

Accelerating Smart City transformation

MatrixSpace develops AI-enabled sensor platforms and radar solutions to deliver proactive community safety.



Business needs

MatrixSpace needed to deploy, manage and maintain its fleet of radars, but faced engineering and resource restrictions as a startup. An end-to-end edge operations solution would enable MatrixSpace to support city-wide drone programs and empower authorities to respond to unfolding scenarios quickly and decisively.

Business results



Saved a year of software development time using Dell NativeEdge automation tools.



Reduced radar maintenance costs with streamlined MatrixSpace software management.



Lowered data volumes carried over the network through the Edge Gateway 3200.



Accelerated results through scalable application blueprints, eliminating manual deployments.

Solutions at a glance

- [Dell NativeEdge](#)
- [Dell Edge Gateway 3200](#)



Saved a year's worth of development time and cost through NativeEdge automation and scalability tools.

Launching the USA's largest public safety radar network

MatrixSpace AI-enabled radar systems monitor the low airspace and ground awareness that cities and private organizations need to keep citizens safe and secure. Its radars, each the size of a cell phone, are small enough to be deployed at the edge, across rural or urban areas to provide blanket coverage for a local drone first responder program.

While its technology is industry-leading, MatrixSpace is a startup with finite time and resources.

To achieve its vision of delivering the USA's first city-wide radar technology solution, MatrixSpace chose Dell NativeEdge.

"NativeEdge is the software that binds everything together. It allows devices at the edge, core and even in the cloud to operate," explains Dr. Nahir Nanda, Head of AI Products at MatrixSpace.

Dell NativeEdge enables MatrixSpace to deploy, manage and maintain its fleet of radars, with edge data ingested through the Edge Gateway 3200. A ruggedized device built to withstand challenging conditions, the 3200's local processing reduces data volumes transmitted over its network.

MatrixSpace has seen considerable efficiencies since implementing NativeEdge. "Dell NativeEdge helped MatrixSpace save a year's worth of software development," reveals Dr. Nanda. Creating a single scalable set of application blueprints, rather than manually programming each deployment separately, also reduced costs associated with time-consuming and tedious engineering work.

Sharper vision, clearer decisions

Public safety is the number one priority for Palm Springs Police Department (PSPD). Thanks to its warm California desert climate, Palm Springs attracts over 7,000,000 visitors to festivals and other large-scale events throughout the year. Its downtown region can see crowds of up to 150,000 during busy periods, meaning potential disturbances need to be minimized using fast, informed decision-making.

"It's critical officers get real-time intelligence in the field as it's happening so they can make more effective decisions," said Lieutenant William Hutchinson of the Palm Springs Police Department.

To enhance its proactive approach to policing and threat detection, the PSPD launched a 'drone as a first responder' initiative – using advanced technologies to provide situational awareness before emergency services arrive.

FAA radars are tuned for altitudes of 5,000 feet and above. The PSPD required a drone solution capable of operating safely below this altitude. It also wanted to automate operations to eliminate the need for visual observers who could miss incidents, people, or objects during challenging weather and lighting conditions.

Bringing emergency situations into focus

Using MatrixSpace, the PSPD can now safely launch drones in seconds that are able to navigate low-level airspace and reach emergencies sooner. Once at the scene, the drones relay intelligence to emergency services in milliseconds.

By combining birds-eye visibility with boots on the ground, critical situations can be de-escalated using informed decision-making. Using NativeEdge, sensors detect and assess aircraft in real time to help PSPD drone pilots avoid potential collisions. Live drone video feeds enable PSPD to prioritize emergency responses citywide.

Following FAA analysis of radar data processed and stored using Dell solutions, Palm Springs became the first



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Head of AI Products, MatrixSpace



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city in Class D airspace in the USA to receive government authorization to fly its drones 24 hours a day. These drones monitor traffic conditions and disaster scenarios, map out crime scenes and traffic accidents, and can even deliver bottles of water to hikers stuck on mountain trails. The MatrixSpace radar network allows PSPD drone pilots to operate from a central command center without the need for ‘people on the roof’ – an impractical approach given Palm Springs’ hot conditions.

Building a smarter future for our citizens

With AI deployments at the edge expected to grow exponentially in the coming years, the scalability of NativeEdge and its automation capabilities will enable MatrixSpace to innovate and serve cities like Palm Springs in even more ways. Air corridors, for instance, are controlled airspaces designated to allow unmanned aerial vehicles to expedite package deliveries or fly medical supplies to rural regions. MatrixSpace technologies, powered by NativeEdge, will make innovations like air corridors possible.

Lori DeMatteis, Chief Revenue Officer at MatrixSpace said, “We’re transforming the city, making it more connected, delivering more information and making it more cost-effective for everyone.”

“I’m really excited to be able to bring technology that enhances public safety to those who work, live and play in Palm Springs,” Lieutenant Hutchinson added.

Safe, smart, hyper-connected cities may still seem futuristic. But the MatrixSpace drone program marks an important step towards reaching that vision. Supported by a futureproof, scalable and automated foundation on Dell NativeEdge, local authorities now have the tools to better serve their first responders and communities, today and tomorrow.

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