

# Plato 1.0 Release Notes

Plato is a topology optimization-based design environment. Plato allows designers to specify a mechanical envelope and functional requirements (“function”) and then Plato generates a topology and shape (“form”) that meets the functional requirements. The Plato product consists of a user-friendly environment for setting up design problems and launching the topology optimization runs on high performance computing (HPC) platforms. Plato 1.0 is available free of charge for government use. Highlights of 1.0 features are summarized below. For more details about the 1.0 features see the Plato User’s Manual.

- Compliance minimization (maximize stiffness) topology optimization using Sierra Structural Dynamics physics
- Professional graphical user interface built on top of the Sandia Analysis Workbench (SAW) framework
- User-friendly interface for running on high performance computing platforms
- Convenient “stop and restart” capability for incrementally exploring design spaces
- Continuous real-time graphical design feedback during the optimization process
- Powerful geometry and mesh generation capabilities powered by the CUBIT mesh generation component
- Convenient user-interface for model attribution
- Graphical input deck creation/editing
- Powerful syntax aware input deck editor
- Displacement/Stress visualization on the optimized design
- HPC resource availability and monitoring views

## Known Limitations or Defects

- Tetrahedral meshes not supported.
- Sierra SD body loads not supported.
- Loading using RBAR elements not supported.

**These limitations should all be addressed in a point release soon after the 1.0 release.**