



PolimOVE Wins the Ansys Indy Autonomous Challenge Simulation Race

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Ansys simulation solutions and artificial intelligence powered virtual autonomous race

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Ansys_Indy_Autonomous_Challenge_Simulation_Race

/ Key Highlights

- Seventeen university teams competed in the Ansys Indy Autonomous Challenge Simulation Race featuring digital replicas of the vehicles and track
- The simulated race, a critical milestone in the Indy Autonomous Challenge (IAC), allowed teams to test the performance of their racecar controllers in a safe environment
- Ansys awarded winner PolimOVE and runner-up TUM Autonomous Motorsport \$100,000 and \$50,000, respectively; \$1.3 million in prizes remain at stake for the IAC race currently scheduled for Oct. 23, 2021

[Ansys](#) (NASDAQ: ANSS), working in collaboration with IAC organizers [Energy Systems Network](#) (ESN) and the [Indianapolis Motor Speedway](#) (IMS), simulated autonomous races that culminated in a seven-team final on a digital replica of the IMS. Ansys awarded winner PolimOVE from Politecnico di Milano (POLIMI), Milan, Lombardy, Italy \$100,000 and runner-up TUM Autonomous Motorsport from Technische Universität München (TUM), Munich, Bavaria, Germany \$50,000 in cash prizes.

The [Ansys IAC Simulation Race](#) was a critical milestone within the IAC — a competition among university teams to program autonomous racecars for a head-to-head race. The IAC race is currently scheduled to take place Oct. 23, 2021 at the IMS, where fully autonomous Dallara AV-21s must safely and competitively race for the remaining \$1.3 million in prizes. With a short timeline and complex engineering challenges, simulation is a critical enabler for teams to safely, rapidly and cost-effectively develop their controllers in time for the October race.

Seventeen competing teams faced four phases: time trials, validation runs, semi-final heats and the final race, composed of 10 laps with the seven remaining vehicles. The event was conducted in the same virtual Ansys simulation environment where teams developed the location, perception, prediction, planning and control algorithms that collectively serve as the racecar controller. This allowed teams to examine their controllers' ability to navigate the track, avoid collisions and execute strategic racing maneuvers.

"Competing in the IAC and working with leading-edge companies like Ansys is a terrific opportunity," said professor Sergio Savaresi, PolimOVE team lead of Politecnico di Milano. "We're getting hands on experience with the same tools major companies use for autonomous vehicle (AV) development. It was an incredible feeling to take first place and we gained insights about our controller that we will use to optimize our software and hopefully get the same result in October."

The IAC launched in 2019 with 40 universities around the world forming more than 30 teams. A series of qualifying rounds narrowed the field of teams that will compete in October.

"Simulation enables these teams to design the software they will use to control the physical racecars," said Matt Peak, managing director at ESN. "It gives them the freedom to be creative and agile in how they approach a very complex problem. We partnered with Ansys because there is simply no company in the world better at simulation — we couldn't do this without the solutions, talent and passion they bring to the IAC."

Many significant engineering challenges must be solved before AVs reach public roadways. Like many major OEMs, ESN recognized the importance of simulation in overcoming these hurdles, tapping Ansys to be the exclusive simulation sponsor of the IAC. In this role, Ansys provides teams with cutting-edge training and free access to products in its [Ansys Autonomy](#) suite. Ansys also built digital replicas of the racecar and IMS, and led three hackathons to help teams advance their racecar controllers.

"Engaging with the academic community through challenges like the IAC allow Ansys to empower the next generation of engineers to accelerate AV commercialization," said Rick Mahoney, senior vice president of worldwide sales, marketing and customer excellence at Ansys. "The teams have not only taken advantage of our solutions with technical ingenuity, but they have done so despite challenging conditions created by the pandemic. We cannot overstate how impressed we are by what these teams have accomplished already."

Click [here](#) to view the full length race.

/ About Ansys

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