

## CASE STUDIES

## SimVIS MAXVIEW SYSTEM

**PROJECT REQUIREMENTS AND INITIAL REQUIREMENTS**

The **SimVIS** project was initiated to meet the growing need for advanced visual systems in Electric Vertical Take-Off and Landing (eVTOL) aircraft operations. eVTOL aircraft, designed for urban air mobility, require a large Field of View (FOV) to ensure safe and effective operation, particularly during takeoff, landing, and low-altitude maneuvers. The ability to have a clear and unobstructed downward view is critical for pilots to accurately perceive vertical distances and obstacles, which is essential for avoiding hazards and ensuring precision in operations.

**SPECIFIC OBJECTIVES**

The project's primary objective was to develop a visual simulation system that could provide eVTOL operators with an immersive and comprehensive visual experience. Unlike traditional dome projection systems, which offer a "decent chin bubble view," the client required full-floor coverage through a cylindrical view. This requirement was driven by the need to offer rotary and eVTOL aircraft operators a seamless, calibrated, and matched forward-ground view. The visual system needed to create a smooth transition in 2D visuals, ensuring that the entire environment, from forward to downward views, was fully integrated and realistic.

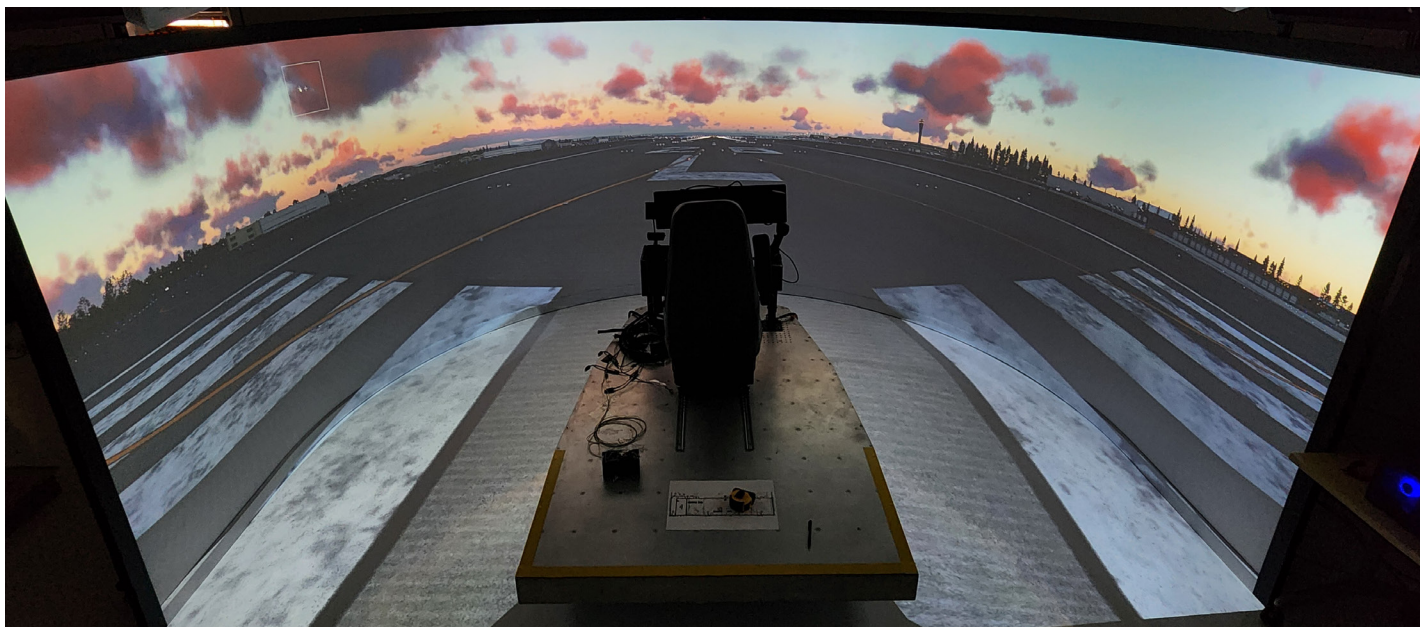
**PRODUCT SELECTION AND SYSTEM DESIGN**

To meet these objectives, the ZK430ST projector was selected as the core component of the visual system. The ZK430ST was chosen for its 4K resolution, long-life laser light source, and short-throw lens capabilities. These features were crucial for the project, as they allowed the integration of five projectors within a compact space, providing the necessary coverage without compromising on image quality. The decision to use the ZK430ST also aligned with the project's budget constraints, as it enabled the use of a traditional screen rather than a custom fiberglass dome, which would have significantly increased costs. The final system design resulted in a compact footprint of 4.5m x 4.5m x 2.7m, making it easily relocatable and capable of being rotated as needed.



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The visual system was powered by two computers running XPlane12 and TruVIEW software, enabling the first global implementation of a visual system that incorporated five 4K projectors with a cylindrical screen and floor views that were seamlessly blended and synchronized.

### OUTCOME

The **SimVIS MaxVIEW System** delivered a geometrically correct FOV with seamlessly blended visuals, offering a superior viewing experience that met the specific needs of rotary and eVTOL aircraft operators. The system not only provided the required full-floor coverage but also ensured a smooth transition between forward and ground views, thereby enhancing the overall realism and safety of eVTOL operations. This innovative visual system set a new standard in eVTOL simulation, showcasing the potential for future advancements in urban air mobility training and operations.



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