

ATA news

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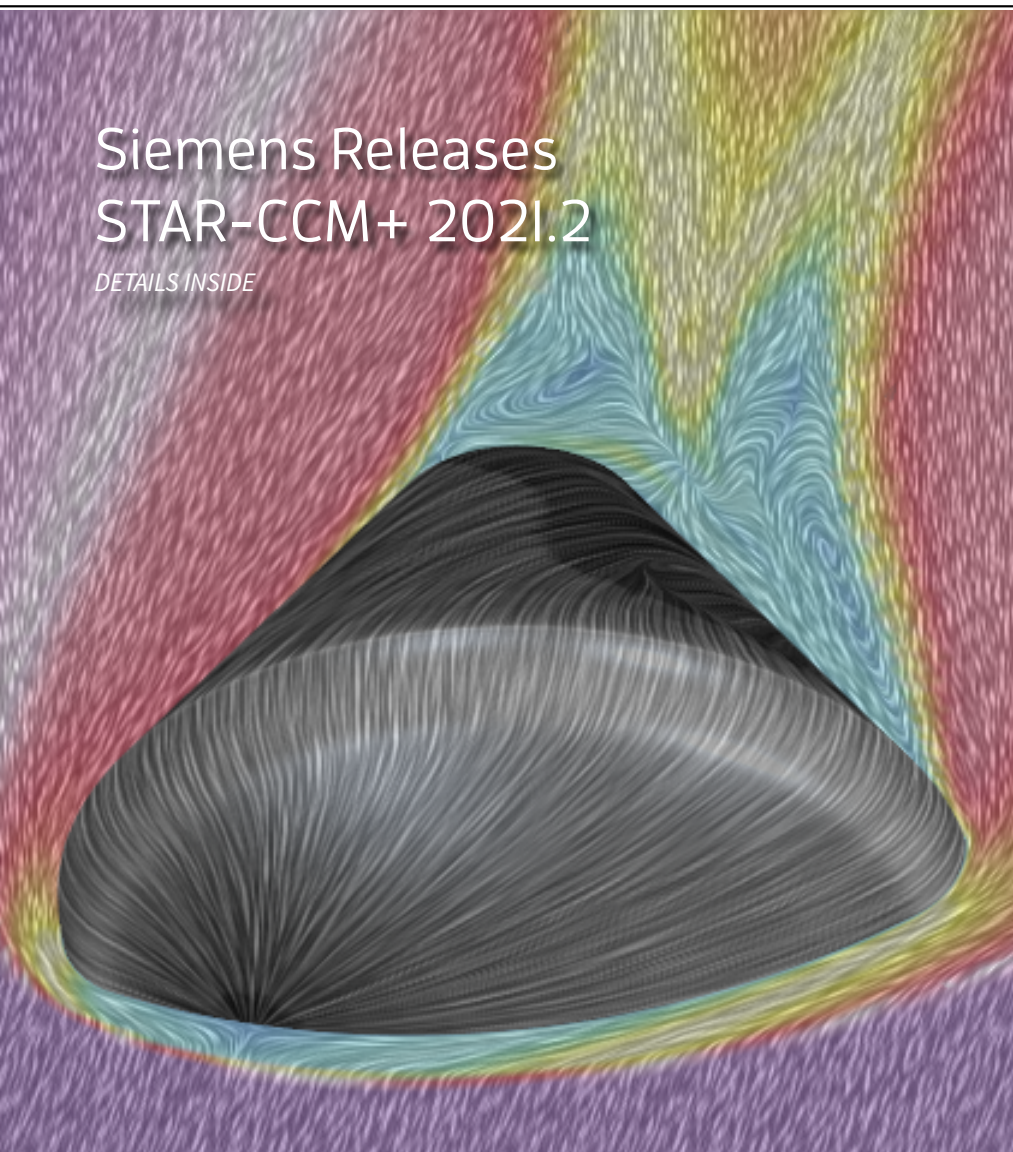
ISSUE 24



SUMMER 2021

Siemens Releases STAR-CCM+ 2021.2

DETAILS INSIDE



Registration Opens for NX, Simcenter 3D 2022.1 Early Access Program

The Siemens Early Access Program (EAP) gives users a sneak-peak at upcoming enhancements and new capabilities, offering the opportunity to test existing workflows in a pre-release version of the software. Participants will be able to interact with the product development team and share valuable insight and feedback to improve the upcoming release and guide future development.

Virtual EAP is available this fall for both NX 2007 Series and Simcenter 3D 2022.1. On-premise EAP for Simcenter 3D will also return this year in Milford, Ohio, beginning October 18, 2021. Registration is free for both virtual and on-premise EAP.

[Reserve your spot today.](#)

Virtual and on-premise Simcenter 3D EAP participants will be able to join virtual presentations on featured new functionality during the week of October 11, 2021. The presentations will be recorded for those who are unable to join.

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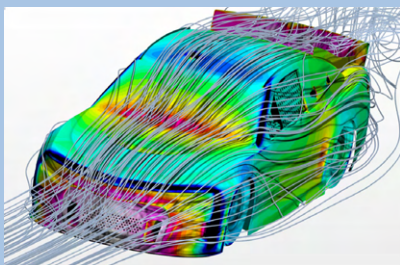
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Siemens Releases STAR-CCM+ 2021.2

The newest release of STAR-CCM+ delivers new features across the entire computational fluid dynamics (CFD) simulation workflow, helping you engineer innovative products with improved performance, from hypersonic spacecraft to life-saving heart-valves. The top enhancements include:

- Higher accuracy for hypersonic CFD applications with mitigation for the carbuncle effect
- Faster industrial multiphase CFD simulations using adaptive mesh refinement with fluid film
- Increased productivity and automation for thermal management CFD applications with parts-based shells
- Faster solution time with the general remeshing solver for periodic cyclic motion
- Improved efficiency for fluid-structure interaction (FSI) simulations with the Adaptive Time Step Model

Check out the [Siemens Simcenter Blog](#) for a deeper dive into these and other new features available in Simcenter STAR-CCM+ 2021.2.



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

NOV
15

[Introduction to Femap](#)

SIMCENTER NASTRAN WITH FEMAP

OCT
25

[Advanced Dynamic Analysis with Femap for Pre/Post](#)

TBA

[Multi-Step Nonlinear with Solutions 401 and 402 with Femap for Pre/Post](#)

TBA

[Introduction to Finite Element Analysis with Femap for Pre/Post](#)

TBA

[Introduction to Dynamic Analysis with Femap for Pre/Post](#)

SIMCENTER NASTRAN WITH SIMCENTER 3D

OCT
25

[Advanced Dynamic Analysis with Simcenter 3D for Pre/Post](#)

TBA

[Multi-Step Nonlinear with Solutions 401 and 402 with Simcenter 3D for Pre/Post](#)

TBA

[Introduction to Finite Element Analysis with Simcenter 3D for Pre/Post](#)

TBA

[Introduction to Dynamic Analysis with Simcenter 3D for Pre/Post](#)

ALL CLASSES CAN BE SCHEDULED ON REQUEST.

WATCH THIS SPACE – THE CLASS SCHEDULE FOR 2022 IS COMING SOON!

UPCOMING SEMINARS AND WEBINARS

SEPT
22

[Efficient Modeling Techniques for Tubular and Frame Structures](#)

This Siemens webinar will present a workflow for simplifying solid geometry, tools to help automate the meshing process, and postprocessing methods for reviewing simulation results on a model containing mostly 1D elements.

SEPT
22

[HEEDS Automated Design Space Exploration Helps Bohning Optimize Arrow Vane Design](#)

The webinar will showcase how design space exploration can identify better designs automatically and will present a nearly hands-off workflow developed by ATA to design a new crossbow arrow vane with improved arrow performance.

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

Tips and Tricks

SIMCENTER 3D: NODAL FORCE REPORTS

Nodal Force Reports offer a convenient way for users to generate force reports that can be used to display free-body diagram outputs in the post view or create loads for breakout models. Forces can also be summed about a point, which could be used to recover the load conditions of a joint or interface.

Users can select grid point, applied, reaction, and MPC forces, including contact and glue forces, from any subcase or step in a selected solution. In addition to selecting nodes and elements directly, users can also identify those entities by selecting associated geometry, mesh, groups, and selection recipes.

Before solving the model, users should make sure that the appropriate structural output request has been selected. Once the solution has been solved, the Nodal Force Report command can be found by right-clicking on the solution of interest.

STAR-CCM+: INSIDE PART FIELD FUNCTION

Field functions provide a means to define initial conditions for various fluid flow simulations. In some cases, a field function may be used to define a region in space with a discontinuous jump at the boundaries, such as an air bubble submerged in liquid, or the approximation of an explosive by a region of high energy.

Historically, these regions were cumbersome to define, often requiring field functions containing numerous if statements referencing local coordinate systems and only relatively simple shapes could be achieved. However, Simcenter STAR-CCM+ 2021.1 introduced the insidePart field function. This function allows the user to provide a geometry part (Geometry→Parts) or filter (Tools→Filters) with any amount of geometric complexity to return a spatially varying field of 1 inside the part and 0 elsewhere. This field function can then be further modified, for example multiplied by some amplitude, to be used in the definition of an initial condition.

New Resources

On-Demand Webinar: Leveraging System Simulation to Accelerate Development of Urban Air Mobility and Distributed Electric Aircraft

The design of any electric aircraft involves multiple technical areas, and model-based systems engineering makes it possible to model all necessary components and their interactions to predict performance for a given flight profile. This webinar uses a battery-electric VTOL aircraft as an example to show how this kind of system modeling can be leveraged to accelerate the investigation and design of urban air mobility concepts and other complex systems.

On-Demand Webinar: Simplifying Advanced Dynamic Analysis with Femap and Vibrata

Discover how the powerful features and capabilities within ATA's Vibrata™ software offer complete control for advanced dynamic analyses. Vibrata is a comprehensive structural dynamics application from ATA that pairs with Femap to predict stress, deflection, and other responses to transient, harmonic, random, and response spectrum excitation. This webinar provides a product overview and demonstrates random vibration and transient analyses to highlight the general workflow and easy-to-use GUI.

On-Demand Webinar: Modeling Advanced Materials with Simcenter 3D Materials Engineering, Part 2

Whether you are dealing with high-temperature composite materials, 3D-printed parts, woven textiles, or porous materials, Simcenter 3D Materials Engineering can help you characterize your materials and use these material models efficiently within Simcenter 3D. Catch up on the second webinar in ATA's series on Simcenter 3D Materials Engineering, which dives into a wider variety of use cases and applications.

Recent News

Siemens Releases NX 1980 Series

The latest version of NX was released earlier this summer alongside Simcenter 3D 2021.2. This release improves the learning experience for both new and veteran users and leverages machine learning to improve selection workflows. Updates to Synchronous Modeling allow for faster design changes, and enhancements to NX Additive Manufacturing, NX Lattice Structure, NX Model Based Definition, and NX Human Modeling enable more productive workflows.

[NX Coatings](#) is a new and fully integrated application that allows specification of coatings for product design. Coating definitions can now be created and managed in the NX part file as a coating layer, and mass property information is automatically calculated. Coating information can be included in the parts list and annotated in PMI, and the coating can be visualized with a high-resolution rendering. Learn more about these and other new features on the [Siemens NX Design blog](#).



On-Demand: The Sea-Air-Space Simulation Symposium

In September, the aerospace, defense, and marine engineering communities gathered for a multi-day digital innovation event. Presentations from subject matter experts discussed how state-of-the-art simulation capabilities can be leveraged throughout a product's lifecycle to improve performance and reliability. If you missed the event, these sessions are now available for free on demand. [Register today](#) and check out the agenda to discover the latest in CAE.



Why choose **ATA**?

ATA Engineering 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 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

[Contact us](#) for more information about 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

SIEMENS

ATA Engineering, Inc., is recognized as a Smart Expert Partner with validated expertise in Femap, Simcenter 3D, and STAR-CCM+.

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Featured Engineer

Bryce Kramer



Mr. Bryce Kramer is a project engineer in ATA's San Diego office. His expertise is in thermal modeling and analysis, and he is also experienced in detailed stress and structural dynamic analyses. Bryce's most commonly used tools include Siemens NX, Simcenter Nastran, and Femap, as well as Thermal Desktop. In addition to project work, Bryce assists with ATA's CAE technical support hotline.

Bryce's project work has focused on the analysis of aerospace structures, including satellites and launch vehicles. Examples of Bryce's project contributions include modeling and analyzing the radiative and conductive heat transfer networks of spacecraft components, and the use of Siemens NX and Simcenter 3D to create component-level finite element models for a rocket engine.

Bryce earned both his bachelor's and master's degree in Engineering Mechanics and Astronautics from the University of Wisconsin-Madison. As a graduate student, Bryce worked as a teaching assistant and still enjoys teaching today, both through ATA's support hotline and volunteer tutoring.

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