

## DESIGN OF COMPLEX 3D OBJECTS OF A VIRTUAL STUDIO FOR MODERN TELEVISION BROADCAST

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**Annotation:** A brief description of VS is presented regarding both the equipment needed and the issues related to the correct matching of real foreground with virtual background. Given this scenario, an important role is covered by the camera supporting structure that allows a more correct execution of the standard filmmaking shots such as: medium shot, close-up, low/high angle shot and tracking shot. The work shows how the structure design has been carried through the Axiomatic Design focusing on how a coupled and a redundant design have been identified and solved. The approach has led to a significantly different design from classic camera support structures such as Cranes and Jibs and advanced Motion Control Rigs used in cinematography. The complexity reduction compared to Motion Control Rigs makes the designed structure suitable for a low budget VS set up.

**Key words:** COMplexity reduction, Axiomatic Design focusing, redundant design

### Introduction

Modern news moves at the speed of a tweet and local outlets are expected to move with it. Local stations must compete with each other and of late with digital media sources for viewership.

They are expected to produce polished, sophisticated looking shows despite often working from small studios with minimal budgets and small crews. Additionally, local news stations need ways to brand and differentiate themselves from their competition.

These are just some of the reasons why virtual studios are becoming a popular solution for local news production.

### What are the key components for successfully using virtual studio for local news?

- VS allows designers to experiment with bolder and more impactful set designs, bringing a higher end look to local news.
- Keying and lighting are essential to achieving a seamless look and marrying talent and graphics together, especially in smaller studios.
- Camera blocking and movement are important in highlighting the features of your VS set.
- Today, virtual studios are an emerging technology that is quickly being adopted across the industry. It has the potential to radically change the way local news production is done. The possibilities are endless.
- **What are the ways local news can integrate virtual studio solutions?**
- Local stations and affiliates are retooling existing stages into full virtual studios by replacing hard sets with green screen cycs, including the floors. These sets are usually configured with three walls and utilize real news desks and furniture specifically designed for green screen environments.
- The 'Hybrid Studio' concept is a good way to use VS technology while still maintaining many of the features of a hard set. These studios combine green screen areas with hard set elements and can be a cheap and flexible solution. Current set design aesthetics often

require big ticket items such as LED walls to display large graphics. This look can be easily mimicked using combinations of hard sets and green screens at a much lower cost.

- VS set extensions can be used to create a big look on a small budget by extending a real set to make it look larger. These extensions can be used for a variety of storytelling scenarios and are particularly useful in turning a small weather corner into an impressive looking “weather center”.

Virtual reality as we know it today actually has a long history. With origins dating back decades, we see it used for practical applications like NASA flight simulations and for entertainment like the sensational.

But never in history has virtual reality ever been so achievable—and profitable. Recent tech advances in VR have many predicting it will eventually permeate all industries. Evangelists suggest its most beneficial applications to be:

- educational aids for students
- physical therapy
- psychological treatment, like acclimating people with PTSD
- cancer research
- image modeling for architects (or rearranging your living room)
- employee training
- empathy training, like the gender-swapping in *The Machine to Be Another*
- a new artistic medium
- remote communication
- virtual tourism
- archeological research
- a more immersive website, potentially changing the way we browse the web

There are also the documented benefits on personal growth and introspection—yes, you read that right. A Stanford study showed that users who saw themselves aged 70 years in a VR mirror later set aside “significantly more money” for retirement than the control group. A separate Stanford-University of Georgia study showed that users subjected to a VR lumberjack simulation used 20% less paper products afterwards.