



# Racing Toward an Autonomous Future

THE UNIVERSITY OF  
**ALABAMA**

Alabama Transportation  
Institute






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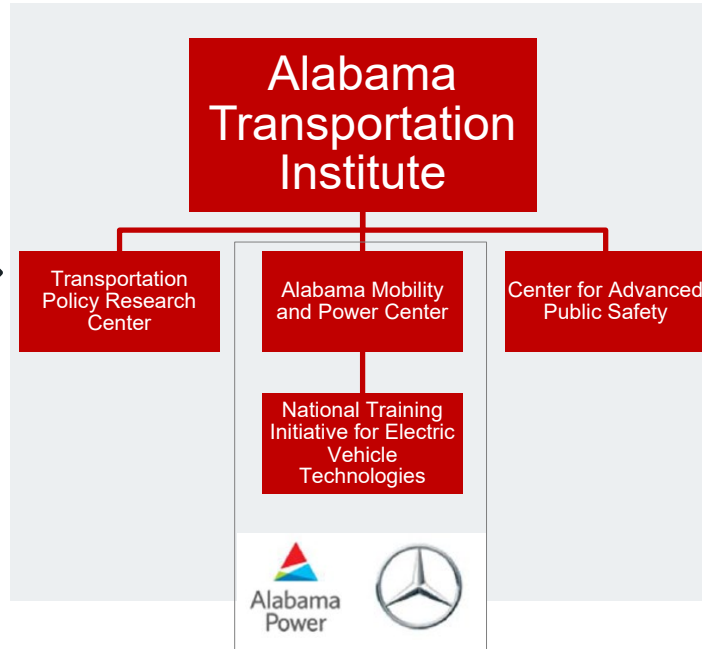


Automated,  
Connected, Electric,  
Shared & Safe  
Mobility





ATI CENTERS



UA COLLABORATING CENTERS



MULTI-INSTITUTIONAL CENTERS



ALDOT COLLABORATION





- Organized by Energy Systems Network, IAC university teams from around the world compete in a series of challenges to advance technology that can speed the commercialization of fully autonomous vehicles and deployments of advanced driver-assistance systems (ADAS) to increase safety and performance. The competitions are a platform for students to excel in Science, Technology, Engineering and Math (STEM).

Friday April 29, 2022  
Daily Mail

## Robo-car breaks the world speed record! Fully autonomous PoliMOVE vehicle reaches an incredible 192.2mph on the Space Shuttle airstrip at NASA's Kennedy Space Center

- The car is a Dallara-built AV-21 that has hardware to enable automation
- It took to the track on the Space Shuttle airstrip in Cape Canavera on April 27
- The speed of 192.2mph was obtained as an average of over 0.6 miles (1km) in two consecutive attempts in opposite directions, to eliminate the effects of the wind

By [SHIVALI BEST FOR MAILONLINE](#)

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A robotic car has broken the world speed record, reaching impressive speeds of 192.2mph (309.3kph).

The car, developed by a team from the Politecnico di Milano, called PoliMOVE, is fully autonomous and took to the track on the Space Shuttle airstrip at [NASA's](#) Kennedy Space Centre this week.

During the test drive, the racecar clocked speeds of 192.2mph (309.3kph), smashing the previous record of 175.49mph (282.42kph), held by Roborace.

# The Challenge

- ① Object is to deploy software to drive a standard issue racecar at high speeds under challenging performance conditions.
- ① Collaborating with partners like Cisco, the IAC **is working to increase safety and performance in not only motorsports, but across all modes of commercial transportation.**
- ① The IAC started as a \$1 million prize competition with 41 university teams signing up to compete more than two years ago, representing top engineering and technology programs from 14 U.S. states and 11 countries.
- ① UA is partnered with Politecnico di Milano (Italy) – one of the top universities in the world.

# The Racecar

Dallara AV-21 (modified Indy Lights chassis)

## Sensors on board:

- High-Precision GPS
- Radar
- Lidar
- Computer-Vision Cameras

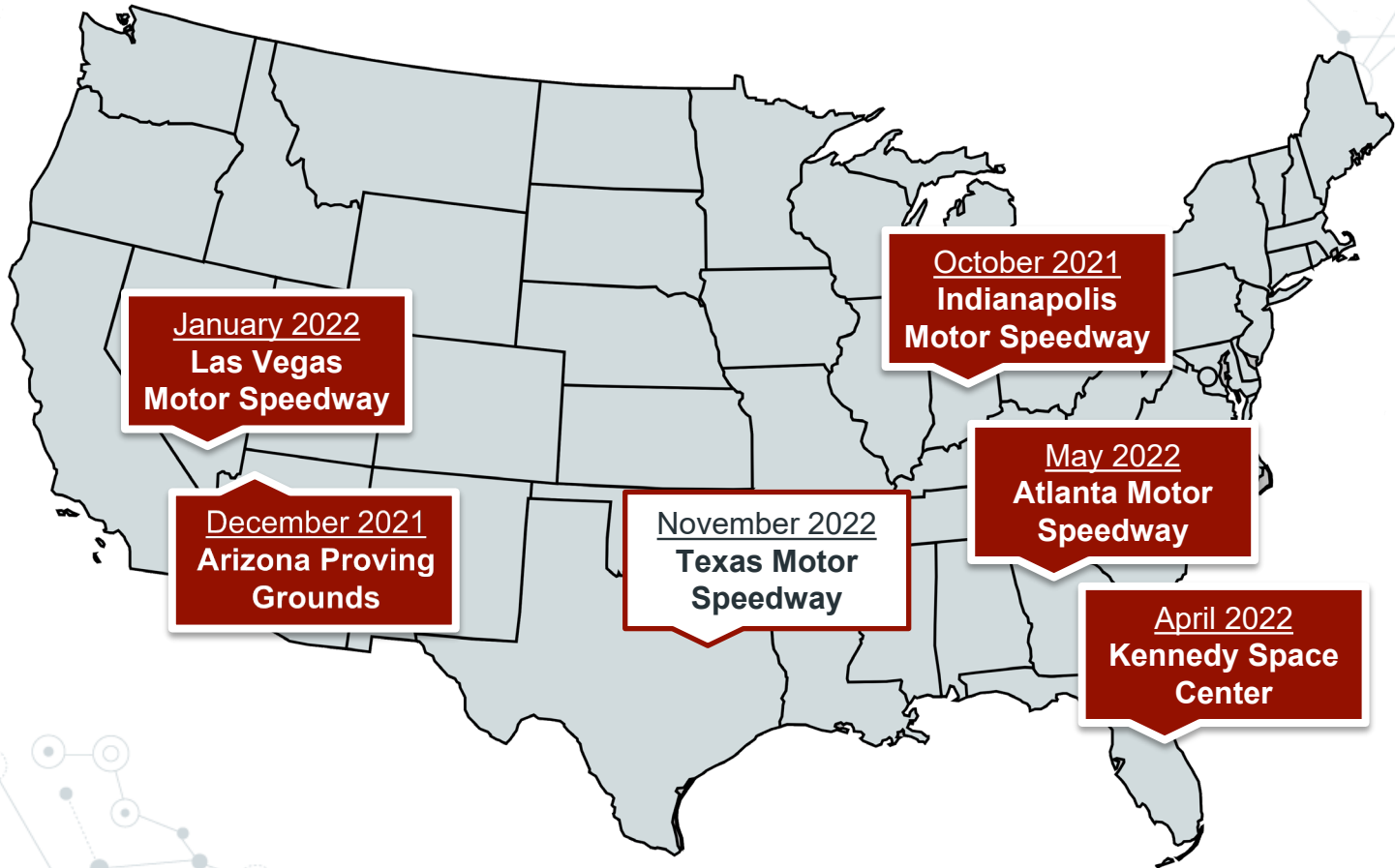




# The PoliMOVE Team at the Indianapolis Motor Speedway Politecnico di Milano (Italy) and The University of Alabama



# Racing Across America...









# EcoCAR Challenge Competitions

- US Department of Energy competition
- 11 top universities
- Topics:
  - Advance propulsion systems
  - **Connected and automated technology**
  - Improve energy, safety and consumer appeal
- Year 3
- Awards given June 9, 2021
- UA Won 1<sup>st</sup> Place
- We are one of the 13 teams chosen for Year 4



## OVERALL AWARDS

- 1st Place Overall – University of Alabama
- 2nd Place Overall – Ohio State University
- 3rd Place Overall – West Virginia University
- 4th Place Overall – Mississippi State University



# Safety Implications

- ◎ Competition drives innovation
- ◎ The brightest minds and top innovators
- ◎ Vehicle dynamics - Working in a controlled environment
- ◎ Build algorithms for edge cases
- ◎ Edge cases are important from safety perspective -
  - Don't come up often in the real world
  - But needed to control vehicle in emergency situations
- ◎ Technology developed will influence autonomous features in all vehicles, including CMVs

# Thank You

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