Overview

- The Game
  - Game play
  - Technical Details
- The World Editor
Game play

- 1\textsuperscript{st} / 3\textsuperscript{rd} Person Shooting Game
- Two teams are combating in a skirmish!
- Fight with your teammates (AI) to eliminate the enemy!
Technical Details

- Quad-tree and Tile based Terrain
- Modeling
- Particle System
- Decaling System (Trails, Fake Shadows)
- Render States Management System
- Collision Detection
- Finite State Automata AI
- Waypoint-based Navigation
Quad-tree and Tile based Terrain

- Four different types of terrain

- Automatically blend them to generate intermediate tiles

- Uses the terrain type stored at four vertices of a patch to determine which tile to use.
Quad-tree and Tile based Terrain

- Fractal Height Field
- Quad-tree for fast view-frustum clipping
Modeling
Modeling

- Trees: “X” shaped billboards
Particle System

- Used for various Special Effects (Just 3 types!)
- Explosion, Fire, Smoke
Particle System

- Firing trailers
Decaling System

- Generate new triangles for the decals to conform to the underlying geometry
Decaling System

- Scorched land

- Tank Trails
Decaling System

- Fake Shadow
Render States Management System

- Group all primitives according to their shaders
- Minimizes render states switches
  - Better Performance on video card!
Collision Detection

- AABB and OBB
Finite State Automata AI

- **High-level States**
  - Attack a place
  - Attack an object
  - Cruise

- **Low-level States**
  - Idle
  - Move
  - Attack
Waypoint-based Navigation

- Waypoints are pre-computed for each block of the terrain
  - Objects following waypoints will not hit any static obstacles
World Editor

- Edit Terrain
- Place objects