Software engineers at Newport Beach-based startup Titan Health & Security Technologies Inc. are developing two mobile features to improve communication and geolocation for its patented Next Gen 911 app system.

The first is mesh networking, which allows devices to talk to each other, even when networks and cellular towers are down or destroyed, Wi-Fi interrupted or power out. Communication delays and outages inevitably accompany natural disasters, evident in the deadly hurricanes that ripped through Puerto Rico and the Gulf Coast last year.

The new Titan feature will be deployed in the next few weeks via a push-notification update of the company’s iOS and Android apps. “That’s a pretty powerful tool,” said founder Vic Merjanian, one of five recipients of the Business Journal’s 17th annual Excellence in Entrepreneurship Awards, held March 15 at Hotel Irvine (see other profiles, pages 1, 6 and 7). “We’ve been developing that for the better part of a year.”

The 911 app system, which Titan launched last year, allows users to broadcast local emergency alerts, lockdowns, safety status, and location to law enforcement, campus administrators or private businesses in its network.

Users and emergency personnel can instantly communicate relevant information, including GPS coordinates, text, audio, photos and video, as well as classify the type of emergency. Administrators and emergency workers can survey communities for safety and location, and provide access to potential life-saving digital resources, such as CPR training videos and site maps. They can also view real-time crowd-sourced data in maps and through augmented reality, improving situational awareness.

Merjanian said a big discount retailer uses the service to monitor and respond to warehouse and workforce-related incidents. Titan’s customer base has more than 114 sites in 44 states, including several local school systems, such as Newport-Mesa Unified, Huntington Beach, Fountain Valley and Learn4Life’s network of public charter schools.

The service, which was used more than 18 million times last year in emergencies across the country, is designed to meet rising demand while narrowing a technology gap. The vast majority of law enforcement departments and other first responders can’t receive texts, photos and videos in real time due to lacking tech upgrades.

Product sales and services in the public safety and security markets are projected to grow from $247 billion in 2016 to $456 billion by 2021, according to search firm MarketsandMarkets.

Titan, which charges a monthly user fee, is rolling out another feature that could help grow the top line. They’re called beacons, or Blue-tooth-powered sensors, that can identify the location of an electronic device within a range of tens of feet, ideal in active-shooter incidents and disasters, such as fires and earthquakes, allowing emergency personnel to quickly deploy to a pinpointed area, according to Merjanian.

“You would know where people are and where to send help,” he said.

The adhesive sensors, about the size of a half-dollar, can be placed in classrooms, office buildings and hotels, boosting location accuracy, even without GPS, which is typically accurate within a few hundred feet, according to Merjanian.

The beacons share information only with emergency responders and network administrators when prompted by an app user.

“Ideally, we would have these deployed one per room in confined spaces or one roughly every 30 feet in a space like an open food court,” said the Corona del Mar native, who founded and serves as managing partner of Newport Beach law firm Kalfayan Merjanian LLP.

“The goal in the next couple of months is to have them commercially deployed.”

The lawyer by trade understands the issue firsthand.

Merjanian encountered several communication hurdles while trying to save a dorm mate who overdosed on pain pills as an undergraduate at the University of California-San Diego.

With cellphone coverage dropping in and out, he was only able to find an emergency room at a hospital during a frenzied drive near campus.

The student lived, but the incident left an impression years later.

Titan had more than 250,000 users in its network through August; Merjanian declined to provide updated figures. It’s raised $2.2 million in seed funding.

By CHRIS CASACCHIA