

MIRANDA:
THE EO-SENSOR PERFORMANCE TOOL POWERED BY EOSTAR-PRO

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Over the last decades, considerable efforts have been made to assess the impact of the environment on EM and EO propagation. While encouraging progress has been made in the EM domain, few, if any, operational tools are available for the EO domain. As a consequence, no EO operational software, equivalent to AREPS, TERPEM or PREDEM, is currently in use within the French Forces. The MIRANDA project aims at providing a first version of such an operational EO-tool for the French Navy. The project is headed by SHOM and utilizes core modules of the (scientific) EOSTAR sensor performance tool developed by TNO, in co-operation with the EO-propagation branch of SPAWAR.

EOSTAR provides a toolbox with modules to evaluate the main atmospheric processes, such as transmission, refraction and turbulence. Background and signature models allow generation of a scenario of interest and calculation of the thermal radiance properties of the scene elements. A sensor module, eventually including signal processing algorithms, generates the synthetic image as seen by an operator. Propagation factors and detection probabilities can also be presented as coverage diagrams for surveillance and vulnerability studies.

MIRANDA provides an interface to the EOSTAR-PRO library. The interface is developed in close co-operation with the intended user community in the French Navy to ensure that the product will be tailored to the operational needs.

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