

- EO 
- AEO 
- RF 
- GNSS 
- RAY 

SE-SEA



ADVANCED SEA RENDERING MODULE

FAST 

More and more defence and civil applications require physical simulation of marine synthetic environment. SE SEA provides state of the art dynamic representation of the sea profile and the interaction with floating objects and coast.

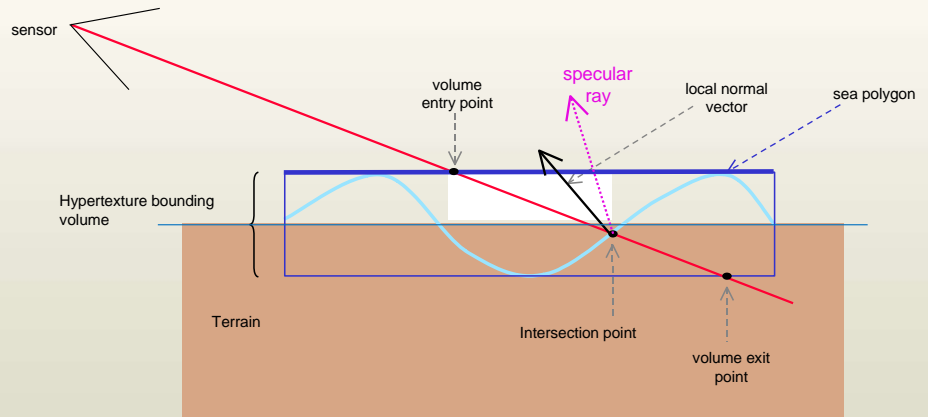
Features

- Real time rendering in visible & infrared domains
- 3rd generation Swan model for sea modelling
- Adaptive behaviour to depth and coast configuration
- Dynamic interaction with ships
- Generation of foam and Kelvin wakes
- Compatible rendering with SE RAY-IR, SE-RAY-EM and SE FAST-IR



Principle

For marine application, it is very important to represent the real and complex shape of the sea surface as well as the wave self masking effect and the masking of floating objects. The hypertexture model fulfills these requirements. It is a real substitute to a complex polygons modeling.



Hypertexture for sea representation

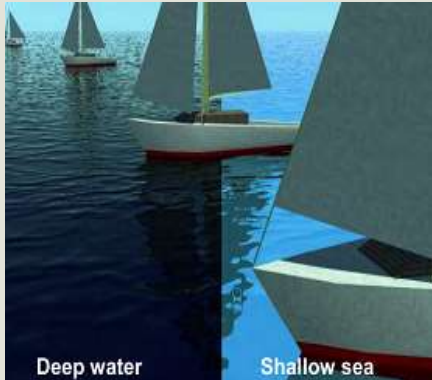
Water material is considered as a dielectric spectral material. It uses smooth dielectric materials of finite width. The model takes into account the variation of the water depth using bathymetry data.



SE-RAY-IR – Sea surface SWIR rendering

Compatibility

- SE-SEA is a complementary module of SE-Worbench-EO
- Compatible to SE-3D-DB-SEA database



System requirements



Marine Special Effect

SE-SEA generates 3D foam volumes (with its associated physical spectral data) using the mechanism of particles systems.



SE-RAY-IR



SE-FAST-IR

SE-SEA manages the interaction with floating object:

- Rear and bow wake,
- Kelvin wake
- Buoyancy rules

SE-SEA adapts sea shape to surrounding configuration:

- Wind
- Coast (shoaling effect)
- Water depth



SE-RAY-IR (OTW) spectral image

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