MSC.Patran™
CAE Solid Modeling

Powerful solid modeling functionality within MSC.Patran

OVERVIEW

The CAE Solid Modeling provides added solid creation and editing tools inside the MSC.Patran modeling environment. The analysts now have powerful solid modeling functionality to enable rapid conceptual model creation and robust editing of solid models. These enhanced capabilities also greatly improve the analysts’ flexibility and effectiveness in dealing with “dirty” and otherwise troublesome imported geometry.

Improved model creation and editing time by 30X

NEW FUNCTIONALITY INCLUDES:

Solid editing operation
- Boolean operations - add, subtract, intersect
- Edge blend - constant, radius, chamfer
- Imprint - solid on solid
- Shell - create thin wall solids

Solid creation operations
- Primitive creation
  - Block, cylinder, cone, sphere, torus
  - Optional on-the-fly Boolean operation
- Extrude and revolve surfaces to solids
- Transformations, including group transform

PRODUCT FAMILY
MSC.Patran 2003

CAPABILITIES
- Solid primitive creation
  - Block, cylinder, cone, sphere, torus
- B-Rep solid creation
  - Extruded solid
  - Revolved solid
- Solid Editing
  - Boolean, edge blend, imprint, shell, break
- Mid-plane surface extraction
- Refit to parasolid
- Automatic/Interactive feature recognition
  - Parasolid based
  - Recognizable features
    - Hole
    - Blend
    - Chamfer
- Added functions
  - Edit
  - Delete
  - Show
- Support transform operations

BENEFITS
- Drastically reduce analysis modeling time
- Reduce development cost
- Increase productivity
- Build conceptual solid models directly within the MSC.Patran environment
**Mid-surface creation**
- Idealization for thin walled bodies
- Automatic
- Manual with trimming tools
  - Perform additional editing
  - Trimming of overlapped edges
- Significant increase in productivity
- Enable accurate and efficient analyses

**Automatic and interactive feature recognition**
The new automatic feature recognition/interactive feature recognition will greatly enhance the robustness and flexibility of the CAE Solid Modeler.
- Parasolid based
- Recognizable features
  - Hole
  - Blend
  - Chamfer
- Edit/Delete/Show features

**Finite element and geometry integration**
- Auto update of FEM and CAE data after solid editing operations
- On-the-fly conversion of MSC.Patran native geometry

- Interactive recognition of 3 features
- Modify feature parameter
  - Reduce diameter from 4 to 2
- Original geometry is modified automatically
- FEA and CAE data are updated accordingly
- No additional editing or remeshing of FEM is needed

---

To find your local MSC.Software office or to learn more about our company and our products, please contact:

**Corporate:**
MSC.Software Corporation
2 MacArthur Place
Santa Ana, California 92707 USA
Tel: 1 714 540.8900
Fax: 1 714 784.4056

**Customer Care Center:**
1 800 642.7437 (U.S. only)
1 978 453.5810 (International)
customer.care@mscsoftware.com

**Worldwide Web** - www.mscsoftware.com
**On-line Purchases** - www.engineering-e.com

MSC, MSC., the MSCxSoftware logo, Simulating Reality, and the names of the MSC.Software products and services referenced herein are trademarks or registered trademarks of the MSC.Software Corporation in the United States and/or other countries.

NASTRAN is a registered trademark of NASA. All other brand names, product names or trademarks belong to their respective owners.

© 2003 MSC.Software Corporation. All rights reserved.
P3*3-03*Z*CAE-SM*Z*LT-DAT