# Dell EMC
# SECURITY
# SOLUTIONS

## Leveraging IoT technologies to solve campus security and safety challenges

Using industrial sensors and analytics to get actionable data in real-time, colleges and universities can enhance security by monitoring campus environments for gunshots and other crimes.

**DELL**EMC

# The top priorities for today's campus leaders

Security — of students, of property and of the information in IT systems — is a top-of-mind issue for campus leaders across the nation. Not surprisingly, information security and cybersecurity are at the top of the 2017 Educause Top 10 IT Issues list, which is based on findings from a survey of CIOs and higher education IT leaders. Information security has been one of the top concerns on the list for the past 10 of 13 years.

Beyond information security, however, is the problem of campus crime, which is on the rise throughout North America. Thus, public safety and student security concerns remain paramount. However, technology can play a vital role in combatting these problems.

# Making a difference with IoT technologies

Increasing concerns about theft, assault and active shooters require campus leaders to consider new approaches to security and surveillance. The Internet of Things (IoT) is well-positioned to be the leading technological solution to help redefine the security experience.

**IoT can deliver security benefits, including:**

- Increased IT efficiency
- Increased safety due to real-time alerts
- Peace of mind for students and their families
- Improved campus experience

Increasingly, colleges and universities are using sensors to understand student behavior, student traffic and how they are accessing resources on campus. By analyzing this data, higher education institutions are improving overall campus and student engagement. For example, at the University of Southern California, researchers are working to use data tracked by sensor-equipped cameras to create a more personalized learning environment for students. *(Source: EdTech, Feb. 20, 2017)*.

# IoT: Advancing smart campuses

Implementing IOT across the campus can support business and learning decision-making and improve the overall experience of students, faculty and administrators. How? By enabling a smart campus, powered by campus-wide modern technologies.

**Smart campuses come to life through:**

- Collaboration and learning
- Security solutions
- IoT sensors in buildings and facilities
- Athletics and campus events
- Business and alumni engagement Campus security challenges

**Struggling to overcome surveillance blind spots**

Ineffective surveillance is one roadblock to making smart campuses a reality. Although many modern campuses have wired solutions with IP cameras that monitor indoor areas with infrastructure, they are also susceptible to surveillance blind spots called "red zones," where power and connectivity are not present. Many crimes on campus, including thefts, assaults and arson, occur within these red zones.

To address this challenge, higher-education institutions are looking to deploy comprehensive outdoor surveillance systems that offer capabilities such as instant notification and analytics in the outdoors. But many campuses are challenged to implement such systems because of the significant investment required for trenching and permitting those areas for power.

**Responding to campus shootings**

There have been more than 200 school shootings in the U.S. since 2013. Sadly, this plight is likely to continue. Schools will remain targets, in part, because it is difficult to keep campuses completely closed. In addition, many campuses lack the sort of gunshot detection technology that can thwart such crimes and get real-time data to police officers and emergency responders during an active shooter event.

The result?
An environment that promotes better learning, which prepares students to be workforce-ready.

# The V5 Systems and Dell EMC solution: IoT portable security systems

Dell EMC has partnered with V5 Systems to help colleges and universities address the challenges of campus safety and security through the V5 Portable Security Unit (V5 PSU). The unit includes the Dell EMC Edge Gateway with sensors, a power system, wireless communications and storage—all packaged in a ruggedized enclosure that weighs less than 25 lbs.

The Dell EMC Edge Gateway, which is integrated into the V5 System's IoT devices, aggregates and analyzes the data input before sending it to users' mobile devices. The solution combines edge and hybrid-cloud analytics into a compact, solar-powered wireless outdoor security system.

**The portable system, which is deployable in less than 30 minutes, offers:**

- HD video cameras
- Reliable analytics driven by artificial intelligence
- V5 Acoustic Gunshot Sensor for gunshot detection
- A self-powered solution combining bullet-resistant solar panels, battery and power management
- Up to one month of onboard video storage, streaming 24/7
- Real-time alerts with edge computing through Wi-Fi, 4G and RF
- Chemical detection (slated for Q2 2018)

**Improving surveillance blind spots**

Because of the flexibility and compactness of the V5 Portable Security Unit, campuses can now have untethered security by moving the system exactly where it is needed. As a result, campus IT departments can place system sensors anywhere in the outdoors and move them whenever necessary.

**Detecting people and cars in real time**

The V5 Portable Security Unit can detect people and cars in real time, through artificial- intelligence software running at the edge and license-plate-reading technology. Taking images captured through HD video cameras, the system provides live video streams and instant notifications to police officers and other first responders within seconds.

The solution can also integrate hot lists, which are databases containing information on students or others who are not allowed on campus. These lists can be fed directly to regional intelligence centers.

Finally, the system offers real-time analytics for defined zones on campuses, with video alerts instantly sent to any smart device with the ability to view live footage.

**Giving responders a better chance to save lives**

During an active-shooter situation, the V5 Portable Security Unit's sensors detect gunshot sounds and transmit those sounds via audio clips to first responders. The system also tracks the shooter and shows his or her location via a Google Map view. With this information on their phones or laptops, police officers and others can follow a shooter through live audio clips and video streaming.

By getting this information in real time, first responders have the potential to act faster — and save lives.

# Campus safety case study:
# San Jose State University

San Jose State University is a downtown campus in San Jose, California. The school has approximately 33,000 students and includes 50 buildings spanning 19 city blocks.

## ◎ THE CHALLENGE

The university's police department handles 50,000 calls, and arrests between 800 and 900 people every year. Police officers and parking personnel work more than 200 annual events, attended by over 500,000 people in total.

The school had very few outdoor cameras, and it could not afford a new campus-wide security solution. The police department also struggled to manage a rise in crimes on campus, such as sexual batteries and public intoxication.

## ◎ THE SOLUTION

The university implemented V5 Portable Security Units with trainable V5 Acoustic Gunshot Sensors as its primary security solution across campus.

## 📈 THE BENEFITS

The police department is benefiting from the solution's portability and ease of installation, moving the systems around to cover areas that were not previously well secured. Since the deployment, the university has been able to identify suspects in several crimes on campus because of the system's accuracy and real-time analytics.