



**PRESS RELEASE : 26 MAY 2014**

## **NEW SOLVERS IN FEKO SUITE 7.0**

**FEKO Suite 7.0 sees the addition of a Finite Difference Time Domain (FDTD) solver to its comprehensive set of powerful computational methods as well as the hybridisation of the Multilevel Fast Multipole Method (MLFMM) with Physical Optics (PO). Three new import file formats are also now available.**

FEKO reaches a new milestone with the inclusion of the [finite difference time domain \(FDTD\)](#) solver to its comprehensive set of powerful computational methods. The solver is easily activated and it is simple to switch between the FDTD and other solvers.

Despite the fact that the method is set in the time domain, the use of Fourier techniques allows wide-band frequency domain information to be calculated. It can achieve second order accuracy using first order numeric differentiation. The method is also well suited to modelling inhomogeneous materials. In addition, the method lends itself well to various parallelisation techniques. The FDTD solver supports GPU computing to improve performance when a compatible GPU is available to obtain significant speedup.

The addition of the FDTD solver will provide more efficient solutions to customers who are focussed on simulation of wide-band antennas and inhomogeneous structures, e.g. anatomical models.

### [Hybrid MLFMM with PO or LE-PO](#)

A new hybrid iterative method is supported which allows MLFMM with either PO or LE-PO to be used in the same model. An advantage of this iterative technique is a significant reduction in memory. The MLFMM models the complex part of the structure which contains the fine details. The PO/LE-PO is used to model the smoothly varying part. When using LE-PO together with the MLFMM, bi-directional coupling is included.

Applications of the MLFMM-PO (and LE-PO) hybrid span over a wide range of problems including analysis of electrically large antennas (e.g. reflector antennas), antenna placement studies on large platforms (e.g. ships, aircraft) for the purpose of antenna pattern, coupling and radiation hazard analysis.

### **Availability**

FEKO Suite 7.0 is available immediately for existing FEKO customers with active Maintenance & Support contracts. A free 45 day evaluation, including technical support, can also be arranged. Contact us via our website.

More detail is available for existing FEKO Users in the [FEKO Suite 7.0 download](#) area or the Release Notes may be consulted in the Suite 7.0 installation directory.

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### **About FEKO and EMSS - EM Software & Systems-S.A. (Pty) Ltd.**

FEKO ([www.feko.info](http://www.feko.info)) is a comprehensive computational electromagnetics code (CEM code) that is used widely in the telecommunications, automobile, space and defence industries. FEKO offers several solution techniques (MoM, MLFMM, PO, Ray Launching GO, UTD, FDTD and FEM) under a single licence. Hybridisation of these techniques enables the efficient analysis of a very broad spectrum of EM problems e.g. 3D antenna design, antenna placement on electrically large structures, microstrip-antennas, microstrip-circuits, EMC, biomedical and scattering. With the MLFMM, and the true hybridisation of the solvers, FEKO is considered the global market leader for antenna placement analysis. FEKO® has a well-established global distribution and technical support network with subsidiary companies in North America, Europe, China and representatives in 10 other countries. EMSS ([www.emss.co.za](http://www.emss.co.za)) was started in 1994 as an engineering company consulting in general electromagnetic problems.

### **Press Kit with Graphics**

A press kit with graphics is available on request.

### **Contact**

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