

SE-TOOLKIT



HOST APPLICATION INTEGRATION TOOL

The SE-TOOLKIT is an Application Programming Interface (API) that supports complex application design and integration. It provides the user with the maximum assistance while integrating HardWare and SoftWare In the simulation Loop (HWIL-SWIL). The library provides solutions to customer requests for taking control of the SE-FAST/SE-FAST-IR and SE-RAY-IR/EM products. SE-TOOLKIT is the ultimate interface tool for external applications without having to recompile or adapt the application code.

Features

- Runs with scenarios made with SE-SCENARIO tool
- Support SE-RAY-IR / SE-RAY-EM and SE-FAST-IR target exploitation
- Support of real-time and non real-time image computation in a unified API
- SE-IR-SENSOR integration
- SE-TK-DSCNX integration



Use Principle

The SE-TOOLKIT API aims at enabling a programmer to integrate the scene renderers of the SE-Workbench to its own simulation application. It federates high level functionalities and proposes a unified interface for integrating and controlling the target exploitation software SE-RAY-IR, SE-RAY-EM and SE-FAST-IR.

Main Functionalities

Initialising:

- Defining message level
- Choosing the target exploitation software among the supported scene generators

Editing scenario:

- Loading a scenario prepared with SE-SCENARIO
- Choosing an exploitation context (compatible with the target exploitation software)

Exploiting scenario:

- Starting a simulation
- Controlling the time advance
- Editing the current position of an entity (sensor, object...)
- Computing the signal produced by a sensor and accessing this signal
- Stopping a simulation

SE-TOOLKIT interfaces customer own development with OKTAL-SE advanced scene generators both in open or closed loop.

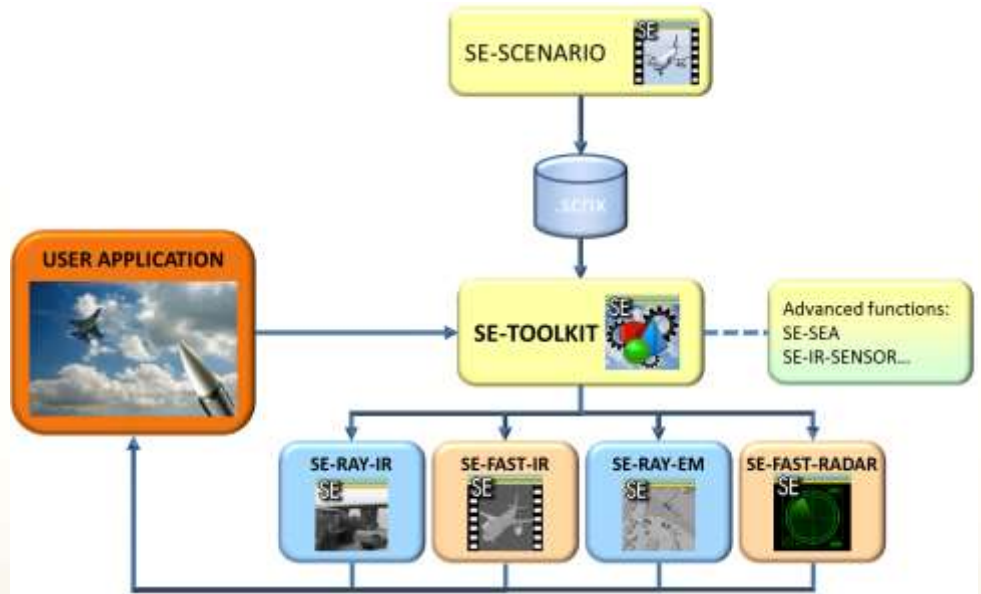
SE-TOOLKIT can model the incoming radiance from the 3D scene to the IR sensor:

- For advanced and most physical studies with SE-RAY-IR
- For training or fast studies with SE-FAST-IR.



Benefits

- **Unification:** unified interface for integrating / controlling the SE-RAY-IR/EM and SE-FAST / SE-FAST-IR target exploitation software
- **Integration:** Written in C in order to make its integration into any existing simulation environment as simple as possible



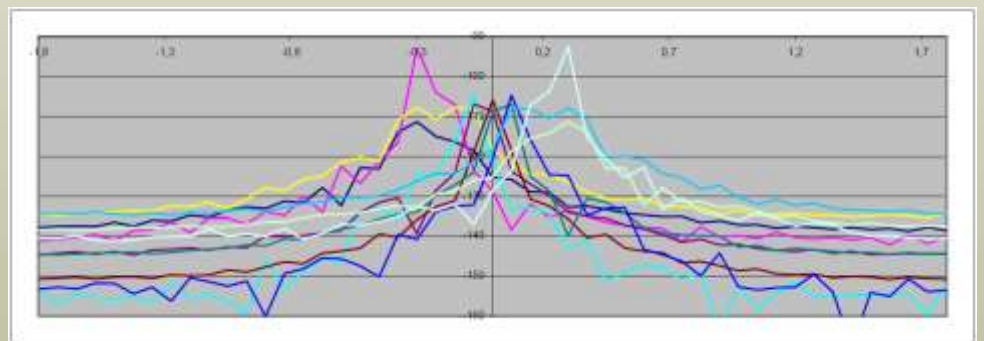
Context Of Use

Suited for the coding of user applications using SE-RAY-IR or SE-FAST-IR. Applications are identical with SE-RAY-IR or SE-FAST-IR used: The same functions are used to manage one or another.

For instance, you can compute a several IR images with various sensor:



For instance, you can compute a Doppler spectrum for EM:



System requirements



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