

Situational Awareness for Higher Education

Integrating Stand-alone Safety, Security and Environmental Alarm Systems for Centralized Monitoring, Alerting and Reporting

White paper provided by Status Solutions

Students are safer in school than out despite tragic headline-making incidents like the one that occurred at Virginia Tech in 2007. Of course, that tragedy brought renewed attention to how colleges and universities address safety and security. Bomb threats, terrorist acts, protests against research facilities, and natural disasters among other threats further complicate campus safety, security and emergency preparedness and response. And while various incident detection systems may be in use, they usually operate in siloes, independent of one another. Therefore, an appropriate response may be delayed because alerts don't reach responders in time or details about an incident are lacking.

Clearly there's a need to integrate stand-alone life safety and security systems so alarm management can be centralized. Such a system must have the ability to capture all alarms from all systems – from the mundane cigarette buster in a restroom to the most serious such as an armed intruder on campus. The system also must be able to deliver detailed alerts to the people best qualified to take action via the communication devices they actually use. Sending an alert to a browser will be of little value to mobile workers such as custodial staff or campus police. And finally, the system must enable information to continue to flow to responders and others as a situation unfolds.

Managing Risk with Situational Awareness

Situational awareness is the key to enhancing life safety and security on college and university campuses. Administrators and on-grounds personnel need to receive real-time information about potential threats, including the nature of an alert and from where it's emanating so they can take corrective action immediately.

In much the same way that voicemail and email have automated the messaging function, Status Solutions has automated situational awareness to provide centralized monitoring, alerting and reporting. Random alarms from disparate systems then can be converted into detailed alerts for delivery to key individuals, select groups or entire populations, depending on the situation and the predefined alerting/mass notification protocols established by a college or university.

Our Web-based Situational Awareness and Response Assistant (SARA) is an automated alerting engine that provides a wireless sensor network, integration tools for existing alarm and communication systems, and mass notification capabilities on one powerful platform. With SARA, the right information goes to the right people on the right devices in real time so action can be taken to protect students, teachers, staff

and property. In addition to managing and delivering alerts, SARA also ensures that information can continue to reach responders and others as a situation unfolds and details change.

Situational awareness also applies to environmental monitoring to ensure that systems vital to a college or university's operations aren't compromised or can be fixed quickly should a malfunction or failure occur. Following are brief overviews of each situational awareness application area.

Life Safety

With integration to emergency alerting, fixed panic, mobile duress, and a variety of other life safety systems such as fire panels, SARA helps protect students, faculty and staff from injury and speeds emergency response. SARA turns alarms from these stand-alone systems into detailed voice and text alerts for delivery to designated communication devices, including smartphones, landlines, pagers, emails, computer screens, two-way radios, PA systems, etc. SARA also provides enhanced location support for mobile duress devices within the Inovonics EchoStream radio frequency (RF) infrastructure through its patent-pending vector-mapping technology. Points of interest can be defined anywhere within or around a campus to provide multiple points of data to more quickly and easily find those who need help.

Security

Colleges and universities can enhance security by integrating their security systems with SARA, including access control, door/window contact alarms, and video surveillance. New sensors (e.g., glass-break detectors, motion detectors, etc.) can be deployed for additional security at any time. In addition, sensors can be added to new or existing video surveillance cameras to enable video paging. When a device alarms – such as a glass break detector – text, audio and video alerts can be sent to various communication end points, including a PC screen or mobile device. By enhancing alerts with video paging, responders can address the situation remotely, enabling a more efficient and appropriate response. Transmitters with key switches also can be set up as checkpoints, requiring security officers to insert a key into each checkpoint at certain intervals to generate a history within SARA to show that the appropriate rounds are being made.

Environmental Monitoring

Significant investments have been made to maintain a safe and comfortable learning environment. While existing environmental controls may be in place, they too usually operate in siloes, but integration with SARA enhances environmental monitoring, alerting and reporting. Sensors can be used to monitor HVAC systems, power generators, cigarette busters and water bugs in restrooms, gas detectors in science labs, and temperatures for food stores in cafeterias. If a system fails, a drastic change occurs, or a hazardous substance is detected, then SARA alerts the appropriate individuals or personnel groups for investigation and remediation. SARA also can

expand alerting capabilities. For example, if a building management system only sends emails, SARA can send alerts to other communication devices as desired. When it comes to heating/cooling, lighting and equipment use, enhanced environmental monitoring through SARA can help reduce energy costs. Energy efficiency is a simple yet powerful means of cutting costs without impacting instructional quality.

Mass Notification

SARA's mass notification capabilities enable key individuals, select groups or entire populations to be notified automatically or on demand when a triggering event occurs (e.g., inclement weather, intrusion/lockdown). Based on a college or university's predefined escalation protocols, detailed voice and text alerts will be delivered to the designated smartphones, pagers, emails, two-way radios, computer screens, PA systems, etc. In addition to using SARA to notify students, faculty and staff about potential emergencies, the solution also can be used to send out friendly reminders regarding activities and events, especially if schedule changes occur. And SARA can be integrated with hosted mass notification platforms already in place. Additionally, alerting can be expanded to the desktop with SARA's eMessenger that enables the delivery of color-coded text, audio, video footage or maps to thousands of PC screens throughout campus.

SARA Applications at Colleges and Universities

SARA can be deployed rapidly and cost effectively to create a wireless bubble around a college or university campus, as well as for multiple campuses. When a fixed panic button is activated, a monitored door to an administrator's office is opened, or a cafeteria refrigerator goes out, an alert will be generated automatically so responders can take action to protect students, faculty and staff as well as valuable property and prevent costly disruptions to normal campus operations.

Examples of SARA applications at colleges and universities:

- Emergency pull stations throughout campus
- Fixed duress in executive offices and cash-handling areas
- Mobile duress for students
- Door/window contact alarms and integration with access control/intrusion detection
- Integration with indoor and outdoor security cameras
- Fire panel integration
- Cigarette busters in restrooms
- Temperature sensors in server rooms and cafeteria food stores
- Sensors on boilers, power generators, HVAC systems and defibrillator cabinets
- Gas detection in laboratories
- Inclement weather warnings
- Lockdown notifications

SARA Higher Education Case Studies

Following are summaries of two specific higher education case studies where SARA's ROI has been demonstrated.

Virginia Western Community College

- Powers lockdown notifications to siren, emails, phone calls, texts
- Sends location details via SPS to police and administration
- Monitors emergency generator in building where data center is located
- Fire panel integration for enhanced local alerting

Virginia Western Community College (VWCC) removed its emergency pull stations from the building management system to create an integrated, stand-alone pull station and siren system using the SARA alerting engine to power the college's 24-7 lockdown notification system. If an emergency is called in via the telephone system or emergency pull station, SARA sets in motion a series of notifications to protect life safety at the campus, including activating the lockdown siren and broadcasting instructions through all of the college's phones as well as PA speakers. SARA also alerts campus police and sends a message to a subscription service that notifies students, faculty, staff and local media about an unfolding situation via phone, email and text. SARA also is used to monitor the emergency generator at VWCC's main building, where the data center is housed, and eventually all nine emergency generators. SARA also is being tied to the college's fire alarm system to further enhance local alerting for life safety.

*Midwestern University**

- Fixed panic buttons in cash-handling area and executive offices
- Sensors on exterior doors of residence halls
- Alerts to Cisco handsets as well as wallboard and paging for redundancy if IP network goes down

SARA has bolstered security in the bursar's office, executive suite and residence halls. Alerts from panic buttons and door sensors go to a wallboard paging device in the public safety office. If an alert is not acknowledged after one minute, a series of escalation protocols are enacted, culminating with SARA calling public safety officers' cell phones in addition to the IP phones in the public safety office. A wireless pendant is used as a panic button at each teller window in the bursar's office where students go to pay their fees. Six additional pendants have been installed as panic buttons in the executive offices, including those of the president, vice president and chancellor. Wireless sensors have been placed on the exterior exits of the residence halls to monitor door activity after normal hours. If an exterior door stays open beyond a set amount of time, then an alert goes to the public safety office with messages again going out via text and voice so officers can investigate.

With SARA, you can have a wide view of what's happening in and around your campus to prevent ignorance-based loss. Let us work with your college or university to design a custom situational awareness system to help you mitigate risk.

** Customer case studies are collected and verified on a regular basis, but subject to the policies of each college or university, permission to use the customer's name is not always granted.*