Centralized Monitoring:
The Key to End-to-End Situational Awareness

Preventing Ignorance-based Loss
on Education and Health-care Campuses

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Introduction

There are many types of emergencies: an overflowing toilet, a power outage, a tornado, an armed intruder. Regardless of the emergency or whether it's classified as an act of God or man-made, the first few minutes will be critical in determining the outcomes. The role of technology is to improve outcomes for people and property and that includes preventing bad things from happening or facilitating the appropriate response if an emergency does occur. Reducing confusion, panic and communication breakdowns prevents delayed responses that can equate to costly mistakes.

Creating awareness about what's happening, where it's happening, and what to do about it saves lives and property. But such knowledge can be difficult to attain when multiple alarm systems are at play, each with its own notification and reporting protocols. Unmonitored systems generally only provide local alerting in the form of buzzers, lamps or annunciation panels. For example, a fire alarm goes off when smoke is detected, but it doesn't tell you where the fire is or where to find the nearest exits so the campus can be safety evacuated.

The good news is that today's smarter networks and devices — plus the right software to tie all of them together — makes it easier and more cost-effective than ever to create a safety and security bubble over a single facility, wide-area campus or entire enterprise. In addition to developing emergency preparedness and response plans, campuses can use technology to integrate all of their alarm systems and then automate emergency notifications for complete situational awareness.

What Is Situational Awareness?

Situational awareness is a simple concept, yet people often miss it or over complicate it. Originally a military term referring to a pilot's operational status and knowledge of immediate threats, today the term has broad applications in any environment. At its essence, situational awareness refers to real-time information about what's happening in and around a given facility/campus/enterprise. This knowledge is made possible by integrating disparate alarm and communication systems for centralized monitoring, alerting and reporting.

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Any threat or deviation from normal operations requires that both on- and off-site responders have situational awareness as soon as a triggering event occurs. With a universal alerting engine, triggering events can be harnessed to drive awareness transactions — aka alerts — with specific details about an unfolding situation and how to address it. Therefore, situational awareness is the key to successful emergency communications and response management for any campus.

Is situational awareness complicated? No. Is it a challenge? Yes, because any number of life safety, security and environmental alarm systems are at work on any given campus at any given time. Then you have to factor in a combination of voice and data networks not to mention a plethora of communication devices. The world's communication infrastructure has moved from rudimentary to super charged — from radios, handsets and pagers to smartphones and tablets. There's been a proliferation of screens for sharing information.

But thanks to computer-telephony integration (CTI) and robust middleware, every sensor, alarm and communication end point can be unified to ensure that key individuals, select groups or entire populations are able to read, hear and see what's happening and do the right things in response, based on predefined protocols or modes and actions (i.e., if this, then that). Instead of a generic nomenclature, detailed alerts, including the nature of the alert plus location data, are delivered according to your business rules — critical information that can improve response in terms of both the right action and the right timing. Campus administrators then can generate daily and historical reports to analyze response times and emergency protocols to identify problems and make improvements.

Example of an emergency alert with instructions

Where to Start?

Smart risk management requires both preparation and response. What's dangerous on and around your campus? What can you do to respond to a crisis and reduce its impacts? Situational awareness is first a mindset and then a technology framework for creating time — time for you and your staff to prevent and/or respond to a threat. As Brad Spicer of SafePlans rhetorically asks, "When would you rather know an intruder is present — when he's in the parking lot or at the door?"

Duress alerting is often the first step an organization takes when implementing situational awareness. Every bank in America is equipped with panic buttons, but unfortunately, not every school is. Fortunately, it's easy and cost-effective to deploy both fixed and mobile duress systems, enabling help to be summoned quickly — whether that's because a student is having an allergic reaction, a theft is being attempted, a residence hall door is ajar, or a nurse in an emergency department needs assistance with a patient who is acting out.

Wide-area mobile duress uses cellular-based help buttons with GPS tracking to enhance safety and security in large, outdoor areas or remote locations. Think about the applications for school bus drivers, teachers on field trips or in experiential learning environments, and any employee who needs to be mobile and remote on the job. When a user activates the cellular duress button for any reason, alerts automatically go to predefined emergency contacts. Automatic hands-free, two-way talk lets a hurt/incapacitated user talk to predefined emergency contact/responder(s), providing additional details about the situation to further ensure an appropriate and speedy response. Responders also can tell the user that help is en route and/or provide instructions.

More good news here: the same smart networks, devices and software that power fixed and mobile duress also make it possible to integrate every existing life safety, security and environmental system and easily add new sensors within a single building or multi-facility campus. Random alarms from these disparate systems then can be converted into detailed alerts for delivery to the right people on the right devices so they can address an unfolding situation in the right way. Access control systems, fire panels, water sensors and cigarette busters in restrooms, temperature monitors in cafeteria and medical-grade refrigerators, motion detectors at eye-wash stations in science and medical labs — each stand-alone system can be integrated with a single yet powerful situational awareness and response engine.
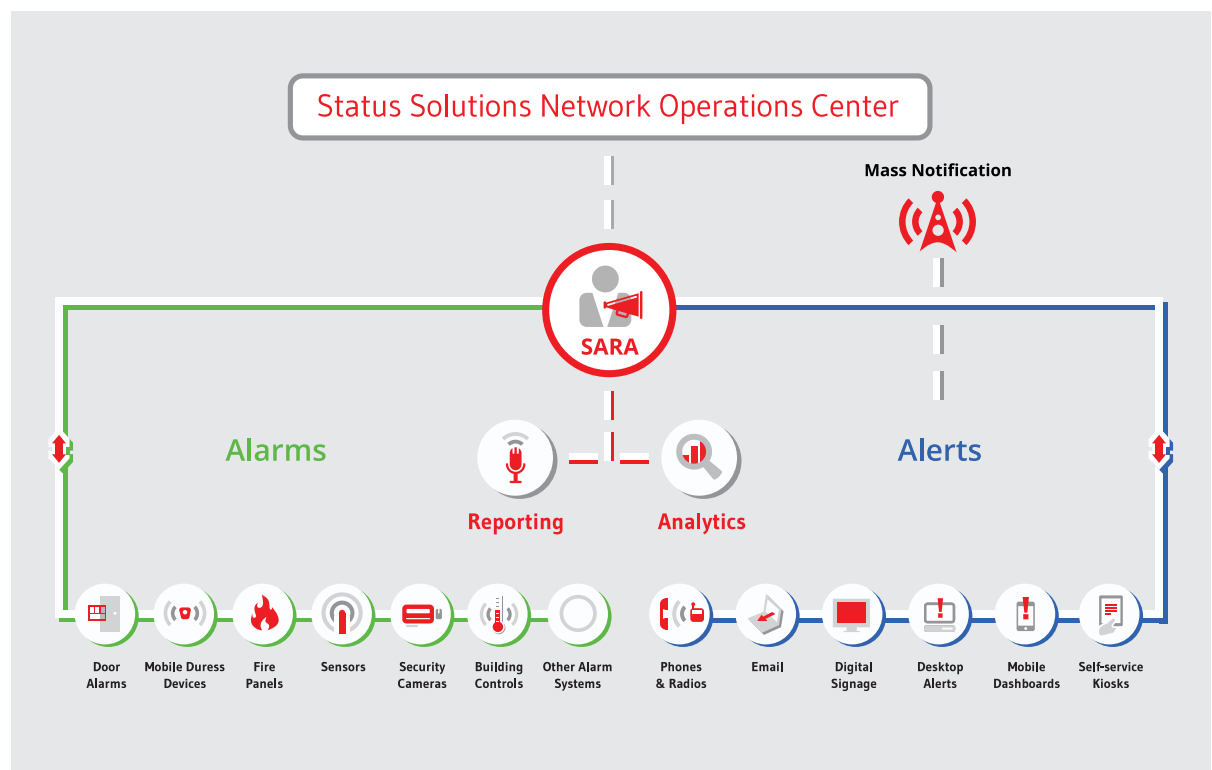
Architecture diagram of our Situational Awareness and Response Assistant (SARA) technology with various alarm inputs and mass notification outputs

Education and Health-care Campuses Embrace Tech Integration

The Tomorrow Center in Edison, Ohio, was one of the first schools to provide teachers with mobile duress buttons. Because they serve students with severe emotional disabilities in grades 3-12, student behavior can be unpredictable. Pressing the duress button transmits an alert to the main office or to cell phones carried by emergency response personnel. More recently, every staff member of the 12 elementary schools in Stamford, Connecticut, received mobile duress pendants — from teachers to cafeteria workers to custodians — to enact automatic lockdowns in the event an armed intruder is detected. If a pendant is activated, staff and students are notified to initiate a lockdown via announcements over the public address system, with alerts also sent simultaneously to both on- and off-site responders.

Nova Scotia Community College has gone all in to upgrade its life safety and security systems to reduce risk and improve the safety of students, staff, property and other assets spanning all 13 of its campuses across the Canadian province. Emergency pull stations plus mobile duress pendants given to personnel summon help immediately, including enacting automatic lockdowns. Physical security has been enhanced with sensors on perimeter doors and critical infrastructure areas. Fire panels have been integrated as have building controls to monitor HVAC systems, boilers, water pumps, etc. Environmental monitoring also includes temperature and humidity sensors in server rooms and temperature sensors in food storage areas.

And let's not forget how situational awareness works for health care campuses. **Shands at the University of Florida** in Gainesville has integrated its various nurse call systems to create a single alerting platform. So has **The Christ Hospital** in Cincinnati, Ohio. At some hospitals, emergency code broadcasting also has been automated. For many facilities, even in the 21st century, this is still a manual process. But if clinicians and code teams can receive real-time alerts via their mobile devices, they can increase survival rates and lower costs for the business. The technology also can be used for asset tracking (e.g., wheel chairs and med carts), in addition to logging temperatures within medical-grade refrigerators as required for regulatory compliance to protect medications and other valuable inventories such as a blood and tissue samples.

The same is true for senior living communities/long-term care facilities, where awareness transactions are delivered to care givers and other staff depending on the situation and desired outcomes. For example, this market was an early and avid adopter of situational awareness for both fixed and mobile duress for resident safety. Owner-operators have expanded the technology's use to also include check-ins and medicine reminders, as well as environmental monitoring. If a sudden change occurs or an acceptable threshold is exceeded, an alert goes to appropriate staff for investigation and remediation. When pilot lights on the water and heating boilers went out at **Franke Tobey Jones** in Tacoma, Washington, the maintenance department was alerted so they could be relit quickly; residents were never inconvenienced.

What's Next?

Innovation is never finished. Much like email and voice mail have automated messaging, software has automated situational awareness with advancements continuing to be made. Anyone recall *Star Trek's* Captain Kirk walking around with his communicator? That used to be science fiction; now it's just science.

All screens can be used to deliver critical information during an emergency, and that especially pertains to the personal screens most of us carry or keep near at all times. Our smartphones are even smarter when backed by an enterprise situational awareness solution that makes use of any device on any network for any stakeholder. This universal alerting application can be customized to meet campus needs, including triggering event type plus modules for roll-call/attendance and the ability to view floor plans and receive live video feeds from nearby security cameras. In fact, video will be a game-changer for both awareness and analytics. For example, facial recognition could determine whether someone is supposed to be in a certain area or not, and whether they're recognized as a staff member, student, legitimate visitor or intruder.

But let's get back to mobile devices with built-in, seamless situational awareness. Users can respond to unfolding situations more quickly, initiate alerts and associated response plans more effectively, and escalate/notify others as necessary — all from one user interface. When Wi-Fi coverage weakens, the device switches automatically to cellular for uninterrupted alerting both on and off campus. Such mobile dashboards can improve overall communication, workflow and collaborative care.

Mobile dashboards, as shown on this page, are pre-programmed to meet customer needs for one-touch alerting, response and escalation.

Interoperability Provides the Power to Read, Hear, See, Do, Analyze

Situational awareness is a big concept, but it boils down to preventing loss of life, property, business and convenience. Whatever the trigger — the press of a panic button, a leaking pipe or a malfunctioning HVAC — information about the situation must be conveyed in real time to the people most likely to be affected, as well as those responsible for investigation, containment and remediation.

With video paging, live video is delivered to a mobile device as part of an alert.

Real-time awareness through centralized monitoring, alerting and reporting is the key to emergency communication so both on- and off-site responders know what's happening, where it's happening, and how to respond. Such alarm and communication interoperability takes a campus from reactionary and siloed to proactive and holistic in terms of emergency alerting and response management. Situational awareness software enables you to control your entire universe of alarms and communication devices.

Give your campus eyes, ears and a voice plus the knowledge to take appropriate action and then analyze those responses for compliance and continuous improvement. When it comes to emergency alerting and response management, situational awareness as a strategy and technology framework will improve your outcomes.

Contact us at **info@StatusSolutions.com** *or* **866-846-7272** *to request more information or schedule a site assessment from one of our valued business partners. Discover how you can implement situational awareness to improve life safety, security, environmental monitoring and mass notification.*

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