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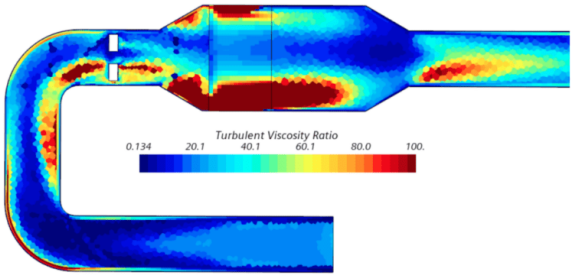
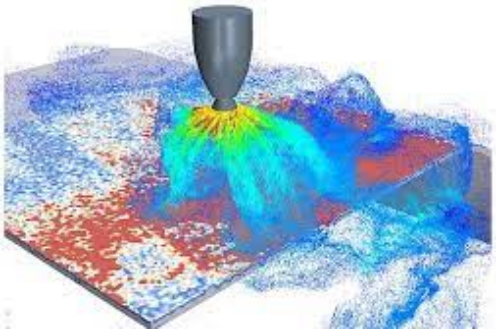
Spotlight On: Siemens STAR-CCM+

Simcenter™ STAR-CCM+™ software by Siemens is a cost-effective computational fluid dynamics (CFD) simulation tool that TotalSim expertly leverages to help companies bring their products to market faster, at lower cost and with optimized design.

We conduct simulations and provide analysis that enables our customers to explore designs digitally through detailed, accurate CFD simulation and design space exploration. While the STAR-CCM+ general purpose GUI workflow can accurately and rapidly simulate problems, it takes finesse and expertise to adapt and deploy the software to the unique needs of each customer.





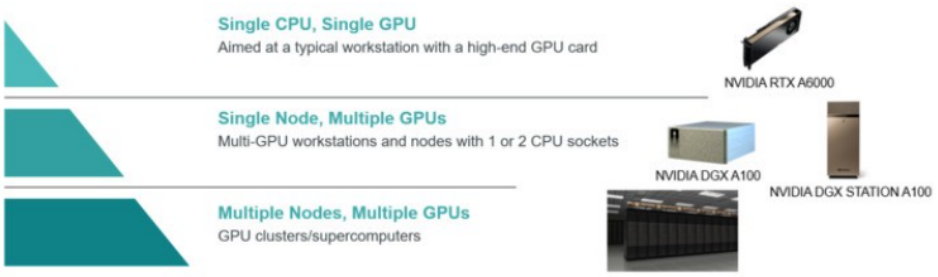
TotalSim expertly incorporates the best of STAR-CCM+'s functionality into elegant, customer-tailored workflows. Our in-house computational toolset has a diverse set of services ranging from simulating external and internal fluid flows to assisting with physical testing.

We invest in high-value simulation tools like Simcenter STAR-CCM+ (and the experts who know how to use them) so you don't have to. Our automated workflows and repeatable, proven processes eliminate errors, save time and money and optimize design so that you can get to market ahead of the competition. To learn more about our STAR-CCM+ applications and templates check out our STAR-CCM+ consulting and industry pages.

Simcenter STAR-CCM+ Now Supports GPU Acceleration For An Increasing List of Solvers

Technology is moving forward and we're moving with it! TotalSim has always been a huge proponent of using STAR-CCM+ software and now it can do even more. With the most recent version of STAR-CCM+ Powerplus GPU licensing our clients can utilize our advanced technology to make projects and simulations run even quicker.

GPU's have more cores than the alternative CPU, and with these additional cores, GPUs can handle more mathematical calculations at the same time but with greater efficiency. These simultaneous computations allow us to get results back quicker, speed up projects and give our customers more bang for their buck.



At this moment, GPU Usage is only fully accelerated on certain types of solvers including:

- Energy: Segregated & Coupled
- Flow: Segregated & Coupled
- Time: Steady, Implicit Unsteady, PISO
- Turbulence: All RANS (SA, k-ω, k-ε, RSM), SRH, DES, LES (including WMLES)
- Equation of State: Constant Density and Ideal Gas with Energy
- Acoustics: Perturbed Convective Wave and Lighthill Wave Acoustic Models
- CHT: Segregated Solid Energy (N.B. not Coupled Solid Energy)
- Combustion: Flamelet-based combustion models & NOx emissions
- Miscellaneous: Passive Scalar, Moving Reference Frame (MRF) Energy: Segregated & Coupled

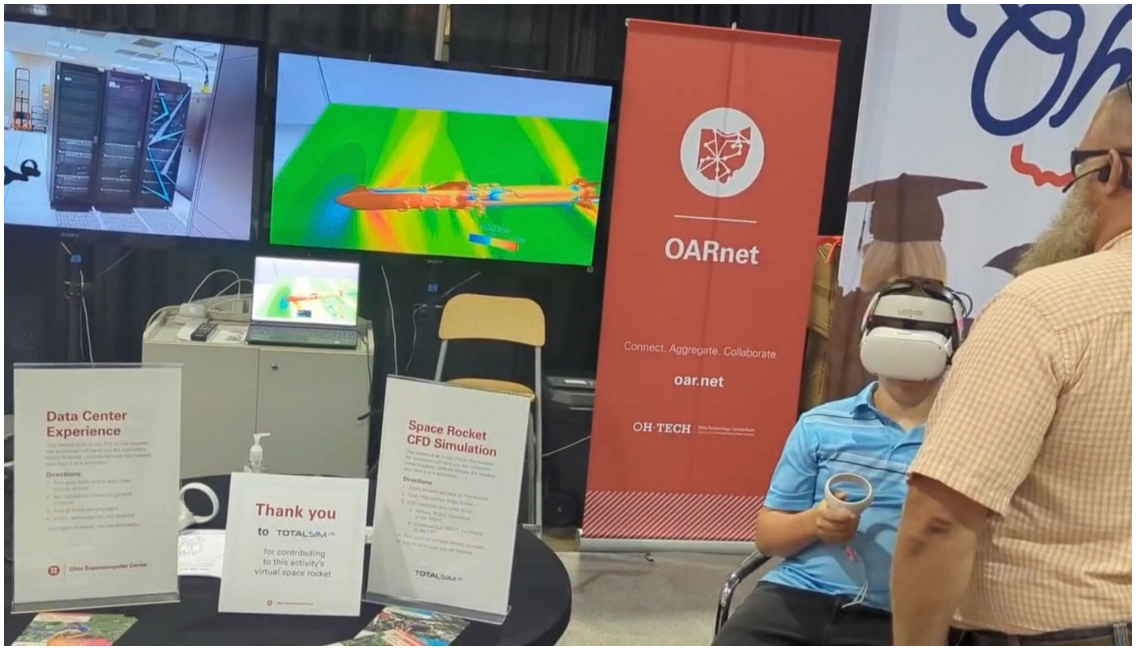
In our in-house testing so far, we have found significant speed-ups resulting in an over 50% cost-savings per simulation run. We will continue to test the software and hope to have some benchmark tests to share soon. Stay tuned on our social media and blog for upcoming results.

Our set of expertly trained engineers, combined with our already diverse toolkit, lets clients reap the benefits of these technological advances in the STAR-CCM+ software. If you have any more questions about GPU capabilities, or how we can assist you in using them, [contact us.]

Ohio State Fair Leads to Hometown Fun

The Ohio State Fair has always been an event that wraps up the summer months and brings together the community. While the majority of the TotalSim team finds themselves enjoying the fair in their personal time, this year we got to enjoy it while showing off some of our work!

Surrounded by other big name exhibitors, such as our friends NASA and Honda, we partnered with the OARnet booth to display a virtual reality model of a SpaceX Rocket.

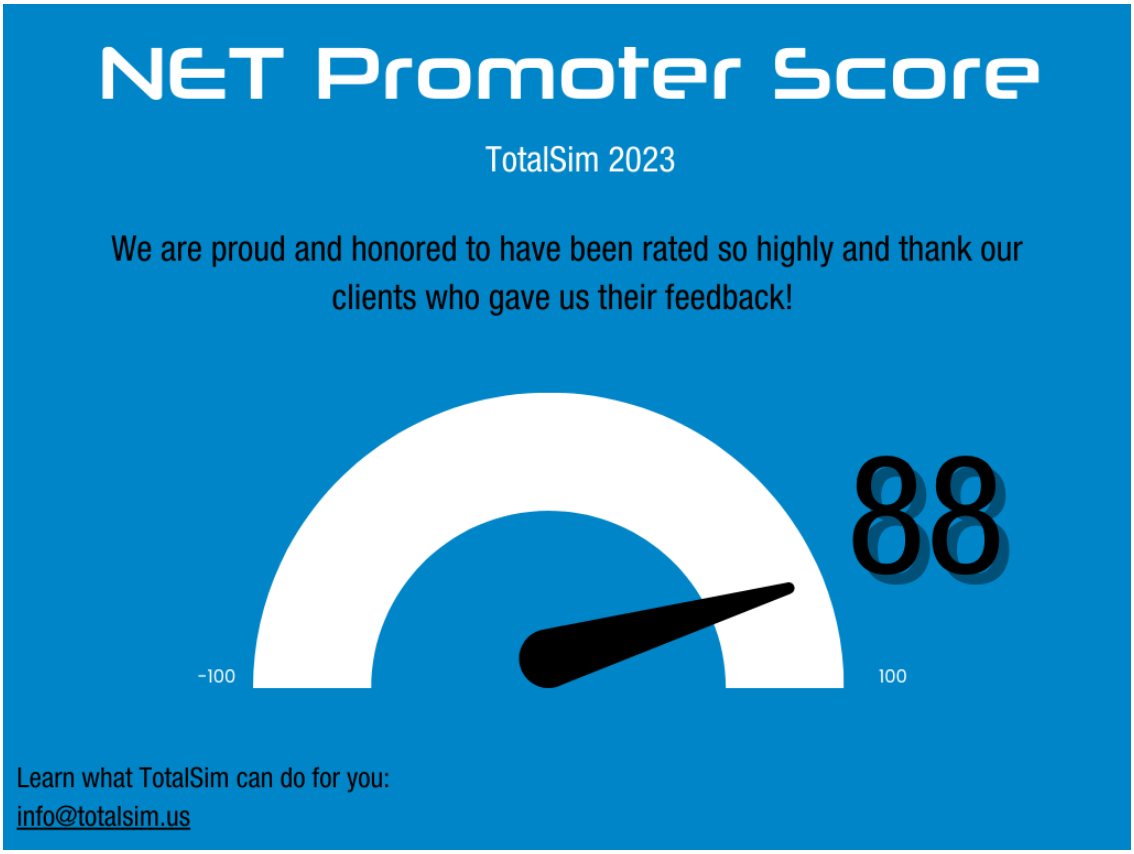


It was great watching all the kids (and adults) get to play with the same equipment we work with everyday. While we may be biased, CFD can be a pretty fun toy and it was awesome opening up even more people's eyes to what technology and simulation can accomplish!

The Results Are In…Our 2023 NPS Score

Customer satisfaction has always been a huge part of who we are as a company and something we've prided ourselves on. We could not be happier when learning our Net Promotor Score (NPS) had totaled out to an 88!

The benchmark NPS score in the consulting industry is a 67, and in the technology & services it is a 64. Our competitive nature loves knowing that we're able to blow that out of the water!



Going forward we will be consistently surveying customers after the end of a project and using that feedback to continue our internal improvement process. If you work with us in the future, we appreciate you in advance for filling out the survey at the end of our time together!

See TotalSim at the National Advanced Air Mobility Industry Forum

The TotalSim team will be returning to the National Advanced Air Mobility Industry Forum on September 18 and 19th!

With the forum in our backyard of Springfield, OH it is always fun to make the quick trip and see the innovations other companies are making in the aerospace industry.

Last year, we saw the ribbon cutting and groundbreaking for the National Advanced Air Mobility Center of Excellence and we also learned more about Ohio's collaborative aviation ecosystem.

This year we're looking forward to another great time and if you find yourself in Springfield make sure to stop by our booth and say hi!

Upcoming Events

National Advanced Air Mobility Industry Forum, Sept. 18 - 19, Springfield, OH

IBEX, Oct. 3 - 5, Tampa, FL

Workboat Show, Nov. 29 - Dec.1, New Orleans, LA

PRI, Dec. 7 - 9, Indianapolis, IN

Industries Where We Excel

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