DIGNITAS TECHNOLOGIES

Physics-based, Dynamic Terrain and Weather Modeling Solutions

*Dignitas Technologies **synthetic environment** core competency includes physics-based modeling of the terrain and weather. These modeling solutions are increasingly being used in simulations to help understand interactions between humans, types of soil properties and behavior, weather conditions and effects, and dynamics of these environment conditions.*

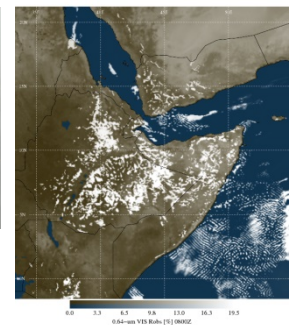## Dynamic Terrain

MUNDUS
ADVANCED DYNAMIC TERRAIN

- Integrated with Army's Computer Generated Forces system.
- High resolution terrain changes; complex, interactive terrain skin changes.
- Distribution of terrain changes and soil attribution.
- Soil Properties and Layers (i.e. bulk density, porosity, degree of saturation.
- Weather effects on soil include: blowing dust, changes to erosion, water content in soil, changes to traction, rain and snow accumulation.
- Create visual models on the fly (i.e. scorched earth, IEDs with ant trail, fencing, destroyed buildings).
- Models are tailored based upon environment (blends with surroundings) and conform to terrain skin.
- Objects can be placed on or below terrain; physics-based interaction with objects and terrain.
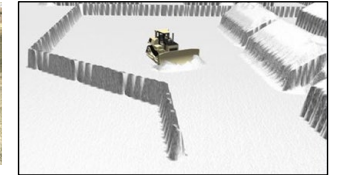
Weather Conditions and Effects

- Environment Representation Data & Effects (ERDE).
- Global weather state modeled and distributed (i.e. precipitation, temp, wind, fog).
- Leveraging DoD historical weather data.
- Cross Service integration.
- Runtime weather updates.

Product/Services Available

- Develop plug-in to integrate with simulation to include game engines.
- Licensed Mundus Software Development Kit (SDK) to integrate with plug-ins.
- Development of additional dynamic terrain and weather effects to meet customer needs.

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