SAND2008-5045P

Immersive Simulation Environment for Critical Asset Protection (ISECAP)

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Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

Sandia National Laboratories

Overview

- Project Goals
- Why use a Game Engine?
  - Serious Gaming
  - Source's Half-Life 2 Game Engine
- Modeling and Representation
- Videos

Project Goals

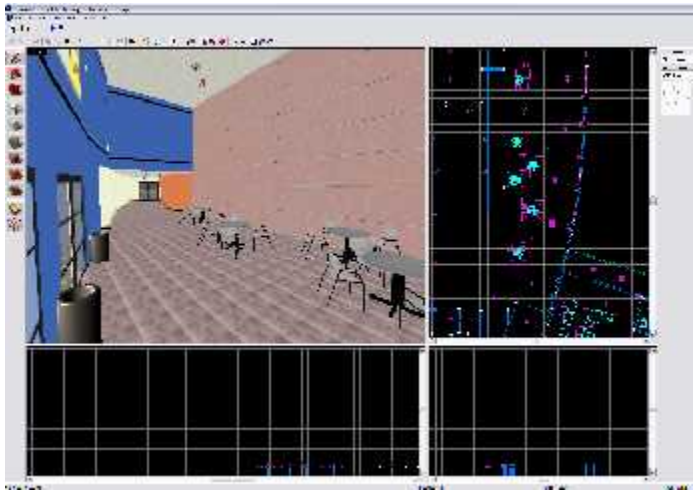
- Virtual environment for developing/testing asset protection systems (i. e. HCARS)
- Give users the ability to explore/defeat the system in unique, creative and unintended ways
- Collect data from red/blue teams in order to identify effective protection strategies
- Apply "virtual reality" technologies to solve national security problems

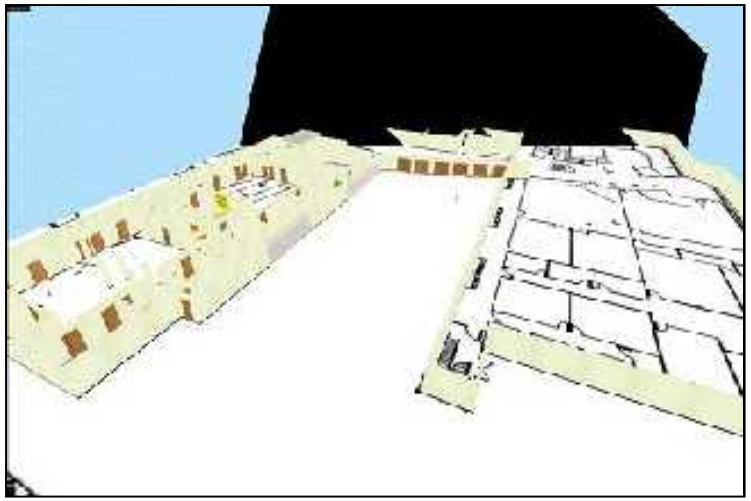
Why Use a Game Engine?

- Games today have become…
  - High-resolution
  - Realistic (physics, animations, etc.)
  - Immersive
- ISECAP is a "serious game"

Source's Half-Life 2 Engine

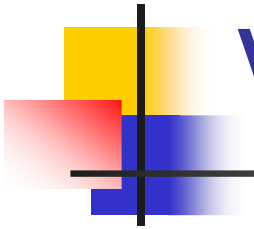
- FPS system, ideal for red team-blue team situations
- Access to full source code
- Large support group and easy to use interface





Object Modeling

- Developed a pipeline for replicating real-world objects in the virtual environment
  - Took digital pictures of furniture, assets, etc.
  - Transformed those pictures into 3D objects that can be moved and positioned in the game



Videos

- Development Environment
- ISECAP

Questions?

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