

# Ansys Data Translator for NX I-deas

## Advanced bi-directional exchange of NX I-deas and Ansys data

### fact sheet

Siemens PLM Software

[www.siemens.com/plm](http://www.siemens.com/plm)

#### ► Summary

The Ansys Data Translator for NX® I-deas® software provides bi-directional exchange of finite element models and simulation results between NX I-deas and Ansys. This allows the user to combine the NX I-deas finite element pre- and post-processing software with Ansys analysis. NX I-deas Simulation and the Ansys Data Translator provide all the tools needed to build models, to define Ansys solution parameters and to view the solution results.

#### Benefits

- Simplifies the modeling process
- Requires little or no intermediate processing
- Helps eliminate redundant process steps

#### Features

- Supports a broad range of Ansys entities and solutions
- Provides advanced formatting options for tailoring the model and viewing results

The power of NX I-deas pre- and post-processing is an ideal partner with Ansys solution capabilities. NX I-deas geometry-based finite element modeling tools simplify the modeling process. The Ansys Data Translator for NX I-deas builds Ansys solver input files, so that little or no intermediate processing is needed. Solution results are imported directly from Ansys binary results files.

#### Importing Ansys models and results

An Ansys PREP7 file – exported from NX I-deas – contains the complete model information and control cards required for an Ansys solve. The model can be solved locally or copied to a remote computer for execution. The Ansys solver results file can then be imported into NX I-deas for post-processing.

Specific capabilities include:

- Creating complete finite element models including boundary conditions, applied loads and solution control for Ansys input files
- Exporting ready-to-run Ansys models for structural, thermal and magnetic analyses
- Exporting nonlinear materials
- Importing solution results directly from solver results files for NX I-deas post-processing

#### Analysis types

NX I-deas can directly create models for the following types of analyses:

- Structural static, modal and transient dynamics
- Steady-state and transient heat transfer
- Eigenvalue buckling
- Magnetics

### Elements and other entities

A wide variety of elements and other model entities are supported. In addition, NX I-deas to Ansys element mapping allows the user to define specific element types in NX I-deas to map to Ansys element types. NX I-deas groups can be exported as Ansys node and element compounds.

#### *Structural*

- Rod, beam and pipe elements
- Axisymmetric solids
- Axisymmetric thin shell elements
- Thin shell, plane stress, plane strain and membrane elements
- Solid elements
- Contact elements
- Rigid, constraint, spring, damper, gap and lumped mass elements

#### *Thermal*

- Rod and beam elements
- Thin shell, plane stress, plane strain and membrane elements
- Axisymmetric solids
- Solid elements
- Lumped mass elements

#### *Magnetic*

- Thin shell, plane stress, plane strain and membrane elements
- Axisymmetric solids
- Solid elements

A complete list of Ansys entity support is provided in the NX I-deas online help documentation.

### Loads and boundary conditions

Loads and boundary conditions for structural and thermal analysis are supported.

- Nodal force
- Nodal temperature and heat source
- Acceleration loads
- Elemental face and edge pressure
- Elemental face and edge convection
- Elemental heat flux
- Coupled DOF
- Multi-point constraints
- Beam distributed load
- Kinematic DOF
- Nodal restraint
- Nodal temperature restraint

### Analysis results

The following results are recovered using NX I-deas finite element modeling or NX I-deas correlation software for post-processing and display:

- Nodal displacement
- Reaction forces
- Nodal temperature
- Magnetic potential
- Stress
- Magnetic field intensity
- Strain
- Thermal flux
- Magnetic forces
- Thermal gradient
- Magnetic flux
- Heat flow rates
- Magnetic flux density
- Element forces

### Compatibility

NX I-deas is compatible with Ansys v10.0 and earlier releases. Contact Siemens PLM Software for up-to-date compatibility information.

### Computing platforms

Ansys Data Translator for NX I-deas is available on all major Unix and Windows platforms where NX I-deas 5 is supported. Visit [http://support.ugs.com/online\\_library/certification/](http://support.ugs.com/online_library/certification/) for additional system configuration information.

### Prerequisite

NX I-deas MasterFEM  
NX I-deas Simulation Modeling Set



### Contact

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