



RAI - Radiotelevisione Italiana

AUGMENTED REALITY AT THE SUMMER GAMES IN RIO

Summer Games are essential in any broadcasters' agenda, as they are followed by millions of viewers all around the world, for which all major channels invest on large and complex installations to guarantee the best coverage.

The 2016 Summer Games in Rio de Janeiro were no exception, and RAI, Radiotelevisione Italiana, sent over a team of professionals backed up by the latest technology available to create a stunning visual experience for their viewers. To be the heart of this installation RAI chose Brainstorm's

eStudio, the industry's fastest 3D graphics and virtual studio engine.

Impressing viewers is a real challenge today, and following the resounding success of the 'The Voice' program based on the Brainstorm eStudio virtual studio application together

with FOR-A and other products, RAI thought that the Summer Games in Rio de Janeiro would be an excellent opportunity to enhance their sports programming. "The objective was to provide our viewers with the best, visually engaging and exciting live content from the Games, enhancing it with Augmented Reality content, for which we built on the possibilities that Brainstorm and FOR-A proved they can deliver." says Davide Meda, RAI's Senior Graphics Producer, and explains that "3D informational graphics are becoming an increasingly requested and impactful asset. For Rio 2016, RAI decided to take advantage of the platforms available for Athletics and Swimming and enrich them with real-time 3D custom graphics".



The setup RAI prepared on site included two virtual sets, one of them with 2 cameras and a crane, and the second with two cameras on pedestals. All cameras were GVG LDX HD with Fujinon HD optics connected to individual FOR-A workstations with MBP-1244 + MBP-12CK chroma keyer boards mounted on Cartoni Master MK2 heads Tecnopoint-sensorized.

Brainstorm is a pioneer company in the application of camera tracking to real-time 3D virtual sets, and today eStudio interfaces with practically all current tracking systems. This makes the integration with any production hardware an out-of-the-box feature, so each workstation was equipped with a Brainstorm eStudio license for graphics and virtual set creation. The feeds coming from the cameras, including a sensorized Tecnopoint Primo crane, were fed into the respective workstations which then used the eStudio software for real-time graphics insertion and virtual studio management. The eStudio used the high quality FOR-A chroma keyer MBP-12CK to achieve realistic results on the Augmented Reality shots.

The workstations received video feeds from the studio cameras plus external live input from cameras located at the Olympic Stadium and the swimming pool at the Olympic Aquatics Stadium in Barra da Tijuca respectively. In practice, the clean signals of the cameras at the stadiums were fed into a dedicated workstation where it was possible to switch between the two locations and recall the associated tracking data and the 3D graphics of the pool or stadium to provide the control rooms with the signal from the cameras with

augmented reality graphics inserted. The compensation of the delays was already calibrated by the MBP card and eStudio software.

Brainstorm's eStudio is a highly flexible tool that gives the operator access to all the possibilities and parameters available and enables the easy drag-and-drop creation of customized interfaces for simple

"eStudio allowed us, thanks to a streamlined and highly reliable system, to customize real-time 3D graphics in a few quick steps with a yield of stunning high-end graphics."

and intuitive control. All the tools are there, but only those required are visible, and for the Games real-time graphics were customized quickly and in a simple way by an operator via a purpose-built eStudio panel.

The eStudio fully responded to all the technical and budgetary requirements,

and culminated in an excellent performance and compactness which proved essential when preparing such remote setup. The wide range of customization and modularity of the software allowed RAI to leverage eStudio both for virtual sets and Augmented Reality. And the ability to remotely control the animation effects of the 3D graphics was a real plus.

RAI was able to create an ever increasing number of complex and impressive graphics, animations and other content thanks to the power of eStudio, which greatly enhances the possibilities of using real-time 3D and Augmented Reality graphics in any kind of event, merging them into virtual studios with live talents interacting with the graphics in a seamless manner. And, on top of that, RAI valued the reliability of the workstations combined with the stability and power of the software working in a high pressure broadcast environment. Designers appreciated the ease of use of the system, which allowed them to quickly become familiar with the eStudio's high-end toolset, rapidly gaining a confidence that allowed them to maximise their creativity and even add final design tweaks whilst on-air.

