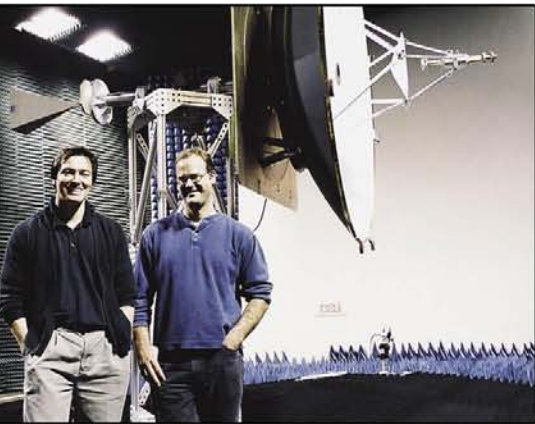


Satellite Code Consortium

ESL's U.S. Satellite Industry Computer Code Consortium (SATCOM) was established in 1999 with the goal of developing computer software to facilitate the rapid design and analysis of satellite and ground-based antennas. Tool development efforts of the consortium combine existing CEM codes with modern user interface techniques and an open architecture to produce software that is rigorous, fast, and easy to use.

Antenna Design for NASA's First Pluto Probe

The Applied Physics Laboratory (APL) of the Johns Hopkins University is a member of the SATCOM consortium, and Ron Schulze, an APL staff member and ESL alumnus, used the SATCOM computer software to optimize antennas for [NASA's New Horizons Pluto mission](#). The New Horizon Probe will



be launched in January of 2006 and will reach Pluto in the summer of 2016. The surface shape of the deep space probe antenna was designed using shaping software developed at ESL and then analyzed using the SATCOM program to achieve high efficiency and increased data rates. Both the prototype and actual flight model antennas were tested at the ESL compact range facility to validate the design.

Antenna Design for Satellite Ground Stations

The SATCOM program has also been used to design and analyze a consumer-oriented satellite ground station antenna for Ku (DBS) and Ka (High Speed Internet) band applications. This antenna can receive three DBS satellite signals while maintaining a bi-directional link with a fourth satellite for high speed internet (both up and down links). With the SATCOM software's unique graphical user interface and its powerful computation engines, the complete prototype design of this complicated antenna system was completed in less than one week.

