

- EO
- AEO
- RF
- GNSS
- RAY

SE-RAY-SAR



ADVANCED SAR SIMULATION TOOL

FAST

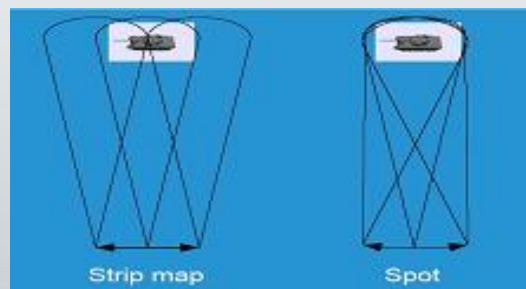
SE-RAY-SAR simulates radar echoes of a scene represented by a 3D virtual mock-up. SE-RAY-SAR is based on scenarios and trajectories created with SE-SCENARIO. SE-RAY-SAR provides SAR raw data. Images of the reflectivity maps can also be generated and visualized

Features

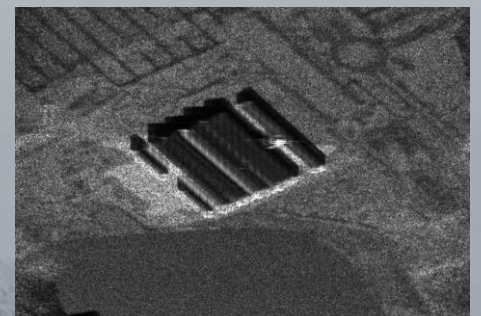
- RF models validated by ONERA in France, FOI in Sweden and Fraunhofer FHR in Germany
- Takes as input a SE-SCENARIO file (*.scnx)
- Computes raw data files (*.rsrm, *.rtrm and *.rprm) and BMP images
- Efficient computation kernel, even for complex scenes containing complex objects
- Computes objects coated with dielectric layers including diffraction by edges
- Easy-to-use product thanks to its dedicated GUI
- Key features of a SAR are simulated such as: - Frequency, Polarisation, Pulse Radar Frequency (PRF), down-range resolution

Key Advantages

- Complex 3D scene management
- Robust electromagnetic models (SE-RAY-EM)
- Antenna diagram import facility
- 2 modes available:

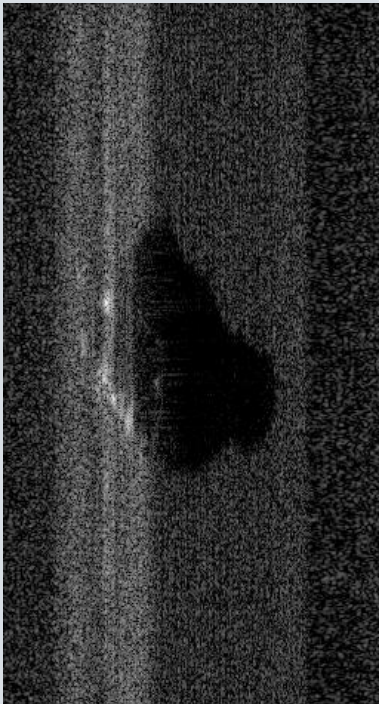


- Improved simulation performances with the Ray-tracing Pulse Repetition Frequency-RPRF that considers the form factor of the scene
- High performance even for a very complex scenario
- Dedicated user friendly GUI



Benefits

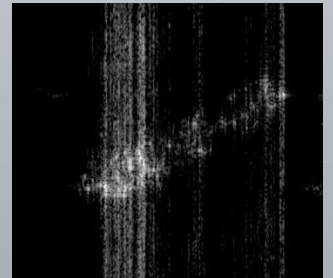
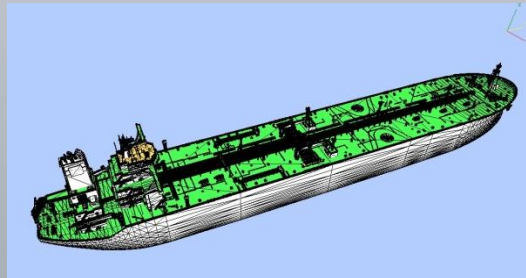
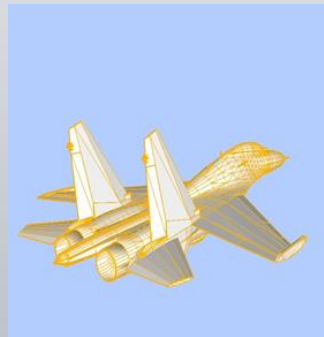
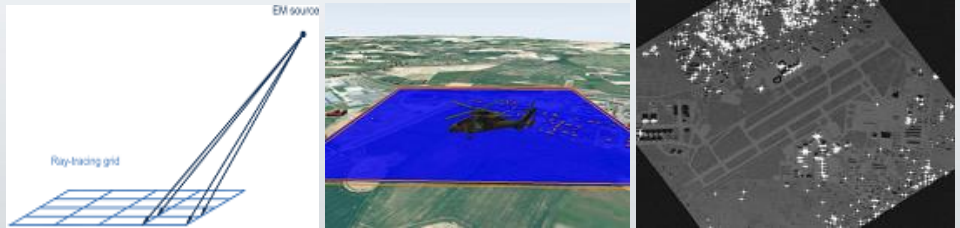
- An efficient tool for 3D scene SAR signature analysis
- Customizable to end-user SAR image algorithm



Physical Model Features

SE-RAY-SAR is based on SE-RAY-EM ray-tracing kernel:

- Association of shooting and bouncing ray technique (ray tracing) & electromagnetic asymptotic formulations
- Scattering computation using Physical Optics
- Multiple reflections computation using Geometrical Optics
- Edge diffraction computation using the Equivalent Current Method of Michiell extended to targets covered by dielectric materials
- Reflection and scattering on multilayer dielectric materials
- Model dedicated to clutter materials including speckle effects



System requirements



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