

TECHNOLOGY EMPOWERING
CREATIVITY

LUX MACHINA

The History & Dynamic Range of ICVFX
David Gray

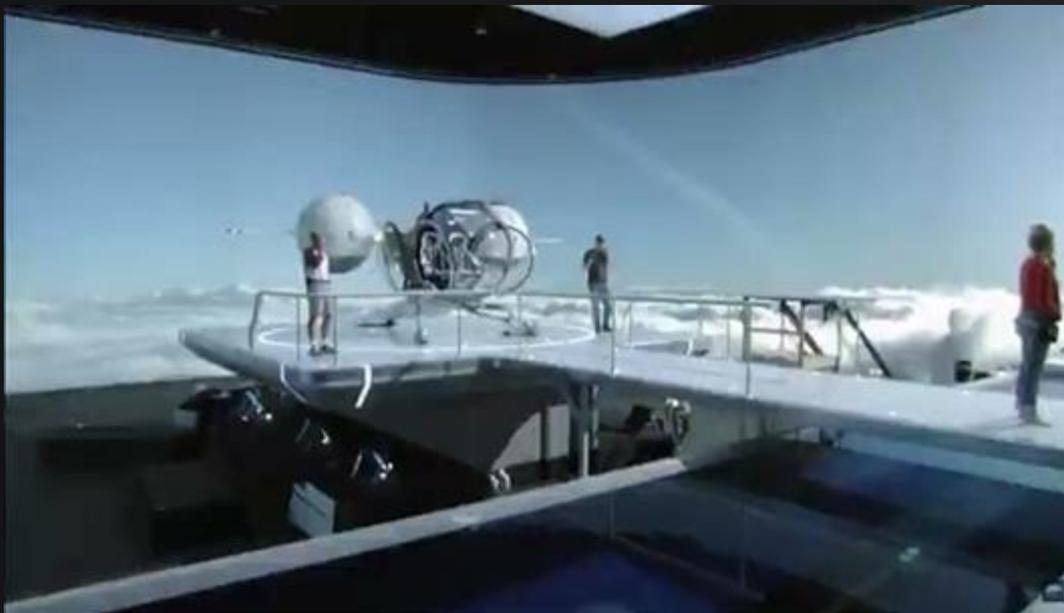


A blue-tinted photograph of a film set. In the foreground, a person is seen from behind, wearing a dark jacket and carrying equipment. To the left, another person is visible, possibly a child, in a light-colored outfit. The background is filled with various pieces of equipment, including what looks like a camera on a dolly, and a person in a dark jacket is visible in the distance. The overall scene is dimly lit, with the blue tint giving it a cinematic and somewhat mysterious feel.

What is Virtual Production?

IN-CAMERA VFX

ICVFX (In-Camera Visual Effects) is a technique where visual effects are captured “in-camera” instead of in the post-production process. The main benefit of ICVFX vs. traditional green screen is the realistic lighting and reflections that the content emits onto the subject.



Translight



Glass Painting



Rear Projection





History





Car Process

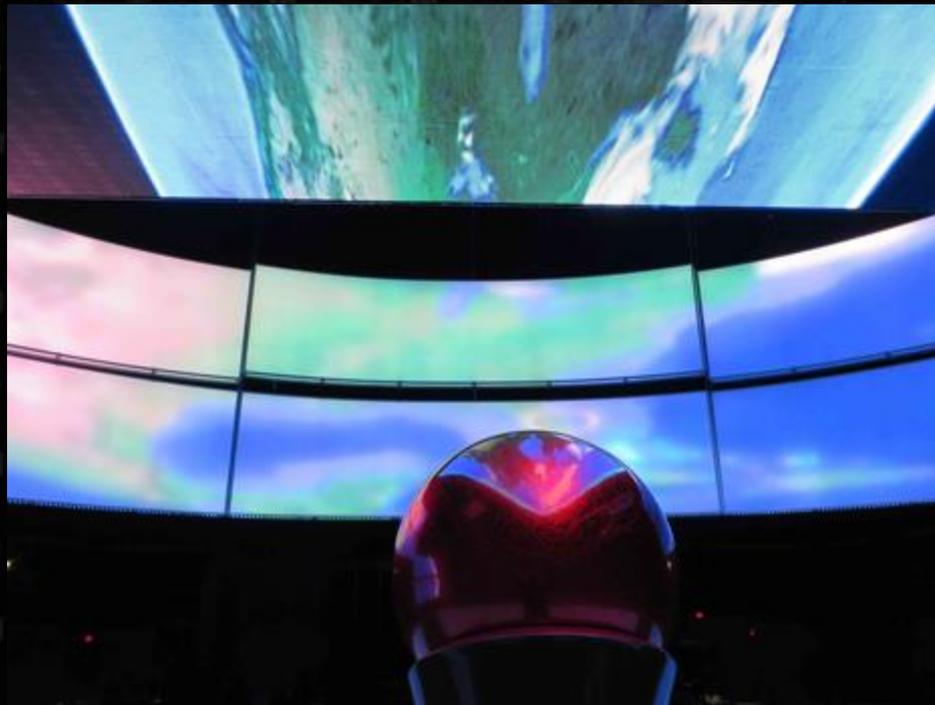


Car Process

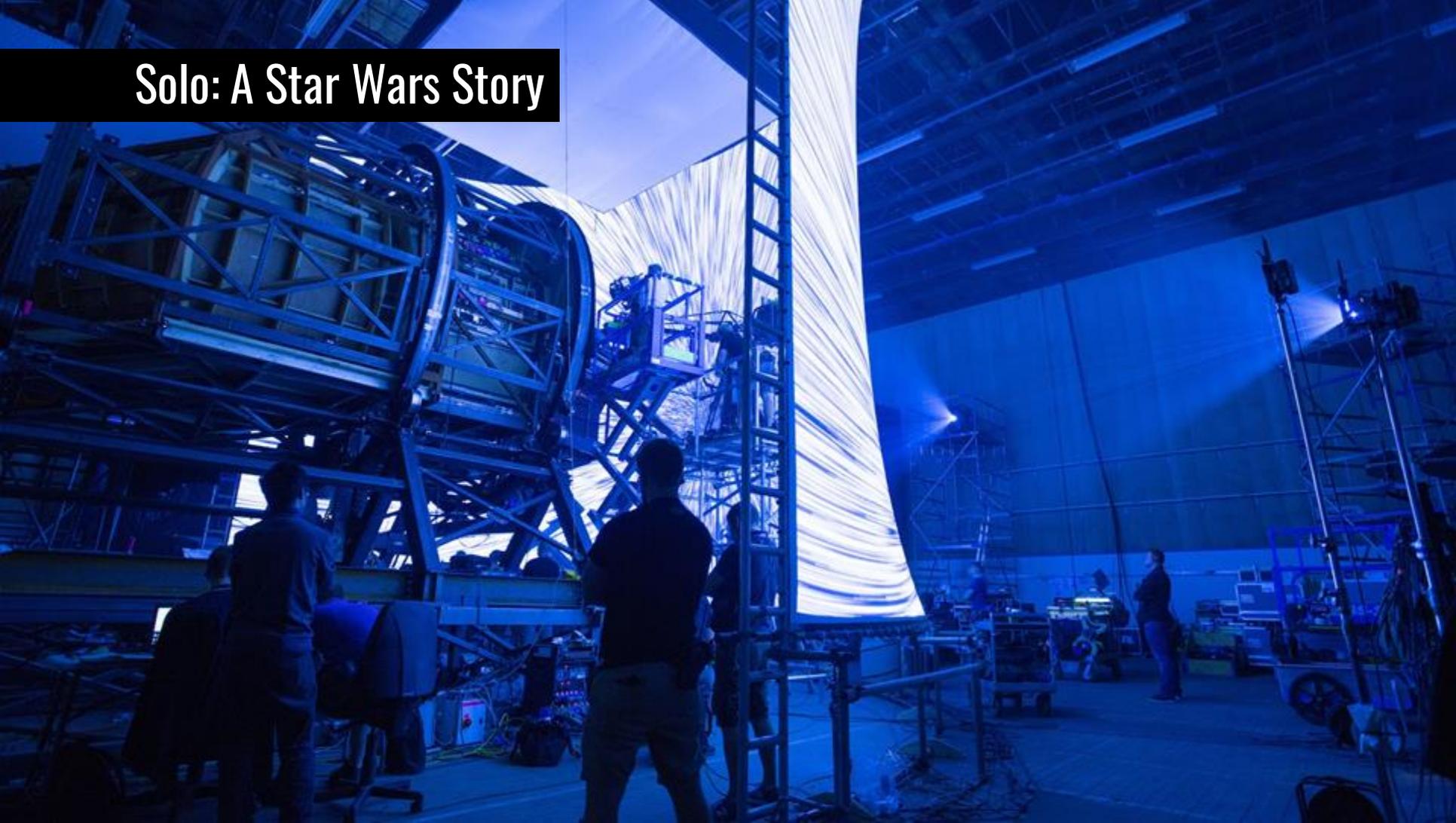


Oblivion

Interactive Lighting



Solo: A Star Wars Story



Solo: A Star Wars Story

ICVFX TECHNIQUES



Realistic ICVFX can be achieved in a variety of ways which can be split into 3 categories: 2D, 2.5D, and 3D. There are reasons for using each type depending on the shot. It is important to remember that all ICVFX solutions are / should be bespoke solutions and the amount of resources needed for each approach is completely dependent on the specifics of the project. Some of the scenarios in which you could use these approaches are:

Car / Vehicle Process

Distant Exteriors

Backgrounds with Parallax

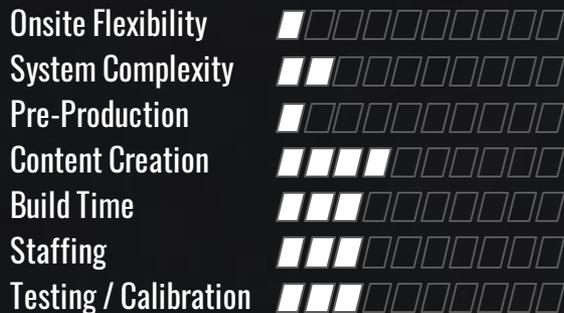
Building Exteriors / Digital Translight

Set Extension

Digital Environments Integrated w/ Physical Set Pieces



2D PLAYBACK



Least complex

Can be captured or CG shots

Can use projection or LED

No parallax effect

Limited on-site adjustments



Red Notice



The Irishman



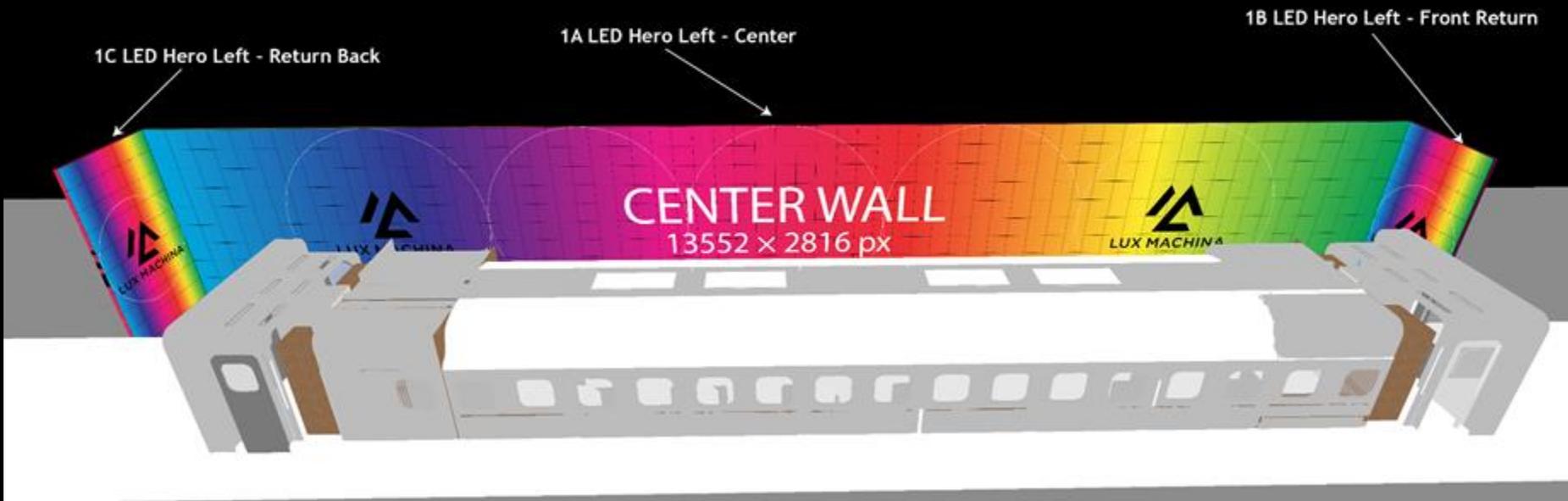
Solo



Game Engines vs. Media Servers



Case Study: Bullet Train - 2D





2.5D REAL-TIME

Onsite Flexibility	██████□□□□□□
System Complexity	██████████□□□□
Pre-Production	██████□□□□□□
Content Creation	██████████□□□□
Build Time	██████□□□□□□
Staffing	██████████□□□□
Testing / Calibration	██████□□□□□□

Parallax effect achievable, allowing for camera movement in shots

2D assets are used to create 3D effect, requires some VAD artist work

Is a combo of layered 2D and 3D assets, or only layered 2D assets

Can use same media servers that are used for 2D playback

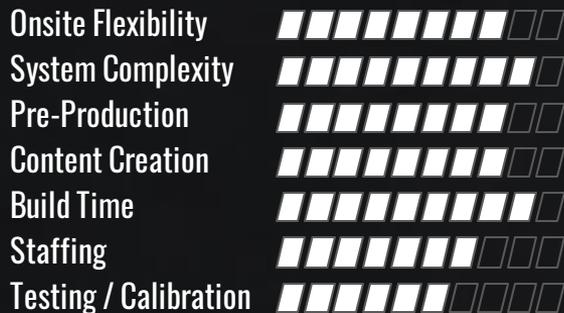
Requires camera tracking system



Shazam 2



3D REAL-TIME



Fully flexible real-time environments

Virtual Art Department and more pre-production planning required

Most resource heavy solution

Requires game-engine real-time playback

Requires camera tracking system



The Mandalorian



House of the Dragon



The Mandalorian

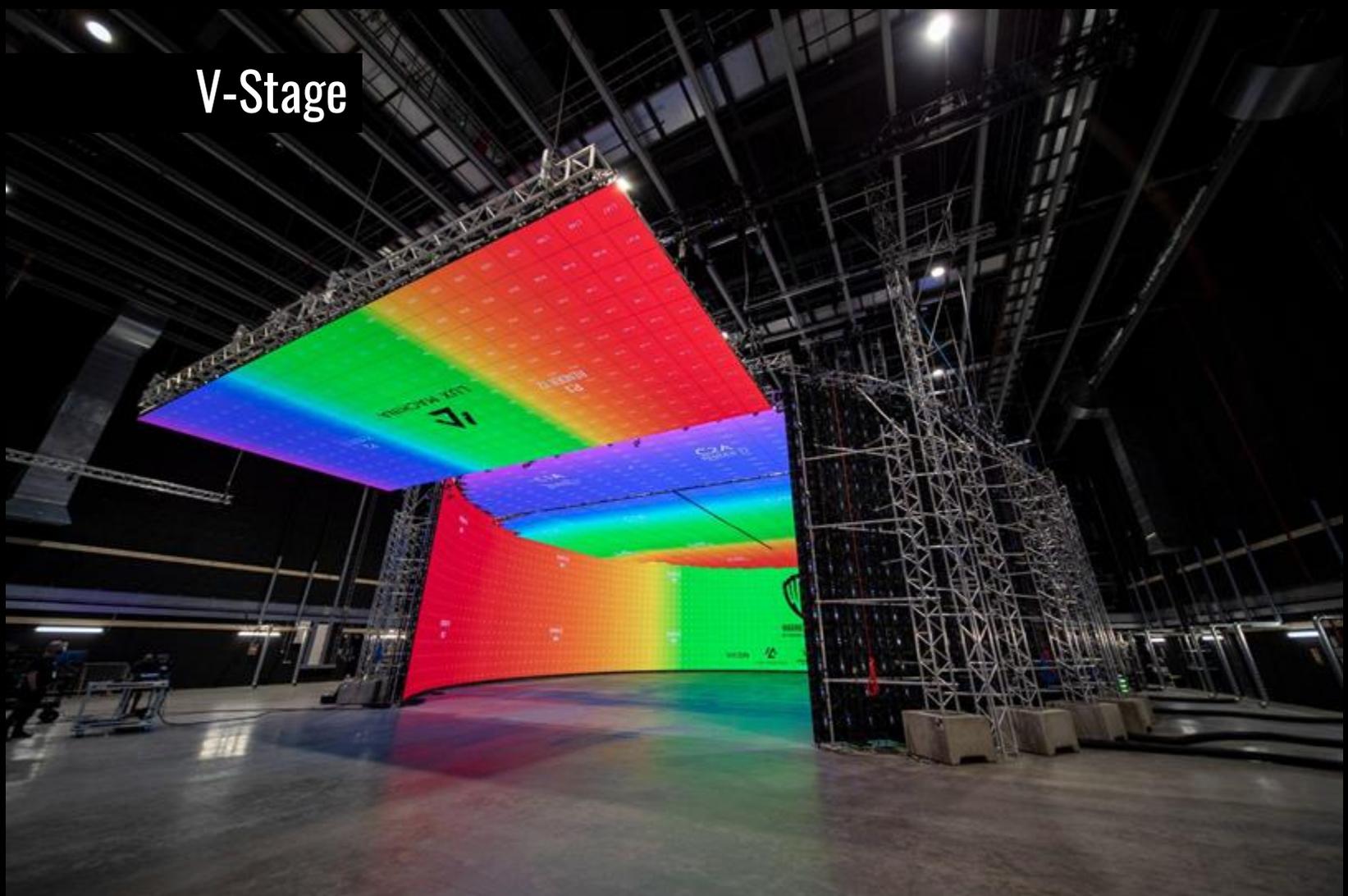


The Mandalorian

V-Stage



V-Stage



House of the Dragon



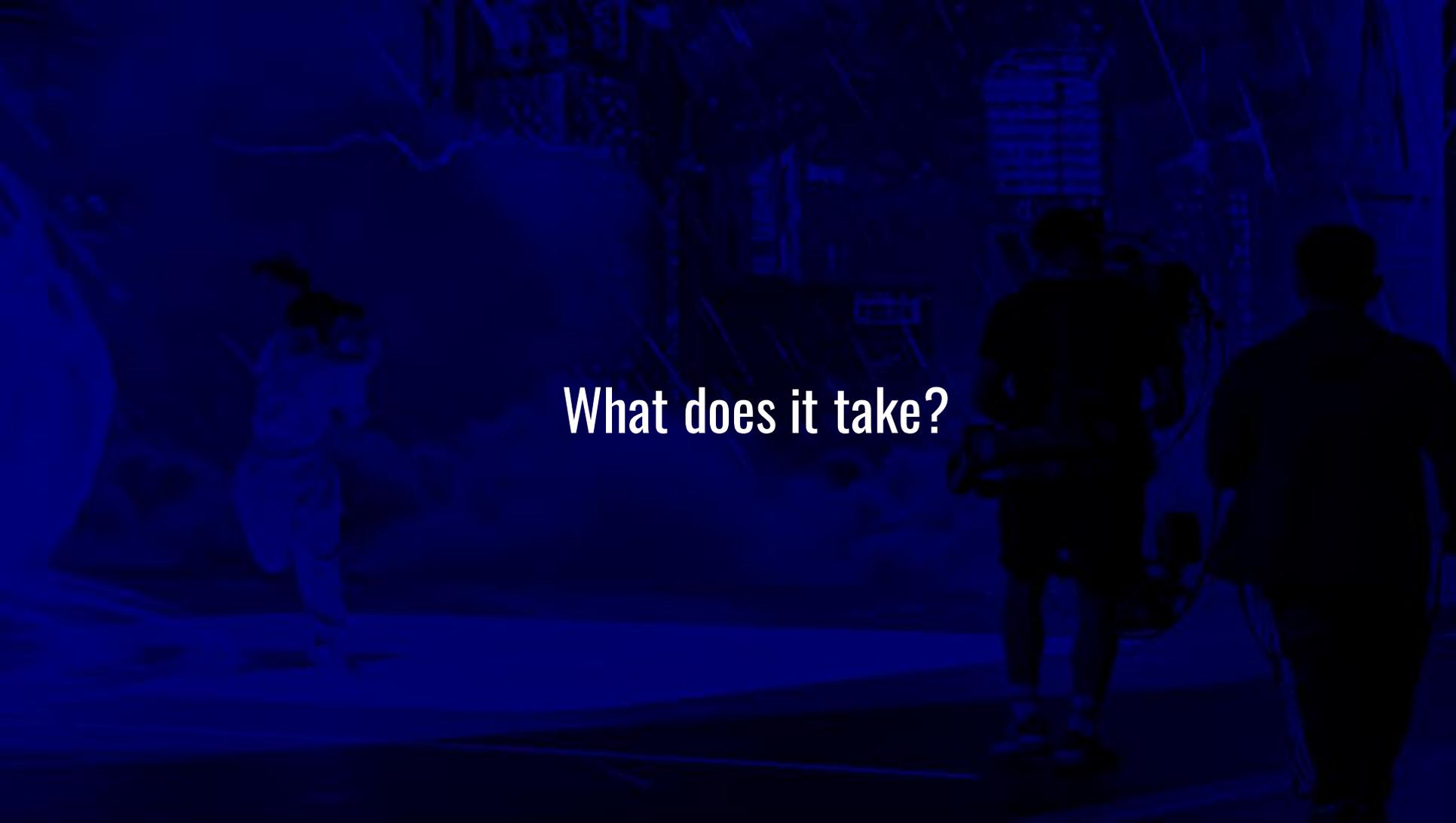


HBO

Worlds 2020



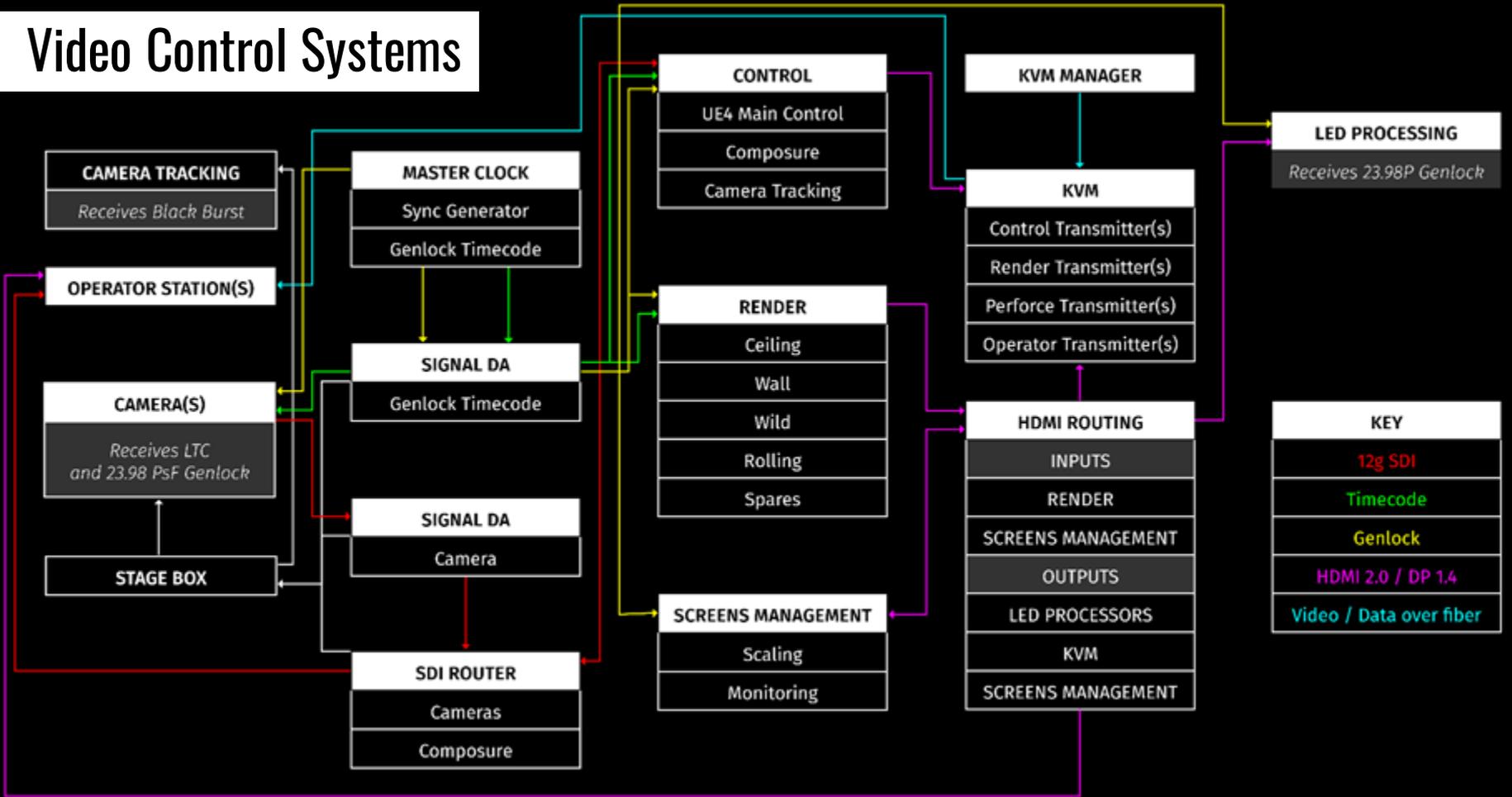
Worlds 2020

A blue-tinted photograph of a busy street scene. In the foreground, a person is walking away from the camera on the right, carrying a bag. To their left, another person is walking towards the camera. In the background, there are several people walking and buildings. The text "What does it take?" is overlaid in the center of the image.

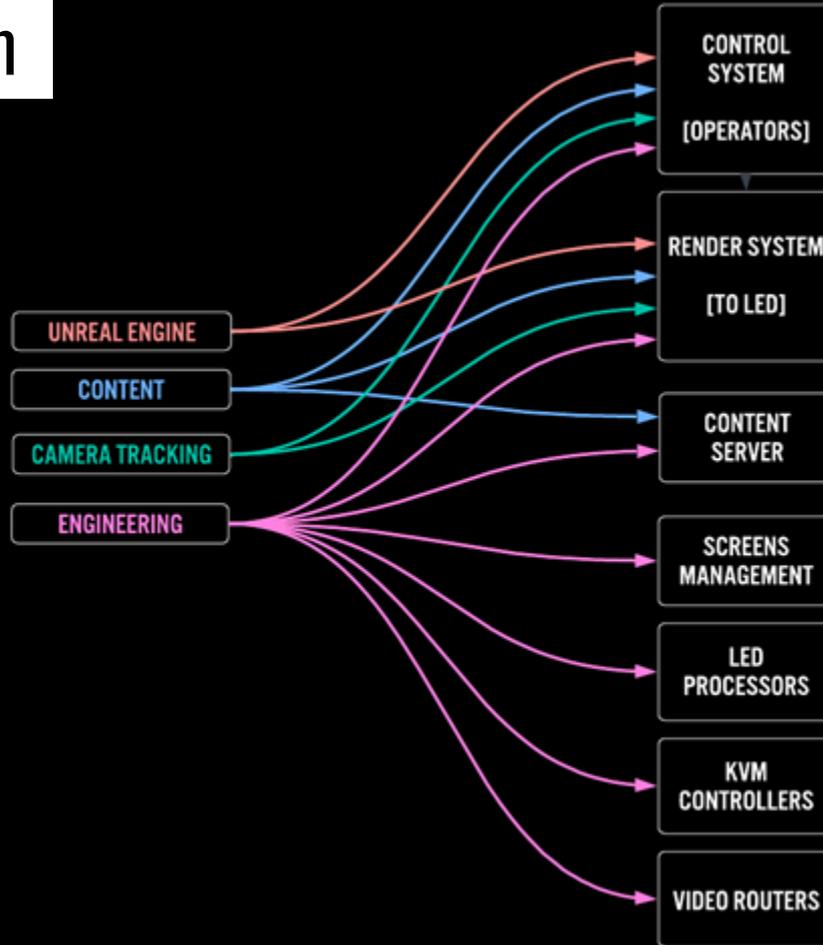
What does it take?

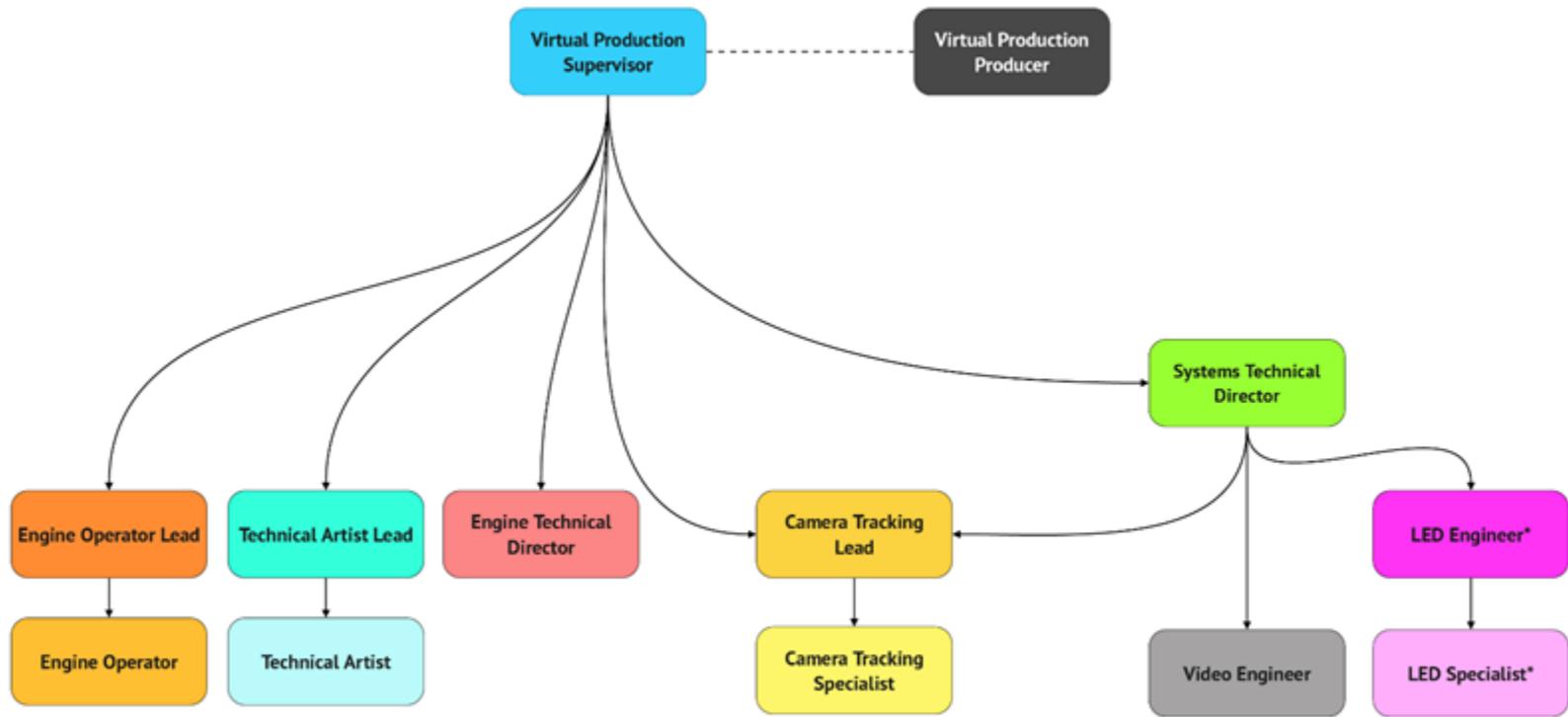


Video Control Systems

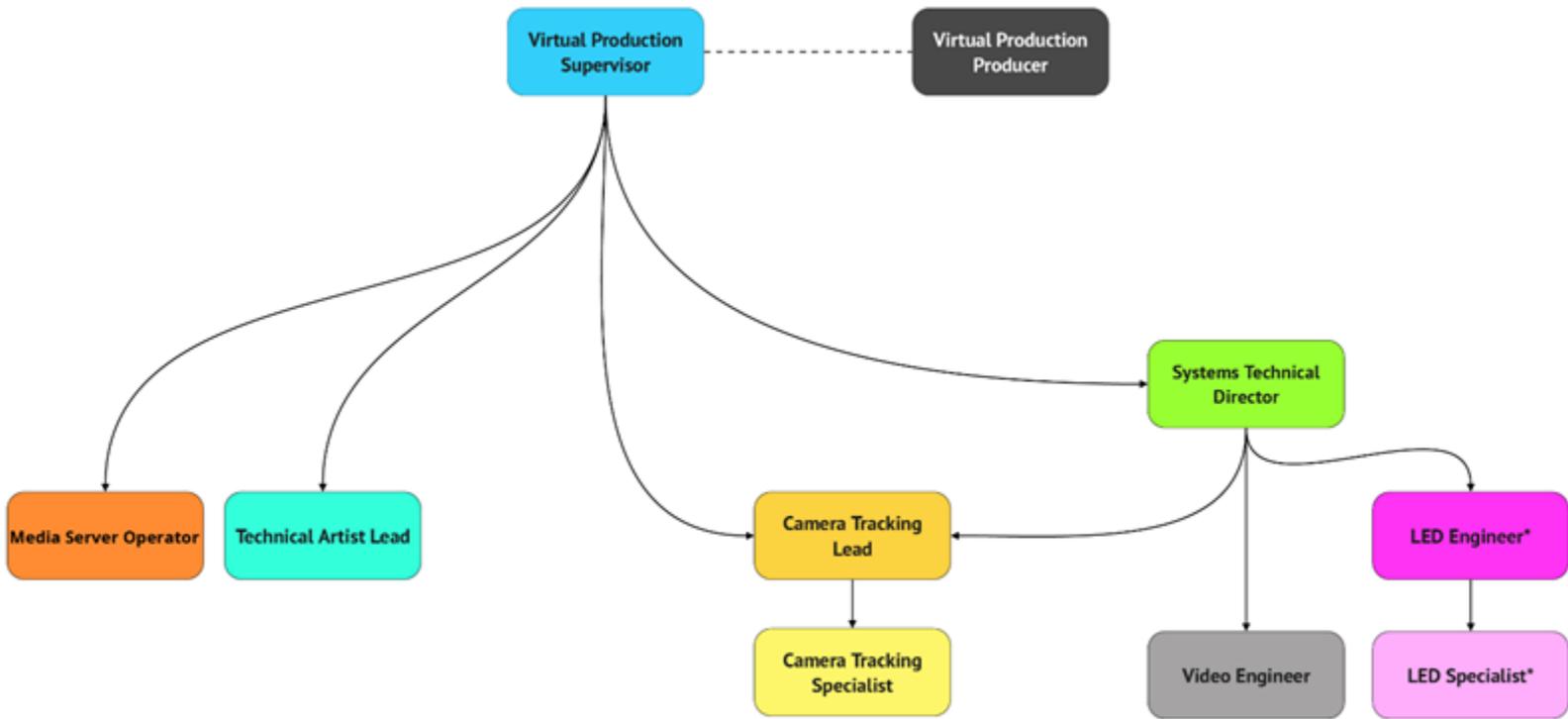


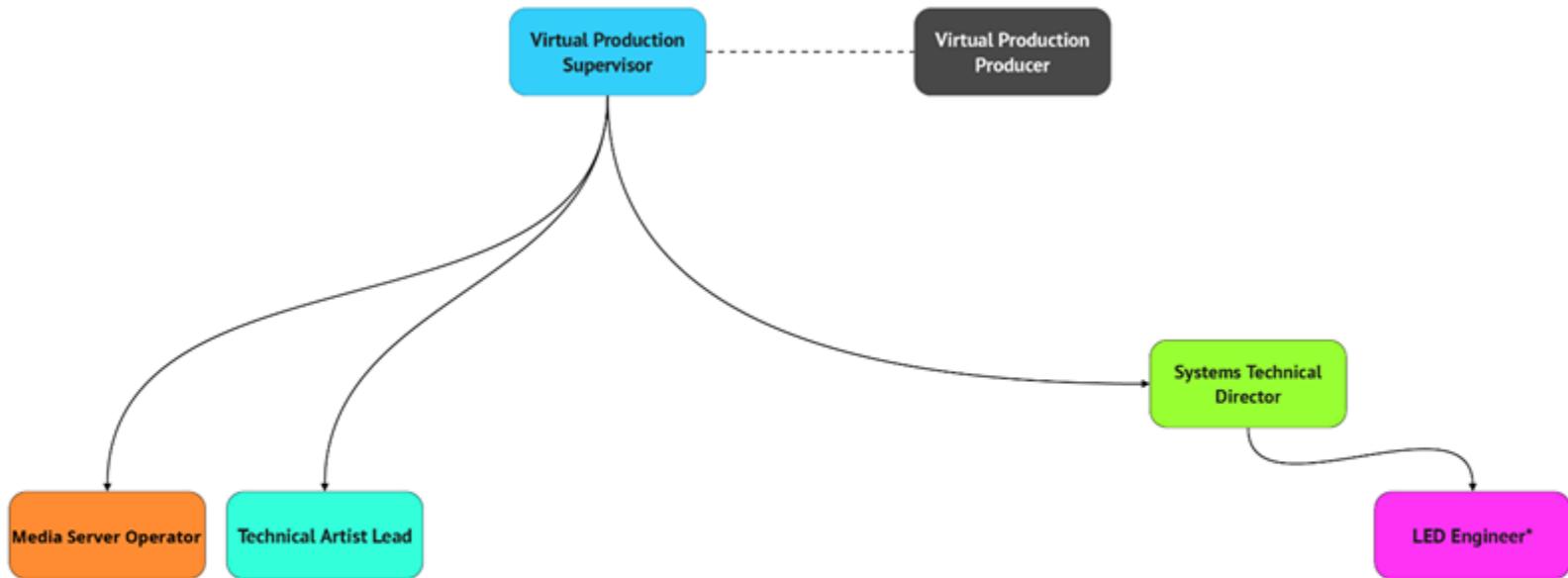
Network Diagram

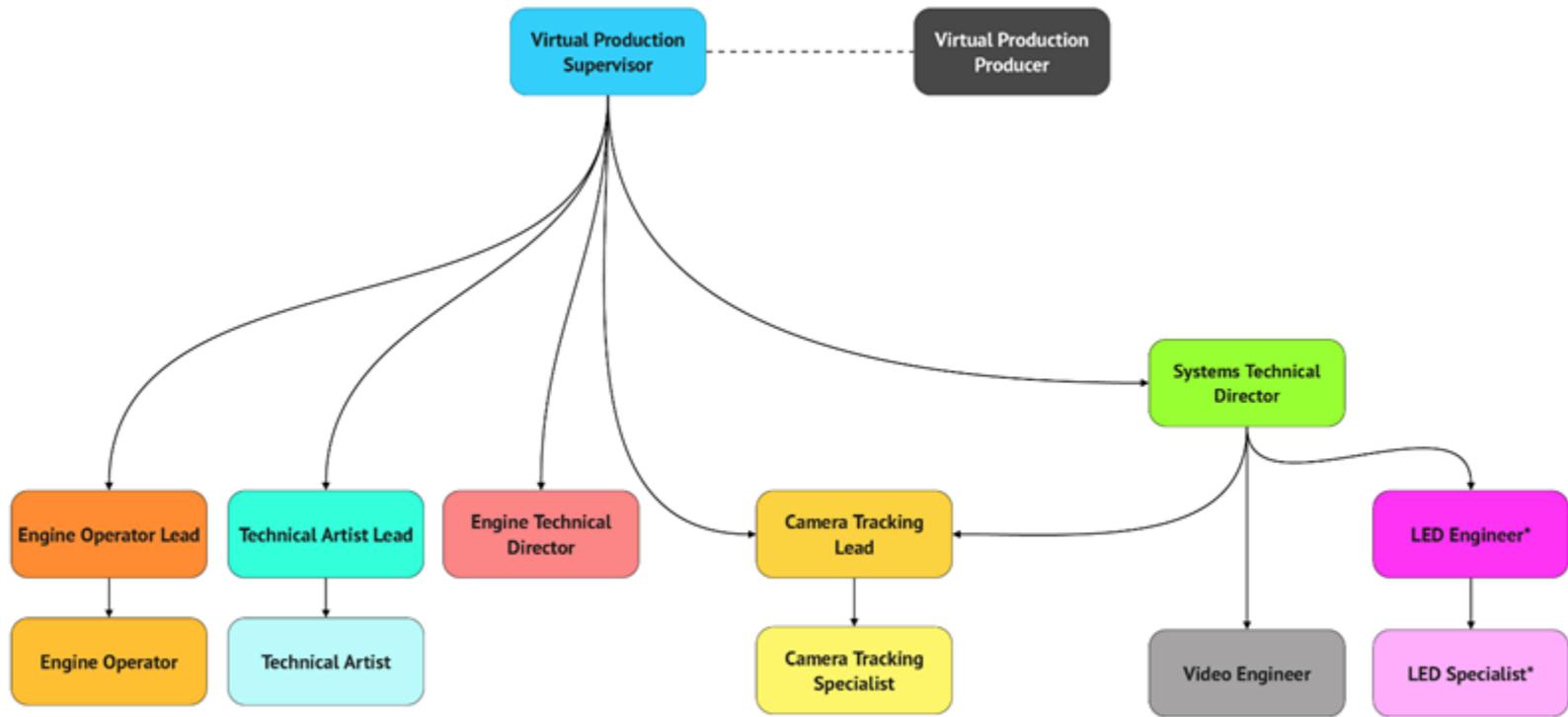




STAFFING SUMMARY: ORG CHART







A blue-tinted photograph of a busy street scene. In the foreground, a person is walking away from the camera on the right, carrying a bag. To their left, another person is walking towards the camera. In the background, there are buildings and other people, creating a sense of a bustling urban environment. The text 'Q & A' is centered in the middle of the image.

Q & A