square-foot virtual production stage is an integrated platform that can be customized according to each scene or movie requirement—combining agility with effectiveness and offering all the creative latitude possible.

In addition to disguise software and hardware, Unreal and other technologies, MELS's overall investment into virtual production includes an OptiTrack camera tracking system, a 3D optical tracking technology with sub-millimeter accuracy for virtual production stages and other industry applications. The OptiTrack system specified for the virtual stage at MELS includes 14 Prime<sup>x</sup> 41 cameras, which maximize precision and accuracy across 3D scenes.



In virtual production environments like MELS, the OptiTrack system measures position and orientation of the video camera within the 3D space, allowing real-time adjustments to the virtual scene to ensure parallax, according to Dr. Thierry Chevalier, OptiTrack director of sales. “Compared to purpose-built equipment for camera tracking, the OptiTrack system is a versatile solution that can be applied for many different uses, from virtual production to engineering as well as robotics, movement sciences, medical procedures and more,” he explained.

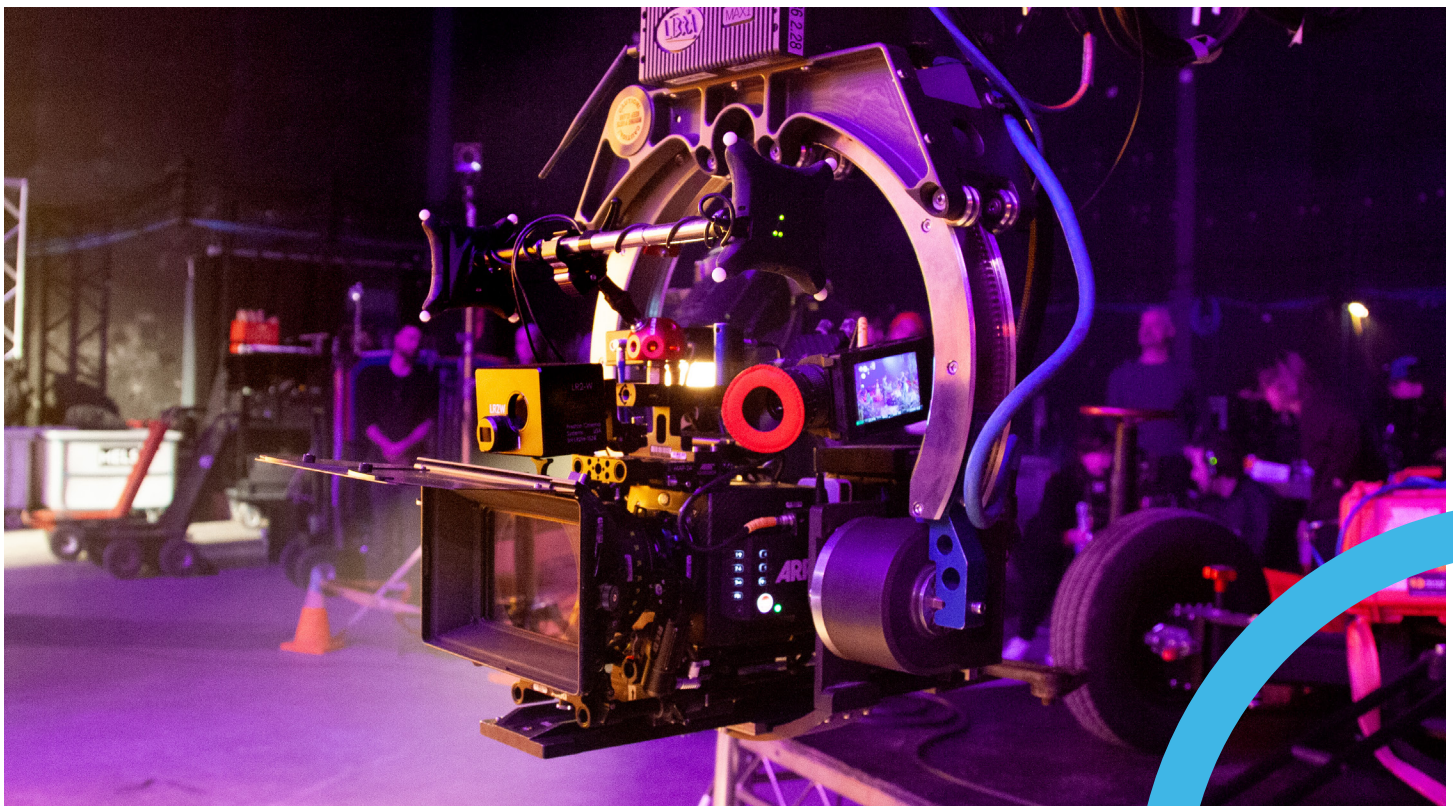
Richard Cormier, executive producer of Virtual Production at MELS, said the studio committed to OptiTrack after evaluating all available options. “We invested heavily in our proof of concept which involved purchasing an OptiTrack system, and following a year of research and development, we doubled down on OptiTrack when we decided to add the larger infrastructure,” Cormier said.

## Simplifying the Set-Up

The Brain Bar at MELS—the experts, artists and technical gurus who oversee and operate all the virtual production equipment—call their new virtual stage a “playground” for the limitless potential it offers to create, explore and imagine. But getting to that point meant first navigating the broad array of complexities inherent with building a fully controllable virtual world, including syncing the different technological elements that make it work.

“Creating a virtual production volume presents many challenges that we had to prepare for in order to realize the full technological potential of our playground,” said Nicolas Fournier, technical director of Virtual Imagery at MELS. “Of course, we are always looking to simplify the equation from a solid and proven foundation. We want to ensure full stability of our virtual volume.”

To this point, Fournier emphasized the connection between the film camera and the camera tracking system. “It is of paramount importance and the basis for everything that follows,” he said. “In this sense, the choice of OptiTrack was obvious—it gives us a system that is universal, precise, flexible and monitor-controllable. We can use it to place digital props and characters in relation to the 3D set. The flexibility of the system gives creative departments full freedom of decision. For example, during a movie shoot, main camera movements, lighting and various equipment often obstructs the tracking cameras. With OptiTrack, we can reposition and re-calibrate the cameras in a very short time and adapt to any last minute situation.”







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And, despite the complexity of the tracking operation “under the hood,” Fournier characterizes the OptiTrack systems as relatively simple to use and calibrate for achieving optimal results in all kinds of shoots. “The ability to monitor the system in real-time makes it so much easier for us to detect bugs and dead zones, allowing us to intervene at the decisive moment, on the spot and all the time.”

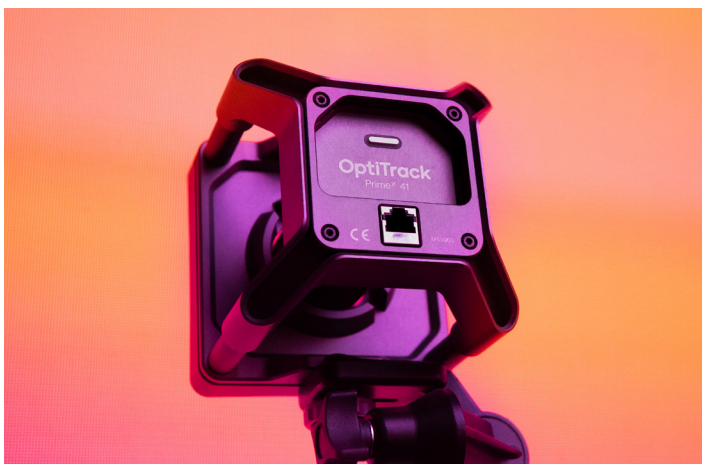
Simon Girard, chief tracking operator at MELS, said the predictability of the tracking system—provided by OptiTrack’s Motive software—enables them to visualize the physical limits of the tracking area and adjust it as needed.

**“By knowing the limitations of the volume, we can anticipate issues ahead of time and communicate it to the team.”**

**Simon Girard** — Chief Tracking Operator, MELS Studios

This information is especially useful, Girard noted, when working with people who are not experienced with mocap [motion capture] concepts. “You can pass on what they need to know to avoid obstructing the camera’s mocap.”

The OptiTrack system also provides a way to manage issues of interference. “On a virtual production shoot, you have to deal with the classic cinema tools that other people use such as huge lights that project a phenomenal amount of infrared,” Girard said. “To address this, OptiTrack’s active markers have a unique luminous pulse for identifying every point and to differentiate them from each other, including from interferences.”





# A Silent Partner

Developing a virtual stage is a project that involves merging several different components and technologies that not only must work perfectly, but also perfectly together. Equally important, the combined suite of virtual production tools needs to be usable in a way so as not to be a distraction to the artistry of directors, actors and others who are integral to the storytelling process on set. In a perfect scenario, the technologies should operate flawlessly in the background—quietly integrating with the filmmaker’s trusted workflows.

In this regard, the OptiTrack system is like a silent partner, allowing filmmakers to focus on the creative aspects of filmmaking and not the technology that enables it, Dr. Chevalier said. “With a motion tracking system that is seamless, easy to use and streamlined, filmmakers can be as nimble as they’d like because the system is in no way a limiting factor,” he said. “When correctly configured, OptiTrack technologies are unnoticeable. The focus is never on the system but what you can do with the system.”

Cormier compared the OptiTrack system to a network firewall. “You don’t really care or think about your firewall, but that’s what saves your company every day,” he said. “So, in that sense, OptiTrack provides peace of mind. We have a lot invested into equipment, technologies and a massive infrastructure, and the one thing you want to know is that it’s not going to fail you. When it comes time to shoot and create magic, customers know they can rely on the OptiTrack system.”

Since launching its initial virtual stage, MELS has hosted a variety of virtual production projects that include feature films like *Transformers: Rise of the Beasts*, *Artette* and *Beau Is Afraid* starring Joaquin Phoenix; television series such as *The Moodys*; commercials for Corona, Nissan and Loto-Québec; as well as several music videos.



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**Thierry Chevalier** — Director of Sales, OptiTrack