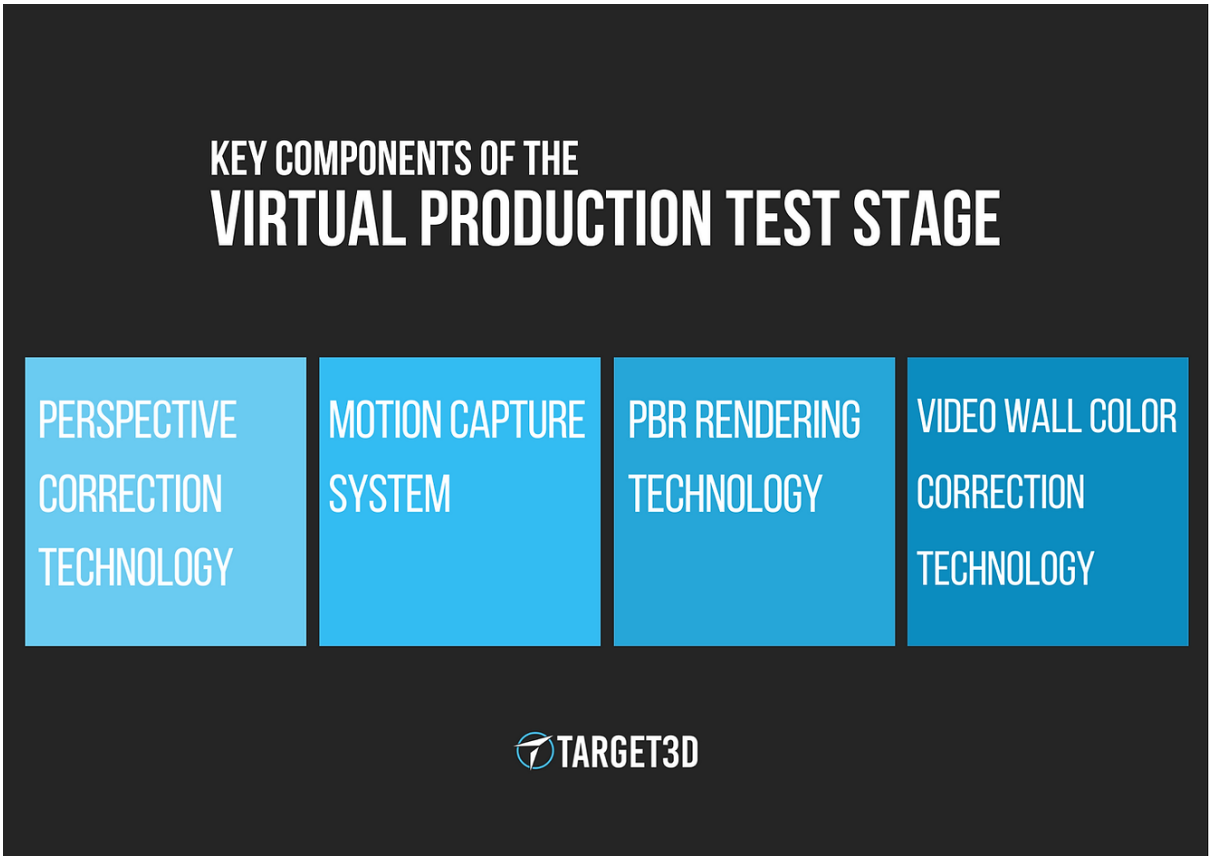
KEY COMPONENTS OF A VIRTUAL PRODUCTION STAGE

A new **Virtual Production Test Stage** is being established to de-mystify VP for creators, educators, engineers and manufacturers. Ahead of its launch, we talk you through the components of an XR virtual production stage. Don't yet know your PBR from your PCT? Stick with us...

Once a 3D virtual environment has been created, it's time for the XR stage. The pre-configured virtual environment is shown on a wall of LED screens as the backdrop to the real-time, real-word action taking place on stage. A precision camera tracking system is used to merge the two environments together, creating an illusion of one - a virtual production.

Although the term Virtual Production encompasses a wide range, the elements of the XR test stage can be broken down into four key components:



PERSPECTIVE CORRECTION TECHNOLOGY calculates and corrects the spatial position and viewing angle of the screen to ensure the correct perspective and parallax is achieved by calculating the relationship between the screen and the live action camera. The performer and camera are free to move around the stage, whilst the digital world is processed from the right perspective and applied to the video screens in real-time - ensuring the final image always looks correct.

MOTION CAPTURE TECHNOLOGY is adopted into the system to track objects including the position and rotation of the live action camera. Our selected optical tracking solution, OptiTrack, with accuracy up to 0.3mm, uses markers that reflect infrared light to determine the position of objects and people in the volume whilst maintaining very low latency performance.

PBR RENDERING TECHNOLOGY (physics-based rendering) uses realistic shadow/light models to accurately represent real-world materials with measured material parameter values. Under the PBR framework, each effect is built using algorithms that aim to replicate to the laws of nature to achieve seamless integration and photo-realism. The digital world can be wholly imaginary or hyper-real, depending on the needs of your project.

VIDEO WALL COLOUR CORRECTION TECHNOLOGY provides a dynamic lighting solution for blending the real with the virtual alongside professional studio grade gantry lights with programmable DMX control from the GrandMA lighting desk.

Motion capture artists are immersed in the digital world. Full body, facial expression, and finger tracking capabilities combined with props, scenery and products help bridge the space between the video screens and the real world.

A collaboration between Target3D and Digital Catapult, the **Virtual Production Test Stage** has been established to de-mystify Virtual Production for creators, educators, engineers and manufacturers. **Get in touch** to find out more.

Rewind... What is Virtual Production? It's the process of mixing live footage and computer graphics simultaneously, to get real-time feedback and to make decisions on set about composition, VFX and animations. **Read more...**