

CAMERA PROJECTION MESHES**ABSTRACT**

A 3D rendering method is proposed to increase the performance when projecting and compositing multiple images or video sequences from real-world cameras on top of a precise 3D model of the real world. Unlike previous methods that relied on shadow- mapping and that were limited in performance due to the need to re-render the complex scene multiple times per frame, the proposed method uses, for each camera, one Camera Projection Mesh ("CPM") of fixed and limited complexity per camera. The CPM that surrounds each camera is effectively molded over the surrounding 3D world surfaces or areas visible from the video camera. Rendering and compositing of the CPMs may be entirely performed on the Graphic Processing Unit ("GPU") using custom shaders for optimal performance. The method also enables improved view- shed analysis and fast visualization of the coverage of multiple cameras.

(No Figure to be published)