NaxTo

THE SMARTEST POST-PROCESSING SUITE FOR MANAGING YOUR CAE FEA RESULTS EASIER AND FASTER

FEATURES

Post-Processing has changed

With NaxTo you can post-process in a better and faster way, thanks to the use of advanced tools, intelligent reporting and automation of tedious tasks.

Naxto incorporates NaxTo View, a handy 3D post-processor; NaxTo Doc, to insert, manipulate and update images from/to MS Word, Excel and PowerPoint; NaxTo Cell to extract and manage results directly from MS Excel and NaxToPy, the python library.

BENEFITS

With NaxTo Smart post-processing, Simulation Engineers can concentrate in their most valuable task, not just moving data from here to there, nor repeating time-consuming works:

- Extract and select results and images easily from binary files.
- Update reports and images captured in few clicks.
- Reuse your reports and update with new cases.
- Enhance the information you send with 3D views into PDF format.
- Compatible with ANSYS, ABAQUS , MSC NASTRAN and OPTISTRUCT.
- Ready for Python programming, with its powerful NaxToPy library.
- No additional licenses are needed.
- Additionally, NaxTo modules can be customized to your needs to implement your analysis methods, create reports as per your formast, connect to other tools or use as 3D viewer of your own generated analysis.

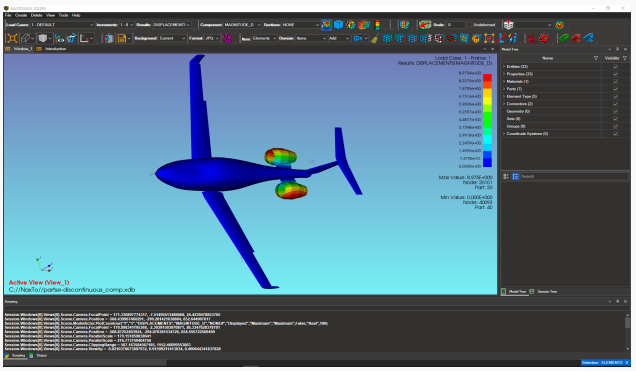
INTEGRATION/COMPATIBILITY

NaxTo is integrated in MS Excel, MS Word, MS PowerPoint with a new Ribbon, so you can use it to get results, images and update it all without the need to open external CAE FEA 3D Viewer.
It is compatible with NASTRAN, ANSYS, ABAQUS, OPTISTRUCT op2, xdb, odb, rst, h5, h3d, binary formats, since are much more efficient than text formats.
Python ready with NaxToPy library.

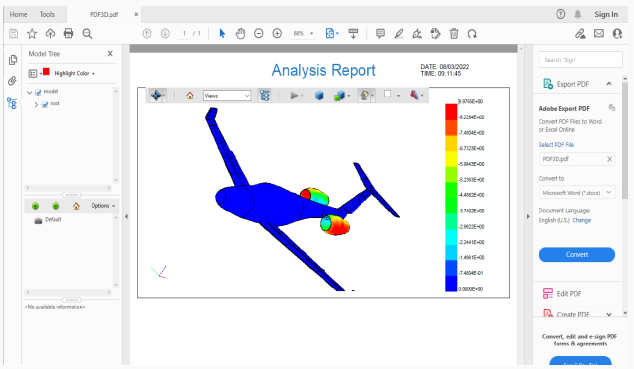
NaxTo View

Handy and easy to use 3D post-processor for stand-alone use or as interface to the rest of NaxTo Products.

- Manage graphically your models and results with useful features.
- Selection to MS Excel. Take your selection into MS Excel as formulas connected to your results files.
- Create 3D views in PDF to exchange documents to be open with Acrobat reader free.
- Scripting to manage, load and recover your post-processing sessions.
- Compatible with NASTRAN, ABAQUS, ANANSYS and OPTISTRUCT.



View NaxTo View



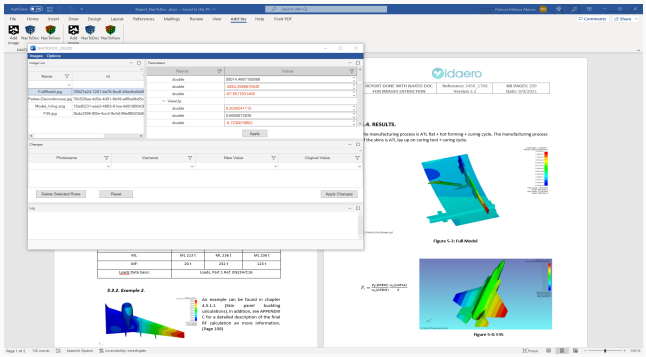
View 3D PDF

NaxTo Doc

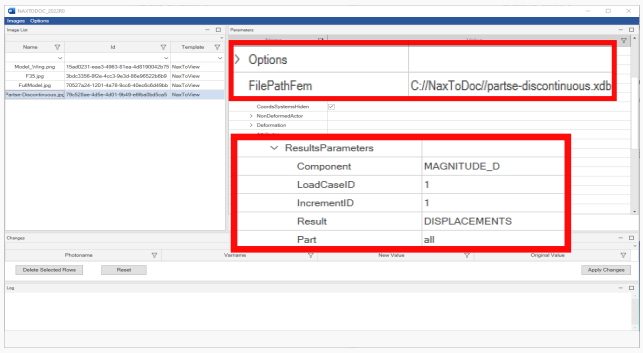
Create, update, and manipulate images taken to MS Word. Never lose again the time of taking a screenshot if anything changes!

- Extract images to MS Word, Excel or PowerPoint, keeping the information that generated each image, including the file used for taking the images.
- Position the images at any part of your Word document and resize them at your convenience.
- Manipulate images easily from MS Word to change and update for showing different results, magnitudes, camera position, files, etc.
- You can use it to update all images in a document one by one or all in batch!

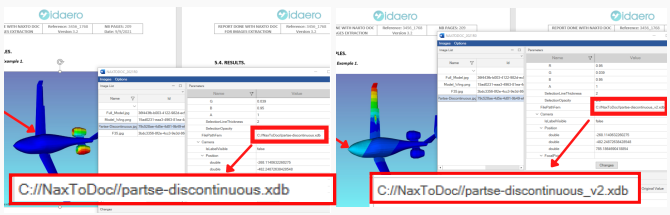
CASES of use



Creation of images for reports in MS Word, and PowePoint, pointing to many results files at a time.



Update of all images in an MS Office report, just by changing file, type of results, step, etc., directly from MS Word or PowerPoint.



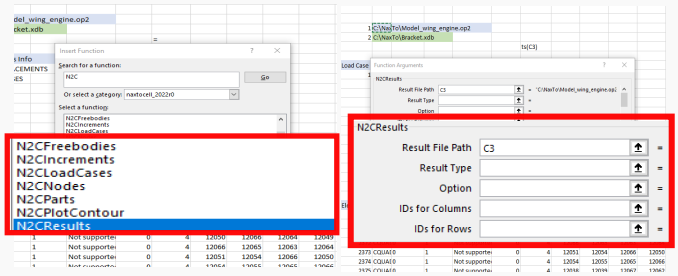
Reuse documents for different parts, just by changing the results files and updating, you will have the new pictures effortless!

NaxTo Cell

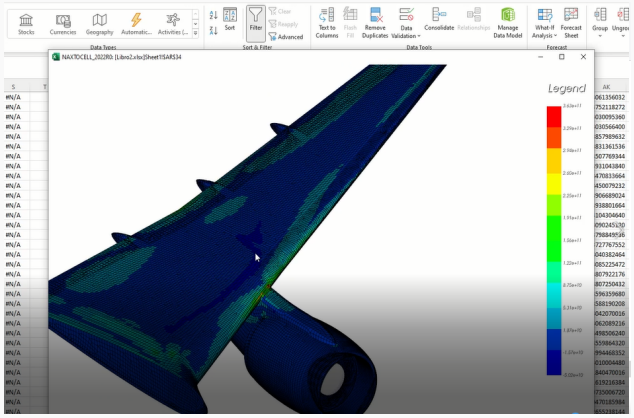
With NaxTo Cell you will have your results in Excel very easily. It works as simple as any other Excel Function.

- Prepare your reports in Excel and get results from your binary results files in a few clicks
- It is not a copy paste of values: Excel cells will be linked to results files, so update and manipulation is extremely easy!
- You can work directly with formulas at your convenience or by using NaxTo View to take results from 3D with functions to Excel cells
- Advanced functions such, Plot Contour, envelopes, free-bodies, etc.
- VBA macros inside Excel can also use NaxTo Cell functions.
- Creation of templates for cascade-like calculations, pointing to many results files at a time.
- Update of all results values in an Excel, just by changing file, type of results, step, etc., from Excel.
- Reuse of templates for applying your calculations to many similar parts, simply by pointing to new results files of those parts and updating.

CASES of use



Easy extraction of any results without the need of macros.



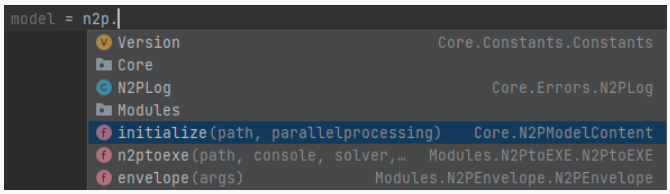
Plot the results of your analysis back to 3D model.

NaxToPy

NaxToPy is the NaxTo library for Python.

- Allows reading and working with FEM analysis binary results files.
- Compatible with NASTRAN, ABAQUS, ANSYS and OPTISTRUCT, op2, xdb, odb, rst, h3d files.
- It allows all the coding power with Python to access the results.
- No need for other softwares, apart of NaxTo Installed.

CASES of use



It appears when you open NaxToPy. Type "n2p" and you will get a list of actions to perform. Main action "initialize model".

```python
import NaxToPy as n2p

results_file = r"C:\NaxToPy\binary_files\Test_Wing_Engine.op2"

model = n2p.initialize(path=results_file)

loadcase1 = model.get_load_case(id=1)

forces = loadcase1.get_result(name="FORCES")

DF_forces = forces.get_results_dataframe()

print(DF_forces)
```

```
"C:\Program Files (x86)\Microsoft Visual Studio\Shared\Python39_64\python.exe" C:\NaxToPy\example.py
                FX          FXY  ...            QX            QY
Element                          ...
2369     -56552972.0   -4794796.5  ...  2.814930e+03  4.058859e+03
2370     -55492172.0   -4788491.0  ...  2.767805e+03 -1.255915e+03
2371     -56036000.0   -5776608.0  ... -3.594790e+03 -2.839860e+03
2372     -56393224.0   -4703345.0  ... -2.451411e+02 -3.578474e+03
2373     -55017848.0   -5816751.5  ... -3.830361e+03  2.041194e+03
...              ...          ...  ...           ...           ...
89127    136493168.0  -55444444.0  ...  1.496280e+06  9.492851e+06
89128    489760064.0  259649424.0  ... -1.364908e+06  1.975284e+07
89129    337457472.0  357883648.0  ... -2.380658e+06  1.936342e+07
89130     54639216.0   95740464.0  ...  9.660638e+05  3.955822e+05
89131     29337546.0   16403569.0  ...  2.166078e+05  1.953980e+06
```

Example with NaxToPy: Forces on elements as data frame in Pandas.

```python
nodes_envelope = [model.get_nodes()[index[0]] for index in envelope_list]

displ = model.get_load_case(3).get_result("DISPLACEMENTS").get_results_dataframe()

# The user knows pandas and process the data frame
displ.drop('Magnitude', axis=1, inplace=True)

envelope_df = n2p.envelope(displ)
print(envelope_df)
```

Example with NaxToPy: Call the function "n2p.envelope" as data frame in Pandas.

IF YOU WANT TO KNOW MORE ABOUT NAXTO. CONTACT US!

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