

OC on Road Map for Autonomous Vehicles

ENGINEERING: Link to Bay Area test station runs through Irvine

■ By KATE SCHWARTZ

Orange County has become a key pit stop in the race to develop a fully autonomous car.

The role has come via Alberta, Canada-based **Stantec Inc.**'s western U.S. headquarters in Irvine. That's where **Arya Rohani**, a recently hired senior transportation principal, has set up shop.

His main duty: project management of the engineering firm's role as a partner in a year-old effort by the city of Concord to turn 20 miles of idle roads, tunnels, bridges and other infrastructure into a secure test station for the newest, proprietary CV/AV technology behind hopes for driverless vehicles.

The station, called GoMentum, is the brainchild of the Contra Costa Transportation Authority. It has been established on a section of the Concord Naval Weapons Station, a 5,000-acre base that had been largely idle for nearly two decades until GoMentum came along last year.

Recent months have brought reports on various developments at GoMentum.

Honda Motor Co. went on record with a presence at the station, while automotive trade publications said that **Mercedes-Benz** was reportedly conducting tests of vehicles and infrastructure, such as traffic lights on the grounds there.

The GoMentum Station's proximity to Silicon Valley brings the potential for a leg up on four other test sites around the U.S. (see map on reverse).

News about the development of connected and automated vehicles has been frequent in recent headlines.

Last week's news that **Apple Inc.** is considering the development of an autonomous vehicle was preceded by unconfirmed reports that the executives of the Cupertino-based company had visited the GoMentum Station for talks about signing up as a tenant—the facility is expected to limit participation to five automakers, which can use it free of charge in exchange for stirring the local economy with research and development.

The buzz from the Silicon Valley has brought new life to the old naval base—and Stantec's role in the project is bringing some of the action to OC. It starts with Rohani, who brings a varied background to the role in Concord—a resume that reflects the



Stantec's Rohani: "people are intrigued" by potential for automated vehicles in master-planned communities

diversity of Orange County's economy. He was head of global cloud solutions at Irvine-based **Ingram Micro Inc.** immediately prior to joining Stantec. He previously held executive and leadership roles at Newport Beach-based developer **Irvine Company** and the **Orange County Transportation Authority**.

"My passions have always been technology and transportation, and this project was the perfect combination of the two at the perfect time," he said.

Strategic

The decision to work on the GoMentum project from Stantec's office in Orange County was deliberate and strategic, according to Rohani.

"Orange County is traditionally very innovative in terms of transportation," he said. "We have the biggest master-planned community in the United States—Irvine—and people are intrigued by how [automated vehicles] could work in this kind of setting. We also have so many different sectors in Orange County. From academic and [research and development] to technology companies, this is a great place to be from an outreach perspective."

Stantec has secured about 45 partners for its role in building out the GoMentum project. Rohani declined comment on private-sector agreements but said the **Institute for Innovation at the University of California-Irvine** has agreed to contribute.

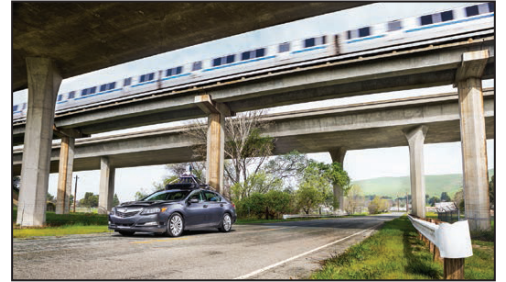
"We want to leverage their horsepower for innovation," he said. "We are also trying to adapt what we learn up [at GoMentum Station] to the conditions in Orange County through these sorts of local partnerships."

The GoMentum management team has had discussions with the Orange County Transportation Authority and the local California Transportation Authority district about implementing CV/AV technology in Orange County, and Rohani says they're very interested.

OCTA is attracted to an application of autonomous vehicles that would transport commuters from trains or bus stations to their homes. These "last mile" mini-shuttles would carry eight to 10 people and complement Orange County's existing transit system.

Rohani said he's talking to OCTA about conducting testing in Orange County.

"Ultimately, I am absolutely confident that in less than five years we will have some form of an autonomous vehicle in Orange County," he said.



Concord Naval Weapons Station: GoMentum Station has Honda, Mercedes on board, said to be in talks with Apple.

"Whether it's with mass transit or the private consumer, I'm not sure yet."

California is one of only five states, along with the District of Columbia, where companies can test fully autonomous vehicles on public roads. Rohani said Google tests its vehicles on public roads in Northern California but that every test and any incidents come with abundant red tape and written reports.

He said the Concord station was attractive for the program because it isn't bound by state regulations.

"Because GoMentum Station is a closed federal naval base, it doesn't necessarily need to abide by California's rules on the subject," he said. "It provides expedited testing, privacy for the proprietary technology, and a lot less hassle."

Stantec's immediate task is to coordinate and implement the efforts of GoMentum's partners as they develop vehicles, but the company said it could add various levels of involvement in the future, including the design of infrastructure to accompany connected and autonomous vehicles.

The GoMentum Station has a vision of creating jobs and improving mobility and environmental health, according to its website, but Rohani says he's especially excited about another goal—decreasing vehicle-related deaths in America.

Life Saver?

Almost 34,000 people died in motor vehicle traffic accidents in the U.S. in 2013, according to a report released by the Centers for Disease Control and Prevention. The number of deaths this year is projected to exceed 40,000.

"I think that one day we can cut that number by over 90% with this technology," Rohani said. "It's really not too far-fetched to say that this is going to change the world. It's like the early days of the Internet—this is the ultimate mobile device, and it's hard to not get excited about that."

(See OC Data Drill map on reverse)

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OC Data Drill: Self-Driving Vehicle Test Sites

Graphic by Jane Yu

Autonomous and connected vehicle technology development relies on "test beds"—designated areas of roads and infrastructure not open to the public, where the driverless vehicles and accompanying infrastructure technology can be tested.

The test beds facilitate collaboration among partners, such as technology companies, automobile manufacturers, insurance companies and government agencies.

There are four major test beds in the U.S., including one on the West Coast—GoMentum Station.

Engineer Arya Rohani manages the Autonomous Vehicle program at GoMentum Station and works out of Stantec's Irvine office (see related story, page 1).

M City (University of Michigan Mobility Transformation Center)

- Ann Arbor, Mich.
- 32 acres (5 miles of roads)
- Partners: Ford, GM, Toyota, Qualcomm, State Farm

GoMentum Station

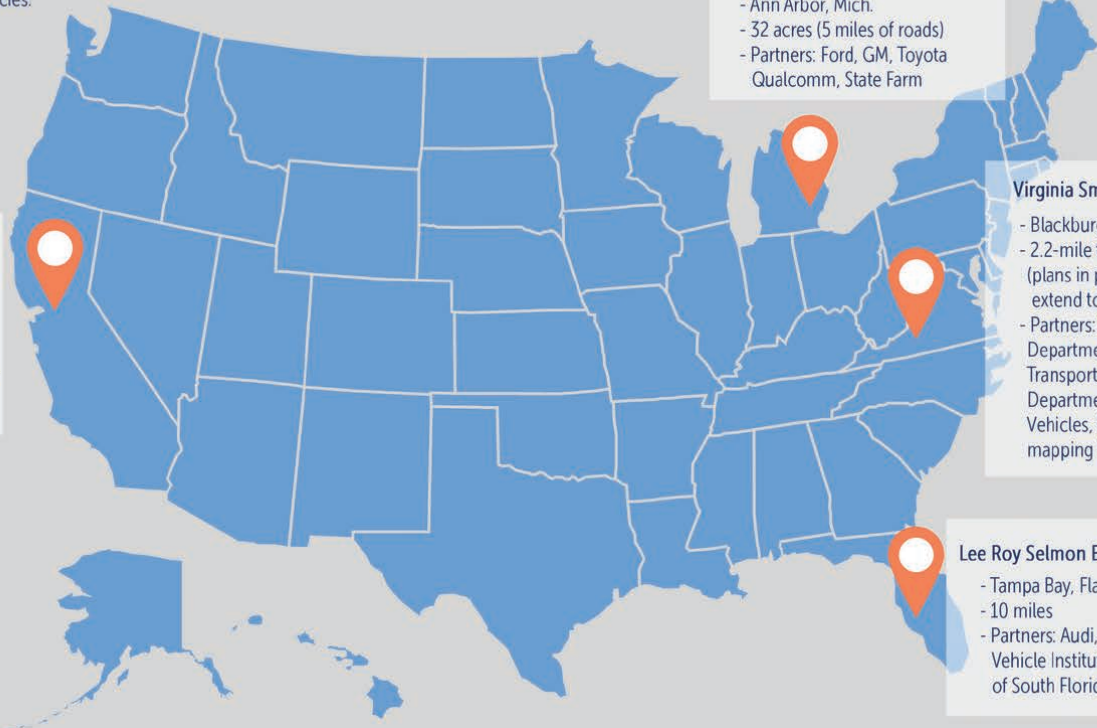
- Concord, Calif.
- 5,000 acres (20 miles of paved roads)
- Partners: Honda, Mercedes, Stantec, TIA, UCI Institute for Innovation, Clean Tech OC

Virginia Smart Road

- Blackburg, Va.
- 2.2-mile test track (plans in place to extend to 5.7 miles)
- Partners: Virginia Department of Transportation, Department of Motor Vehicles, HERE (Nokia's mapping business)

Lee Roy Selmon Expressway

- Tampa Bay, Fla.
- 10 miles
- Partners: Audi, Automated Vehicle Institute at University of South Florida



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