OKTAL-SE
Synthetic Environment

EO ✓
AEO ✗
RF ✗
GNSS ✗

SE-WORKBENCH-EO

SE

RAY ✓ **3D synthetic environment for EO sensor simulation** FAST ✓

OKTAL-SE has built a complete tool suite dedicated to the modelling and rendering of complex 3D synthetic environments in the frame of visible and infrared sensors simulation. This offer is widely used by Defence agencies and industries to assess the performances of EO/IR sensor based systems.

Features

- **A comprehensive package to study the behaviour of EO sensors in a realistic 3D environment**

- **A unique graphical user interface to edit the synthetic environment**
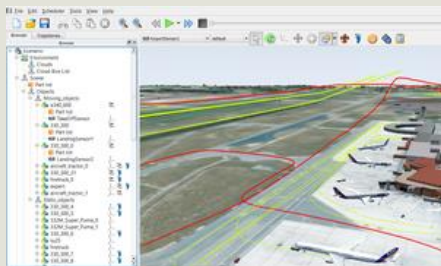
- **Dual approach: A high fidelity (ray-tracing) computation mode to calibrate real-time rendering**

- **The package is delivered with ready-to-use resources (terrain, objects, scenarios, sensors, user guides…)**

- **Rendering can be managed though GUI, through launcher interface or through a versatile C API**

- **An open framework where any parameter like the spectral material database can be customizable**

Complete electro-optic domain coverage

From 0.2 microns up to 15 microns, SE-WORKBENCH-EO is the perfect solution to evaluate the EO/IR sensors performances through various rendering capabilities:

| Full physics – Ray tracing Non Real-Time	Fast rendering - GPU Real-Time
Spectral visible	*Spectral visible*
Spectral infrared	*Spectral infrared*

Full control of the simulation settings

SE-WORKBENCH-EO includes a wide range of setting capabilities:

- **CAD format i/o to import your 3D target or terrain**
- **Atmosphere & Thermal settings**
- **Physical properties - material attributes**
- **Scenario edition**
- **Sensor effects**
- **Non Real-time & Real-time IR rendering**
- **API (application programming interface)**

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Advantages

- **Full control of the environment (atmosphere, geometry, materials) to assess sensor performance in various conditions**

- **Ability to easily introduce scenario variability on the same 3D scene**

- **Deterministic approach to enable parametric studies**

- **Modular platform that can be enriched by advanced features**

- **HWIL capacity using the dedicated add-ons**

- **The scenario can be controlled on-line by end-user application (API)**

- **Python script interface for complex animation (rotor motion, ship buoyancy…)**

Visible   SWIR

MWIR   LWIR
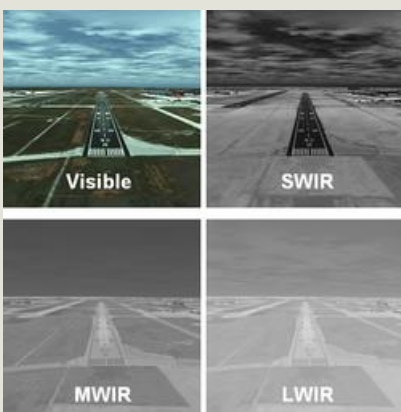
System requirements

Windows

Linux

Add-ons for advanced simulation

SE-WORKBENCH-EO can be completed with several add-ons that are designed to fit advanced technical requirements of specific applications:

Add-ons

Creation of 3D terrain

3D terrain catalogue

Dynamic sea surface

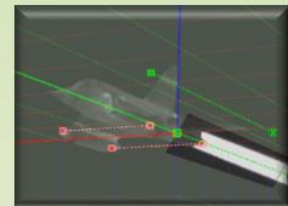Advanced flare modeling

Gaz turbine plume

Image Based Rendering

3D clouds

Skydome

HWIL module

A specific HWIL module can be plugged to the SE-WORKBENCH-EO package to address the communication and performances requirements related to the stimulation of a sensor based system.

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