

JPL Vets Seek Profit in Repurposed NASA Gear

Pasadena-based startup 'shrinks' component from Curiosity Rover

SEEKOPS Inc.'s employees spend a lot of their time sniffing around for problems. The Pasadena startup manufactures a methane sensor that it attaches to a quad-copter drone and flies over oil and gas fields looking for leaks.

It was founded by a pair of former **Jet Propulsion Laboratory** employees who repurposed, slimmed down and licensed a methane-detecting sensor that **NASA** was using on its Curiosity Rover to search for microbial life on Mars.

"What they need on Mars is a lot more sensitive than what we need on Earth," said Chief Executive **Andrew Aubrey**, who co-founded SeekOps with **Brendan Smith**, the company's chief operating officer. "We take that tech and shrink it to 150 grams" – light enough to easily fit on a commercial-grade drone and be flown around oil and gas fields by the company's operators.

Oil and gas companies are required by different state laws to inspect for leaks, said Aubrey. Leaks also can cost oil and gas companies revenue, and indicate larger, more dangerous equipment failures, which makes firms eager to sniff out problems early, he added.

SeekOps manufactures its sensors in-house but buys custom-made drones from a San Diego company named **Straight Up Imaging**.

SeekOps offers survey flights of sensor-equipped drones as a service on a fee basis. The methane-sensing drone can fly up to 35 minutes at a time, long enough to survey most oil fields or production facilities, said Aubrey.



COURTESY OF SEEKOPS INC.

Aubrey, Smith: SeekOps' cofounders buy drones, add methane sensor.

The firm also makes and sells a handheld methane detecting sensor that can be used to detect leaks by engineers on the ground. The 7-person company has raised about \$500,000 in seed capital right now, mostly from friends and family, said Aubrey.

Smart Glasses

Augmented reality company **Daqri** of downtown Los Angeles has begun shipping its Smart Glasses.

The company believes its smart glasses have the potential to address a much larger market than its previous Smart Helmet product, an industrial hardhat with a retractable augmented reality lens that allows workers to view 3-D images overlaid onto equipment to help them with repair and assessments.

"There are a lot more use cases around inspection and design review, where you don't necessarily need to wear a hardhat," said **Gaia**

Dempsey, co-founder and vice president of business operations of Daqri. "Some 2.4 million workers merited using the smart helmet. In terms of the glasses, that number jumps to about 100 million in the U.S."

The smart glasses are lighter than the helmet product and don't have a thermal sensor, but retain similar computing performance and can be used as safety glasses, said Dempsey.

"The glasses are really lightweight and really comfortable for all-day wear," she said, noting that the company moved much of the hardware's guts into a hockey puck sized portable computer which is clipped to a user's belt. "It's by and large built on the exact same overall augmented reality platform."

The similarities between the systems allow users of the hard helmet system to closely collaborate with users of the smart glasses, Dempsey said.

The smart glasses cost \$4,995 apiece. Early customers include heavy machinery manufacturer **Siemens AG** of Munich and construction service **Royal BAM Group** of the Netherlands, the company said.

Skip the Line

Software developer **QLess**, which makes a flexible appointment scheduling program, announced last week that it raised a \$5.5 million round of capital, which it plans to use to grow its business through marketing and product improvement.

The Pasadena company's software product puts users in a virtual queue and notifies them to show up in-person for their appointment when their place holder approaches the front of the line.

"The average American spends three years of their life standing in a line," said **Alex Bäcker**, the company's founder and chief executive. "We've realized that waiting only

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happens in circumstances of imperfect communications."

QLess' communication methods include text messages, app notifications, and phone calls, and promises to save time for line-waiters and businesses alike. Time saved is money earned, argues Bäcker, who said businesses can increase their through-put of client visits and increase customer satisfaction with a system that requires less standing around.

"From the merchant's point of view, having appointments or fixed visits sometimes cost business," said Bäcker, noting that appointments often run long or wrap up early. "It's impossible for an appointment or reservation, made days or weeks in advance, to be precise."

Customers of **QLess** include **Minneapolis-Saint Paul International Airport**, the **Chicago Public School District** and **Renown Medical Group** of Reno, Nev., among others.

Moreover, because **QLess** is able to measure the speed at which customers are being processed it can also predict how many more clients could be seen before an establishment closes, Bäcker said.

"That allows staff members to go home at the end of the day," he said. "It reduces overtime pay."

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Chanje Order Signals New Direction for Trucks

Playa Vista-based brand delivers 125 to vehicle rental outfit

ELECTRIC-VEHICLE maker **Chanje** recently announced the delivery of its first order to **Ryder System Inc.**, one of the largest medium-duty truck fleet management companies in the country.

Playa Vista-based Chanje, whose name is pronounced "change," delivered 125 of its electric vehicles set to be in use by Ryder at the end of the year, the car maker said. Miami-based **Ryder** also is the exclusive distribution and service provider for Chanje's medium-duty EV fleet.

"There is a pent-up customer demand for commercial electric vehicles which makes today's delivery of Chanje electric trucks to Ryder a significant milestone," **Bryan Hansel**, chief executive of Chanje, said in a statement.

Chanje's product, a zero-emission all-electric delivery truck, is designed to haul up to 6,000 pounds of goods with a 100-mile range and is meant to compete against similar short-haul commercial vehicles on the "last mile," or the last leg of product movement. That's often a relatively short hop from a distribution or processing center en route to the final destination, such as a customer's home.

The company is backed by Hong Kong-based **FDG Electric Vehicles**, which makes battery packs and electric vehicles in Hangzhou, China. **FDG**, Chanje and other partners have invested nearly \$1 billion combined into developing the product, Hansel said in August.

FDG has the rights to sell the trucks in China, while Chanje has U.S. distribution. The price tag hasn't yet been revealed.

"The company hasn't announced the price

yet, but we can say that the total cost of ownership of a Chanje vehicle will be comparable to an equivalent diesel truck when you consider the fuel and maintenance savings of an electric vehicle," Chanje spokeswoman **Stacy Morris** said.

A similar non-electric vehicle, **Ford Motor Co.**'s transit cargo van, is priced at about \$32,000.

Chanje's management team includes executives with experience at companies including **Tesla Inc.**, **Volkswagen** and **Ford Motor Co.** as well as the **Los Angeles Cleantech Incubator**.

Lime Time

A new bike ridesharing service launched in Los Angeles on Nov. 6 in all its bright lime glory.

LimeBike, a San Mateo-based provider of dockless bike-sharing is providing yet another option for Angelenos to get around from one point to another.

"Today's launch marks the first dockless bikeshare to come to L.A., which is exciting because together, we can change the future of transportation, communities, and cities to make them the best they can be," **Toby Sun**, chief executive, said in a statement.

Other local cities and agencies have created bike-sharing programs with some of **LimeBike's** competitors.

Santa Monica-based **Cyclehop** has helped Long Beach, Santa Monica, Beverly Hills and West Hollywood all establish bicycle-sharing programs. **Metro** partnered with Philadelphia-based **Bicycle Transit Systems** to create **Metro Bike Share**.

LimeBike said the difference between it and other bike-sharing services is that it doesn't have designated places to return bikes, what the company describes as a "dockless" system.

"This allows people to go wherever they



COURTESY OF CHANJE

Roll Out: Chanje has delivered its first order of electric medium-duty trucks.

want and not have to worry about returning bikes to a certain location," **LimeBike** spokeswoman **Mary Caroline Pruitt** said.

The company will begin offering 250 bikes in City Council District 15, which includes the neighborhoods of San Pedro, Wilmington, Vinegar Hill, Harbor City and Harbor Gateway, among others.

"We're excited to be the first district in Los Angeles to bring this revolutionary dockless cycling technology to our citizens," Councilman **Joe Buscaino** of District 15 said in a statement.

The company isn't concerned about theft since the bikes are equipped with an anti-theft lock and an alarm system that goes off when the bikes are moved without being unlocked first via its app, Pruitt said.

The app is available for download on iOS and Android smartphones. The bikes are GPS and 3G-enabled and can be found via the app.

Rides cost \$1, or 50 cents for students, for 30 minutes. When the ride is finished, riders lock the bike's back wheel and park between the sidewalk and the street curb or at a bike rack.

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Port Drone Permits

The Port of Long Beach now requires drone operators to obtain a permit before taking off or landing in the Harbor District.

Anyone operating a drone must show proof of insurance, provide registration information and takeoff and landing plans and obtain permission from occupants of any port facilities to be overflown, port officials said.

The permitting process was developed with Federal Aviation Administration guidelines in mind by port security, risk management and commercial operations staff and the Long Beach City Attorney's Office, port Executive Director **Mario Cordero** said in a statement.

"The approved rules, with requirements for insurance and notifications, should enhance our ability to maintain a safe environment for cargo operations in the Port," he said.

The cost for the permit is \$100 and those interested should apply a few weeks before flying as the process can take up to 10 days, ports spokesman **Lee Peterson** said.

For more information, visit www.polb.com/drones.

The neighboring **Port of Los Angeles** has no requirements on drone permits as of yet.

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