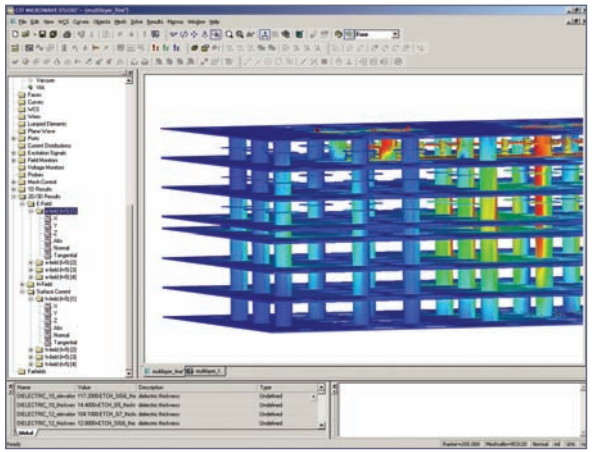
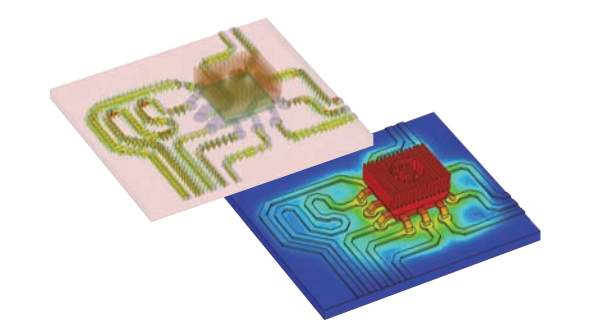
CST MICROWAVE STUDIO®

CST MICROWAVE STUDIO® [CST MWS] is a leading edge tool for the fast and accurate simulation of high frequency problems. Applications include the expanding areas of: wireless design and mobile communication, signal integrity, defense and EMC.



CST MWS 2006's advanced design environment.

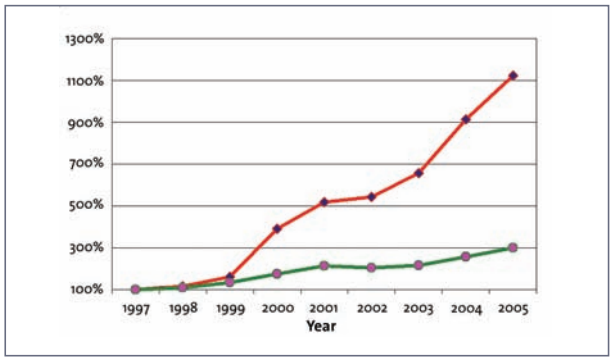
Since its inception in 1998, CST MWS has become renowned for its easy to use graphical interface and modeling abilities.
It has remained the industry leading example of how to make 3D EM simulation easy and efficient. Customers ranging from sole proprietors to large corporations have seen tremendous design cycle improvements and profited from an excellent return on investment.



Coupled simulation of temperature distribution due to electric losses.

CST – COMPUTER SIMULATION TECHNOLOGY

CST is one of the two largest suppliers of electromagnetic software and its flagship product CST MWS is the industry standard for 3D Time Domain simulation.
With over 90 employees worldwide and a network of qualified distributors, 130 people are dedicated to developing and supporting of its EM simulation products in more than 30 countries.



Estimated Increase of Revenue – CST vs. 3D EM Competitors 1997-2005.

With the successful introduction of the proprietary PERFECT BOUNDARY APPROXIMATION [PBA]®, CST created a significant technical advantage which has helped ensure its leadership in Time Domain simulation.
The significance of PBA's technical merits can be seen in the economic development of the company.

COMPLETE TECHNOLOGY

Time Domain in combination with PBA has not only advantages in terms of speed but can also deliver accurate broadband time signals which are essential for TDR and signal integrity problems. But no one method is perfect for every application.
CST is the first commercial vendor to offer an HF 3D EM code which unites hexahedral and tetrahedral meshing, Time and Frequency Domain in one interface. Users can now switch easily from one to the other solver without changing the model and parametric settings and in this way benefit from the most appropriate method for each problem.

Test the new Frequency Domain solver and benefit from the 2006 promotion.

The evolution in 3D EM simulation software

CST MICROWAVE STUDIO®

Version 2006 B – New Features

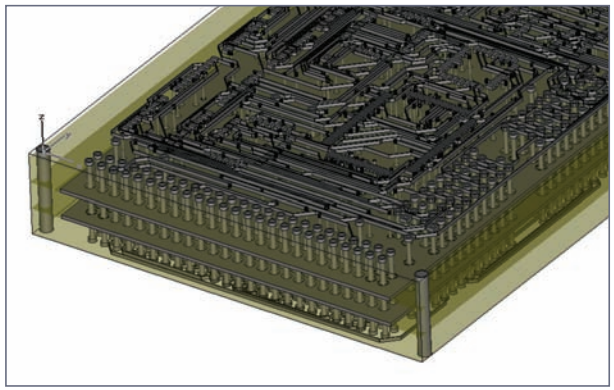
CST

CHANGING THE STANDARDS

CST MICROWAVE STUDIO® 2006 B – New Features

Frontend

- Improved frontend performance for large structures.
- New interactive features such as hover selection, scaling of multi-layer structure, and vector plot adaptation.

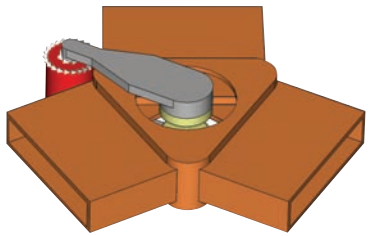


Imported multi-layer structure.

EDA Tool Links

- The Cadence®Allegro®import now supports flip chips, wire bond and ball specification.
- New multilayer Gerber import links to EDA tools like Cadence, Mentor and Zuken.
- Automatic single-ended S-parameter computation.

Coupled simulation
of magneto-static and HF fields.

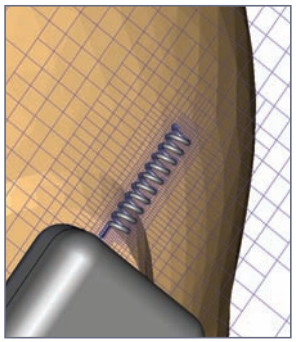


Co-Simulation

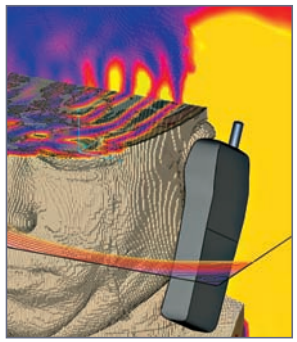
- Easy switching from low to high frequency applications.
- Coupling of magneto static to high-frequency simulation in order to calculate realistic biasing of ferrites by external magnets.
- Improved integration between thermal and HF-solvers.

Time Domain Solver

- Fast PBA mesher, with improved performance and robustness in particular for large imported models.
- New subgridding scheme with improved flexibility of mesh subdivision, and drastically reduced memory requirements.
- Implementation of Linux version.
- Support of IEEE C 95.3 standard [SAR]



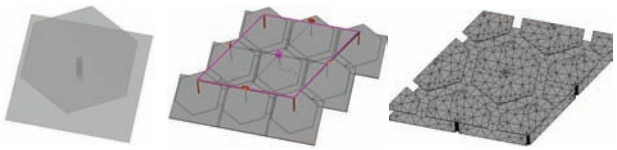
Subgridding of an helical antenna.



Radiation of a mobile phone.

Frequency Domain Solver

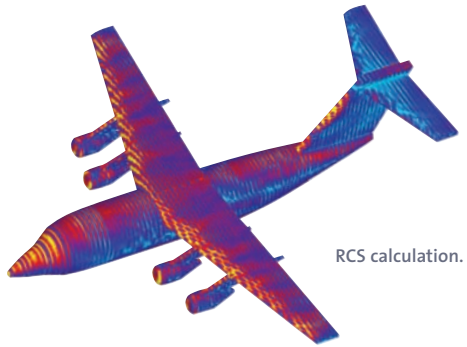
- Tetrahedral Frequency Domain solver with improved and more robust meshing algorithm.
- Excitation of fields by plane waves, multi-pin ports and wave-guide ports on arbitrary planes in the model [slanted ports].
- Distributed computing scheme enables remote calculation.
- Upcoming Linux version.
- Easy access to surface currents, B and D fields.
- Improved mesh adaption for thin conductors.
- Solver performance increase for both direct [particularly out of core] and iterative solvers.
- Hexahedral and Tetrahedral Frequency Domain solvers 64 bit enabled.



Simulation set-up of an FSS.

Integral Equation Solver

- The new Integral Equation Solver [MLFMM] opens up new possibilities to users in terms of structure size.
- It will be able to solve structures much larger than 20 wavelengths and is of particular interest because of its ability to deal with dielectric losses.
- Typical application examples include antenna placement on an airplane and radar cross section [RCS] calculations of large scattering objects.

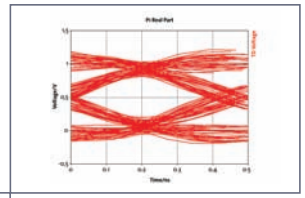


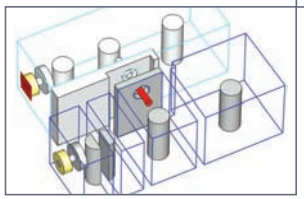
RCS calculation.

CST DESIGN STUDIO™ 2006 B

Now applicable to transient problems e.g. in order to perform eye diagram analysis.

Eye diagram.





Filter simulation using
CST MWS & CST DS.

Integration of Mician µWave Wizard components into CST DESIGN STUDIO™ enables co-simulation of mode matching, 3D EM and circuit simulation.