



Technology Service Corporation

RealIR™ API for IR Sensor Simulation

Technology Service Corporation (TSC) developed the RealIR™ application programming interface (API) to provide a toolkit for real-time sensor simulation developers. The RealIR API implements physics-based models for thermal IR sensor simulation, compatible with standard scene database formats and real-time simulation engines. The API has been incorporated in simulations for both man-in-the-loop training systems and hardware-in-the-loop simulation systems.

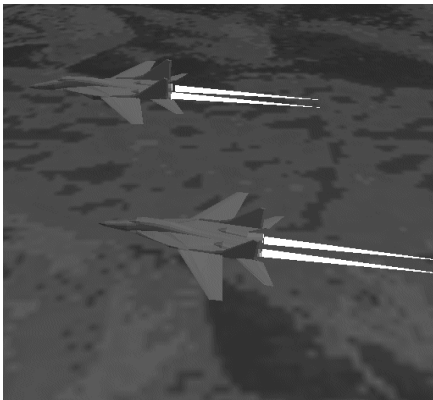
PRODUCT DESCRIPTION

The RealIR API meets the needs of users who require a dynamic IR simulation that can be rapidly reconfigured during the simulation run. The API provides complete functionality for incorporating a physics-based IR model into a real-time simulation. Using the API, a simulation application can continuously update the simulated IR sensor imagery. The RealIR API functions include sensor specification, real-time modification of environment and atmosphere, physics-based computation of scene temperatures and radiances, atmospheric propagation using LOWTRAN or MODTRAN, and real-time visualization with 8, 12, or 16-bit image depths. The API also provides automatic conversion of terrain and target textures to physically correct IR textures.



In addition to the IR physics library, the API contains functions for loading OpenFlight™ target and terrain models, predicting their IR signatures, and performing the real-time visualization for a moving, user-specified platform.

The API also does physics-based atmospheric effects that vary with sensor altitude and line of sight.



WHY REAL-TIME IR SIMULATION?

Use of thermal IR imaging sensors is increasing in both military and commercial sectors for day/night surveillance, navigation, and fire control. IR simulation is essential for the development of these sensors, and for operator training. Thermal IR imagery is highly dependent on local conditions, and can change dramatically within a few hours. Only a physics-based simulation system such as RealIR can provide realistic simulated IR imagery under all operating conditions.

WHY TSC?

TSC has extensive experience in IR and radar sensor simulation. The RealIR API is used by many companies and government agencies for training and simulation. Our numerous customer applications include UAV operator training, enhanced vision flight simulation, and hardware-in-the-loop seeker testing. We can provide support or deliver a turnkey simulation with RealIR to fit your specific needs and applications.

CONTACT INFORMATION

For more information please contact Uri Bernstein (uri.bernstein@tsc.com) or Eric Wilen (eric.wilen@tsc.com) at (310) 754-4200, or visit www.tsc.com.