NISA™

NISA - 3D CAD Interface

Interfaces to 3D-CAD & Solid Modelers

Pro/E

Solid Works

ACIS

Solid Edge

To facilitate the integration of analysis with CAD, NISA offers a slew of data exchange capabilities. They take one of the two forms: (1) *Direct CAD system interfaces*, implemented by a menu command within a CAD program, and (2) *Indirect data exchange interfaces*, provided by various data translators or built-in commands of DISPLAY III/IV Data conversion takes place in a manner transparent to the user.

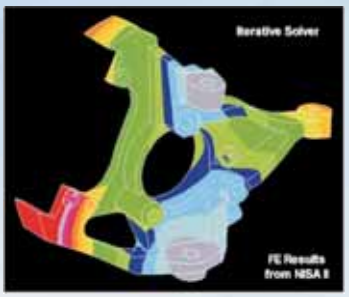
NISA - 3D CAD Interface

NISA - Pro/E

Integrated Environment for the NISA™ family of programs

NISA/Pro/E, a direct & seamless interface, provides a dynamic environment for the finite element modeling and analysis of the 3D designs created in Pro/E™. Solid models are imported into EMRC's modeling systems & DISPLAY III/IV in the form of higher order NURBS surfaces and curves (along with topological data) to ensure accurate geometry transfer.

DISPLAY III/IV's powerful and robust AUTOMESHER can mesh the transferred geometry using either solid or shell elements with a single click of the mouse. The automesher generates either all hexahedron, all tetrahedron, or mixture of different types of solid elements. For surface meshing, models with all quadrilateral elements can be generated. Loads and boundary conditions can be applied directly to the geometry. Analysis can be performed from within DISPLAY III/IV or sent for batch processing of either single or multiple runs. The results of the analysis can be viewed using the advanced post-processing features of DISPLAY III/IV.



Alternatively, users can create the finite element model using Pro/MESH, apply boundary conditions & forces, and then transfer the model to DISPLAY III/IV for the analysis. The results can then be viewed using the post-processing features of DISPLAY III/IV. The program will read the FNF neutral file created by Pro/E containing the finite element data.

In addition, DISPLAY III/IV offers powerful tools for manipulating the geometry to perform mapped meshing operations. MACRO language can be used to create models for parametric studies. MATH operator can be utilized to generate user defined quantities from the analysis results.

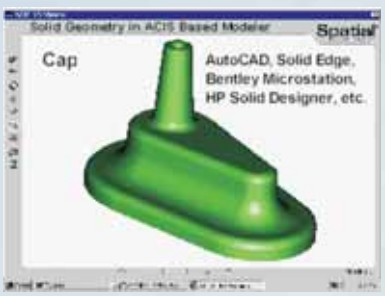
NISA/ACIS

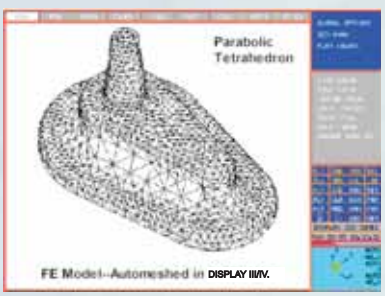
Integrated Environment for the NISA™ family of programs

As EMRC became a licensee of Spatial Technology's ACIS Kernel, the *ACIS SAT* data translator enables you to import the topological and geometric model data into DISPLAY III/IV. This is available for all ACIS-Kernel-based CAD modelers like AutoCAD/Mechanical Desktop, CADKEY, Bentley MicroStation Modeler, and Solid Edge.

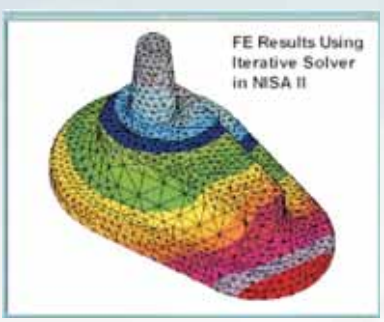
NISA/ACIS, a direct & seamless interface, provides a dynamic environment for the finite element modeling and analysis of the 3D designs created using the ACIS geometry kernel. Solid models are imported into EMRC's modeling systems & DISPLAY III/IV in the form of higher order NURBS surfaces and curves (along with topological data) to ensure accurate geometry transfer.

DISPLAY III/IV's powerful and robust AUTOMESHER can mesh the transferred geometry using either solid or shell elements with a single click of the mouse. The automesher generates either all hexahedron, all tetrahedron, or mixture of different types of solid elements. For surface meshing, models with all quadrilateral elements can be generated. Loads and boundary conditions can be applied directly to the geometry. Analysis can be performed from within DISPLAY III/IV or sent for batch processing of either single or multiple runs. The results of the analysis can be viewed using the advanced post-processing features of DISPLAY III/IV.





In addition, DISPLAY III/IV offers powerful tools for manipulating the geometry to perform mapped meshing operations. MACRO language can be used to create models for parametric studies. MATH operator can be utilized to



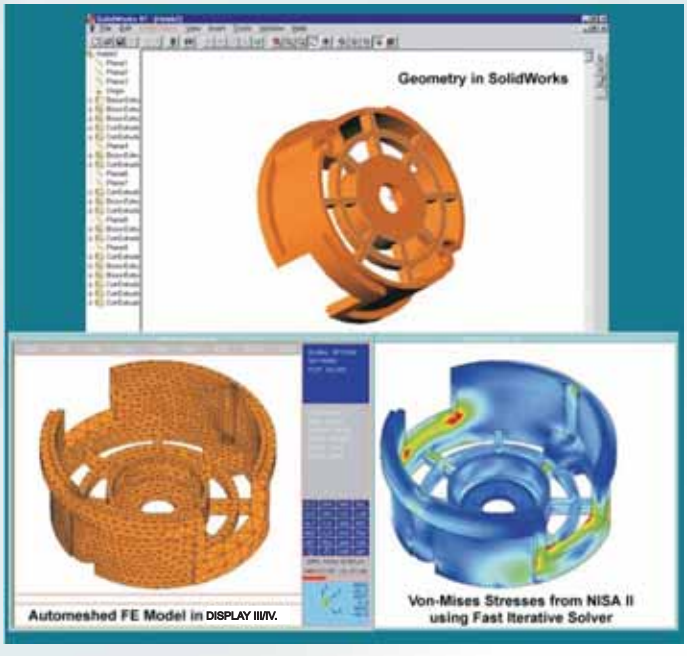
NISA/Solid Works

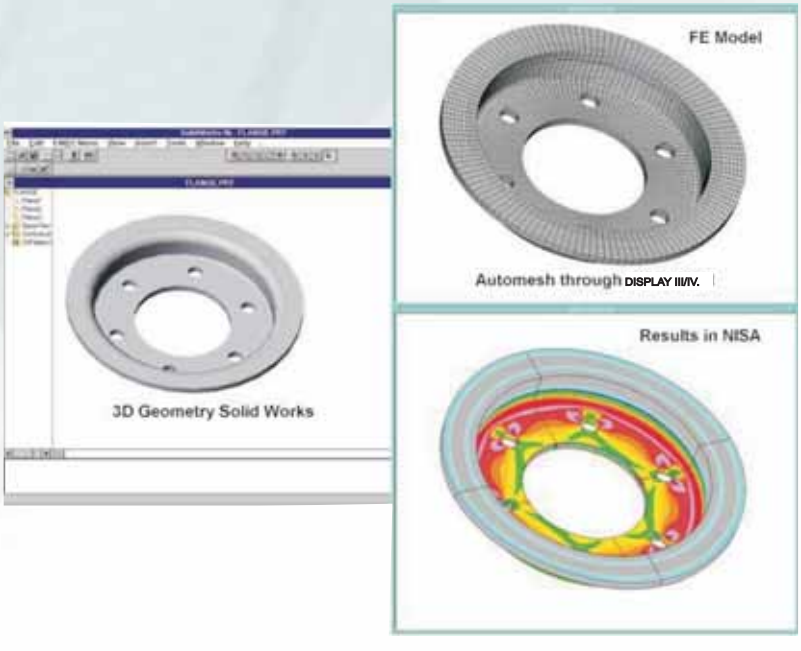
Integrated Environment for the NISA™ family of programs

NISA/SolidWorks, a direct seamless interface, provides a dynamic environment for the finite element modeling and analysis of the 3D designs created in SolidWorks™. Solid models are imported into EMRC's modeling systems & DISPLAY III in the form of higher order NURBS surfaces and curves (along with topological data) to ensure accurate geometry transfer.

DISPLAY III/IV's powerful and robust AUTOMESHER can mesh the transferred geometry using either solid or shell elements with a single click of the mouse. The automesher generates either all hexahedron, all tetrahedron, or mixture of different types of solid elements. For surface meshing, models with all quadrilateral elements can be generated. Loads and boundary conditions can be applied directly to the geometry. Analysis can be performed from within DISPLAY III/IV or sent for batch processing of either single or multiple runs. The results of the analysis can be viewed using the advanced post-processing features of DISPLAY III/IV.

In addition, DISPLAY III/IV offers powerful tools for manipulating the geometry to perform mapped meshing operations. MACRO language can be used to create models for parametric studies. MATH operator can be utilized to generate user-defined quantities from the analysis results





NISA - 3D CAD Interface

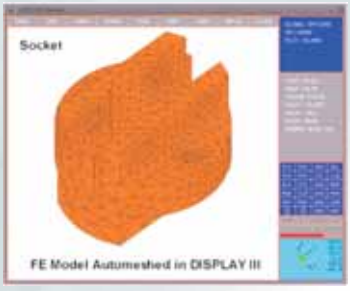
NISA/Solid Edge

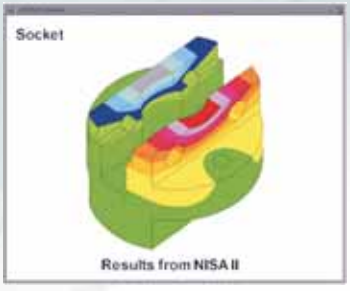
Integrated Environment for the NISA™ family of programs

NISA/Solid Edge, a direct interface, provides a dynamic environment for the finite element modeling and analysis of the 3D designs created in Solid Edge™. Solid models are imported via SAT files into EMRC's modeling systems & DISPLAY III in the form of higher order NURBS surfaces and curves (along with topological data) to ensure accurate geometry transfer.

DISPLAY III's powerful and robust AUTOMESHER can mesh the transferred geometry using either solid or shell elements with a single click of the mouse. The automesher generates either all hexahedron, all tetrahedron, or mixture of different types of solid elements. For surface meshing, models with all quadrilateral elements can be generated. Loads and boundary conditions can be applied directly to the geometry. Analysis can be performed from within DISPLAY III or sent for batch processing of either single or multiple runs. The results of the analysis can be viewed using the advanced post-processing features of DISPLAY III.

In addition, DISPLAY III offers powerful tools for manipulating the geometry to perform mapped meshing operations. MACRO language can be used to create models for parametric studies. MATH operator can be utilized to generate user defined quantities from the analysis results.





Other Interface to Modelers

IGES Data Translator

To exchange geometry and finite element data created using such CAD systems as CATIA, CADDS 5, MICRO-CADAM, and Solid Designer, a bidirectional IGES data translator is integrated in DISPLAY III. When invoked from within DISPLAY III, it translates the required geometry data to the neutral file format for NISA finite element models. Currently supported elements are various arcs, curves, splines, lines, points, ruled surfaces, rational B-spline curves and surfaces, trimmed parametric surfaces, etc.

Finite Element Model Data Translators

Bi-directional data translators let you exchange finite element models between NISA II/DISPLAY III and other systems such as NASTRAN and ANSYS.

About us

Starcom Information Technology Limited is a leading provider of Computer Aided Engineering (CAE) services to the Automotive, Aerospace, Energy & Power, Civil, Electronics and Sporting Goods industries. Over 70 dedicated scientists, technology architects and software engineers providing NISA based solutions have helped major engineering companies reduce analysis turnaround time, improve user productivity, and ensure faster return on investments.

With a mission statement to provide its customers the best in scientific technology and to enable its customers to define new limits, Starcom is setting new standards in the scientific and engineering field. For more information, please ***Email: info@starcominfotech.com***

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