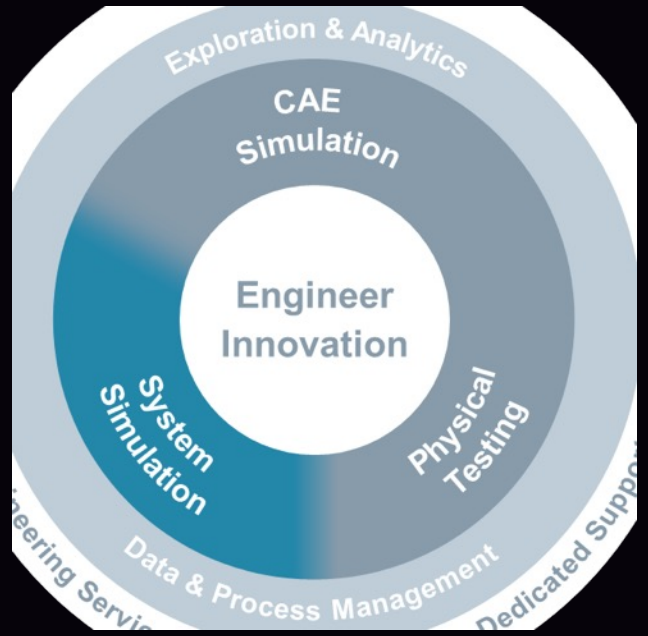

Simcenter Simulation: How to be a Simcenter Femap Expert

Extended Learning for Simulation Engineers

George Laird, PhD, PE – Principal Mechanical Engineer and Founder

APPLIED CAx

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AP·PLIED - /ə'PLĪD/- -ADJECTIVE

Put to practical use as opposed to being theoretical.
"applied chemistry"

C.A.X. - /SEE·AY·EX/
COMPUTER AIDED TECHNOLOGIES

The use of computer technology in the design, analysis, and manufacture of products.

WE DO THIS EVERY DAY

Since 2008, Applied CAx has guided companies to realize their investment in digital engineering tools.

TEAMCENTER
NX
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FLOTHERM
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AMESIM

How to be a Simcenter Femap Expert

Building expertise in whatever skill set, be it carpentry, or learning to be an electrician or how to design a rocket, relies upon having a solid foundation to leverage or “knowing what you know” – which sounds trivial but often trips up the best of us. In this little seminar (30 minutes), we’ll cover the foundation of Simcenter Femap and show what makes it tick from a fundamental perspective, talk about how to leverage its tool set with some simulation examples, and talk about its development roadmap from today (v2306.1) and for its future.

Who Might Like to Attend?

- New to Simcenter Femap and would like to learn about its foundation
- Inquisitive simulation engineer that would like to sharpen up their skill sets
- Experienced Femap users who would like to keep abreast of the ever-changing software landscape

Simcenter Femap: Advanced FEA for Simulation Engineers

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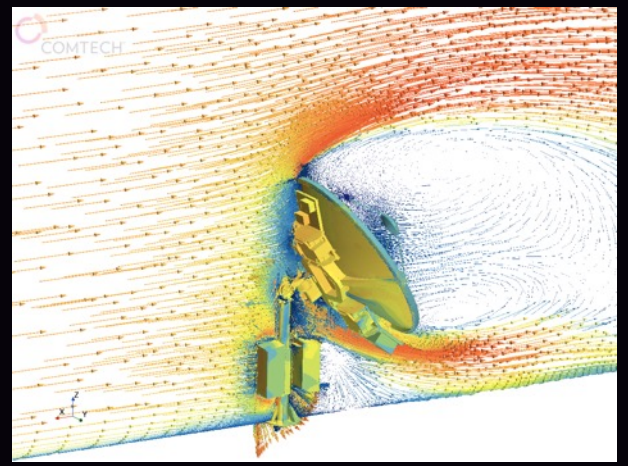
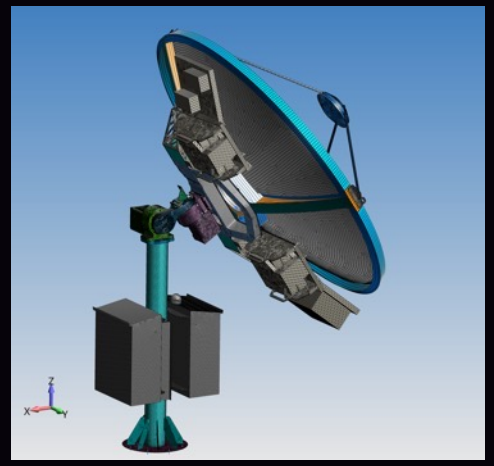
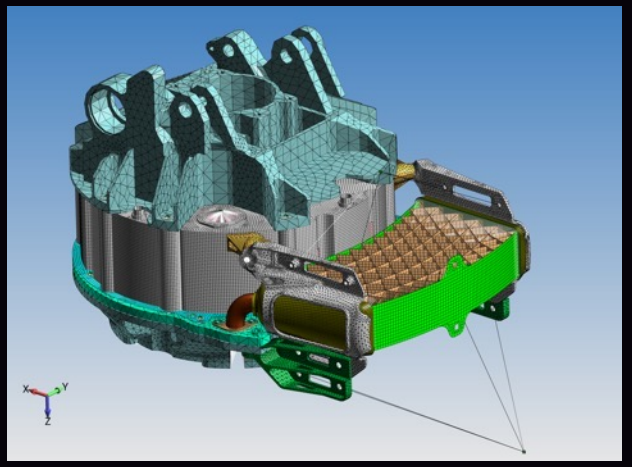
How to be an Simcenter Femap Expert?

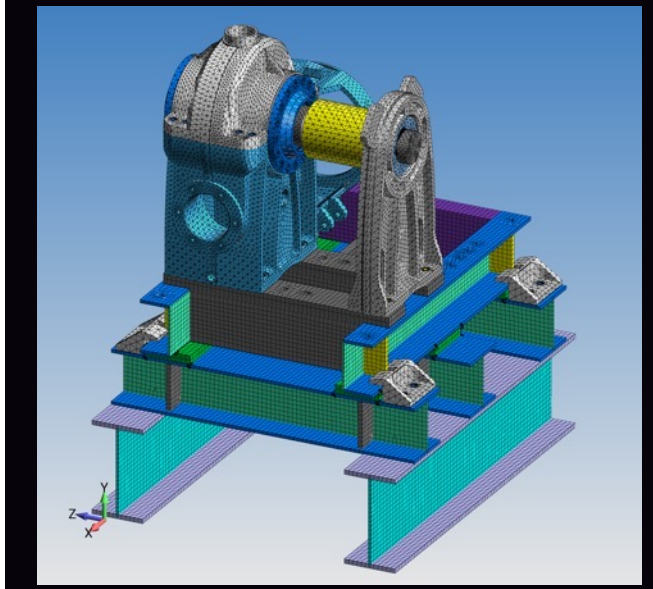
Simple:

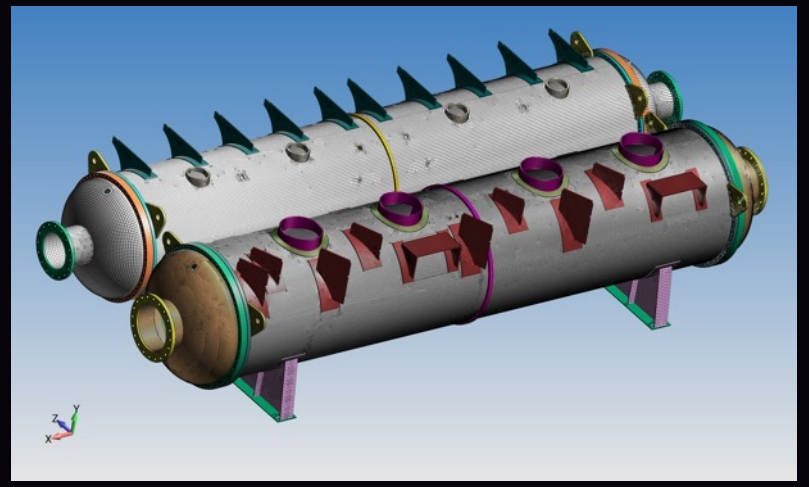
- Do your homework
- Be Humble
- Read the Manual
- Attend Seminars
- Dedicated Effort
- Be Professional
- Be Proud









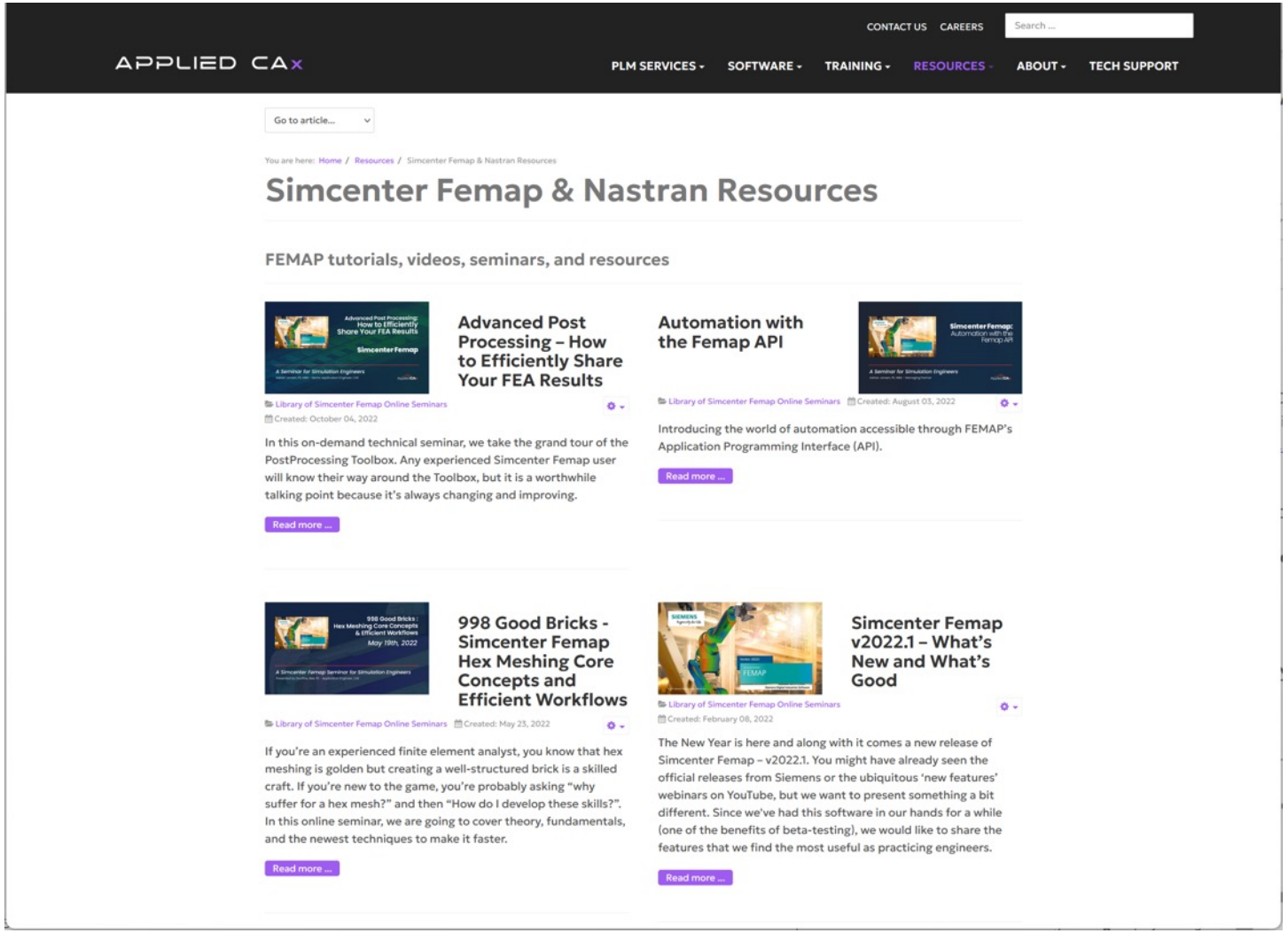


No limits simulation capabilities from CFD pressure mapping to multi-body analysis to advanced fatigue predictions. Simcenter Femap is no-holds barred FEA

How to Get Better?

As easy as 1-2-3

1.) Enjoy the Technical Seminars



How to Get Better?

As easy as 1-2-3

1.) Enjoy the Technical Seminars

2.) Read the Manual

Femap PDF's

- api.pdf
- Commands.pdf
- Custom Tools.pdf
- Digital ProdExp and Prod Excellence Program Admin Guide.pdf
- Examples.pdf
- Femap Online Subscription.pdf
- Installation and Configuration Guide.pdf
- Library Management.pdf
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- readme.pdf
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- Whats New Previous Verions.pdf
- Whats New.pdf

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- thermal.pdf
- User.pdf
- Verification.pdf

How to Get Better?

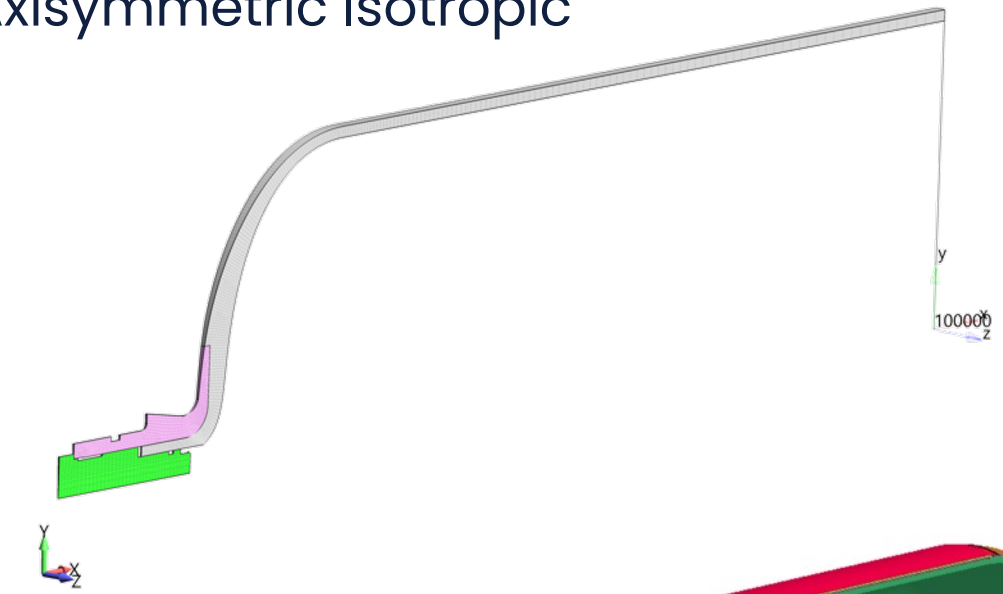
As easy as 1-2-3

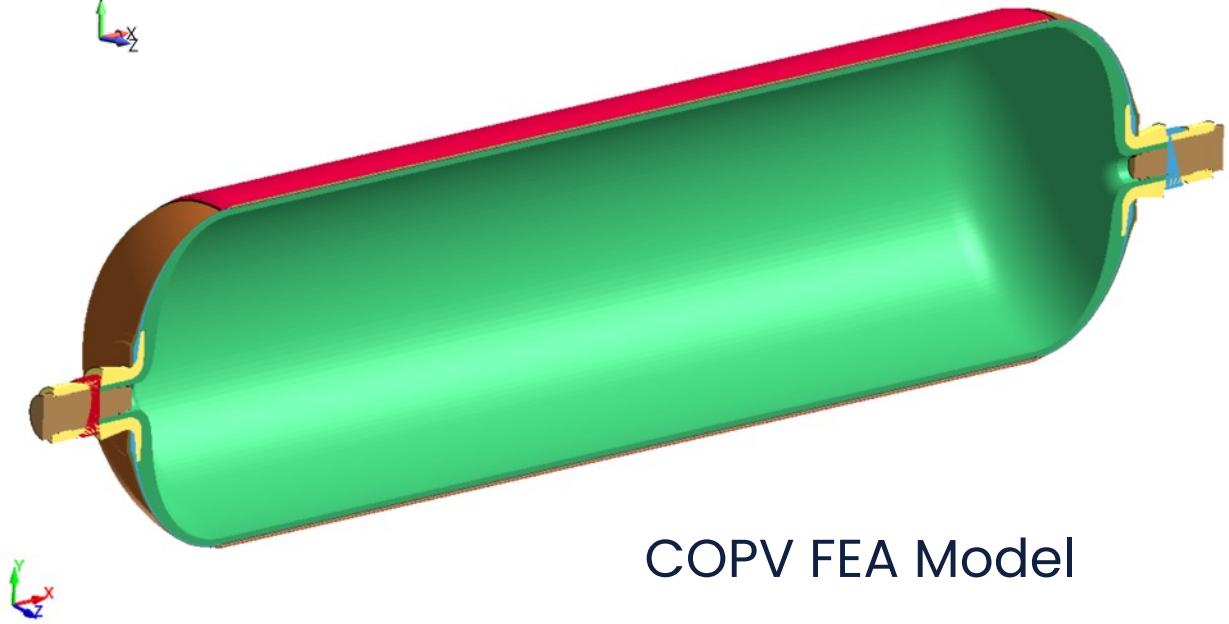
1.) Enjoy the Technical Seminars

2.) Read the Manual

3.) Build Pilot Models

Axisymmetric Isotropic





COPV FEA Model

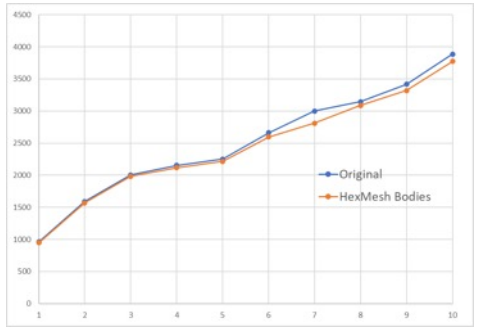
Tricks of the Trade

The Things that we Enjoy with Simcenter Femap

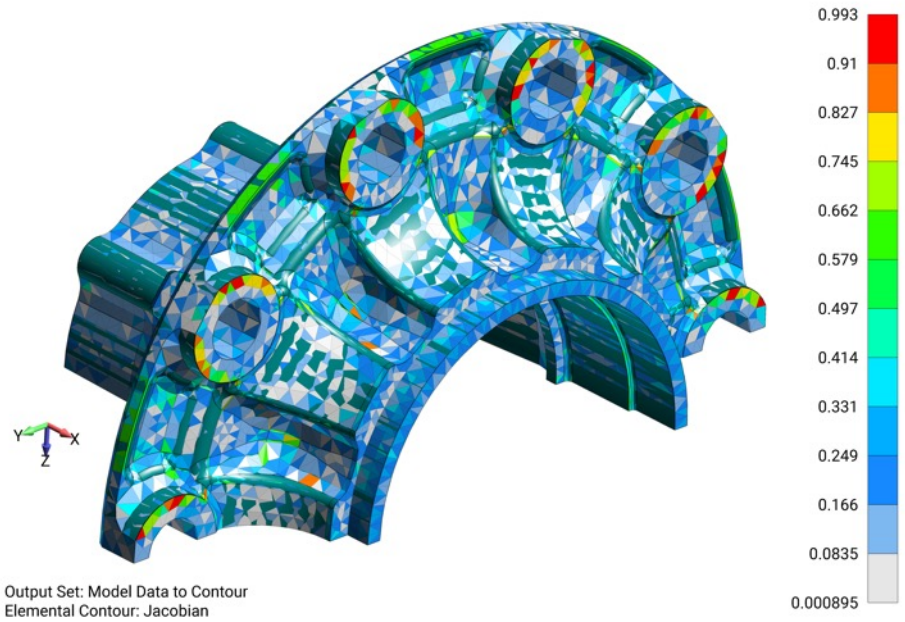
Ultimate Mesh Control
(Get want you Want Where you Want)

A.) Solid Meshing

So What?

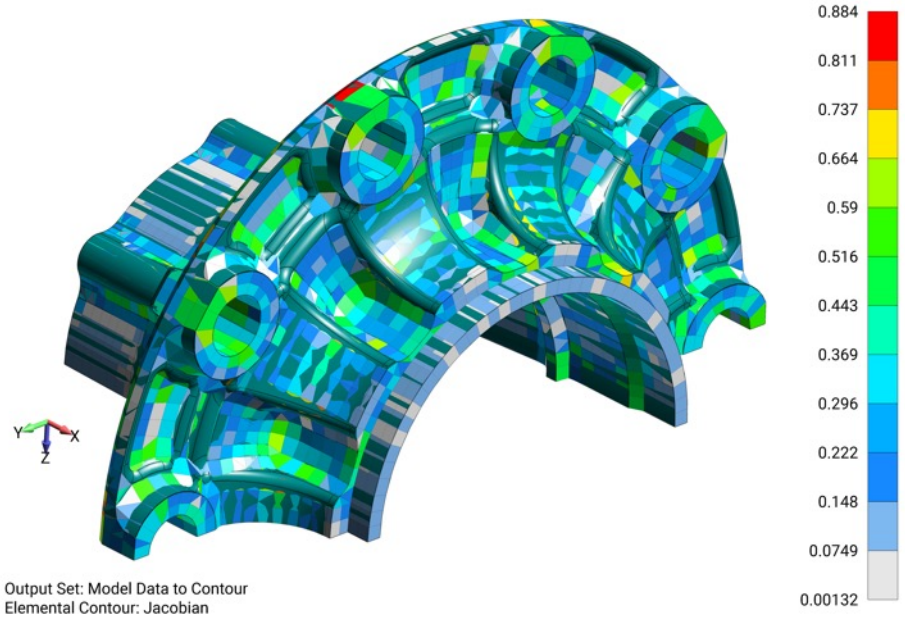


Mesh – 102k Nodes



Output Set: Model Data to Contour
Elemental Contour: Jacobian

HexMesh Bodies – 27k Nodes



Output Set: Model Data to Contour
Elemental Contour: Jacobian

Tricks of the Trade

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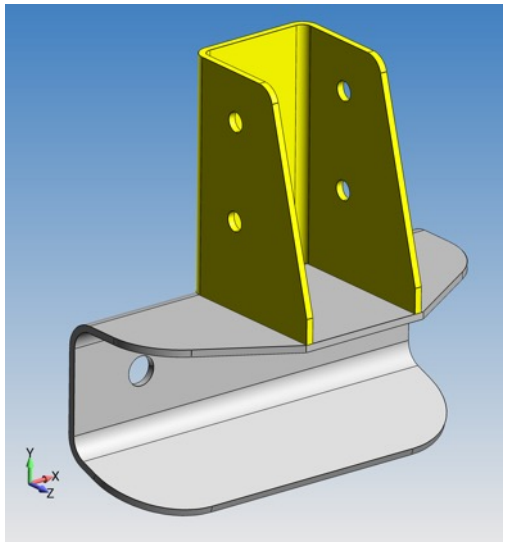
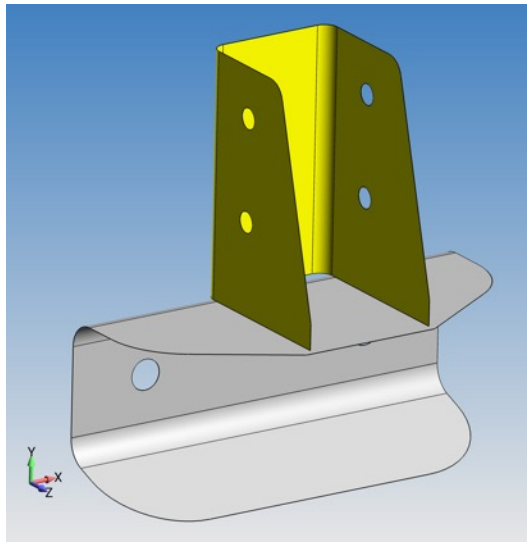
Ultimate Mesh Control
(Get want you Want Where you Want)

A.) Solid Meshing
B.) Surface Meshing

3D Geometry



Midsurface



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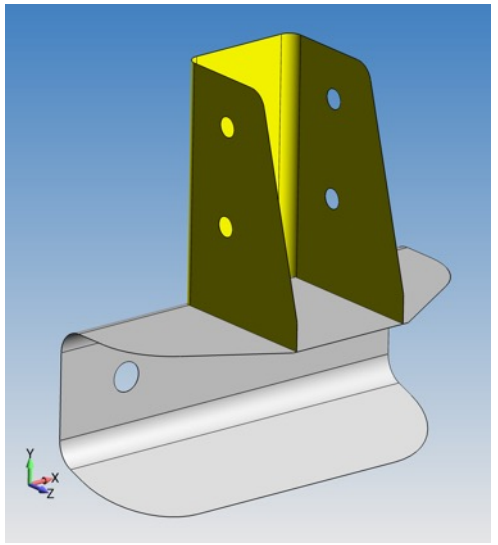


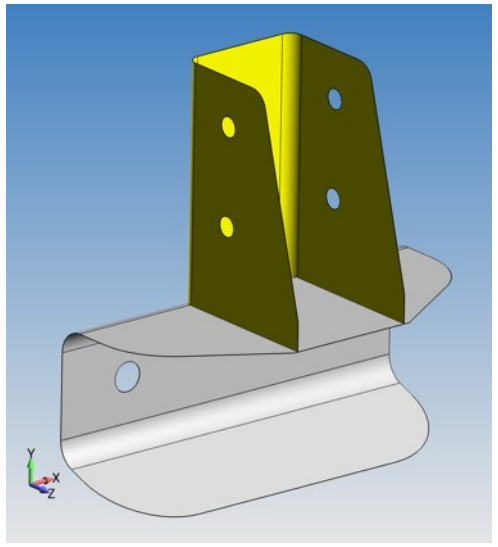
Tricks of the Trade

The Things that we Enjoy with Simcenter Femap

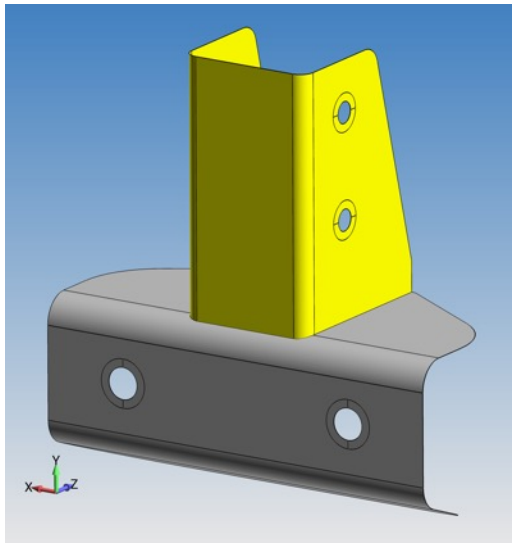
Ultimate Mesh Control
(Get want you Want Where you Want)

A.) Solid Meshing
B.) Surface Meshing
C.) Meshing Toolbox

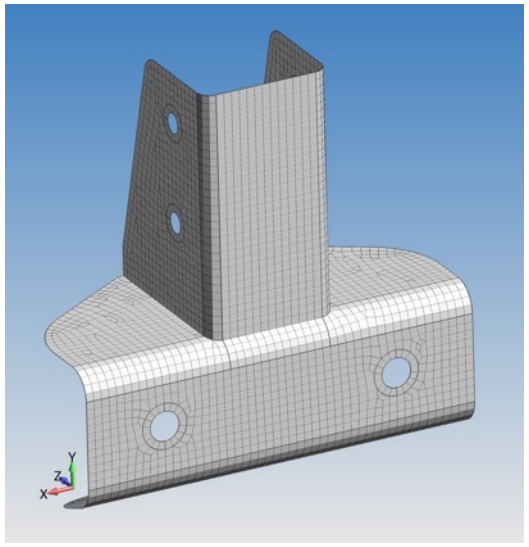
NonManifold Add



Washer – 0.1



Mesh and Clean

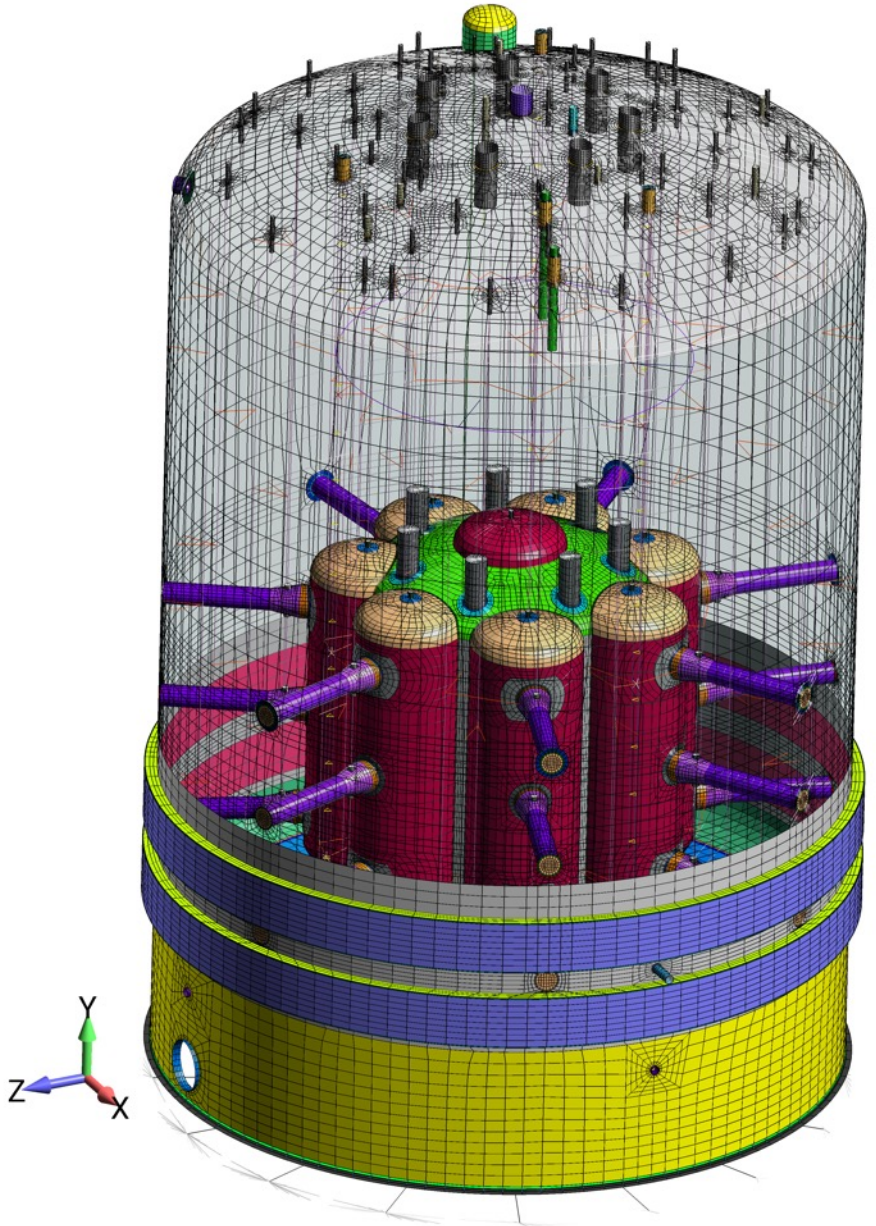


Tricks of the Trade

The Things that we Enjoy with Simcenter Femap

Ultimate Mesh Control
(Get want you Want Where you Want)

A.) Solid Meshing
B.) Surface Meshing
C.) Meshing Toolbox
D.) Selector

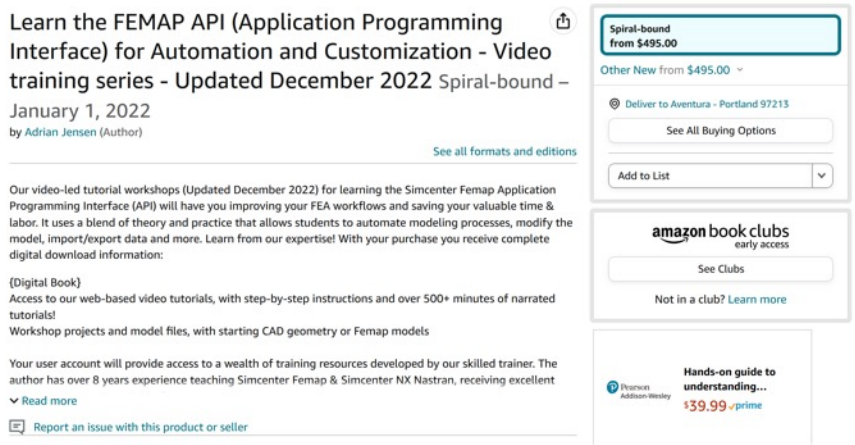


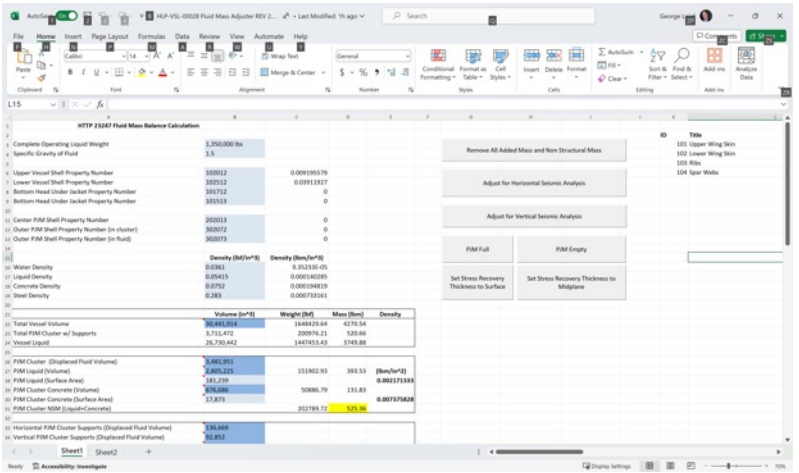
Tricks of the Trade

The Things that we Enjoy with Simcenter Femap

Ultimate Mesh Control
(Get want you Want Where you Want)

A.) Solid Meshing
B.) Surface Meshing
C.) Meshing Toolbox
D.) Selector
E.) API





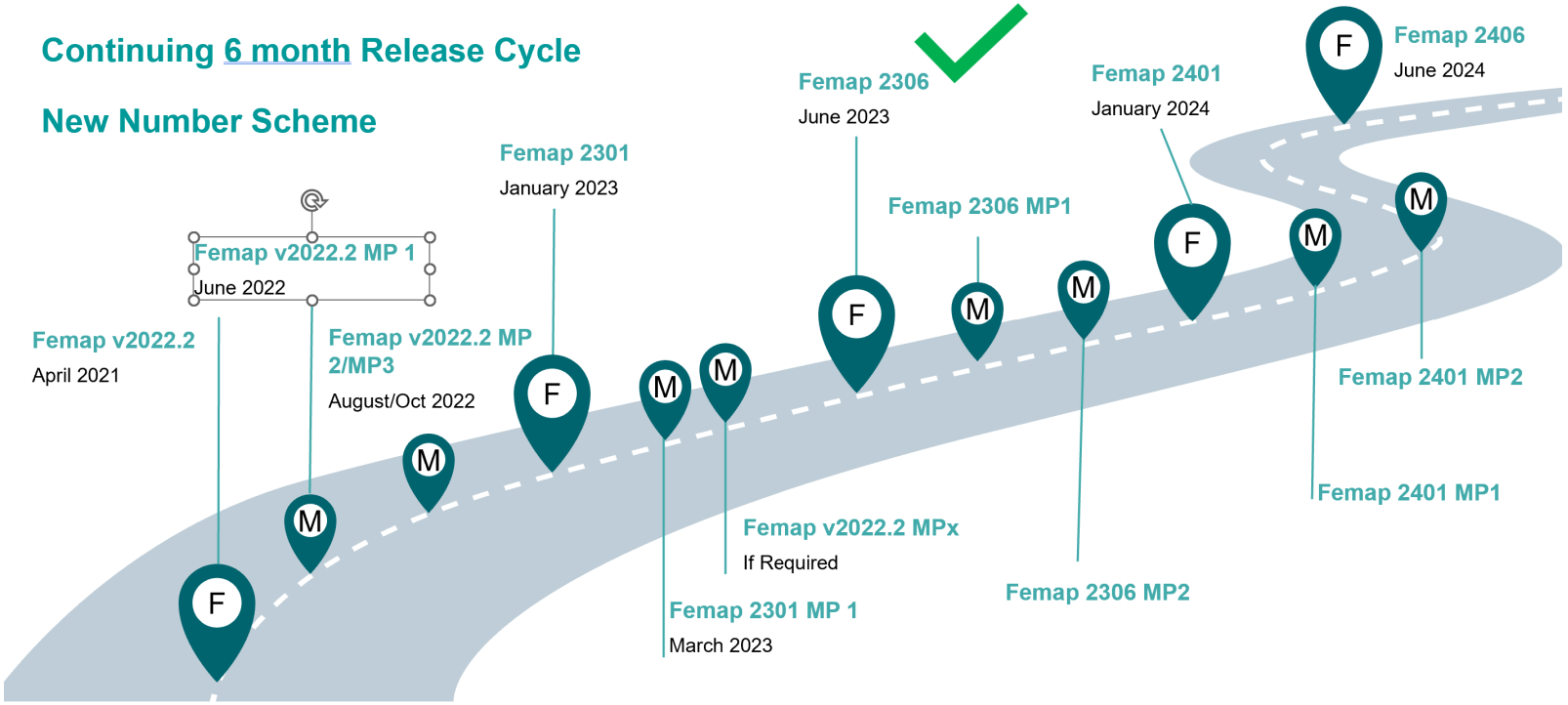
Where is Simcenter Femap Going

Is it Worth the Investment?

Simcenter Femap 2306 and Beyond Roadmap

Continuing 6 month Release Cycle

New Number Scheme



What is the Roadmap to be a SME's?

A Proven Method to Ensure Lifetime Simulation Employment

- Take Time to Explore
- Dedicate an hour every week to learning something about your specialty and document your effort
- Attend technical seminars
- Be brave and ask questions
- Build simple models and explore new features
- Share your expertise and experiences with others

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CAD - CAE - CAM - PLM

Simcenter Femap - NX - Teamcenter
Simcenter 3D - Simcenter STAR-CCM+ - Amesim