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"new MLFMM formulation gives well-conditioned equation systems and fast convergence also when the model contains both dielectric materials and perfect conductors"

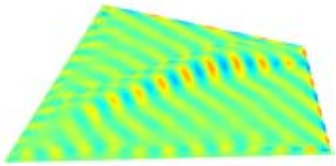
"Efield® is the first commercial software combining an FDTD solver on structured Cartesian grids with a FEM solver on unstructured tetrahedral grids"

Efield 5.0 now shipping

Efield® announces that its new product release Efield® 5.0 is now shipping. Efield® provides the simulation tools needed by engineers working with complex design problems in for example antenna design, antenna integration, EMI/EMC and radar signature prediction. Following up on the success of the first public release of Efield® last year, the new product release contains a number of important improvements.

Efield 5.0 feature highlights

Radar signature predictions for large objects containing dielectric materials



The new product release introduces major improvements to the multilevel fast multipole method (MLFMM), the boundary integral equation method of choice for accurate RCS simulation on large objects. A new formulation gives well-conditioned equation systems and fast convergence also when the model contains both dielectric materials and perfect conductors. The picture shows results for a UAV design with radar absorbing material near the wing edges.

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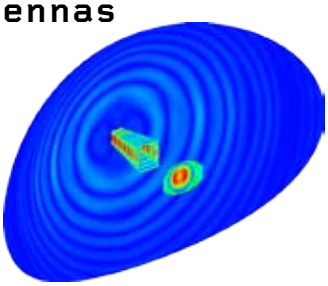
Accurate analysis of complex antennas



The new product release offers improved frequency domain hybrid methods extending the range of applications to accurate analysis of realistic reflector antenna designs. The picture shows results from a Cassegrain antenna fed by a horn.

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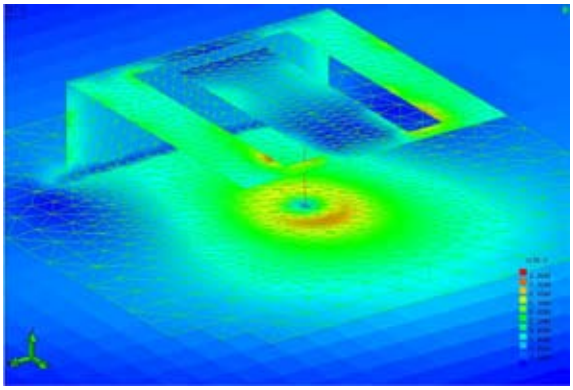
Antenna installation on large objects



Efield® is the first commercial software combining an FDTD solver on structured Cartesian grids with a FEM solver on unstructured tetrahedral grids. The Efield® hybrid FDTD-FEM solver enables accurate modelling of complex geometries and small details through the use of body-conforming unstructured grids. In this way it is fully feasible to study the performance of a detailed antenna design when installed on for example an aircraft.

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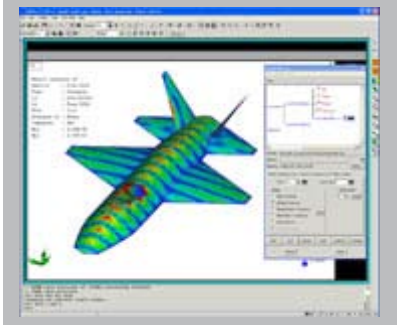
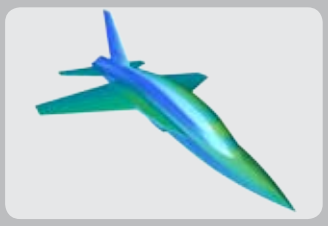
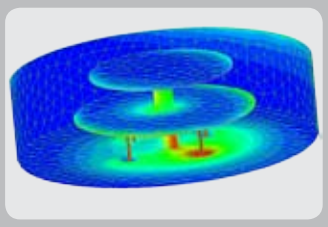
Efield Electromagnetic Solver Suite



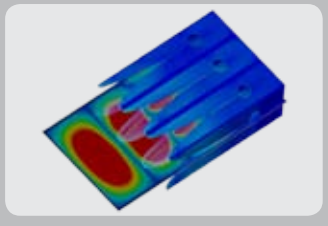
RCS and Scattering



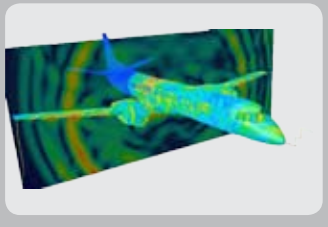
Antenna Design



Microwave Design



EMC and EMI



About Efield®

Efield® provides a unified electromagnetic simulation environment making both time and frequency domain methods available through the same user interface. Efield® makes the powerful concept of hybrid methods easy to use in both in time and frequency domain. Hybrid methods makes it possible to use an accurate numerical method in only the part of the simulation domain where it is really needed, and a less costly method in the rest of the domain. Efield® offers an environment for High Performance Computing with carefully parallelized solvers for distributed and shared memory multi-processor architectures. Powerful CAD interfaces streamline the design process, making reuse of existing CAD models easy. In this way we enable electromagnetic simulations for applications you have only dreamt of before.

Take a look at our web site www.efieldsolutions.com. There you can find more information and download a white paper describing our products in detail. Also, please forward this message to those of your colleagues who are interested!

Efield a complete simulation environment for 3D electromagnetics applications

Efield® offers a complete and unique integrated software environment for 3D analysis of a wide range of electromagnetic applications such as:

- Antenna design: All kind of antennas including horn, reflector, wire and microstrip antennas as well as broadband antennas and antenna arrays.
- Antenna integration: Radiation pattern of installed antennas on large platforms such as aircrafts or ships. Coupling between installed antennas.
- Microwave design: Typical applications includes design of filters, connectors and couplers.
- EMI/EMC interaction: Analysis of a wide range of EMC/EMI problems including shielding and coupling problems.
- Scattering & radar cross-section: RCS analysis of structures such as aircrafts, ships, air-intakes, exhausts, and antennas.

Efield® has the solution to every stage of the analysis including:

- Integrated environment including user friendly GUI
- CAD import of all major formats
- Fixing and repair of complex CAD models
- Model building
- Efficient and high quality meshing
- Unique solver technology in both time- and frequency-domain including full wave, approximative and hybrid techniques
- Unparalleled execution performance on single PC's or parallel processing on multiprocessor computers
- Flexible and high quality post-processing including graphing of results as well as visualization of surface currents, near fields and far fields.