

Digitalization & Technologies for fire safety Produced by



About us

With more than 500 customers and deployments in 5 countries, Overseas offers a comprehensive and fully integrated stack of Solutions, Consultation & cloud applications, platform services, and engineered system.

Reach Us

 **Egypt:** Nasr City, Cairo Abbas Al-Akkad St.

Tel: +20 1007200031

Tel: 02227553845

 **Saudia Arabia:** Rakkah District, Dammam PO Box 75826

Tel: 0543705200

 **Email:** Info@Over-Seas.net

 **Web:** www.Over-Seas.net

why do we need this Technology ?

Smart Cities and Buildings need to also inherently be Safe Cities and Buildings. Most of our upcoming cities have high rises and dense concentration of buildings, making it even more essential to rapidly and effectively address any type of fire situation to minimize and contain any loss of life and property.



The speed of local response and the degree of preparedness is especially important when you consider the fact that most cities have dense traffic conditions and it is unlikely that in every situation the Fire Department and its equipment reach the required locations immediately or in a timely manner. Some of the recent fire mishaps in Europe and the United States have further underlined the fact that this is not an area to be taken lightly as the consequences can be devastating. Fortunately there are emerging technologies which can be leveraged to enhance the effectiveness and speed of the fire response. It is critical that the deployment of these should be systematized and standardized, and should go hand in hand with the evolution of our cities into smart cities that are made up of highrises and urban sprawls.

Where can digitalization help us improve our operations sustainably and profitably?

Today's hot topics in business are digitalization, the Internet of Things and cloud computing.

Applying selected implementation examples, SMS/Email/Visual monitors.



Overseas have developed strategies for advancing digitalization in safety.

We are developing future-focused solutions in this sphere. Simultaneously, external framework conditions are constantly changing.

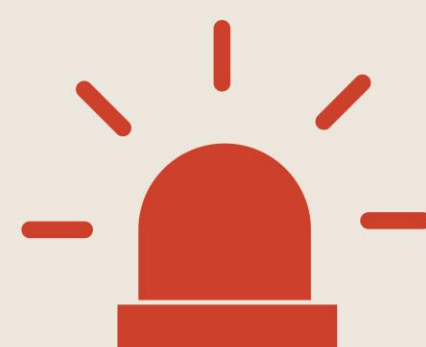
Included here are costs for raw materials, energy and personnel as well as statutory regulations



The focus for plant operators, Largely autonomous fire protection. This involves the interconnection and collaboration of humans and machines in dynamic production processes that adjust to optimum parameters in real time.

Key Trends in Fire Alarm Systems

Overseas innovation has been slow compared to other high demand smart devices. Global manufacturers focus their major efforts on evolving high-return products, primarily the ones that connect consumers with rapidly changing lifestyle trends. While fire alarm systems aren't exactly at the cutting-edge of social advancement, innovative companies are developing new methods for approaching fire and gas-related threats.



EMERGENCY



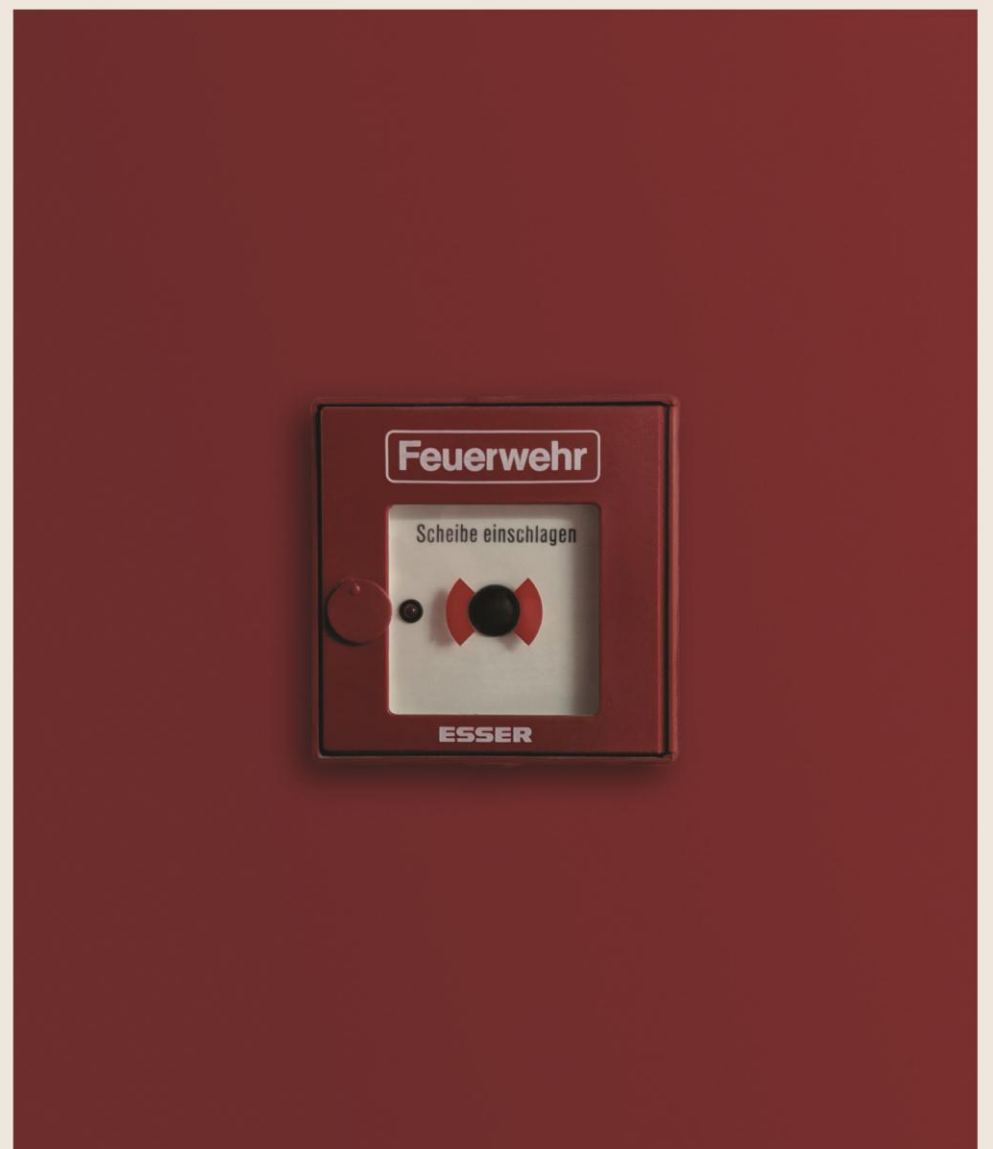
Today, we have a wide range of innovative technologies available that help save hundreds and thousands of lives every day. Preemptive technologies work to prevent a fire before they begin. Some of these technologies include smoke, heat, and flame detectors that help provide early warning on fires. Suppressive technologies help to extinguish a fire that has already started. A wide range of sprinkler systems are available today to help prevent fires from spreading.

To reap maximum benefit from the technology and ensure the utmost safety, we should review on an on-going basis not only the existing technology and its implementation but also regulations, policies, and enforcement and bring on improvements in these areas. Artificial intelligence, connected systems, and smart city initiative—along with its promise to spark a creative revolution in fire alarm systems — will lead to more out-of-the-box technological innovation. Some of the major trends in the market are outlined below.

Trends in Fire Alarm Aspiration Detection

Where the highest level of accuracy is vital, Aspiration detection can be the ideal solution for enhanced safety.

Aspiration sensors are capable of detecting microscopic particles of smoke in the air for accurate and early detection. There are two types of aspiration sensing technologies in the market.



- Point-based solution - System consists of enclosed detectors with a fan system which draws air samples to check the potential threat
- Laser-based solution - Laser technology solution will detect smoke by drawing air into a laser chamber to identify a possible threat

It's the fastest-growing detector type because these systems are designed to detect fire and smoke activity in large and open spaces, where smoke dilution and stratification can occur. The challenge in the adoption of this technology is due to the lack of awareness of benefits offered by these technologies among end-users, but in the near future, we can expect to see a much higher demand for this technology.

IoT in Fire Safety Systems

Fire safety is among the various areas that can realize the extraordinary benefits of the Internet of Things (IoT). The Internet of Things (IoT) has led to much of the world becoming smarter and more connected. With IoT, now safety alerts can be sent to hundreds of people fast and effectively.

Several leading fire safety companies have already launched IoT-enabled fire detectors.

IoT Enabled Connected Detectors

There are a number of leading companies in the marketplace offering connected smoke detectors and carbon monoxide detectors for residential use. These connected detectors are able to communicate with the Thermostat and can shut off the furnace in the event of a fire or carbon monoxide. The detectors can be accessed anywhere using mobile apps. In the event of an alarm, the detectors sound a local alarm as well as send notifications on the mobile phone. Nest and Ring are some of the most popular smart detectors in the market today



IoT Retrofitting

Technology is also available today to add connectivity to existing detectors. One of the leading manufacturers of fire safety products, Kidde offers a monitor to add connectivity to existing detectors. With a monitor, users don't have to change all detectors. The monitor listens for the specific frequency of smoke and CO detectors and sends an alert to its app when it hears them. One single monitor can cover multiple detectors on the floor.



Another retrofit option for users is available through a company called Roost. The company offers a 9V battery, that contains a Wi-Fi antenna and a microphone. Users can swap their regular batteries with Roost batteries in their old detectors to add Smart features. The battery can send a push alert whenever the detector sounds. Users can also check the remaining battery life at any time with its app. Various other smart detectors and connectivity products are available through large players such as First Alert and new startups such as Leo.



Mass Notification system

More and more facility owners and managers are realizing the benefits of integrating all the building systems, such as mass notification and security systems. A unified mass notification system (MNS) is defined as a platform to deliver a message to a small or large group of people. Traditionally these systems offered one-way message delivery via email, text message, or reverse 911 calling mechanisms. By integrating these systems together, users can improve the oversight and management of multiple systems from a single point of control.

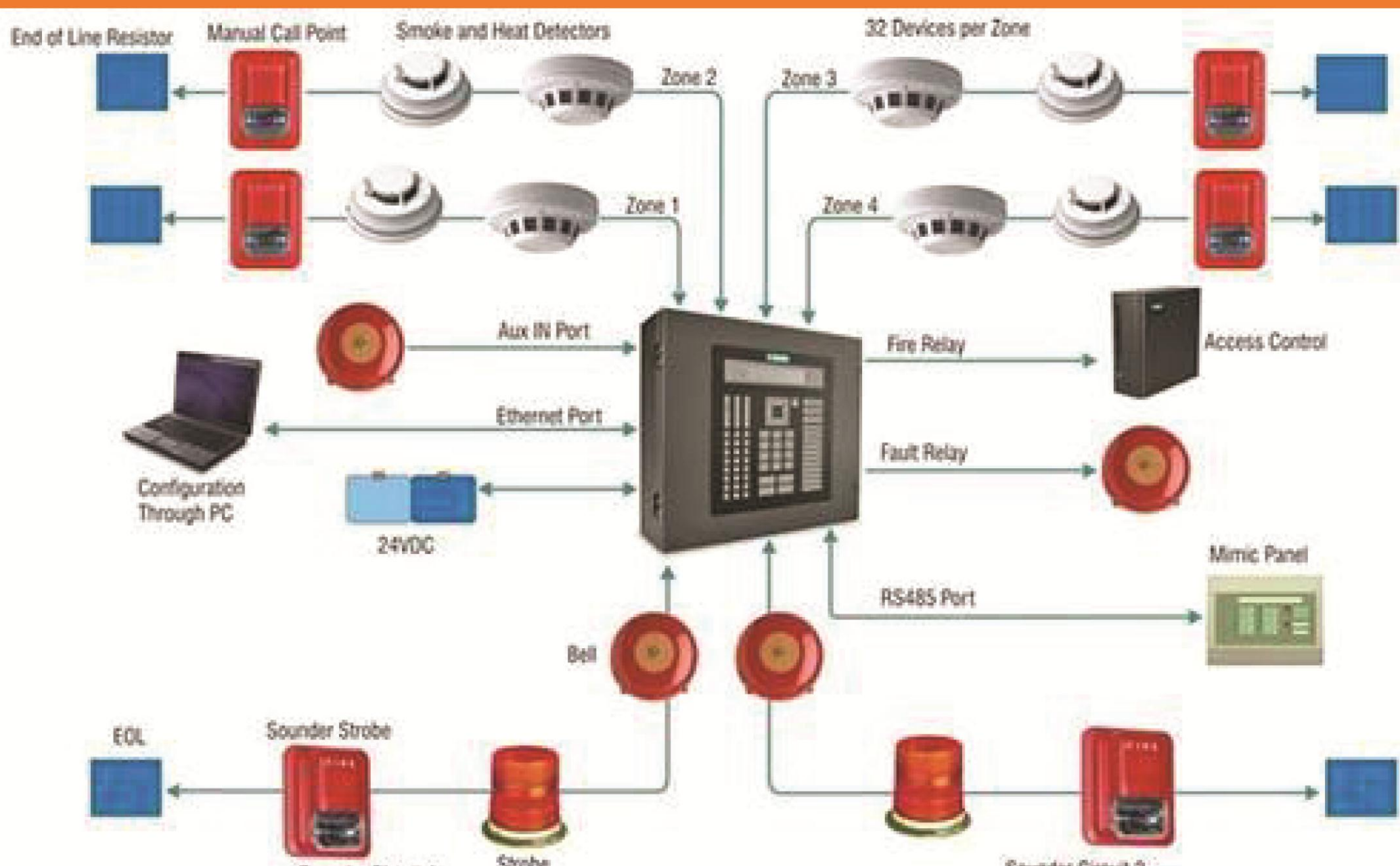


More and more facility owners and managers are realizing the benefits of the integration of the fire alarm system with other building systems, such as mass notification systems and security systems. By integrating these systems together, users can improve the oversight and management of multiple systems from a single point of control.



Advancements in Central Alarm System Technology

In a central alarm system, all detectors are connected to a central controller and send the signal directly to this controller. The controller actively monitors multiple locations and when it receives alarm input from the detection devices, it activates notification devices such as horns, strobe lights, and speakers to alert the occupants. Now, more and more connected and smart features are also coming to central alarm and evacuation systems. Now, mass notification systems include a paging component to relay live audio instructions throughout the building in case of an emergency. Most mass notification now a day also includes support for various types of emergency messages such as inclement weather emergency, security alerts, amber alerts, etc. Advanced features in mass notification systems include the capability to communicate alerts via SMS, text, email, popup, app message and push notification to targeted recipients, thus helping create quick and effective awareness.



With IIoT and other advanced technologies, improvements can also be brought to emergency planning. Sensor and detector data along with other surveillance data can be combined with algorithms and analytics to help quickly prepare better emergency or evacuation plans. Analytics can consider various factors such as the number of people in the building, building maps, location of the fire, the rate at which fire is spreading, and the direction of the fire to come up with better evacuation plans. Analytics-based evacuation plans can prevent congestion, by guiding the crowd in different parts of the building to take the optimum route to ensure and fast and effective evacuation.



Multi-Sensor Detection

There is a major shift happening in the industry towards multiple criteria technology. Many companies are continuing to develop innovative products that have the ability to detect not only smoke but heat, infrared light from flames and carbon monoxide as well. These sensors not only save money and time but also reduce the time involved with installing multiple sensors, but it also helps in eliminate nuisance alarms, because more than one criterion needs to meet before the alarm is triggered.



Wireless Technologies

Wireless technology continues to spread widely across the security industry, fire alarm also is not expected to remain on the sidelines. Nowadays wireless smoke detectors come in more compact and streamlined designs that can be more appealing aesthetic wise. However, the most significant about this trend is the absence of the need for wire installations in difficult spaces such as finished rooms and historical buildings. Once wireless fire alarm systems become a more affordable and feasible option, this will lead to a surge in demand for wireless fire alarm systems.

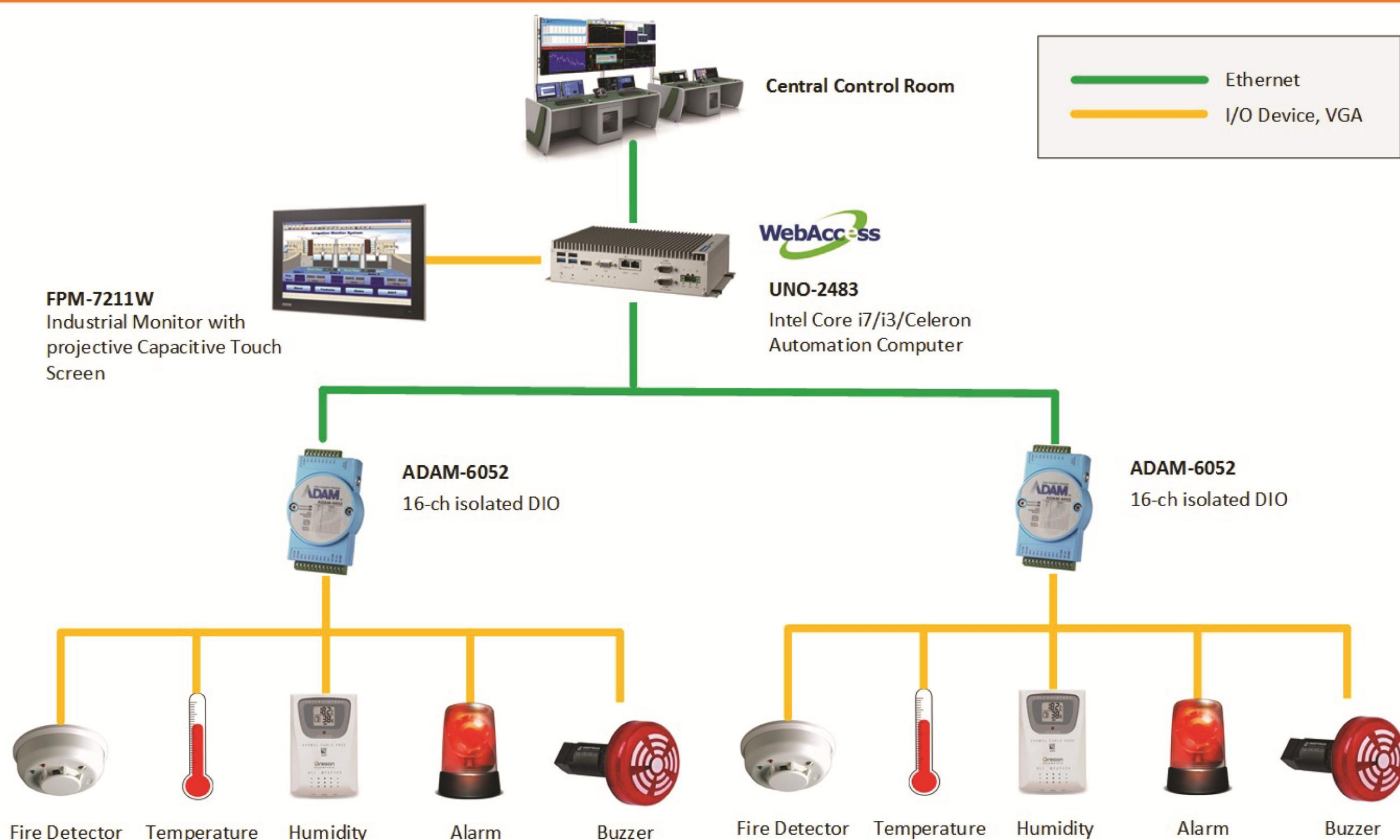
Voice Alert Systems

Systems that announce danger with pre-recorded message continues to gain traction and shows no sign of a slowdown in the near future. Voice alerts system allows for providing specific life safety instructions and safety measures to evacuate. This system is not only effective for fire events but also other emergencies as well such as a hazardous chemical spill, intruder and bad weather. In addition, these systems allow the building managers to speak through the voice alert system to provide basic instructions to evacuate the building, studies have shown people have an increased reaction to voice instructions as opposed to simple sirens and recorded voice.



Limit Risks with Remote Monitoring

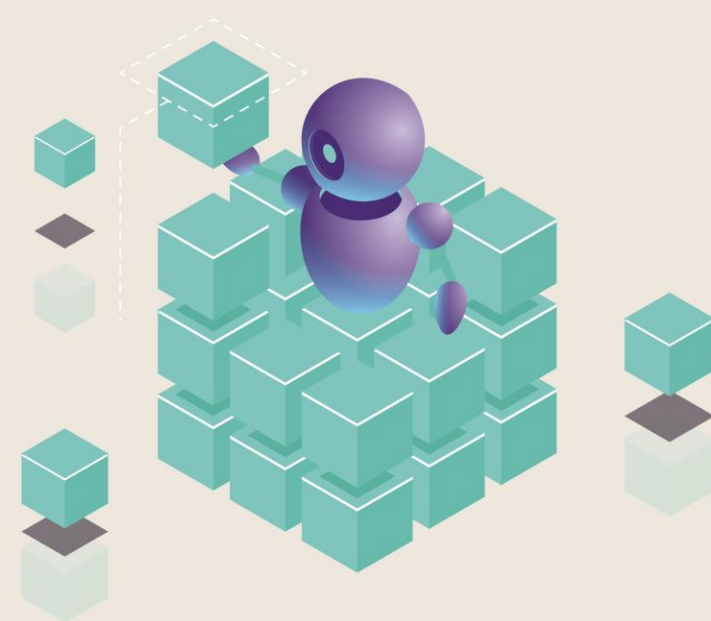
Modern fire alarm systems can be set up to offer alarms on-site as well as at a remote station. The fire alarm system, including the central remote monitoring station, must meet all the governing standards and regulations. Although the remote monitoring feature adds to the system cost as well as maintenance and operations expenses, the benefits of such features are huge. Facility managers can connect multiple facilities to one central monitoring station and ensure better monitoring of alarm systems, maintenance of records and reports, and scheduling of tests and maintenance activities.



Embrace Machine Learning

In the building segment, one of the fastest-growing applications for machine learning is improving maintenance. Machine learning applications are self-modifying, highly automated, and embedded. Machine learning algorithms are designed to continuously adapt and improve their performance with minimal human intervention. Machine learning algorithms are also embedded within a process or workflow such that they become seamlessly integrated into the process to the point where they are invisible to the user or operator. Machine learning technologies are used for swift maintenance of the fire alarm system.

Prescriptive maintenance builds on simple condition monitoring to provide advanced notice of failure. Condition monitoring typically monitors a single variable per device – such as sensor failure. Prescriptive maintenance, in contrast, typically monitors multiple variables per system and uses sophisticated algorithms – such as machine learning. The aim is to give a longer-range prediction of failure, with a higher measure of confidence.



The Internet of Things will bring high volumes of fast-moving data. This, in turn, brings both challenges and opportunities for building organizations. One of the challenges is making sense of large complex data sets. Predictive analytics and machine learning approaches are one way to do that. The potential return on investment (ROI) is real, tangible, and relatively immediate.

The IoT will bring more data, faster, from a greater variety of sources. Managing this data complexity to be able to respond to events in a timely manner will require a much more automated and frictionless approach to the analytics value chain. Maintenance applications that incorporate machine learning are a promising approach for capitalizing on IoT data.

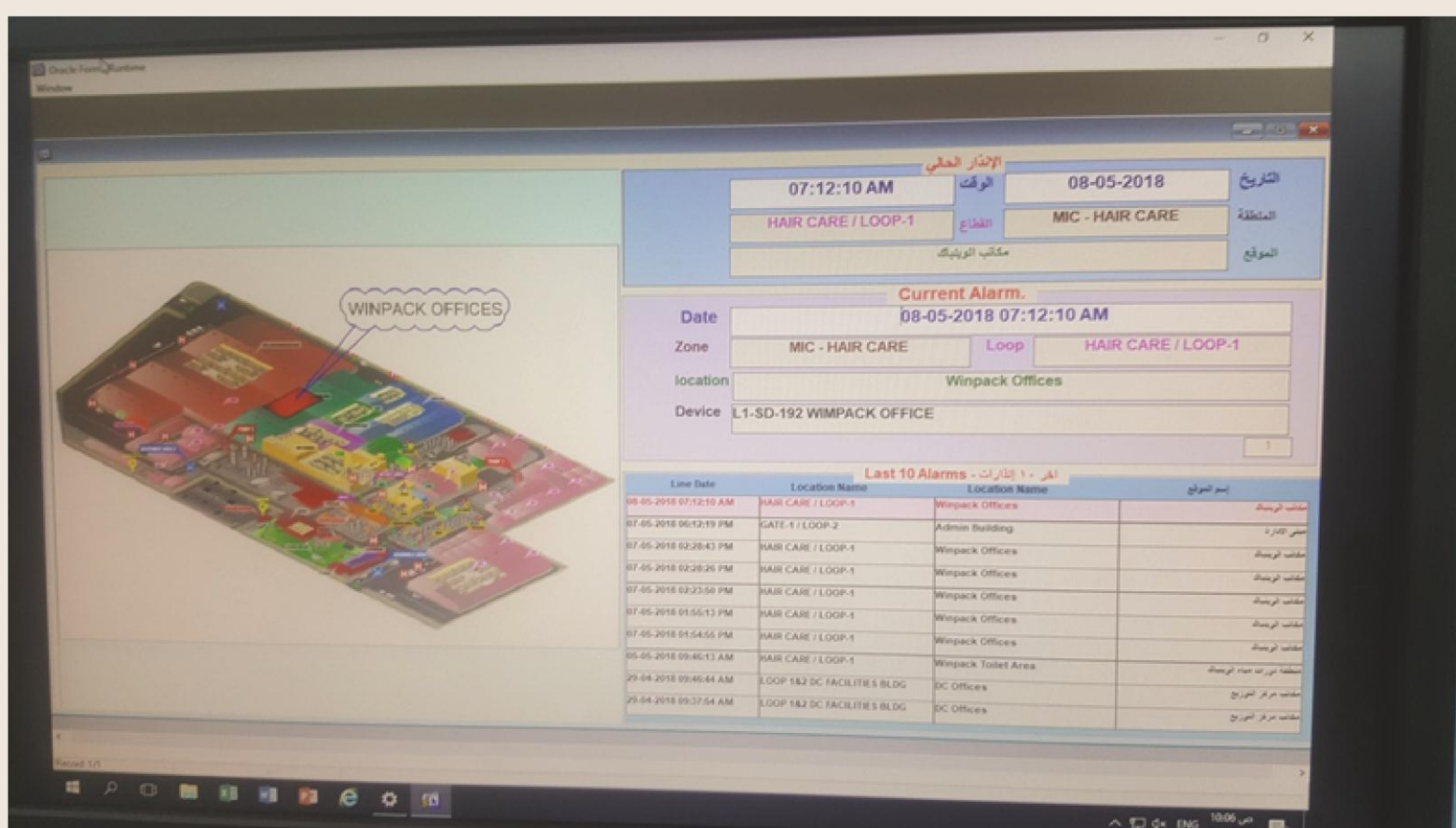
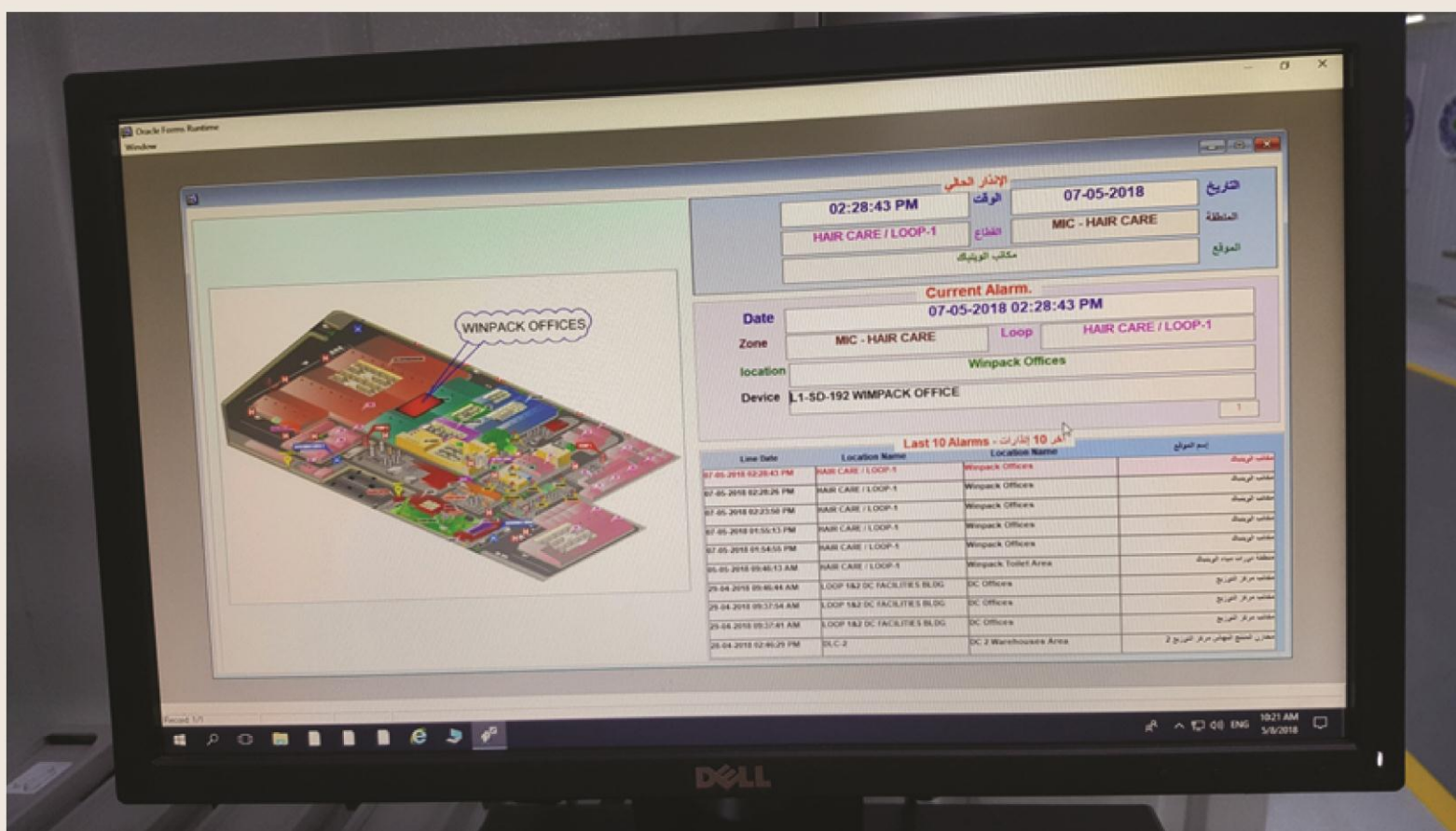
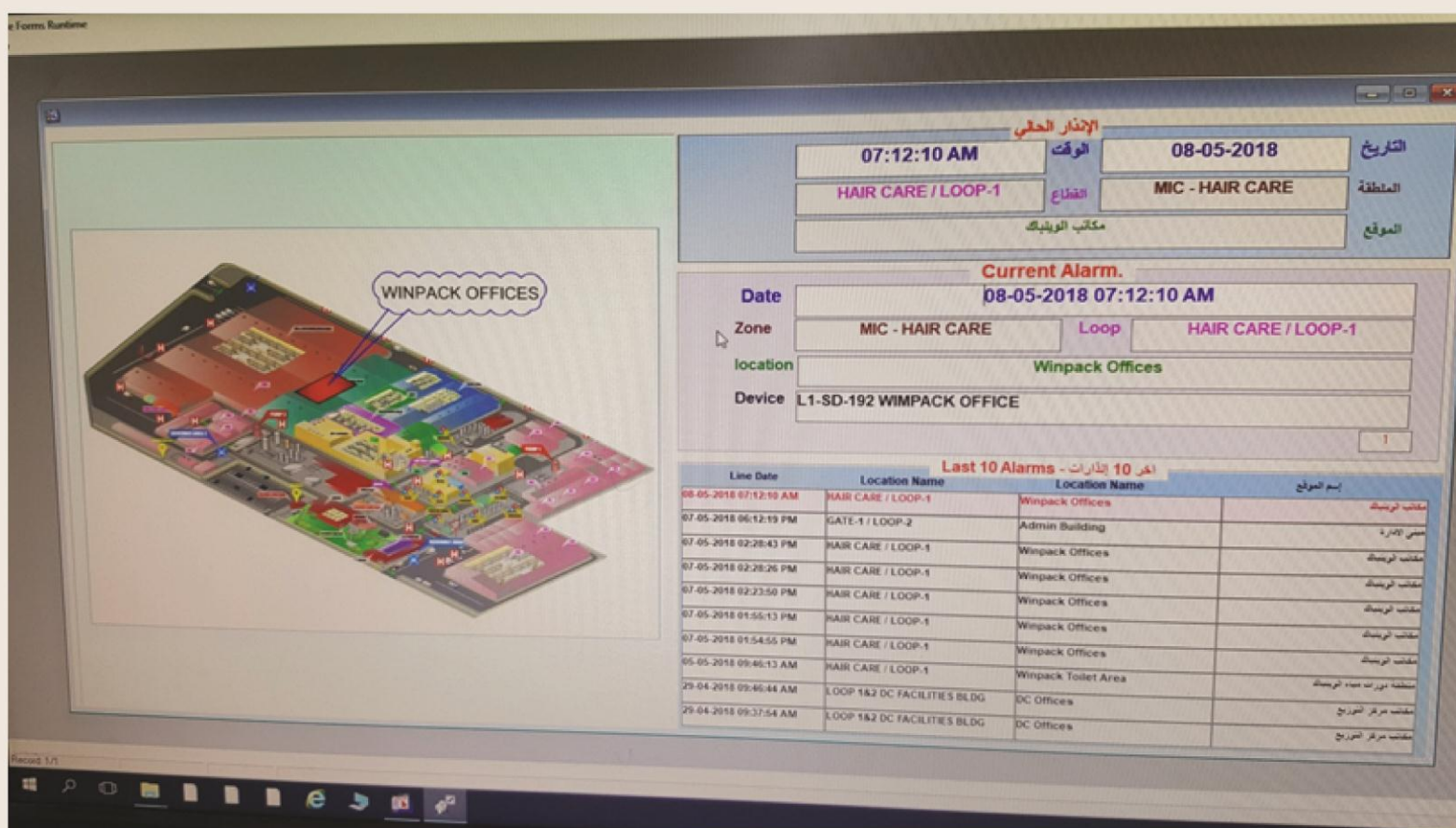
Final Thoughts

Even with the best of technologies, we cannot avoid accidents altogether, but much can be done to minimize the damage and save human lives. Connected products and solutions such as smart detectors, alarms, and notification systems can help us gather crucial alerts quickly and better plan for emergency situations. Users should evaluate and implement these connected technologies to enhance safety.

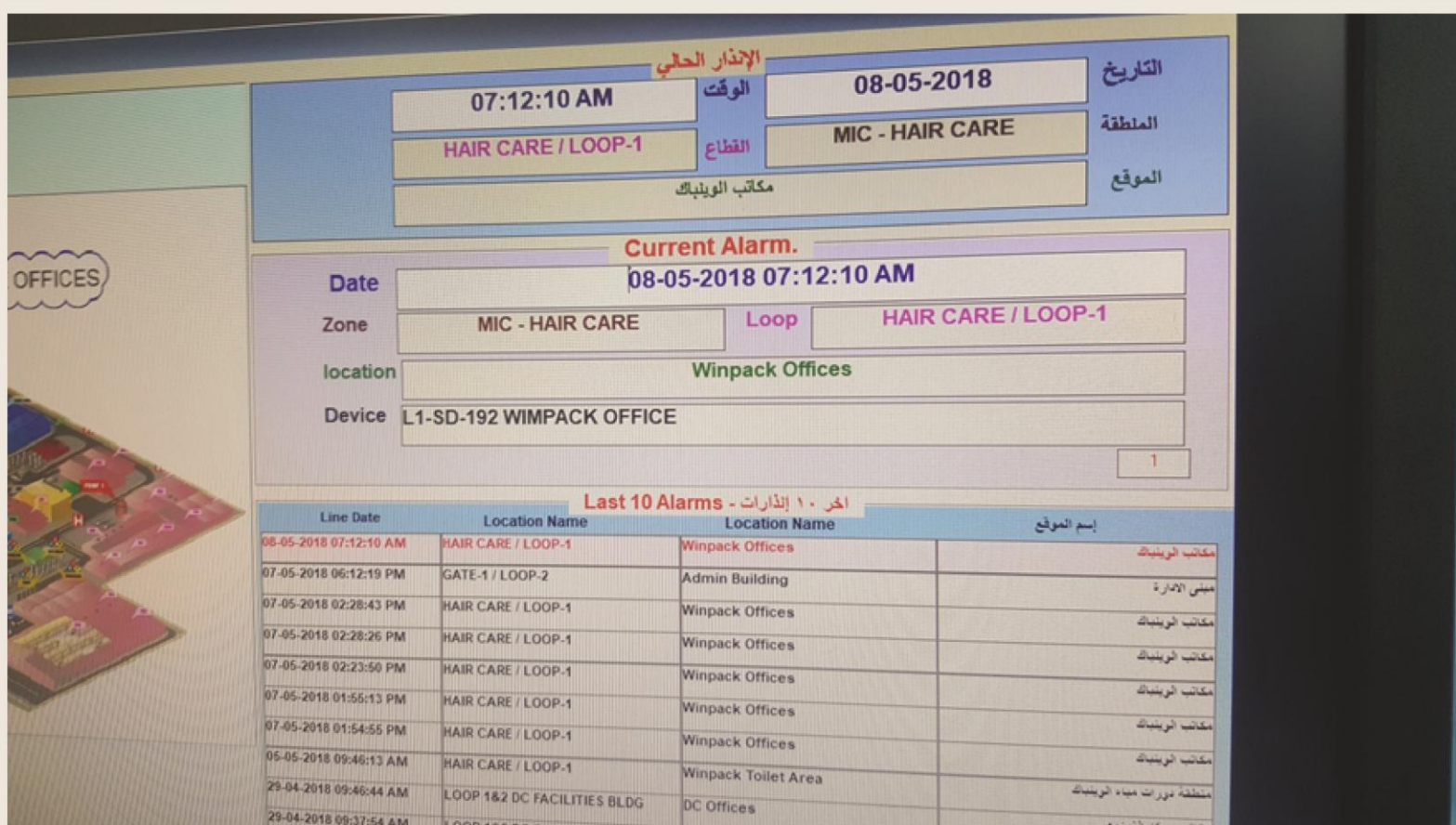
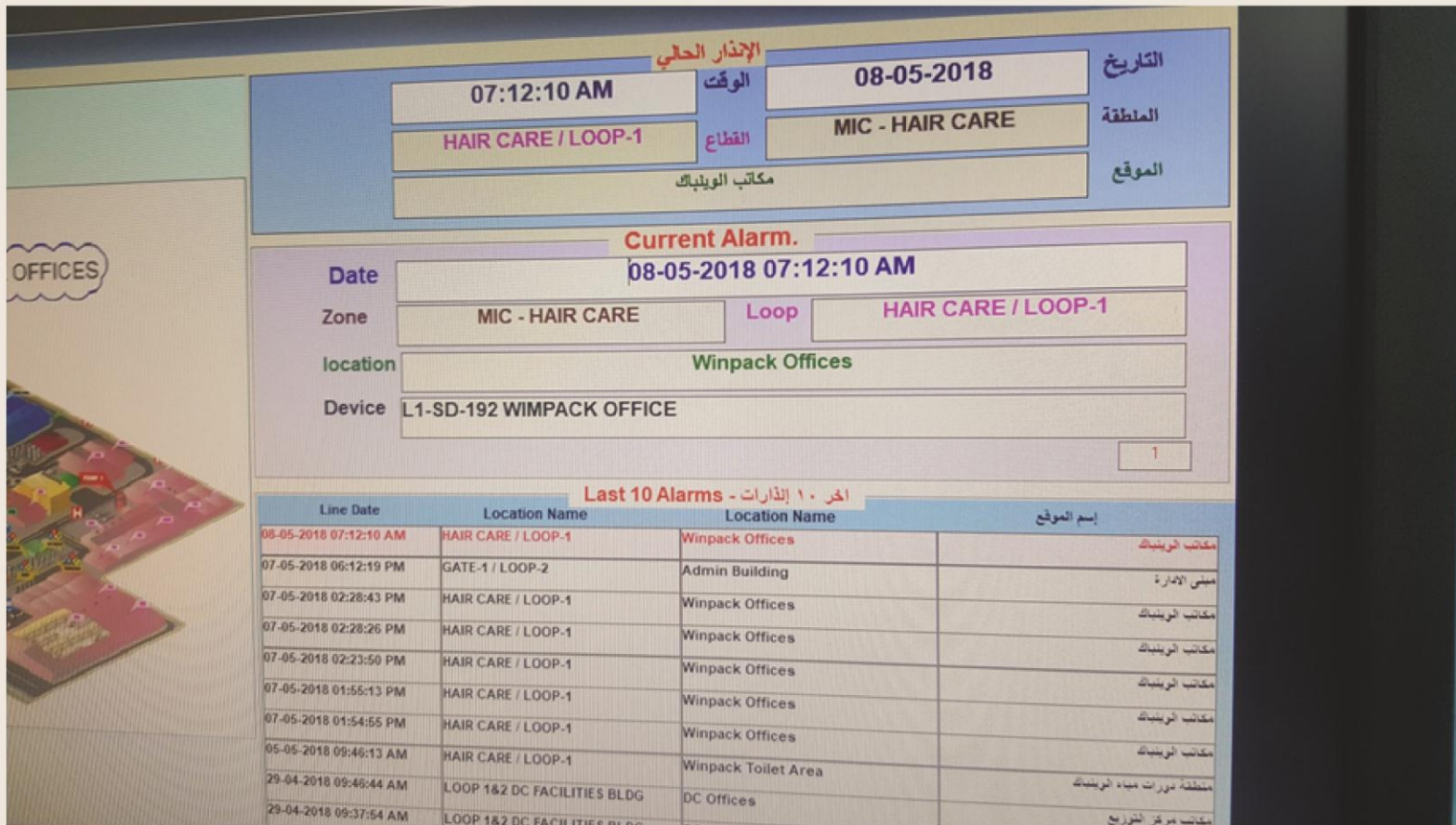
Although safety technology has come a long way, technology alone is not sufficient and probably never will be. Often, disasters happen not because of faulty equipment or lack of appropriate technology, but from lack of proper implementation and poor planning. Deploying advanced safety technology will not help improve safety unless the technology is properly implemented and maintained. Appropriate regulations, policies, and procedures should be in place and adhered to rigidly.

Take the first part of the new year to reflect on what worked for your business in 2019, what didn't work, and what you can do to make 2020 a better year. Get ready to make some changes and grow your business by learning how to create a fire alarm system more engaging, efficient and effective. Half of your competitors and end-users are already doing it. Don't get left behind.

images from system



images from system



For more details visit



<https://www.youtube.com/watch?v=KHwiCssaow8>



<https://www.youtube.com/watch?v=6Lu0wqpRW30>

Some of our clients



Some of our clients

