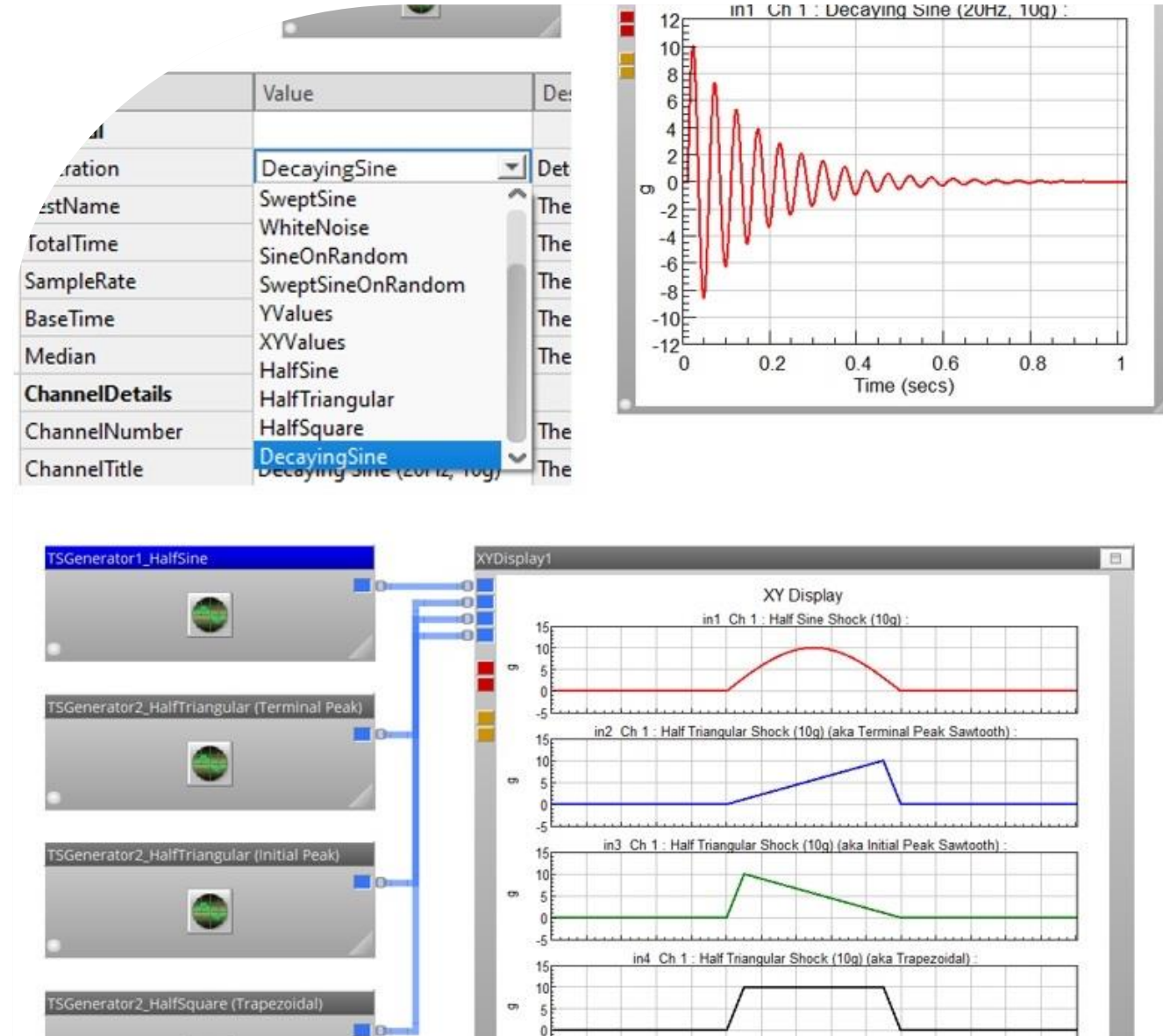


What's new in nCode (2026.1 & recent)

Doug Young
Applications Engineer



New in Training

You may take, free-of-charge, any public offering (with capacity) of this class within one year of having taken it on a paid basis.

Please contact us if you would like to register to **re-take** a class.



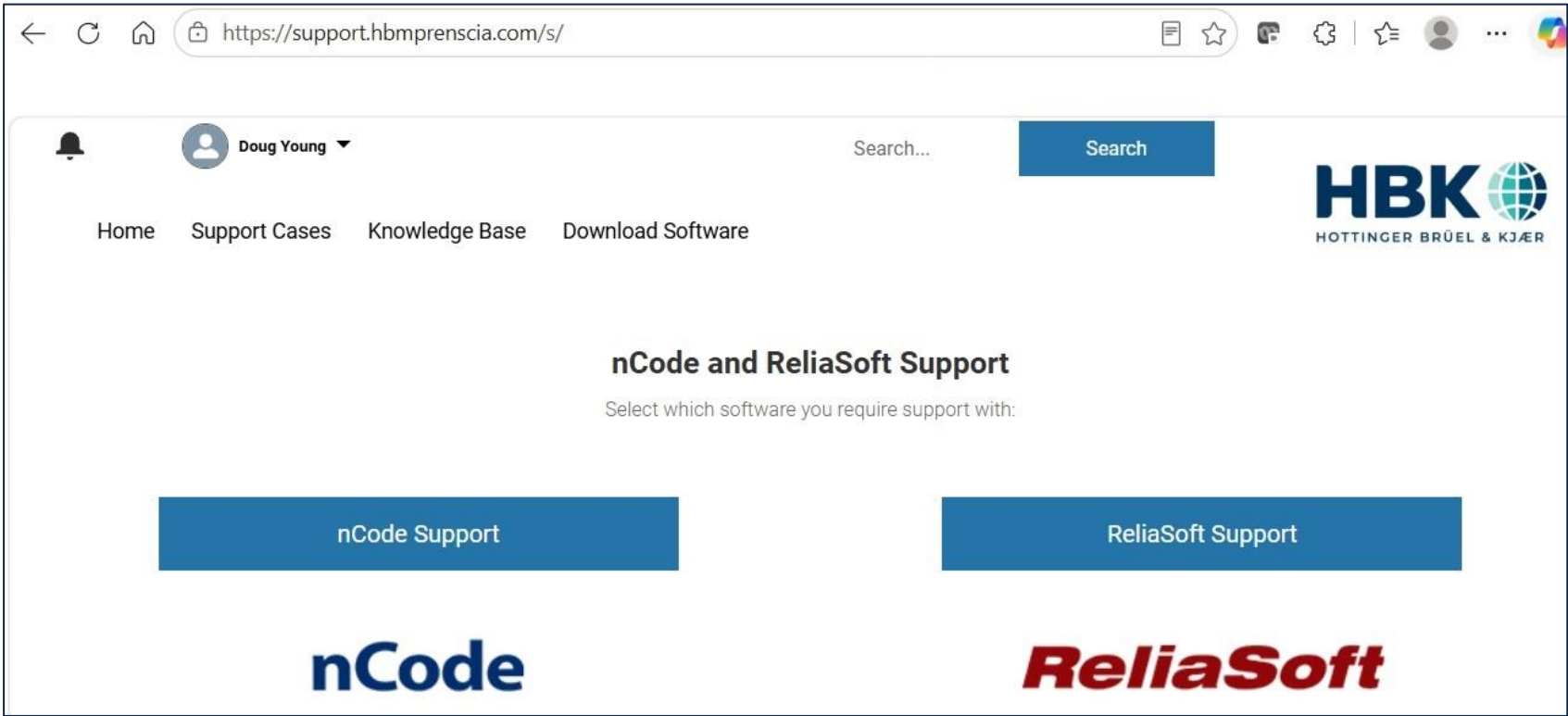
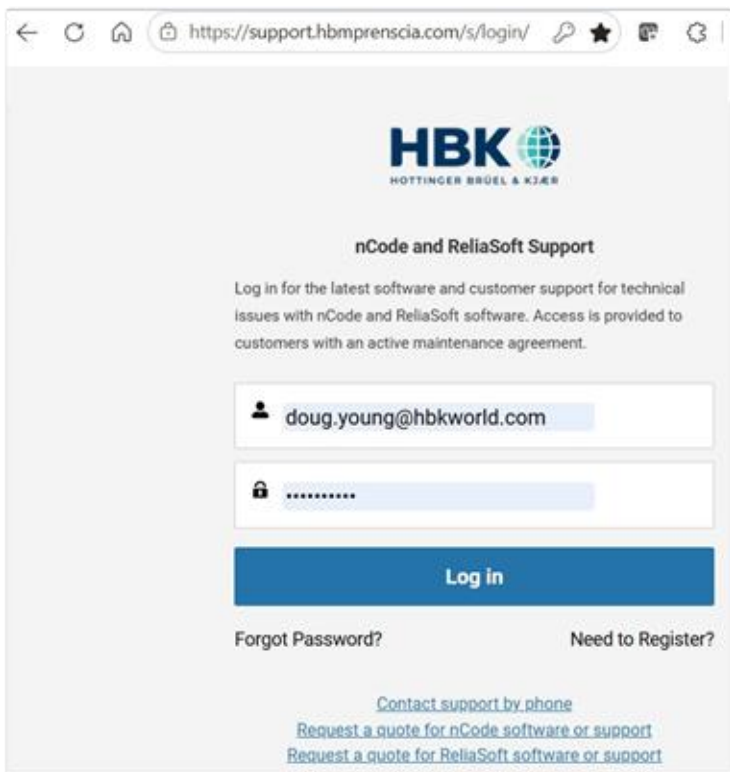
Digital course certificates will be issued to all individuals attending at least 70% of the course sessions. These certificates may be shared on social media and may be printed. Please allow up to 30 days for delivery of the certificate.

Support Portal to Download Latest Release

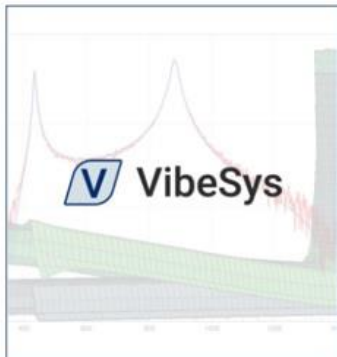
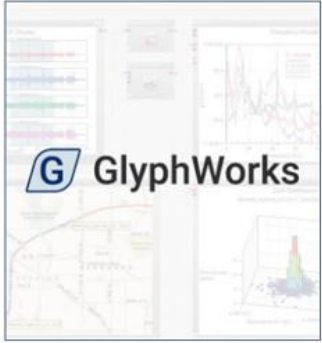
Login to: <https://support.hbmprensia.com>

1st time: Requires Registration

Subsequent Use:
Create Support Request
Check Knowledge Base
Download Software



What's New in nCode (2026.1 & recent) Agenda



New glyphs & properties to support new workflows
Usability enhancements palette reorganisation
Cyber Security, OS, & 3rd Party (Python, Matlab etc) support
Performance, DesignLife Faster translation and faster analysis
DesignLife FE solver specific enhancements
New and enhanced temperature methods
New material databases and materials (in MaterialsManager)
New Vibration & **Shock** Standards (in VibrationManager)
New worked examples and standard processes

Check Release Notes

The screenshot displays the nCode 2026.1 software interface. On the left is a 'Contents' sidebar with a tree view of the documentation. The main window shows the 'Release Notes' for 'Section 7: DesignLife'. The sidebar includes sections like 'Release Notes', 'Known Issues', 'Resolved Issues', and various guides. The main content area is titled '7 DesignLife' and contains subsections: '7.1. DesignLife - New Features', '7.1.1 Enhanced Control of Normal Strain Calculation in the Brown–Miller Method', '7.1.2 Support for the ANSYS H5DPF File Format (Beta)', '7.2. DesignLife - Enhancements', '7.2.1 Support for Scale Factors in LS-DYNA .d3eigv Files', '7.2.2 Solid Seam Weld Notch Location Identification', and '7.2.3 Support for MSC Nastran H5 Files using LZ4 Compression'. The text describes new features like the **BMNormalMethod** property and enhancements like support for ANSYS H5DPF and LS-DYNA file formats.

nCode 2026.1

Search All Files ▾

Contents

- Release Notes
 - Section 1: Introduction
 - Section 2: Supported Platforms and Operating Systems
 - Section 3: Software security enhancements
 - Section 4: Important notes
 - Section 5: Databases
 - Section 6: GlyphWorks and VibeSys
 - Section 7: DesignLife**
 - Section 8: The Versions of Results Files supported
- Known Issues
- Resolved Issues
- Installation, licensing, Python/NumPy guides
- Aqira and nCodeDS
- Getting Started
- Worked Examples
- Glyph Reference Guide
- Metadata Keywords & Equation Variables
- DesignLife Programmers Guide
- Standard Processes
- File Formats
- User Guides
- Theory Guides
- Premium Materials Database
- Modules
- Tools

... [Release Notes](#) > Section 7: DesignLife

7 DesignLife

7.1. DesignLife - New Features

7.1.1 Enhanced Control of Normal Strain Calculation in the Brown–Miller Method

A new **BMNormalMethod** property has been introduced to control how normal strain is calculated in the Brown–Miller method.

The following options are available:

- » **TurningPoints** (default): Normal stress and strain are assumed to be maximised at the turning points of the Wang–Brown excursion and coincide with shear strain.
- » **All**: The full excursion is searched for maximum normal and shear strain ranges independently, allowing them to occur at different locations.

7.1.2 Support for the ANSYS H5DPF File Format (Beta)

Support for the **ANSYS H5DPF** file format is available through the DPF reader. This is a Windows-only Beta feature and currently supports linear stress/strain and temperature data for solid element types.

7.2. DesignLife - Enhancements

7.2.1 Support for Scale Factors in LS-DYNA .d3eigv Files

Scaled data in LS-DYNA .d3eigv files is now supported, with original values automatically recovered.

7.2.2 Solid Seam Weld Notch Location Identification

WeldRootMethod and **WeldRootElementMinSize** properties have been added to the FE Import Analysis Group. These optionally enable identification of weld root or notch locations by evaluating adjacent weld element edge sizes.

7.2.3 Support for MSC Nastran H5 Files using LZ4 Compression

Check for Worked Examples (WEX), Glyph Reference Guides, Standard Processes, Training Classes, Knowledge Base (KB) Articles, or Contact Support

nCode 2026.1 DesignLife Solid Seam Weld

Automatic Weld Detection added in 2022.0
New improved method to find root locations.

The screenshot shows the nCode 2026.1 user interface. At the top, there is a dark blue header with the text "nCode 2026.1" on the left, a "Search" button in the center, and "All Files" with a dropdown arrow on the right. Below the header, on the left side, is a "Contents" panel with a list of sections. "Section 7: DesignLife" is highlighted in blue. The main content area on the right displays the details for Section 7.2, "DesignLife - Enhancements". It includes two sub-sections: "7.2.1 Support for Scale Factors in LS-DYNA .d3eigv Files" and "7.2.2 Solid Seam Weld Notch Location Identification". The text for 7.2.2 describes the addition of **WeldRootMethod** and **WeldRootElementMinSize** properties to the FE Import Analysis Group.

nCode 2026.1

Search

All Files ▼

Contents

Release Notes

- Section 1: Introduction
- Section 2: Supported Platforms and Operating System
- Section 3: Software security enhancements
- Section 4: Important notes
- Section 5: Databases
- Section 6: GlyphWorks and VibeSys
- Section 7: DesignLife**
- Section 8: The Versions of Results Files supported

7.2. DesignLife - Enhancements

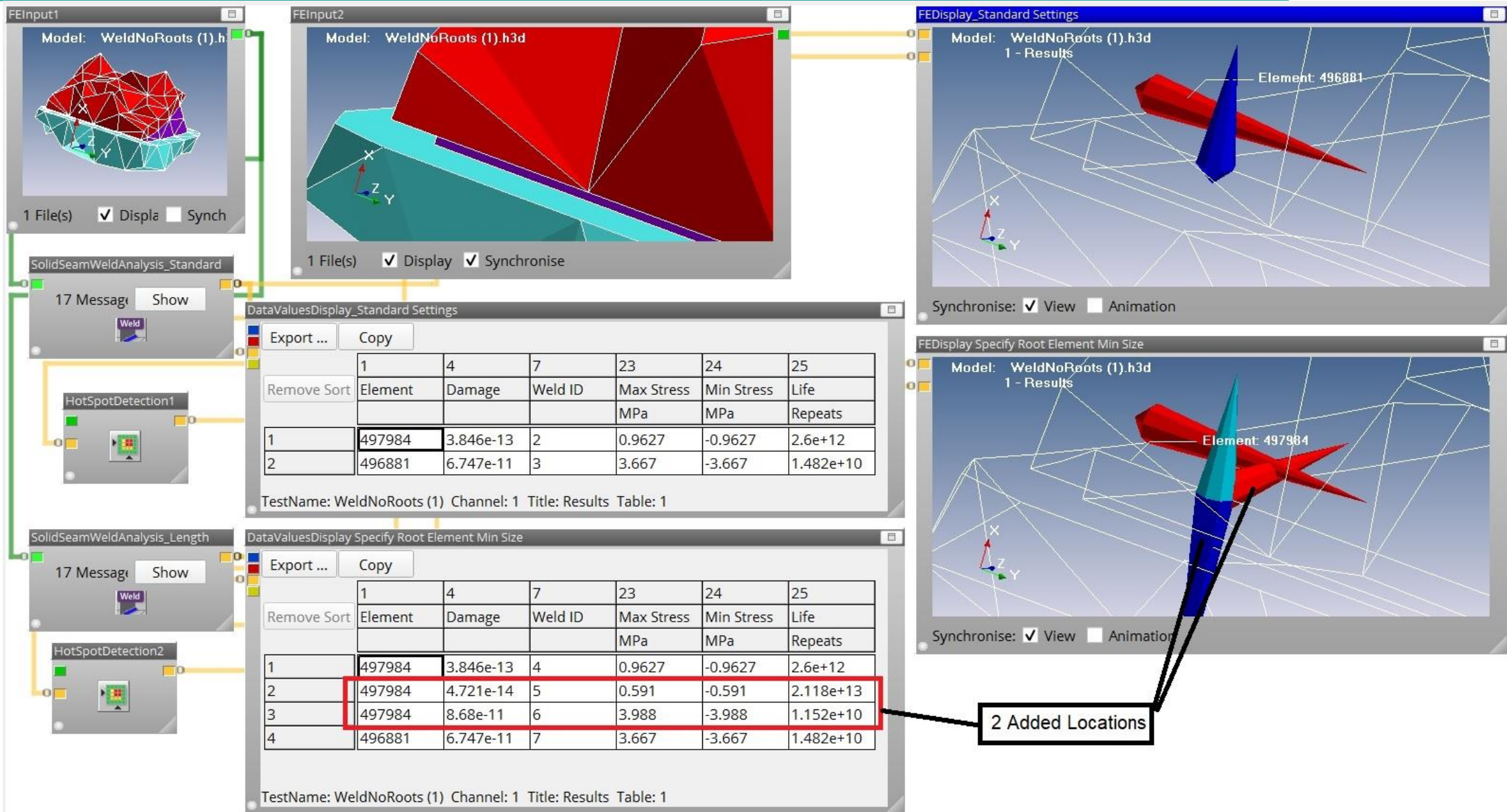
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WeldRootMethod and **WeldRootElementMinSize** properties have been added to the FE Import Analysis Group. These optionally enable identification of weld root or notch locations by evaluating adjacent weld element edge sizes.

New: nCode DesignLife 2026.1 WeldRootMethod = WeldRootElementMinSize



Details: WeldRootMethod = WeldRootElementMinSize

Glyph Reference Guide

Object name

Job

FE Results

FEResultsImport

WeldsSolids

FEResults

Loading

LoadProviderConstant

Materials

MaterialMap1

DefaultMaterial

MatDB

Analysis Runs

Run1

AnalysisDefinition1

SeamWeldEngi

MaterialMap1

EntitySubsetStatic1

Compressed result:

Post Processors

Compressed results (dis

Entity Subsets

EntitySubsetStatic1

Advanced

Object Name

	Name
+	Gener
+	Entity
+	Entity
+	Entity
+	Units
+	Seam
+	SolidE

SolidWeldAuto

True

Solid weld auto selection mode

MaxWeldDepth

5

Maximum weld depth

NumWeldLayers

5

Number of weld layers

NumNotchWeldLines

3

Number of weld definitions at notch positions

AverageResultsAtNodes

True

Whether to average results to the nodes

WeldRootMethod

ElementMinSize

Method to use for notch identification with solid welds

WeldRootElementMinSize

2

Minimum size value for notch identification

WeldOutputFilename

Output file for auto located solid element welds

Help on WeldRootElementMinSize

i

Element edge value to use with WeldRootMethod options ElementMinSize (FE DistanceUnits) or ElementPercentMinSize.

nCode 2026.1

Search

All Files

Contents

VibeSys Glyphs

DesignLife Solvers Glyphs

Adhesive Bond Analysis

CAE Fatigue (Blank Configuration)

CAE Creep Analysis

Composite Analysis

Custom Analysis Engine

Dang Van CAE Fatigue

EN CAE Fatigue

Multiaxial CAE Fatigue

SN CAE Fatigue

Safety Factor CAE Fatigue

Seam Weld CAE Fatigue

Shell Seam Weld CAE Fatigue

Short Fibre Composite SN CAE Fatigue

Solid Seam Weld CAE Fatigue

Description

Inputs

Outputs

Properties

Spot Weld CAE Fatigue

Strain Gauge Positioning

Vibration CAE EN Fatigue

psf

Pounds square foot.

Welds_Solids_WeldDefinitionFilename

This property is used to specify a single XML format file containing thick solid element weld definitions. This file contains one or more weld line definitions and each weld line defines one or more weld locations. Each weld location defines a starting location, a vector to define the direction of the SCL, a vector to define the primary stress direction perpendicular to the SCL, and an optional max weld depth distance. The detail of this file format is described in the File Formats PDF document.

Although the weld definition file is an XML formatted file no specific file extension is required therefore the complete filename should be specified. If no path is specified then the file is assumed to be in the working directory.

Welds_Solids_WeldOutputFilename

If SolutionLocation=SeamWeld, SeamWeldType=SolidWeld and SolidWeldAuto=True, the results of the automatic solid weld location process are written to this file.

The file can be used as input with SolidWeldAuto=False by setting WeldDefinitionFilename.

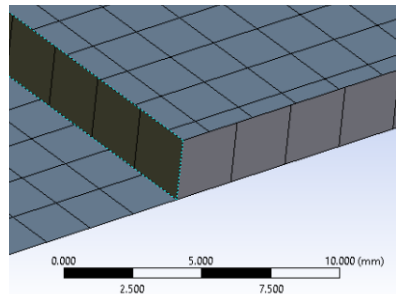
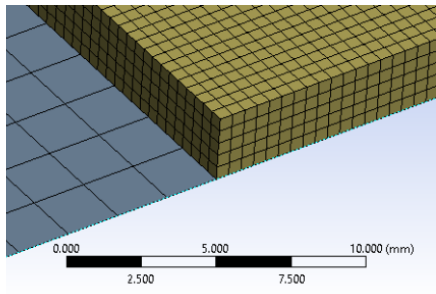
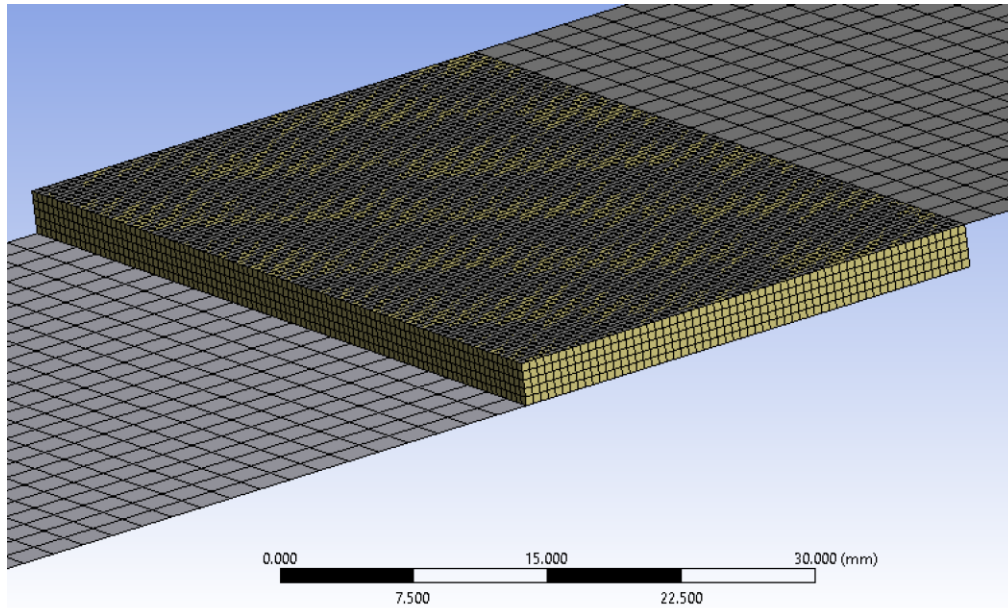
Welds_Solids_WeldRootMethod

If SolutionLocation = SeamWeld, SeamWeldType = SolidWeld, and SolidWeldAuto = True, this property enables automatic determination of weld root and notch locations by examining the edge sizes of the adjacent weld element free face.

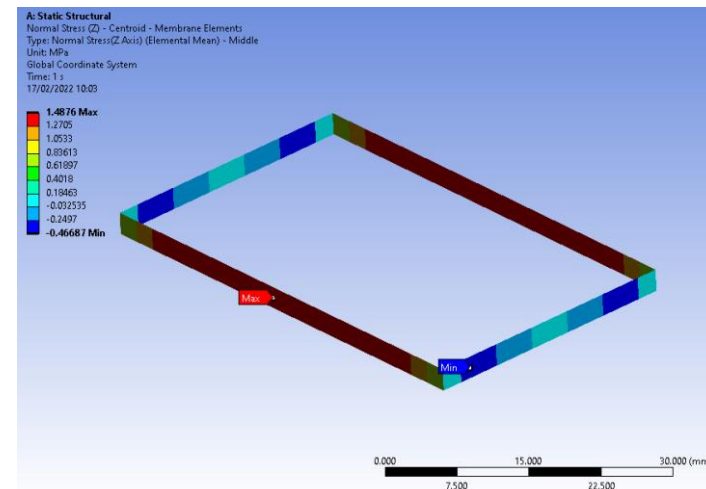
Standard	Do not analyse element dimensions when determining notch locations.
ElementMinSize	Considers a location to be a notch if any adjacent edge length is less than WeldRootElementMinSize.
ElementPercentMinSize	Considers a location to be a notch if the minimum adjacent edge length, expressed as a percentage of the maximum adjacent edge length, is less than WeldRootElementMinSize.

Advanced Edit
Menu: Element Size
= 2mm

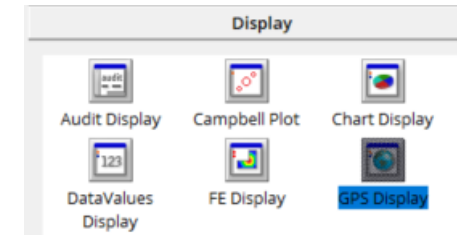
Adhesive Bonds – SN Analysis Robust Meshing



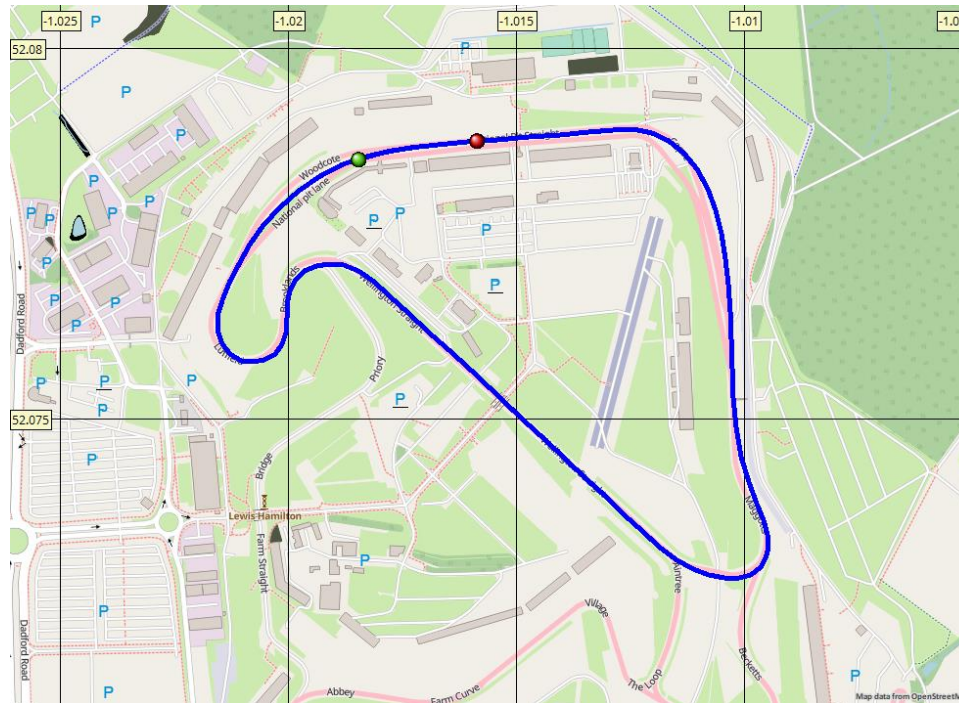
- Sheet metal and adhesive mesh do not have to match
- Adhesive can be solid or cohesive elements
- MPCs or bonded contact join adhesive to sheet metal
- Edge perimeter of adhesive coated with single row of membrane elements
- Membrane elements attached to adhesive with bonded contact
- Stress recovered at element centroid of membranes in the through thickness direction of the adhesive
- Requires Adhesive Specific SN Curves



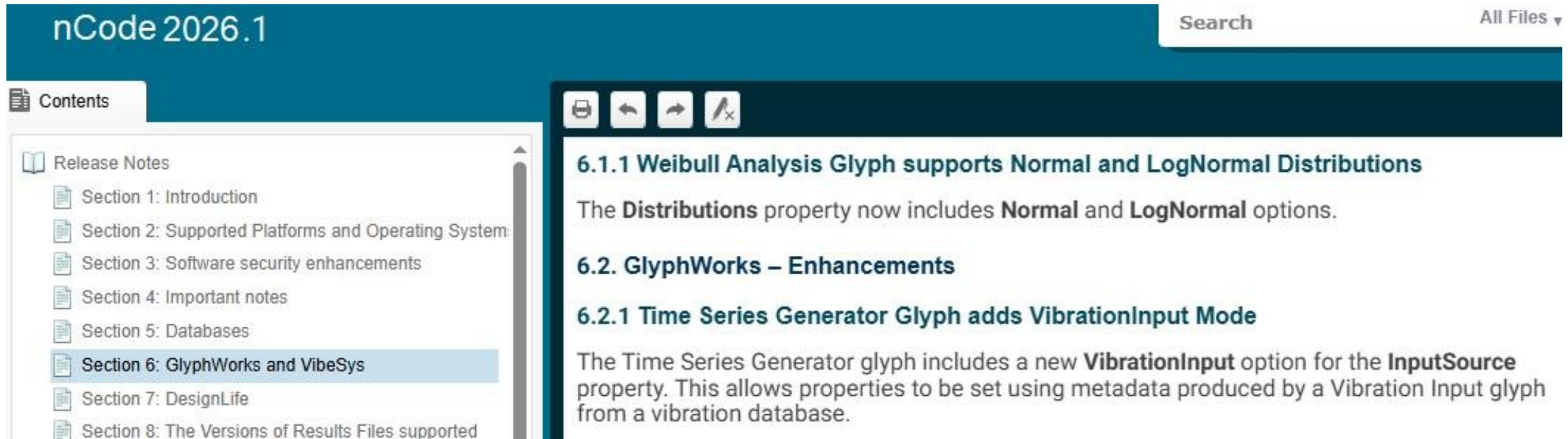
- Provide a HBK version of OpenStreetMaps
- Uses the HBK OpenStreetMaps as the default internet map in the GPS Display glyph
- No need to pay for an Internet map service



Provides a map tile service with no cost or need to register a credit card



nCode 2026.1 GlyphWorks TimeSeries Generator



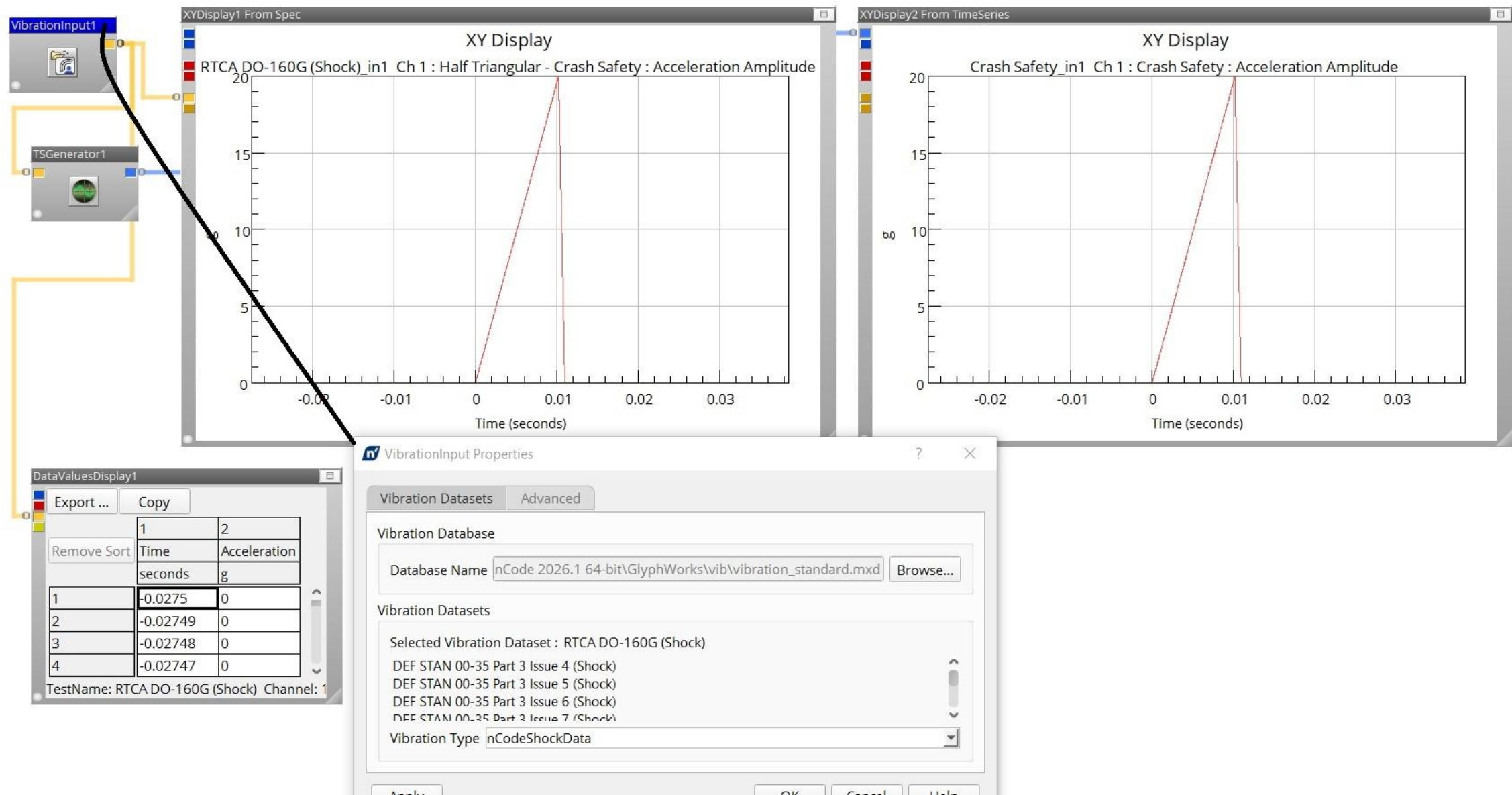
Added Input Pipe to Time Series Generator in 2025.0

Needed wave types in 2025.1

Added Specifications added to VibrationManager in 2026.0

Added from VibrationManager through VibrationInput to TimeSeriesGenerator

New: nCode GlyphWorks 2026.1 Shock Analysis Workflow (1/2)



New: nCode GlyphWorks 2026.1 Shock Analysis Workflow (2/2)

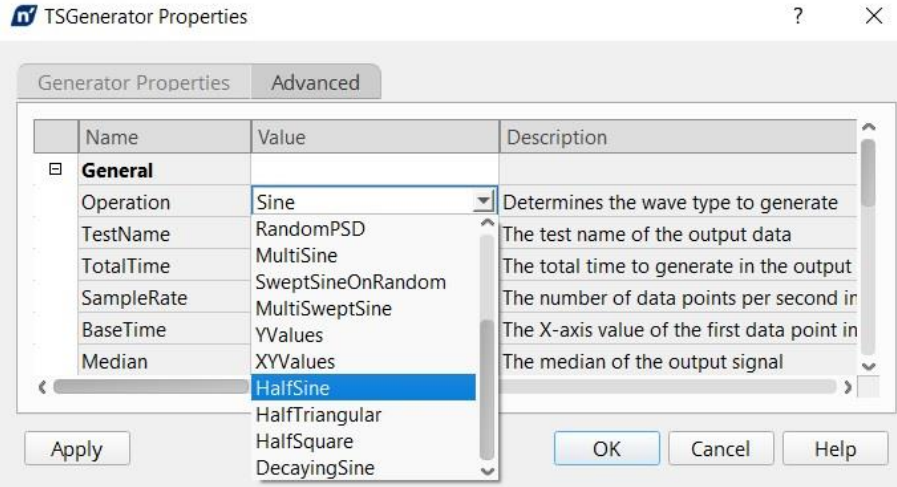
- Section 3: Software security enhancements
- Section 4: Important notes
- Section 5: Databases
- Section 6: GlyphWorks and VibeSys
- Section 7: DesignLife

6.2. GlyphWorks – Enhancements

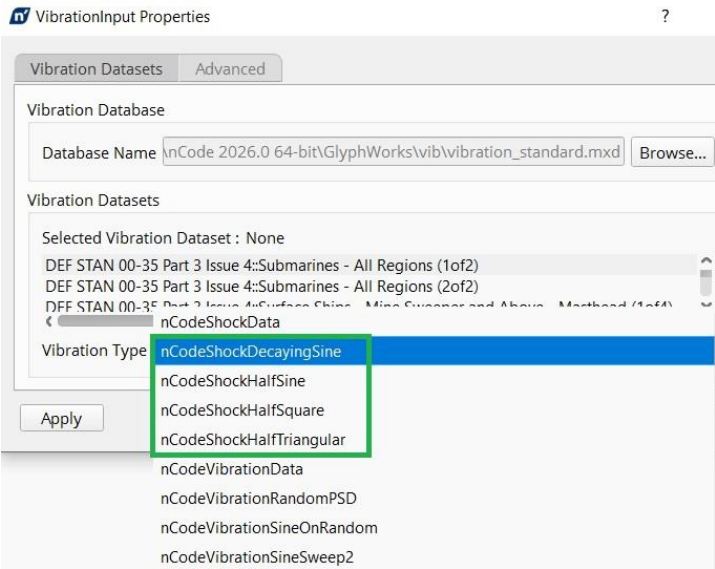
6.2.1 Time Series Generator Glyph adds VibrationInput Mode

The Time Series Generator glyph includes a new **VibrationInput** option for the **InputSource** property. This allows properties to be set using metadata produced by a Vibration Input glyph from a vibration database.

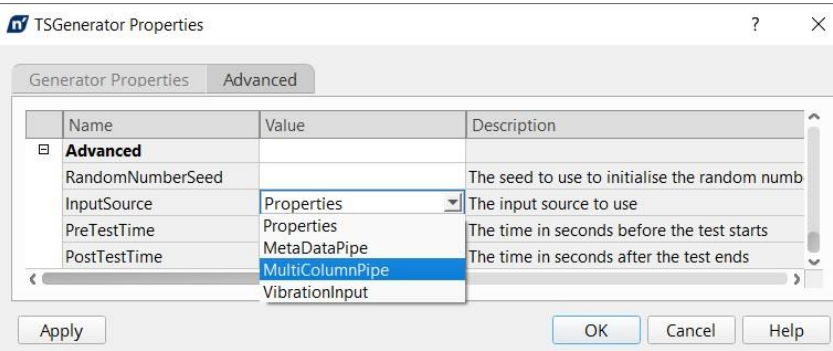
Add wave types to
TSGenerator in 2025.1



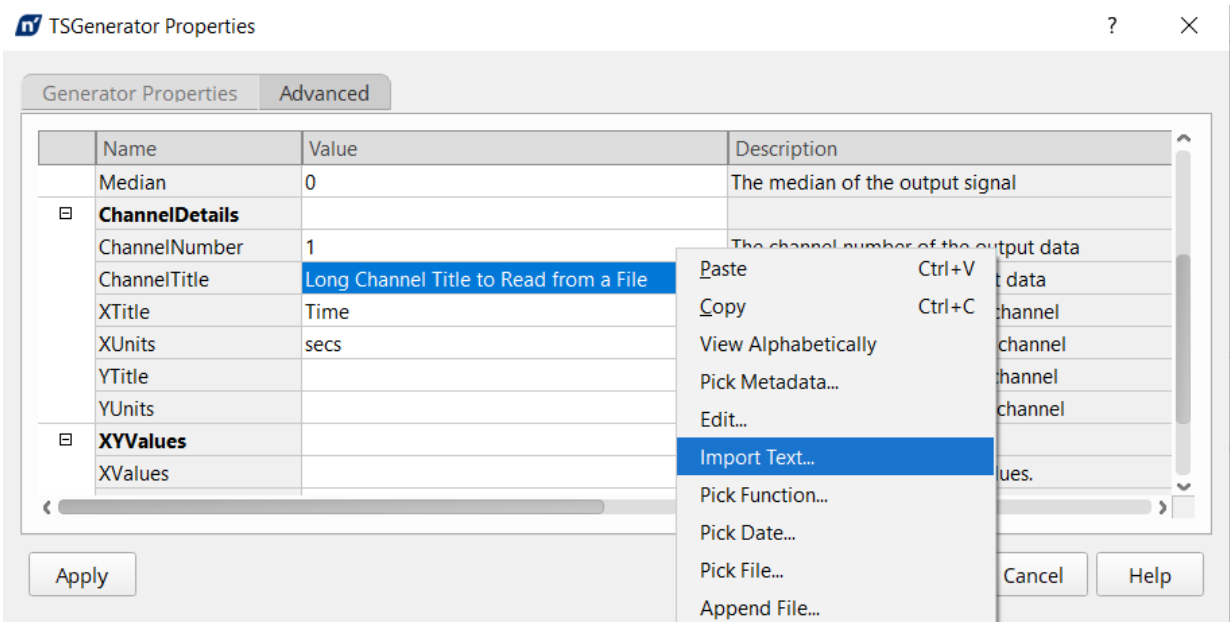
Add to Vibration Table
2026.0



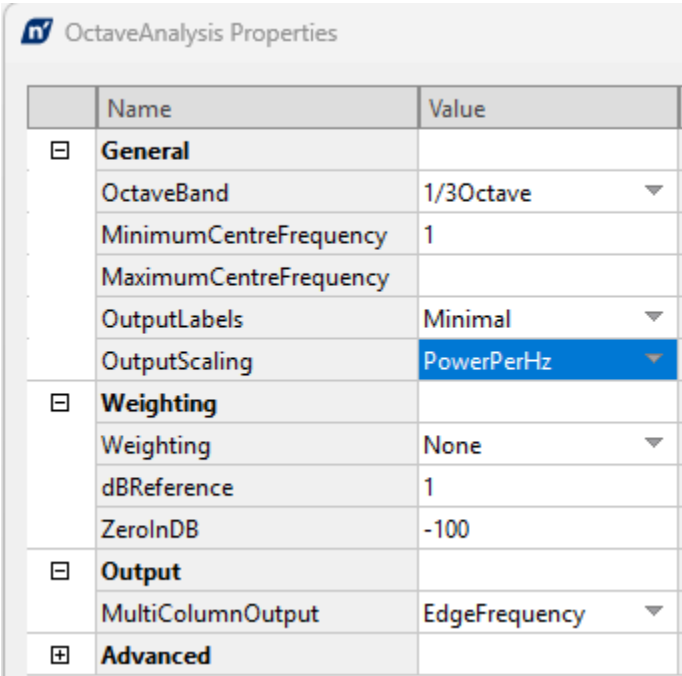
Read From Vibration Table
2026.1



New option to import text from a file to set property values



Power-per-Hz output scaling from the Octave Analysis glyph



Material	
MaterialDataSource	MXD_database
MaterialDatabaseName	iceflow_standard.mxd
MXDMaterialType	EN
MaterialName	Austenitic Stainless Steel BS970 Grade 349S52
SurfaceFinish	EnterKRoughness
SurfaceTreatment	None
CertaintyOfSurvival	50
KRoughness	0.8

DesignLife’s EnterKRoughness surface finish option is now available in the Stress Life and Strain Life glyphs

- MSC.NASTRAN

Continuing to keep up to date
with all supported FE solvers

- nCode 2023.0 .op2 2022, .h5 2022
- nCode 2024.0 .op2 2022, .h5 2022
- nCode 2025.0 .op2 2024.1, .h5 2023.4
- nCode 2026.0 .op2 2025.1, .h5 2023.4
- **nCode 2026.1 .op2 2025.1, .h5 2023.4**

- OptiStruct

- nCode 2023.0 .op2 2022, .h3d 2022
- nCode 2024.0 .op2 2023, .h3d 2023
- nCode 2025.0 .op2 2024, .h3d 2024
- nCode 2026.0 .op2 2025, .h3d 2025
- **nCode 2026.1 .op2 2025, .h3d 2025**

- NASTRAN / OptiStruct compressed OP2

- From nCode 2023.1 FEMZIP 1.7.13 compression

- Abaqus ODB

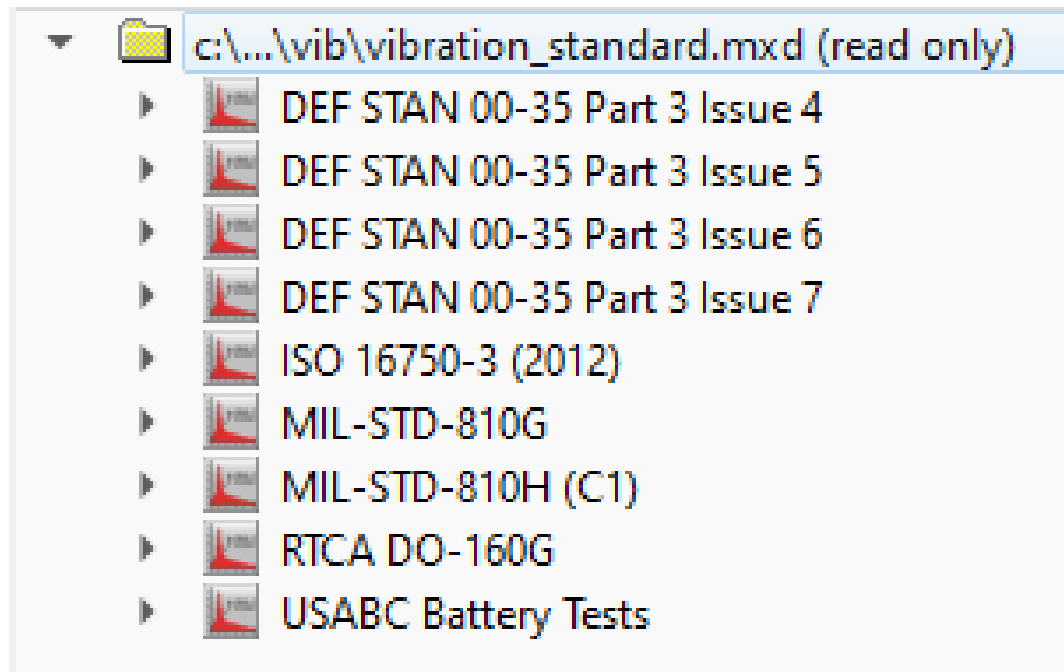
- nCode 2023.0: .odb 2017, 2018, 2019, 2020, 2021, 2022
- nCode 2024.0: .odb 2019, 2020, 2021, 2022, 2023
- nCode 2025.0: .odb 2022, 2023, 2024
- nCode 2026.0: .odb 2022, 2023, 2024, 2025
- **nCode 2026.1: .odb 2023, 2024, 2025, 2026**

- Ansys RST

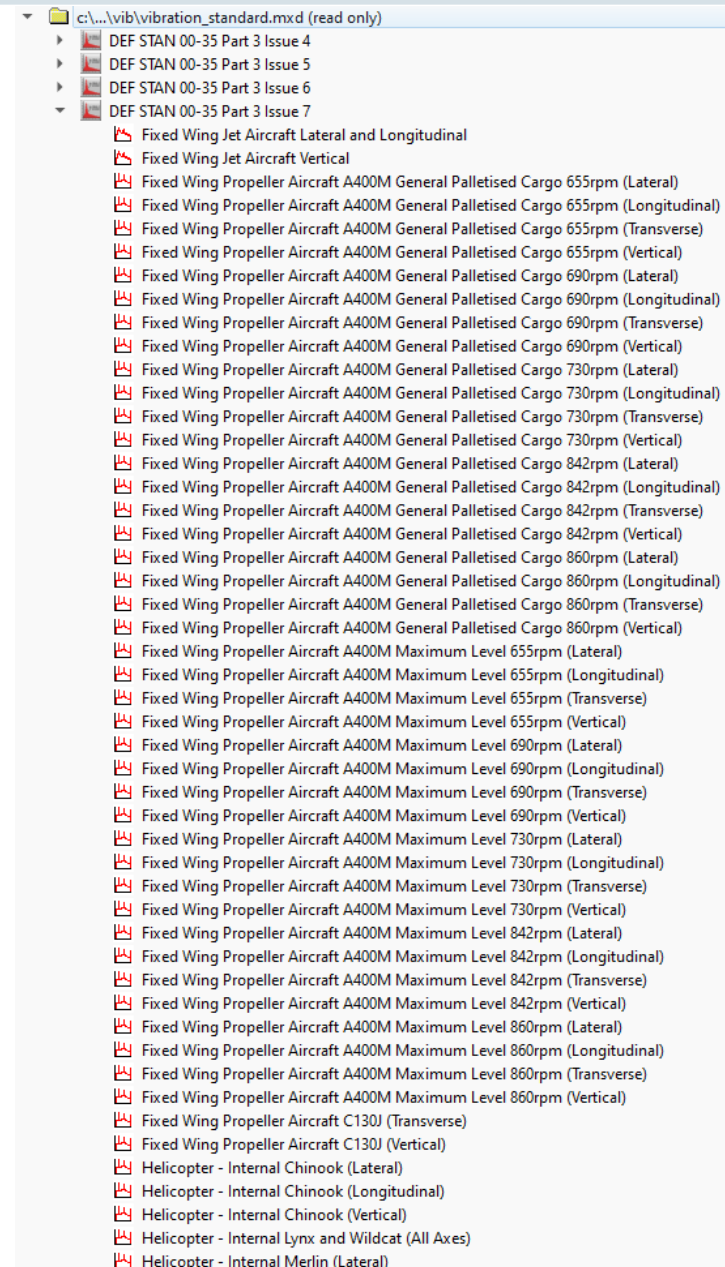
- nCode 2023.0: .rst 2023 R1
- nCode 2024.0: .rst 2024 R1
- nCode 2025.0: .rst 2025 R1
- nCode 2026.0: .rst 2025 R2
- **nCode 2026.1: .rst 2026 R1**

For details of all supported FE solvers and results, including LS-Dyna, Mechanical/CREO, I-DEAS, Radioss, PAM-CRASH, FEMZIP, see “Versions of Results Files Supported” in Release Notes in nCode documentation.

- The data from DEF STAN 00-35 has been updated to include Issue 7
- The total number of entries is now over 380

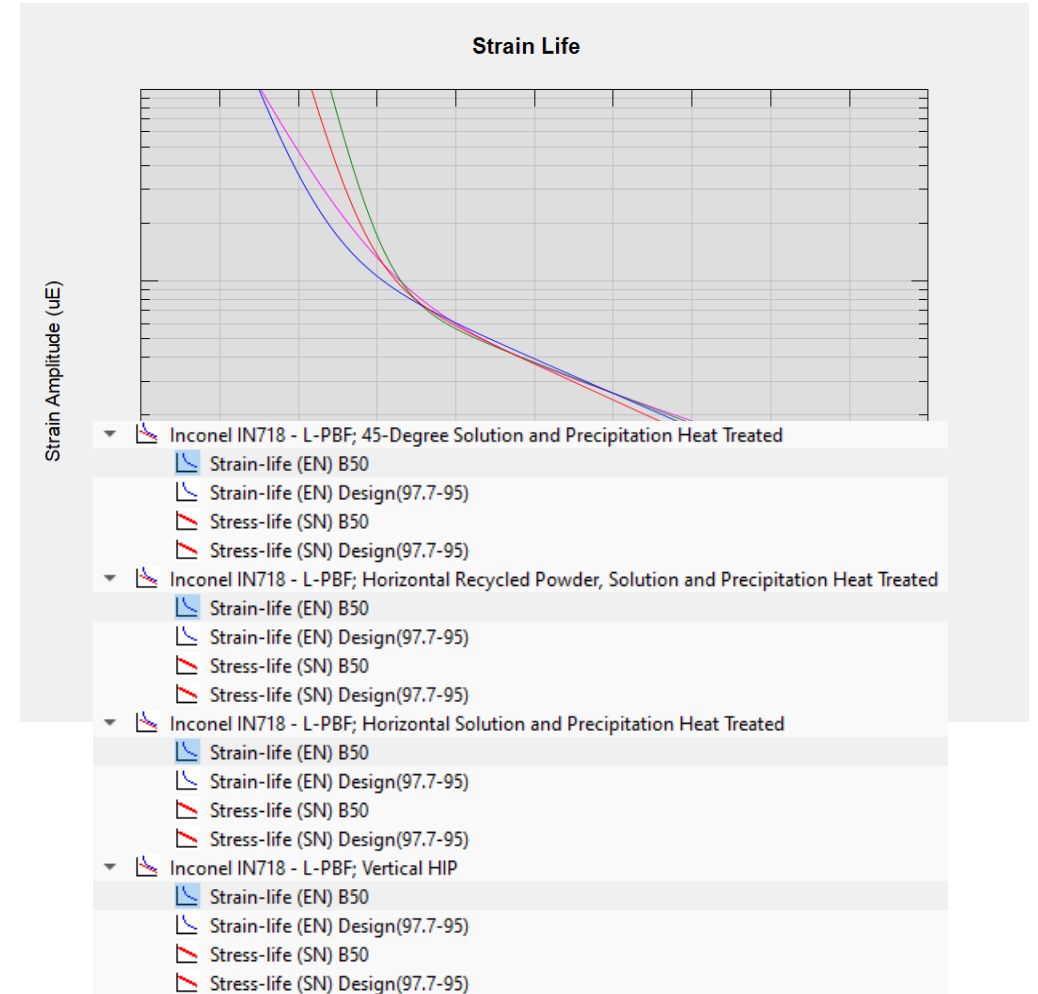


Continue to expand the availability of
vibration standard data and to keep
them up-to-date



- Inconel materials have been updated
- The materials have been re-analysed using our latest methods, and their names have been changed to accurately reflect the heat treatments applied. The new materials entries are as follows
 - Inconel IN718 - L-PBF; 45-Degree Solution and Precipitation Heat Treated
 - Inconel IN718 - L-PBF; Horizontal Recycled Powder, Solution and Precipitation Heat Treated
 - Inconel IN718 - L-PBF; Horizontal Solution and Precipitation Heat Treated
 - Inconel IN718 - L-PBF; Vertical HIP
 - Inconel IN718 - L-PBF; Vertical Solution and Precipitation Heat Treated

Continue to provide the best in
class materials data

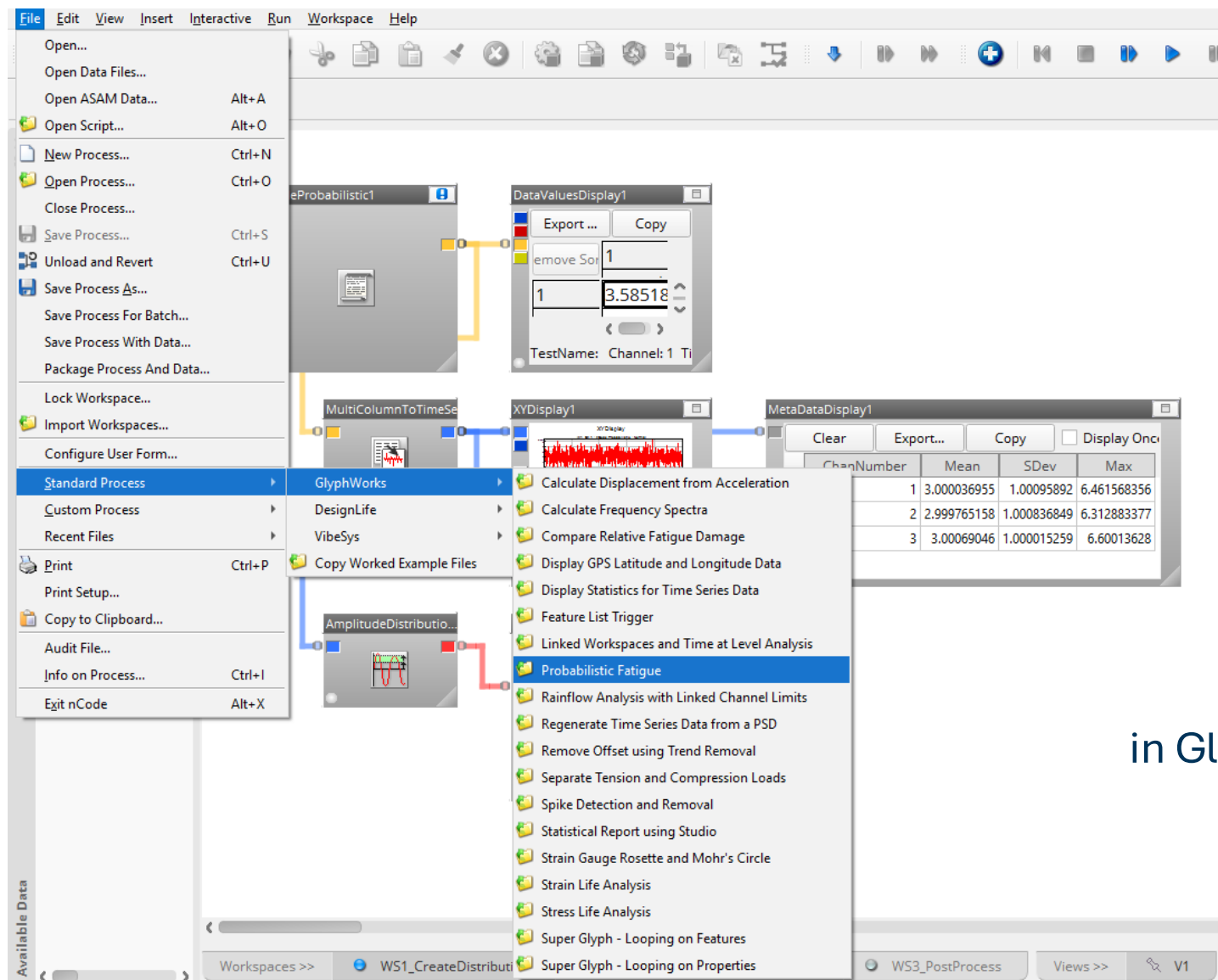


- Support added for reading temperatures from OptiStruct h3d files
- Enhanced computational efficiency for PSD loading
- Small cycle correction in vibration fatigue
- Walker mean stress correction added to spot weld
- New Laser Powder Bed Fusion (LPBF) material AlSi10Mg with different build orientations and post processing conditions has been added to the Premium Materials Database

A selection of some of the many other improvements that we continue to add to DesignLife

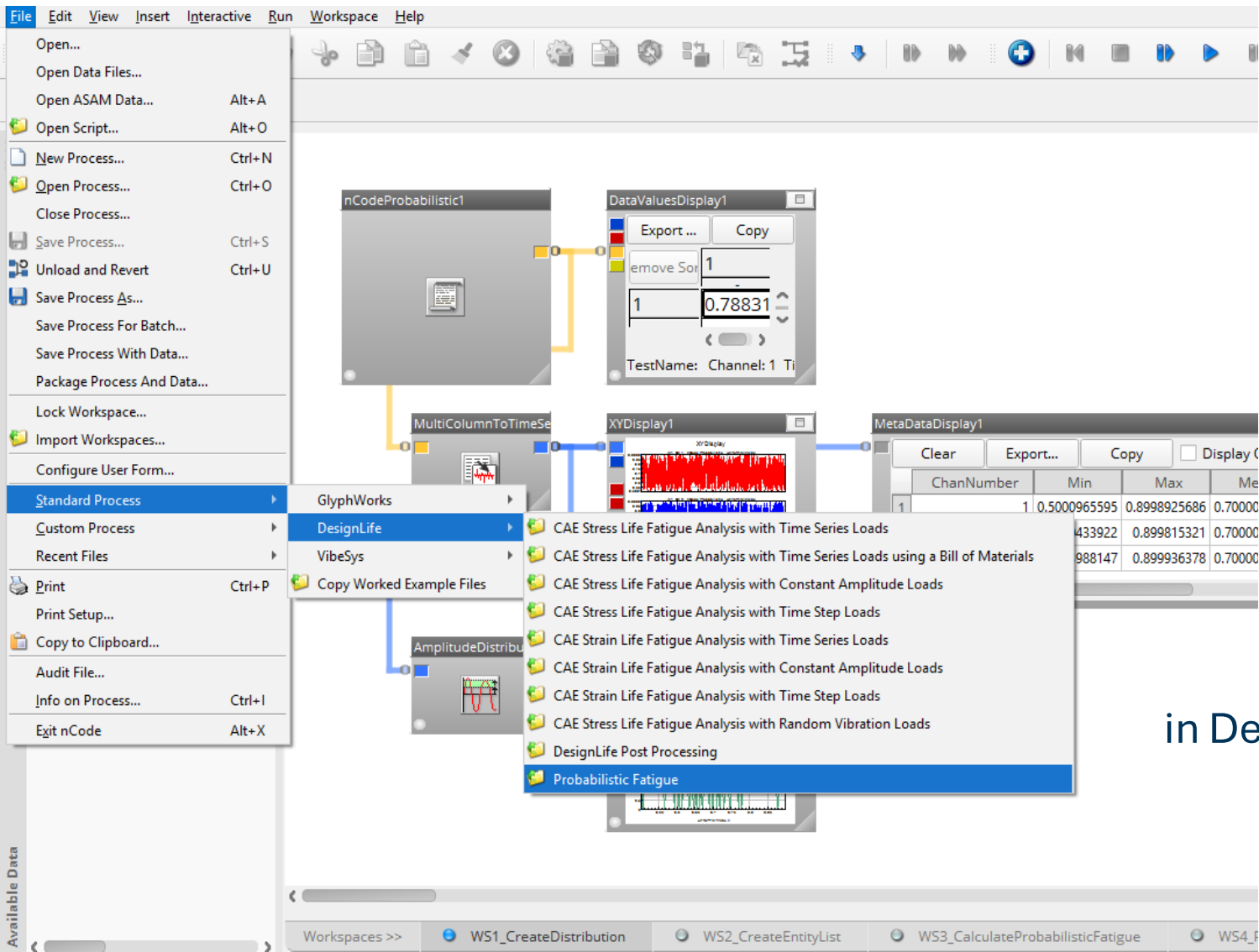
- ▼  AlSi10Mg - LPBF; 45 Degree (No Heat Treatment)
 -  Strain-life (EN) B50
 -  Strain-life (EN) Design(97.7-95)
 -  Stress-life (SN) B50
 -  Stress-life (SN) Design(97.7-95)
- ▼  AlSi10Mg - LPBF; Horizontal (No Heat Treatment)
 -  Strain-life (EN) B50
 -  Strain-life (EN) Design(97.7-95)
 -  Stress-life (SN) B50
 -  Stress-life (SN) Design(97.7-95)
- ▼  AlSi10Mg - LPBF; Vertical (No Heat Treatment)
 -  Strain-life (EN) B50
 -  Strain-life (EN) Design(97.7-95)
 -  Stress-life (SN) B50
 -  Stress-life (SN) Design(97.7-95)
- ▼  AlSi10Mg - LPBF; Vertical Stress Relieved
 -  Strain-life (EN) B50
 -  Strain-life (EN) Design(97.7-95)
 -  Stress-life (SN) B50
 -  Stress-life (SN) Design(97.7-95)

GlyphWorks: new standard process in nCode 2026



Probabilistic Fatigue
in GlyphWorks Standard Process menu

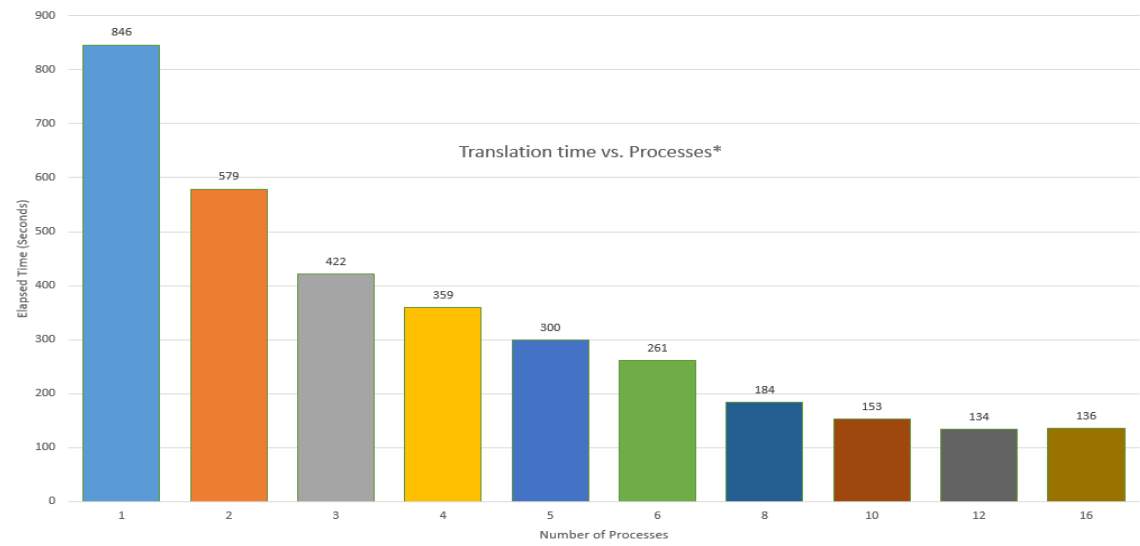
DesignLife: new standard process in nCode 2026



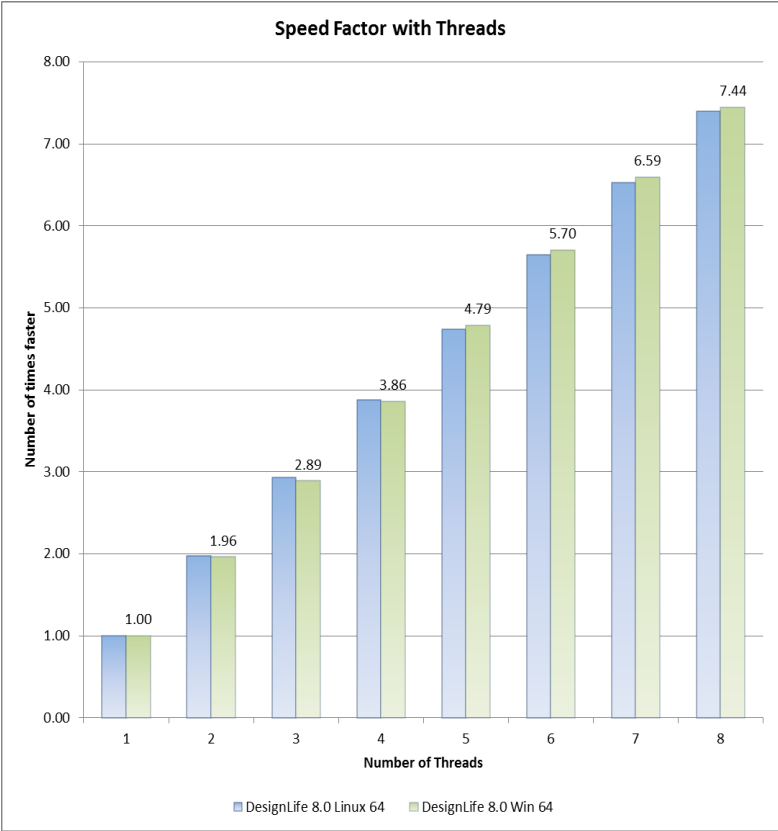
Probabilistic Fatigue
in DesignLife Standard Process menu

- Simple change to increase the speed of a DesignLife analysis.
- The software uses four threads before any thread licenses are pulled.
- The 4 free threads can be used for analysis and to speed up the translation.

Faster Translation and Analysis
without using extra thread
licences



*Actual reduction in translation time depends on specific job



Batch jobs can be re-submitted after failure due to license

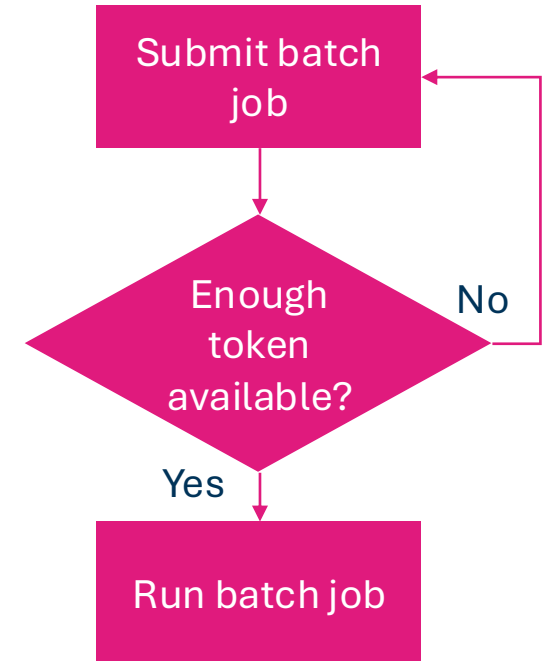
- Both flowproc and dtproc can retry a job if it fails due to a license problem (e.g. not enough tokens available).
- The number of retries **N** and the time to wait between retries **T** can be specified on the command line.

Running batch jobs
resilient to transient
lack of license

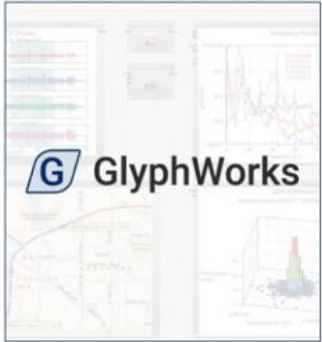
Example flowproc command line:

"flowproc" /flow=xx.flo /script=ss.script /**NumJobSubmissionRetries=N** /**TimeBetweenRetries=T**

- This new feature is only available as a Beta feature at this release. It will be fully supported at a future version of the software.



Plan to use what's new in nCode



Create Login to Support Portal (if needed)

Download & Install latest release

Check Release Notes & Other Documentation

Glyph Reference Guide

Worked Examples (new or updated)

Check for new Standard Processes

Check Knowledge Base from Support Portal

Check Materials & Vibration Manager

New Materials in PMD or Vibration Specs

Contact Support



Thank you.

Doug Young
Applications Engineer

