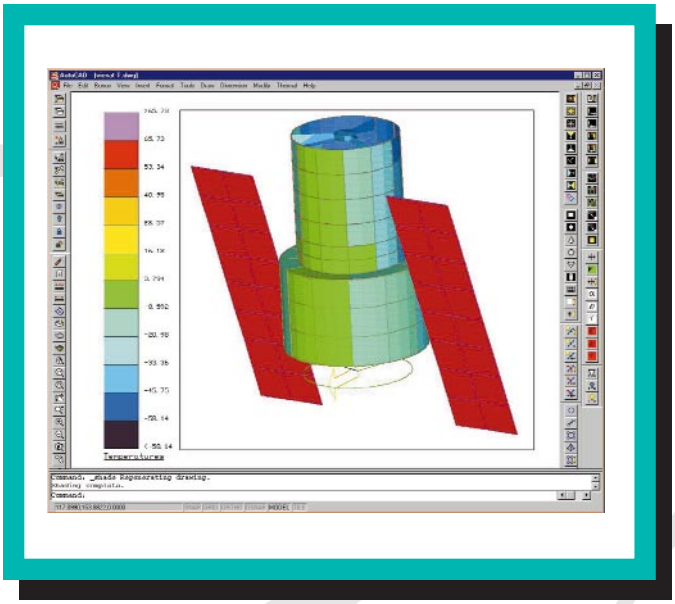
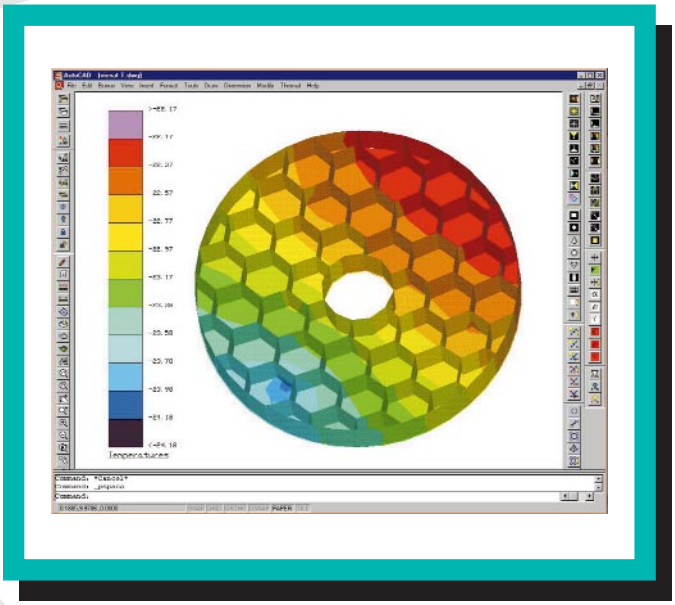
C&R TECHNOLOGIES



Spacecraft with articulating geometry post-processed for temperature results



Imported finite element model with temperature results

Thermal Desktop® enables concurrent engineering for thermal analysts by providing full access to CAD-based geometry as well as data exchange to and from structural codes without compromising traditional thermal modeling practices.

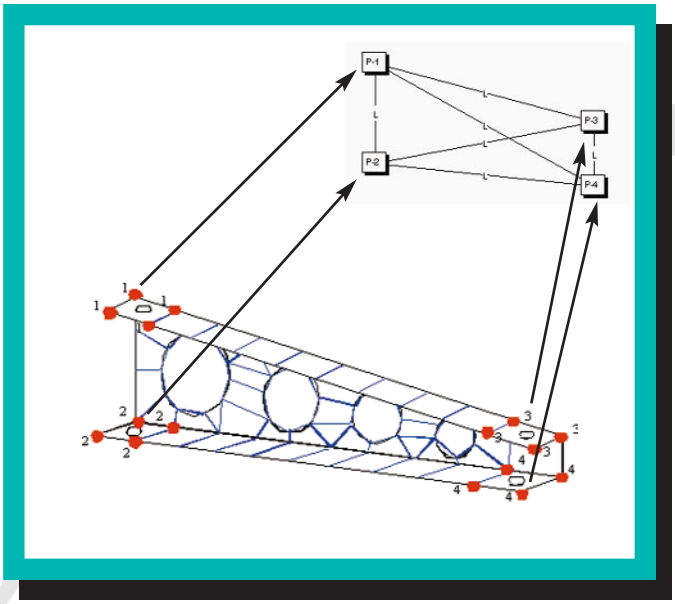
FEATURES

- Accurate conduction/capacitance generation, surface insulation, and contact conductance calculations.
- Fast thermal radiation analysis using the optional RadCAD® module.
- Fluid flow and convection analysis using the optional FloCAD™ module.
- Integrates CAD, FEM, FD, radiation and flow into a single environment.
- Fast and easy "snap-on" methods simplify thermal model building using imported CAD or FEM models as scaffolding as an alternative to using the imported models directly.
- Stretch and reshape surfaces directly on the screen in addition to traditional form-based inputs.
- Superior data mapping to structural FEM models whether or not the thermal and structural models are derived from each other.
- Innovative thermal superelements simplify complex elements into one or more SINDA nodes.
- Facilitates model verification and enables impressive presentations using extensive pre and post-processing.
- Fully integrated X-Y plotter for post-processing results.
- Calculates edge and area contact conductance.
- Automatic and easy to use insulation feature, including MLI.
- Edit models easily with the extensive node finding feature.
- Handles temperature-dependent and anisotropic material properties.

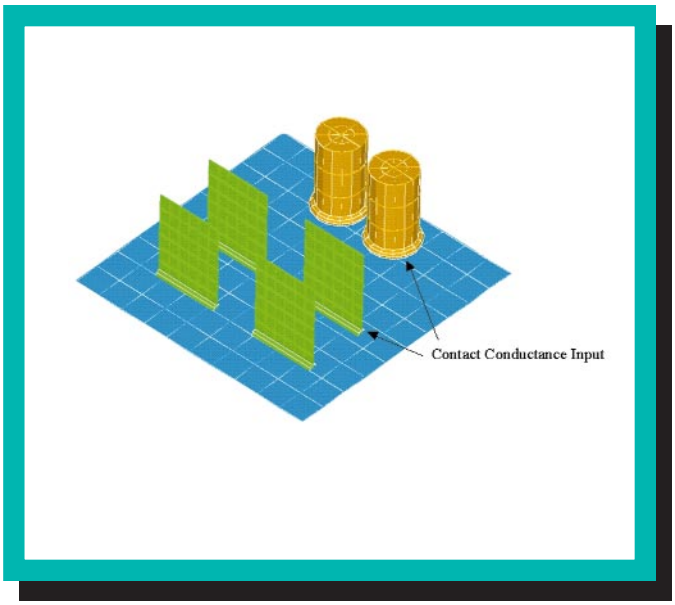
Thermal Desktop®

Thermal Desktop®

- Powerful incorporation of variable model geometry and rotating parts.
- Easy-to-use tool bars for quick access.
- Provides arbitrary nodes and conductors for abstract networks.
- Performs rapid model changes and what-if scenarios using material property aliases.
- Apply heaters, loads, or fluxes to nodes, elements, and conic surfaces.
- Automatic through-thickness conduction extends the usefulness of simple surfaces.
- Provides graphical construction of procedural thermal entities such heat pipes, heaters, and thermostats.
- Imports many file formats including TRASYS, Nevada™, TSS, STEP-TAS, IDEAS/FEA™, IDEAS/TMG™, NASTRAN, FEMAP™, IGES, STEP.
- Extensive CAD functions make model building fast and effective: • Boolean, revolved, extruded surfaces • Superimposable drawing layers • Multiple port views with store/recall • Snap-on model building • Drag and Drop model editing • User-defined light sources • Wireframe, hidden, rendered views.
- Multiple undo command.
- User-defined symbols and expressions add spreadsheet-like parametric modeling.
- Directly launches SINDA/FLUINT runs and immediately post-processes results using the one-button case set manager.
- Dynamic link to SINDA/FLUINT for on-the-fly recalculations and access to logic, parametrics, optimization, statistical design.
- Incredibly easy to learn and use with the assistance of step-by-step on-line tutorials.



Superelements: Complex regions simplified into designated SINDA nodes



Contact conductance between non-aligned edges/areas automatically calculated

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