

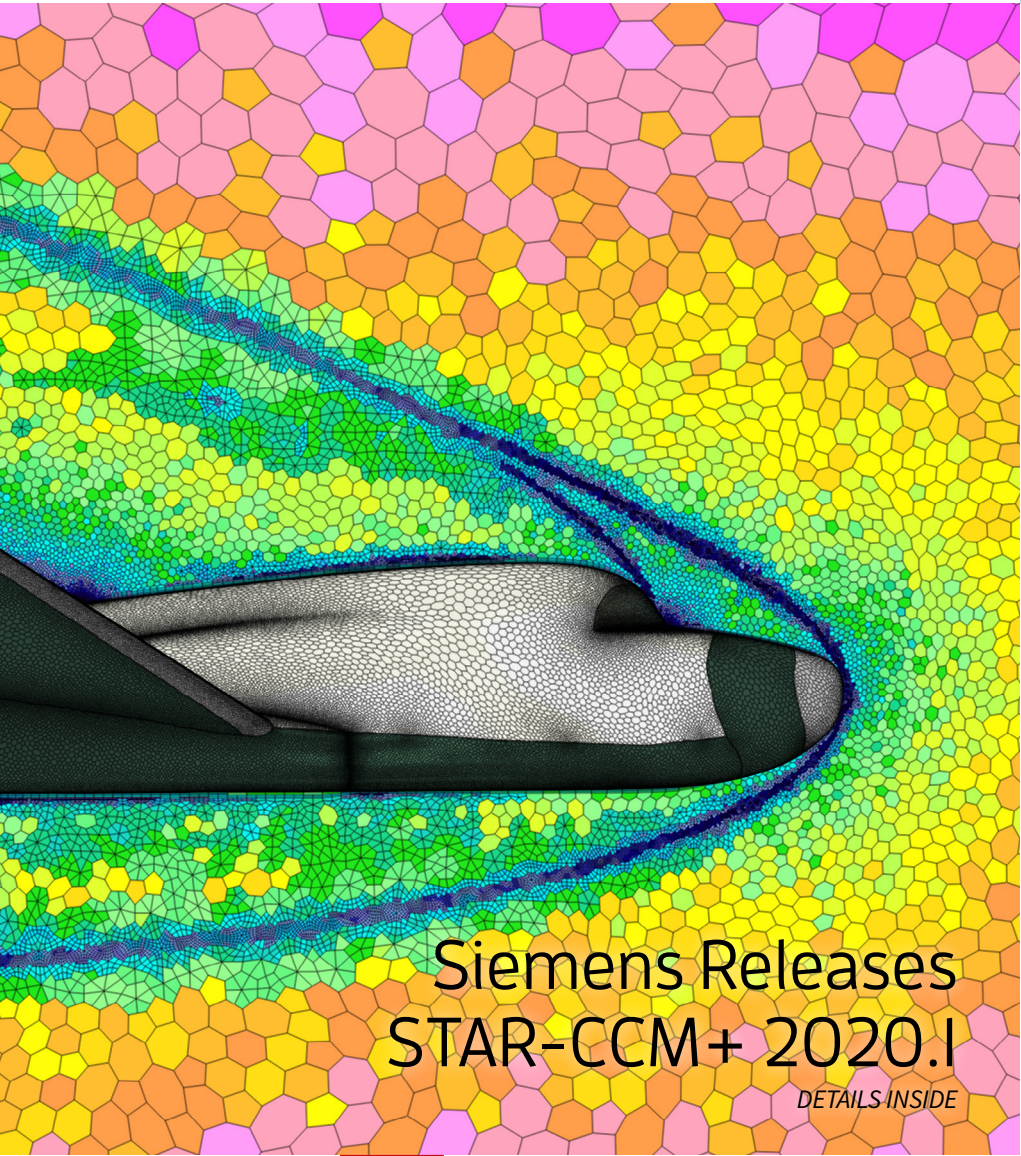
ATA news

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ISSUE EIGHTEEN



WINTER 2020



Siemens Releases STAR-CCM+ 2020.1

DETAILS INSIDE

ATA Adds New Nastran Multi-Step Nonlinear Classes with Femap to Training Schedule

Last fall, ATA began offering a new training class: Multi-Step Nonlinear with Solutions 401 and 402 with Simcenter 3D for Pre/postprocessor. Starting this spring, we're looking forward to also offering this class with Femap for Pre/postprocessor.

This three-day course discusses material, geometric, and contact nonlinear effects and explains the solver steps in the solution process. It identifies difficulties that nonlinear solutions can pose and offers best practices for debugging convergence problems with nonlinear solutions.

Our full training class schedule is available [on our website](#). Courses are held throughout the year in our San Diego, Denver, and Washington DC offices. In addition, you can [contact us](#) for on-site and custom classes.

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Siemens Releases STAR-CCM+ 2020.1

The newest version of STAR-CCM+ was just released, delivering many exciting new features that will enable users to make better engineering decisions in less time.

Users can save time meshing with new model-driven adaptive mesh refinement (AMR), which also lowers computational expense by dynamically refining a mesh where needed without any user interaction. AMR can also be used alongside an adaptive time step to allow refinement in time and space simultaneously. In addition, polyhedral meshes build up to 30x faster with next-generation parallel polyhedral meshing.

New automatic default solver settings for the coupled solver improve convergence while simplifying setup. Now an average or even a novice user can achieve convergence results that rival or exceed previous performance based on best practices, all with a few simple choices.

Visualization and collaboration are improved in this version because STAR-CCM+ now allows multiple VR clients to connect and synchronize to the same simulation. This allows users across the country to collaborate and share results in new ways.

Check out the [Siemens Simcenter blog](#) for more details on these features and more.

Calendar of Events

UPCOMING TRAINING CLASSES

ATA provides comprehensive training in the use of Femap, Simcenter 3D (formerly NX CAE), and Simcenter Nastran (formerly NX Nastran). Upcoming training classes are shown below. Please visit [our website](#) to sign up for these classes or request a custom class.

FEMAP

JUL 21 [Introduction to Femap](#)

SIMCENTER NASTRAN WITH FEMAP

MAY 12 [Introduction to Finite Element Analysis](#)

MAY 19 [Multi-Step Nonlinear](#)

MAY 27 [Introduction to Dynamic Analysis](#)

JUN 01 [Advanced Dynamic Analysis](#)

SIMCENTER NASTRAN WITH SIMCENTER 3D

MAY 12 [Introduction to Finite Element Analysis](#)

MAY 19 [Multi-Step Nonlinear](#)

MAY 27 [Introduction to Dynamic Analysis](#)

JUN 01 [Advanced Dynamic Analysis](#)

SIMCENTER 3D

APR 07 [Response Dynamics](#)

THIS WEEK'S ON-DEMAND WEBINARS

Introduction to Nastran Grounding and Groundchecks

Learn more about what grounding is and why a groundcheck should be completed before every analysis.

What's New in STAR-CCM+ 2020.1

See how the latest enhancements can improve your engineering workflow.

ATA also provides a host of [free training resources](#) including tutorials, videos, and whitepapers.

Tips and Tricks

NX: FILTER AND SORT MESH COLLECTORS

In a .fem or .sim file, mesh collectors and meshes within a collector can be filtered and sorted. First, right-click on the type of collector to filter or sort, for example 2D Collectors or 3D Collectors, or on an individual collector whose contents you want to sort. Filter allows users to specify a text string to display and can include wildcards including an asterisk (*) to represent multiple characters, a dot (.) to represent a single character, or an at sign (@) before an asterisk or dot to use that symbol as a literal character. Mesh collectors can be sorted by name, property, or material, and within an individual collector, meshes can be sorted by name, type, number of nodes, number of elements, or element size.

STAR-CCM+: INCREASE EFFICIENCY USING GLOBAL PARAMETERS

Executing a series of simulations on an HPC resource can be streamlined with the use of global parameters in your simulation file and the help of the "-param" command line argument. Say, for example, an analyst wanted to run a series of steady-state simulations at a variety of Mach numbers. At each Mach number, the sim file would need to be opened (a time-consuming process for large models) and the flow velocity would have to be updated in the boundary and initial conditions. Time would be saved and input errors would be avoided by setting up a global parameter, "myMach" for instance, and referencing that in the initial and boundary conditions. The analyst would only need to update the "myMach" parameter, and that value would be propagated to the dependent simulation inputs. Further, an analyst submitting jobs in batch mode, for example on an HPC resource, could avoid opening the sim file entirely. Instead, the "-param" argument could be used to update the "myMach" parameter via the command line. For example, the Mach number could be set to 3.2 with the following batch submission line: starccm+ -param myMach 3.2 ATARocketShip.sim.

Recent News

ATA Engineering's Hotline Is Rated As "Excellent"

ATA's technical support hotline is staffed by experienced engineers who use Siemens CAD and CAE tools every day. In 2019, ATA's hotline was rated as "excellent" by our customers, and most issues were resolved the same day they were reported.

We're proud to be our customers' first line of support for questions and problems. Our hotline is available by phone Monday through Friday from 8:00 AM ET to 5:00 PM PT, or any time [online](#), and we look forward to another great year.

Siemens Releases NX 1899 Series and Simcenter 3D 2020.1

The latest version of NX, Simcenter 3D, and Simcenter Nastran was released in January and is available to [download from GTAC](#). Check out the [Siemens Simcenter Blog](#) for a closer look at some of the new features.

ATA releases Vibrata 3.0.1

Vibrata 3.0.1 contains a number of bug-fixes, including some related to the new database introduced in Vibrata 3.0.0. It also adds support for Femap 2020.1, although it still uses the pre-2020.1 output vector IDs. [Download the Vibrata brochure](#).

Register for Realize Live

Realize Live will be held in Las Vegas on June 22-25, 2020. This event connects users with peers, partners, and industry leaders for education, networking, and training. Attendees can customize their experience by choosing from over 550 sessions. [Register today!](#)

New Resources

[STAR-CCM+ Whitcomb Area Rule Tutorial: Modeling Geometry](#)

This new tutorial series from ATA walks through the workflow of utilizing HEEDS optimization software and the STAR-CCM+ flow solver to demonstrate the Whitcomb area rule on a simplified model of the Convair F-102 aircraft. The goal is to minimize the total drag coefficient on the aircraft by manipulating the radii of five discrete sections of the fuselage midsection.

This tutorial is part one of three and leads users through modeling the aircraft using the STAR-CCM+ native CAD package. Contents include the following:

- Navigating the STAR-CCM+ user interface
- Using the 2D Sketch environment
- Setting design parameters
- Creating 3D CAD features
- Importing sketches from .csv files

[New On-Demand Webinars](#)

[What's New in Femap 2020.1](#)

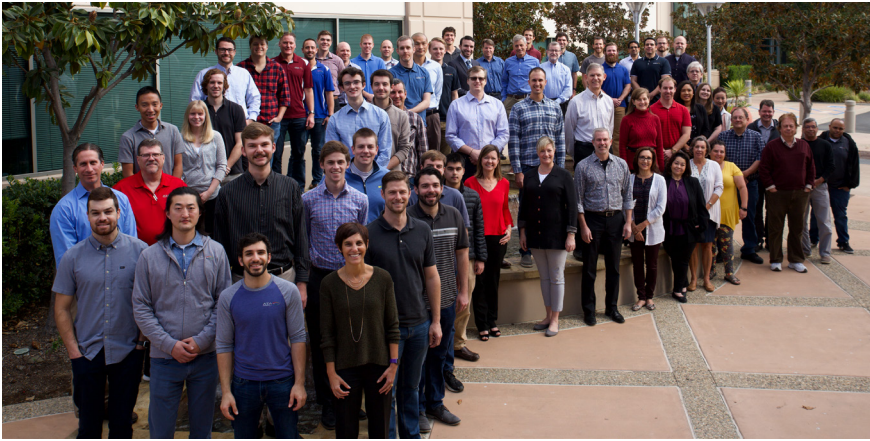
Leverage the newest features and enhancements in Femap 2020.1 to simplify your simulation workflow, from geometry and meshing through solver support and post-processing.

[Hybrid Multiphase Modeling in Simcenter STAR-CCM+](#)

Learn about Hybrid Multiphase Modeling, the ability to combine multiple multiphase models in the same STAR-CCM+ simulation as needed to obtain accurate results for a wide range of real-world problems.

[What's New in STAR-CCM+ 2019.3](#)

Learn about the latest enhancements in last fall's STAR-CCM+ 2019.3, from CAD handling and manipulation through meshing and simulation.



Why choose **ATA**?

ATA Engineering, Inc., (ATA) is a nationwide provider of innovative, high-value, test- and analysis-driven mechanical engineering design solutions.

With more than four decades of experience working with our customers to solve the most challenging design, test, and analysis problems, we have gained a reputation for excellence in the engineering community.

Our work on a wide range of products across a broad spread of industries has been recognized with numerous technical and service awards for excellence. This expertise and support is a key part of the added value we offer to all customers who purchase Siemens products from us, whether you are an independent contractor or a large engineering team. To provide best-in-class support to our VAR software customers, we have established a formal hotline system that provides on-demand support to resolve technical issues encountered by our customers in their implementation of the tools.

The hotline is staffed by experienced engineers, all of whom use these applications on a regular basis. ATA is also the Siemens PLM Software-preferred training provider and official developer of courseware for all Simcenter Nastran training.

ATA Technical Support

Need technical assistance? Call our hotline staffed by engineers at **877-282-4223**, or [visit us online](#). Even if you're not a current ATA customer, try us out for free.

Free Software Trials

Visit our website to access free trials/demos of Femap and Simcenter Nastran, NX CAD and CAM, Simcenter 3D, Simcenter STAR-CCM+, Teamcenter, and Solid Edge



Solution
Partner
Smart Expert
Digital Industries
Software

ATA Engineering, Inc., has been recognized as a Smart Expert Partner with validated expertise in Femap and STAR-CCM+.

Featured Instructor

Miles Hatem



Miles Hatem is a senior project engineer in ATA's Herndon, Virginia, office. Although he is well versed in linear and dynamic analysis, his expertise is in nonlinear analysis involving plastically deforming metallic materials through contact with other bodies. Miles' most commonly used tools include Simcenter 3D, Simcenter Nastran, and Femap. In addition to project work, he supports ATA's customer hotline.

He has worked on projects for the entertainment and defense industries but has spent the majority of his career on aerospace projects. These include design and analysis of communication satellites, science instrument packages on Mars rovers, and orbital-class liquid-fueled engines, along with many others. Additionally, he has analyzed high-performance solid rocket motor systems, composite radio antenna reflectors, and composite aircraft structures. He also shares his experience by teaching ATA's class on SOL401/402 nonlinear Nastran solution sequences.

Mr. Hatem has both a Bachelor's and Master's of Science from Purdue University, specifically from the school of Aeronautics and Astronautics.

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