QUARTERSIM US

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Bringing You the Latest Insights, Innovations, and Stories

Letter from the President

Hi all,

This year is "flying by"! We've seen an uptick in aerospace activity while continuing our strong involvement in racing —maybe that's why things feel like they're moving so fast. Or perhaps it's just my age… Either way, it's hard to believe we're already heading into the final quarter with the holidays and new year just around the corner. It's been a busy and productive year at TotalSim.

Looking back over the past few months, one highlight was attending and exhibiting at the VFS Electric Aircraft Symposium, held alongside EAA AirVenture in Oshkosh. It was a fantastic event, and I thoroughly enjoyed soaking up all things aviation at OSH.

We're also proud (and a little amazed) to share that TotalSim has achieved both **Gold Partner** and **Expert Partner** status as a Siemens reseller. *Gold* recognizes the sales milestones we've reached, while *Expert* confirms that our entire team has passed Siemens certifications in Sales and Technical Support for STAR-CCM+. Naethan and I had set these as ambitious goals for the year—not certain we'd even hit one, let alone both! This recognition allows us to leverage more Siemens resources for our clients and challenges us to keep raising the bar internally.

Just last week, Greg and Dan hosted a webinar on HPC and GPUs, exploring how advances in hardware and software are reshaping what's possible in engineering timelines. And that's without even diving into AI and its impact on simulation! We're working hard to stay at the forefront of these rapid changes—it's an exciting time to be in engineering and simulation technologies.

Here's to closing out the year strong and keeping up the momentum into 2026.

TotalSim Bulletin

Company News

In July, TotalSim had the exciting opportunity to attend the Vertical Flight Society's Electric Aircraft Symposium (EAS) in Oshkosh, WI. As the premier electric VTOL, STOL, CTOL, and advanced air mobility (AAM) event, the Symposium brought together industry leaders, innovators, and technical experts for two days of presentations and networking ahead of EAA's annual AirVenture. This year marked the first time TotalSim exhibited at the event, with President Ray Leto representing

the team and engaging in meaningful discussions with presenters and attendees. It was a fantastic opportunity to connect with the community shaping the future of unconventional aircraft design, propulsion, and flight.

From there, Ray rolled right into AirVenture, where the energy and enthusiasm of the aviation world was on full display. Between booth time and networking events like Hartzell's Props 'n' Hops, he connected with clients, partners, and friends, while also taking in highlights like Beta's Alia aircraft, DeltaHawk's latest engine innovations, and an incredible lineup of aircraft spanning WWII classics to cutting-edge designs like the HondaJet. At Honda's booth, the Acura DPi race car — a project TotalSim proudly supported — showcased the exciting crossover between motorsports and aviation. Ray returned home recharged and inspired, already looking forward to next year's event.

AI is accelerating transformation in the CFD industry — making simulations faster, workflows smarter, and insights more accessible. Engineers are already leveraging AI/ML to enhance meshing, predict performance metrics, automate feature detection, and speed up design exploration. Siemens has begun integrating AI capabilities into its Simcenter portfolio, showing how machine learning can complement physics-based solvers to drive better, faster decisions. As a Siemens partner, TotalSim is actively exploring how AI-augmented CFD can strengthen our own toolchain — from automating routine processes to unlocking new ways of interpreting simulation data. We're excited to continue watching these advancements unfold and to bring the benefits of AI-driven innovation to our clients.

QuarterlyRead

Dark or Sunny? The Pros and Cons of Cloud-Based Engineering Software

In the fast-evolving world of engineering, where precision meets innovation, the shift to cloud-based software has been nothing short of revolutionary. Gone are the days of bulky servers humming in dimly lit rooms — today, tools like CAD, simulation software, and project management platforms live in the cloud, accessible from anywhere with an internet connection. Whether you're designing bridges, optimizing supply chains, or simulating fluid dynamics, cloud-based engineering software promises efficiency and collaboration on a global scale. But is it all smooth sailing?

You have to dive into the advantages and disadvantages of embracing the cloud, drawing from real-world insights, to decide if it's the right altitude for your workflow.

The Upside

Why Cloud-Based Engineering Software are a game-changer for engineers

1. Scalability on Demand
One of the biggest wins is the ability to scale resources effortlessly. Need more computing power for a complex simulation? Ramp it up without investing in new hardware. Cloud platforms dynamically provision and de-provision resources, ensuring your software flexes with project demands—perfect for fluctuating workloads in engineering projects.

2. Cost Efficiency Without the Upfront Sting
Say goodbye to hefty capital expenditures on servers and licenses. Cloud models operate on a pay-as-you-go basis, slashing IT overhead and eliminating the need for individual software licenses. For engineering firms, this means redirecting budgets to innovation rather than maintenance, with automatic backups thrown in for good measure.

3. Seamless Collaboration and Accessibility
Engineering is a team sport, and the cloud levels the playing field. Access your CAD models or project files from any device, anywhere—ideal for remote teams or global collaborations. Tools like Onshape allow real-time modifications with role-based permissions, turning dispersed teams into a unified force. Plus, integration with other platforms streamlines workflows, from quoting to invoicing.

4. Enhanced Flexibility and Disaster Recovery
Cloud software adapts to business needs, letting you subscribe only to what you use and scale as you grow. In disaster-prone scenarios (think floods or earthquakes), your data stays safe on external servers, ensuring business continuity without a hitch. It's a lifeline for deadline-driven engineering environments.

5. Automatic Maintenance and Innovation Boost
Providers handle updates, security patches, and infrastructure, freeing engineers to focus on design rather than downtime. This fosters faster prototyping and testing, accelerating time-to-market for new ideas.

In short, cloud-based tools empower engineers to work smarter, not harder, fostering agility in an industry where adaptability is key.

The Downside

No technology is perfect, and cloud-based engineering software has its share of storm clouds.

1. Internet Dependency and Downtime Risks

At its core, the cloud relies on a stable connection. A spotty internet link can grind simulations to a halt or block access to critical files— a nightmare for time-sensitive engineering tasks. Service outages from providers add another layer of vulnerability, potentially compromising project timelines.

2. Security and Data Privacy Concerns

Storing sensitive designs or proprietary data off-site raises eyebrows. While providers invest in robust security, breaches can expose intellectual property. Legal questions around data ownership—who profits from your stored files?—further complicate matters, especially in regulated industries like aerospace or civil engineering.

3. Hidden Costs and Vendor Lock-In

That pay-as-you-go model? It can spiral if not monitored, with unused resources or inefficient setups leading to surprise bills. Transitioning providers (vendor lock-in) is often painful, tying you to one ecosystem and limiting flexibility.

4. Performance Limitations for Heavy Lifts

Not all cloud tools are created equal. Early-stage platforms may lack the full feature set of on-premise giants, forcing compromises in complex simulations or high-fidelity modeling. For resource-intensive tasks, latency can lag behind local setups.

5. Learning Curve and Compliance Hurdles

Migrating to the cloud demands upskilling—engineers must adapt to new interfaces and cloud-specific governance. In sectors with strict regulations (e.g., healthcare engineering), ensuring compliance across distributed systems adds overhead.

These challenges highlight that while the cloud offers freedom, it comes with strings attached—ones that require careful planning to avoid tangles.

Touching Down: Is Cloud Right for Your Engineering Workflow?

Cloud-based engineering software is like strapping on wings: exhilarating for collaboration and scalability, but demanding vigilance against winds like security risks and connectivity woes. For growing firms or distributed teams, the advantages often outweigh the disadvantages, driving efficiency and innovation. However, if your work involves ultra-sensitive data or offline-heavy processes, a hybrid approach might be the sweet spot.
Ultimately, assess your needs: pilot a tool like AWS or Google Cloud integrations, monitor costs with built-in tools, and prioritize providers with strong SLAs. The cloud isn't the future—it's the present. Ready to take off? Your next breakthrough might just be a login away.

What are your experiences with cloud tools in engineering? Drop us a comment — we'd love to hear your take!

Quarter in Review: Events

This past quarter, the TotalSim team stayed busy sharing insights and connecting with the community. On September 24th, we hosted our webinar **Software + Hardware + Automation = CFD Acceleratio**n, where attendees explored how the right mix of tools can eliminate workflow bottlenecks, optimize hardware investments, and leverage automation to speed up simulation. The session highlighted real-world hardware setups for STAR-CCM+ and offered proven strategies to unlock faster, more cost-effective CFD. Thanks to everyone who joined us — it was a great discussion on how to drive efficiency and innovation in engineering workflows.

From the Field

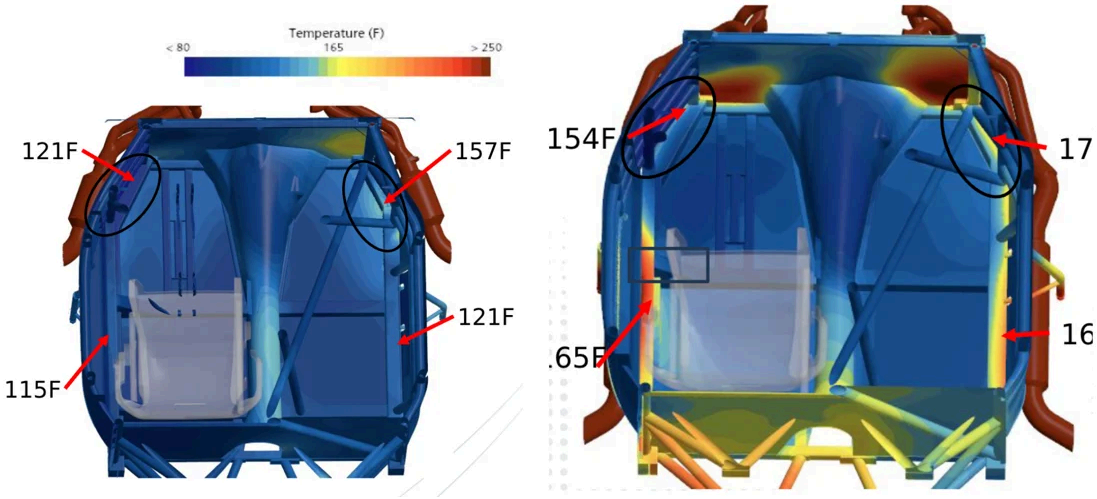
The cloud gives you speed, scalability, and freedom — but it shouldn't come at the cost of human support. That's why TotalSim partnered with the **Ohio Supercomputer Center (OSC)** to create something better: a cloud experience that's powerful and personal.

Together, we're giving engineers access to supercomputing performance backed by a team that actually knows your projects, your workflow, and your goals. No ticket

queues. No automated replies. Just expert support that keeps your simulations running smoothly.

Learn how our partnership brings the best of both worlds — cutting-edge cloud power and the responsiveness of a real team.

Discover what sets OSC + TotalSim apart here.



UpcomingEvents

Ohio 2025 National Advanced Air Mobility Industry Forum
October 14-15, 2025

TotalSim US will be exhibiting at The National Advanced Air Mobility Center of Excellence (NAAMCE) Industry Forum, on October 14-15, 2025, in Springfield, OH. As a Dublin-based, Ohio company, we take great pride in all things Ohio and are looking forward to supporting JobsOhio, Dayton Development Coalition, and the Advanced Air Mobility Institute at the fourth National Advanced Air Mobility Industry Forum in conjunction with the Pulitzer Electric Aircraft Races held on Oct 10-12. Advanced Air Mobility (AAM) will revolutionize the way we travel and transport goods, from military capability to organ transport. The National Advanced Air Mobility Industry Forum (NAAMIF) will bring together manufacturers and suppliers from across the AAM industry for networking, workshops, keynote presentations, static displays, and demonstrations. Please stop by and see us if you are attending.

Performance Racing Industry (PRI) Trade Show
December 11-13, 2025

The TotalSim team is gearing up for another exciting trip to Indianapolis this December for the Performance Racing Industry (PRI) Trade Show — the world's largest gathering dedicated to the business of racing and motorsports. Last year, we had a fantastic time at PRI, from connecting with old friends and new faces to hosting a packed seminar on racecar aerodynamics. It's always one of our favorite events of the year, with countless opportunities to see the latest innovations shaping the future of performance.

We'll be back this year at PRI in **Booth #133** from December 11–13. And also have Naethan Eagles F1, IndyCar, NASCAR, and other race series experienced CFD Aerodynamicist and TotalSim US Co-Founder provide a Free 1-hour lecture with Q&A about how aerodynamics can improve your car's laptime performance on **Friday, December 12th at 1:00 PM.**

If you'll be at the show, let us know — we'd love to connect!

Blast from the Past

This quarter, we're revisiting when TotalSim President Ray Leto was featured as an expert source in **Uncrewed Systems Technology** for their article Sense and Simulation. The piece highlights the latest advancements in simulation for autonomous vehicles and uncrewed systems, with a focus on digital twins and high-fidelity virtual testing environments. From advanced GPUs to generative AI, it explores how emerging technologies are enabling accurate, repeatable scenarios for validating AV sensors.

The article also examines the growing role of quantum computing in accelerating simulations and enhancing sensor data accuracy — breakthroughs that are shortening development cycles and paving the way for safer, more efficient autonomous systems. It's an insightful look at how cutting-edge simulation is shaping the future of autonomy, and we're proud to have Ray's expertise featured in the conversation.

Ctrl + Alt + Delight

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Industries Where We Excel

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