



TVE, Televisión Española

INFINITY SET EMPOWERING CRUCIAL ELECTIONS COVERAGE

For its 60th anniversary in 2016 TVE started a project to further develop and enhance the outcome of the virtual set technology to bring in live Augmented Reality, Projection Mapping and Virtual tele-transportation.

RTVE (Radio Televisión Española) is the state's public broadcaster in Spain. Founded in 1956, TVE (Televisión Española) has been the broadcaster of reference in Spain especially because of its News programs, even after the arrival of the private channels in 1990, not only for its public service but also for

the diversity of contents, creativity applied on the programs and advanced technology used.

TVE has been using Chroma keying technology in several programs since the early 70's and extensively used virtual set technology since 2000 both on regular shows and for

special News, Sports and Election Nights specials, created in their purpose-built virtual scenarios of Madrid and Barcelona, all powered by Brainstorm.

Late in 2015 TVE decided to further develop its long-lasting relationship with Brainstorm to explore new ways to push the limits of the most recent virtual technology available to create the most visually compelling output. TVE also required to use the same hardware available at their premises' virtual studios. This decision also required the use of the latest version of Brainstorm's virtual set and 3D graphics solution InfinitySet, powered by the eStudio render engine, which included several features that perfectly matched TVE's



requirements. TVE and Brainstorm worked together to further develop Brainstorm's patented TrackFree technology to achieve the result the broadcaster required.

One of the first outcomes of this development was the decision to use the InfinitySet's internal Chroma Keyer instead of the external one available at the studio, as it produced a similar result and simplifies the setup. TVE finally decided to include the following features for the 2016 Elections coverage:

- Immersive Reality data-driven graphics over live characters.
- Augmented Reality and mapping

simulation over an outdoor live signal using a sensorized crane, which transmitted the tracking data to Brainstorm's Infinity Set.

- Real-time inclusion of a live character over a pre-recorded video signal of the Parliament.

This meant that the live (or pre-recorded) video feeds, the talents recorded in studio both in real and chroma stages, and the data-driven graphics must be, always, perfectly rendered together matching movements, camera focus and perspective, to ensure the accurate realism of the combined output. Using InfinitySet, TVE operators

combined in real-time the camera's tracking data, the chroma feed of the talent, the background video signal with its tracking, and render the combination of those with the Augmented Reality data-driven graphics, also created in real-time and applied within the composition. Graphics were rendered out from XML data coming from the Official Elections site with real-time updating and refreshing.

InfinitySet allowed to digitally create realistic shadows and reflections over 3D surfaces, include volumetric simulations, add rotoscoping effects and live playout of graphics using its HandTracking feature, which allows for the triggering of events just by the movement of the bare hands.

"The secret of this project is that it doesn't seem a virtual system at all because of the seamless integration of all the elements, both real and synthetic, which makes all the participants proud of the result" says Vicente Gil-Dávila, TVE's News Production Manager.

WORKFLOW DIAGRAM

