

CLASP

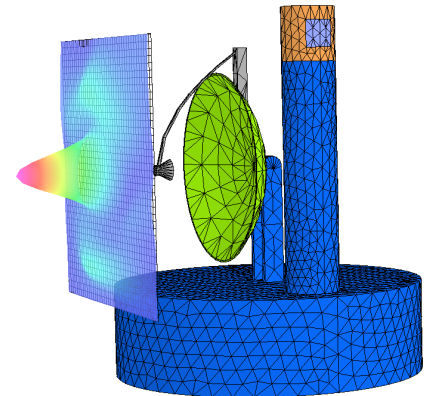
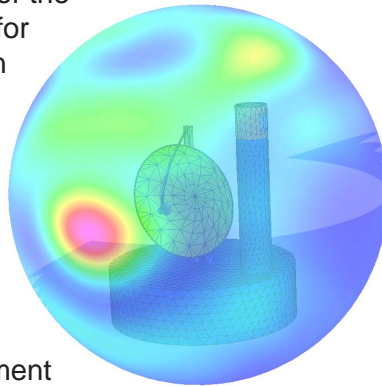
DESIGN SOFTWARE FOR ANTENNAS & RADAR SIGNATURES

The **CLASP** analysis package is a module of the **CONCERTO** integrated suite of software for RF and Microwave electromagnetic design and analysis. **CLASP** computes the response of high frequency electromagnetic devices in three dimensions, and is based on well proven advanced numerical methods.

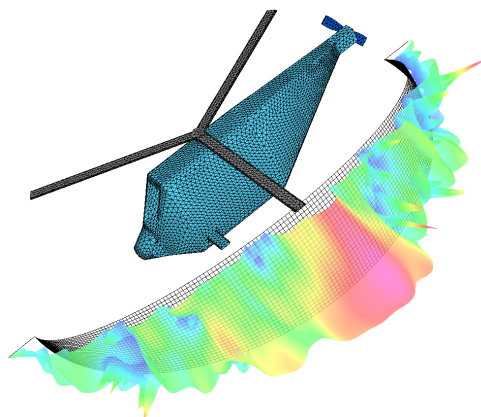
Concepts

In optimizing the design of electrical equipment the basic conceptual design needs to be based on proven analysis tools. Vector Fields is a specialist in electromagnetic design, and has built up an enviable reputation over many years for reliable, accurate and easy to use software for electrical and electronic engineers.

The complex computation of high frequency fields for antenna design and radar signature calculations has been extensively researched, and the **CLASP** analysis module, together with the **CONCERTO**



Far field pattern over surrounding sphere (left) and near field power distribution (right) due to an antenna system placed near a second antenna



Far field power density scattered from a simplified helicopter model with plane wave incident

Modeler and Post Processor package, offers a complete environment for this class of electromagnetic analysis and design.

With the latest Vector Fields developments the analysis of electromagnetic fields has moved from the realms of specialist analyst to the main stream design process. Interfaces to major CAD packages enable the **CLASP** software to be integrated into an overall computer aided engineering system.

Applications

CLASP is designed to complement existing modules, by extending the range of applications to include antenna and RCS calculations. The package is easy to use and has been well validated over a number of years as a tool for consultancy. Applications include Antenna Coupling, EMC analysis, and Radar Signature prediction.

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Software for Electromagnetic Design

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Method

CLASP uses specialist Method of Moments analysis techniques for simulating the frequency domain fields of a structure. Accurate modeling of a structure is carried out by representing the conductors, dielectrics and thin materials by a collection of surface triangles and wires. Since only the surfaces are modeled, the size of the model is significantly reduced compared to differential methods (where the entire 3D volume must be meshed). The equations lead to a smaller, but full, matrix equation which is then solved.

Boundary conditions can be applied to imply perfect conducting or magnetic walls, which are used to impose symmetry in the model.

Sources can be plane waves or point sources. The surface currents are computed, along with the far fields, which are then passed to the post processor for visualization and further processing.

Features

CLASP has the following features:-

- Full 3D modeling
- Automatic Surface Mesh Generation
- Efficient data input
- Interfaces to CAD/CAM
- RCS and Far Field Analysis
- Extendable Post Processing

Modeler and Post Processing

As a module of the **CONCERTO** suite of software, **CLASP** interfaces to the **CONCERTO** Modeler and Post Processor. This gives the user access to powerful pre and post processing features specifically tailored for electromagnetic design.

The Modeler is specifically designed for electromagnetic applications by Vector Fields using the ACIS™ kernel. The Modeler has an easy to use 'windows' interface with clear icons. This enables complex 3D models to be constructed swiftly from primitive solids using Boolean operations and automatically meshed with surface triangles. Transfer of geometric data between CAD systems

and the Modeler is through the industry standard SAT and IGES file interfaces. The sophisticated Macro language also allows easy parameterization of models.

The post processor is renowned for its versatility in displaying computation results. It has very comprehensive and flexible facilities enabling the user to display the results in a variety of ways controlled by an easy to use 'windows' interface. The features include:

- 3D model views from any angle with mouse driven pan, zoom and rotation
- Graphs, histograms and contour maps of the solution, including far field plots
- Contours of the results on any surface
- User defined functions

Hardware

All Vector Fields software runs on PCs and Workstations. It is Vector Fields policy to always support the latest operating system on each hardware. A list of supported hardware, and suggested minimum configurations, is available on request.

Customer Support

Applications advice and "hot-line" support is an integral part of the Vector Fields service. Professional engineers with extensive electrical design experience are available to help users in their application of **CLASP**. Your main Vector Fields office or local distributor will be pleased to be of assistance at all times.

Comprehensive user documentation is provided with **CLASP** enabling new users to quickly apply the software to their application. In addition, training courses are held regularly to give "hands-on" training in the use of **CLASP**.

User group meetings are held annually giving users the opportunity to discuss their applications with Vector Fields experts and other users in a relaxed atmosphere.

Whatever your application and wherever you are located, you can be sure of Vector Fields interest and support.

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