

PAPER TITLE

Geospecific Urban Models Bring Accuracy to Mission Rehearsal Training Systems

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ABSTRACT

True Mission Rehearsal requires a current mission-specific database with high geometric and texture accuracy for aircrew area recognition. Synthetic environments containing urban models continue to increase in apparent realism. However, realism does not always imply accuracy. The “serious games” approach to modeling raises the bar, using hyper-realism techniques to provide enhanced geotypical detail in smaller artificial training environments, but falls short of geospecific accuracy. Urban models that do exhibit geospecific visual and positional accuracy have either remained small or, for larger coverage areas, remained low-resolution. However, it is now possible to assemble cost-effective geospecific solutions containing urban content that occupy the middle ground of acceptable performance, good visual accuracy, and good positional accuracy. We are very close to being able to address the needs of the high flyer, the helicopter pilot, and the ground troops with a single, accurate, simulation environment. This paper will discuss the levels of quality and accuracy of modeled urban datasets, and their importance to training syllabus in aircrew training systems, especially in the presence of simulated airborne sensors.

BIO

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Ellery Chan is co-founder and CTO of Precision Lightworks, LLC and PLW Modelworks, LLC, where he has helped to develop techniques and processes for the creation, storage, delivery, and exploitation of accurate geospecific 3D urban models derived from high resolution aerial or satellite imagery. Prior to that, he was a software engineer at Harris Corporation involved in geospatial imaging, medical imaging, interactive 3D, graphical user interfaces, fingerprint recognition, and parallel processing technologies. He has a BS in Computer Science and Engineering from MIT.