

Bound for California, no hands on the wheel

By LE ROY STANDISH The Daily Sentinel

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John Trotter, 57, owner of Quality Garage Doors, has difficulties when it comes to scrolling through his cell phone's menu to find someone's number.

"I hate my cell phone," he said after accidentally turning on the speaker phone.

His ineptitude with modern technology is all the more surprising when one considers he is part of the nine-man team Mojavaton — a local band of fellows who have worked for the last two years to build a completely autonomous, computer-driven vehicle.

"We are proud of the fact we represent Grand Junction," said Trotter, who has been with the team from the start. He has seen the team's vehicle, a 2003 Nissan Xterra that gets about 10 miles to a gallon of gas, advance from a stock, factory-built SUV to a computer-packed, fully autonomous vehicle.

The team's motto is: The lights are on and nobody's home. That phrase refers to the vehicle, not the team members.

The team participated in the Department of Defense open desert challenge last year and placed 13th in a field of 22.

"I don't think any of us thought we were going to win; there was a lot of stiff competition," he said.

Team Mojavaton, which is one of 35 teams to participate in this year's Defense Advanced Research Projects Agency (DARPA) Urban Challenge, will now attempt to prove its vehicle can navigate city streets. Tuesday, the team will trailer its vehicle and head to the Southern California Logistics Air Base (formerly George Air Force Base) in Victorville to begin qualifying for a Nov. 3 challenge, testing its ability to safely navigate 60 miles of urban terrain.

The autonomous vehicle "must perform as well as someone with a California Driver's License," said Tony Tether, director of DARPA.

But with fierce foes such as teams CajunBot, Juggernaut and the Urbanator, it won't be easy to win the competition and claim the \$2 million grand prize, the \$1 million second-place prize or the \$500,000 third-place prize.

"We have to be able to convoy; then you have to be able to pass cars in traffic," Trotter said.

Vehicles will have to navigate street signs, stay in their proper lanes and avoid other vehicles.

"Of course, if you run into a car, that is a big demerit," Trotter said.

When asked how much has been invested in the vehicle, team leader Jim Crittenden, 56, became elusive.

"Oh, I don't know," he said with a smile. "I guess that is a nice way of saying I won't say, but I will say it is a whole lot less than a lot of our competitors."

Some teams — sponsored by heavyweights such as the Massachusetts Institute of Technology and Princeton University — have spent in excess of \$1 million, said Crittenden, the general manager of C5 Medical Werks, a manufacturer of medical and implantable medical components.

"I think we have set the record among all the DARPA teams for sponsors," he said.

Without sponsors such as Barney Brothers, Big O Tires, Bud's Signs, Pro Powder Coating, Fox Haven Video Productions, TCS Marketing and Tee Time USA, team Mojavaton would not exist, he said.

Without software experts such as team member Karl Castleton, team Mojavaton probably would not exist, either.

"He's the real superstar here," Crittenden said.

The vehicle is able to use multiple technologies, such as radar, color cameras, lidar (a laser displacement range finder), to see the road ahead. All the sensors then have to communicate with a central brain that fits neatly behind the back seat.

"It's not much different than a good size desk top PC," Crittenden said.

The government will have the vehicles go through six days of testing to see if they can safely negotiate intersections, avoid oncoming traffic, recognize stop signs and navigate through an array of city obstacles. Then, on Nov. 3 comes the final test — a 60-mile-long urban track.

Despite the prize money for the top three finishers, team members say money is not the motivating factor.

"We do it because it is interesting to us. But if we can touch some of the kids' in the (Grand) Valley's lives and say, 'Look what you can do if you apply yourself,' that is what I am about," Trotter said referring to Mojavaton's numerous visits to area schools.

"It really is a labor of love," Crittenden said. "We enjoy the technological challenge."

Rounding out team Mojavaton are: Crag Frazier, Mike Hawkins, Warren MacEvoy, Phil Miller, Walt Rhodes, and Dan Councilman.

To learn more about team Mojavaton visit its Web site at www.mojavaton.com. And to keep tabs on the race, visit www.darpa.mil.

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