# WHY FIRE SAFETY WORKS BETTER WHEN IT'S DIGITAL

**How digitalized life safety systems can improve reliability, streamline building operations, and reduce compliance costs**

Digitalized life safety
technical resource guide

# HOW BUILDINGS BENEFIT FROM DIGITALIZED LIFE SAFETY

**As the Internet of Things (IoT) and cloud computing mature, buildings can now have access to capabilities that are redefining what's possible for fire safety – and also what's most effective.**

**This guide provides an overview of these digitalized life safety capabilities and what they can mean for your building.**

## A DELICATE BALANCE

If you own or operate a building, you've likely experienced the challenge of trying to find fire safety technologies that can help you balance a range of potentially conflicting needs – such as dependability, ease of use, compliance, and affordability.

Protecting people and property is a must, but many building owners and operators would also prefer fire safety technologies that can keep the related maintenance tasks and operational disruptions to a minimum, while mitigating the risk of compliance gaps and the burden of corrective-action costs for non compliance.

This has long been a tricky balance for virtually every kind of building – from large and medium facilities in sectors such as commercial real estate, healthcare, data centers, transportation and airports, education, and government, to industrial facilities and other organizations with mission-critical facilities, as well as those who operate portfolios of smaller buildings.

## A GROWING NEED FOR CONNECTED LIFE SAFETY

**The challenge**

Facility managers are increasingly searching for connected technologies that can provide better remote oversight and ease staff burdens while still meeting compliance and safety needs.

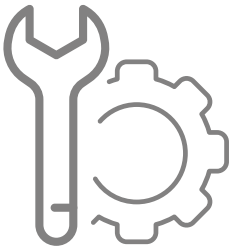
Various technologies and vendors have attempted to develop digital applications and connected solutions for fire safety, yet many of these have failed to deliver the desired value.

Among the top concerns and shortfalls that facility managers have experienced with early digital life safety approaches: high costs, difficult deployments, usability challenges, and questionable cybersecurity.

**How to meet it digitally**

In an effort to address these shortcomings, as well as the longstanding hopes for more efficient fire safety, Honeywell has developed its own approach to integrated safety for buildings, called Connected Life Safety Services (CLSS).

We will use this platform as a point of reference to discuss what we've learned about the types of fire safety capabilities that are now possible and that you may want to specify for your building (regardless of the provider you select).



## INSTALLATION AND COMMISSIONING

**The challenge**

On paper, fire protection may only constitute a fraction of overall construction costs, yet it's a critical step in the construction management process – the fire safety system must be fully commissioned before building operations can commence.

This commissioning can potentially delay other activities by a week or more, due to the time needed to comply with safety requirements – to test and validate every installed fire safety device and then correct errors in system programming. Depending on the building project, delays of even a day beyond what the construction schedule allows for can translate into the loss of millions of dollars.

So for many buildings, high priority is given to technologies and capabilities that can prevent commissioning delays and enable operations to commence on time.

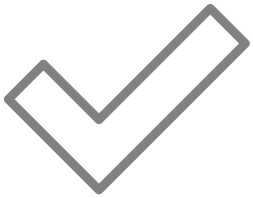
**How to meet it digitally**

With the right capabilities, an integrated life safety system can greatly reduce the time needed to install, configure, and commission a fire safety system and can reduce the likelihood of errors that require reprogramming and retesting.

For example, our Connected Life Safety Services automate this process by using a fully networkable fire alarm control panel along with unique self-testing smoke and heat detectors.

Via its secure cloud connection, CLSS records the automatic self tests from each detector, eliminating the need for installers to use ladders and lifts to physically reach each detector with smoke and heat guns for manual testing. The system also uses a mobile app to give installers clear step-by-step guidance.

By reducing the number of hands-on steps, as well as their complexity, a connected system like CLSS can reduce the number of personnel required for installation and commissioning, reduce the risk of human error, and greatly accelerate the overall process. This helps keep commissioning on schedule so that building operations can commence on time.



## AUTOMATED COMPLIANCE TESTING

**The challenge**

Like the commissioning process, compliance testing can be time consuming and laborious due to the need to walk to each fire safety device in person and manually test them. This usually requires ladders to reach ceiling-mounted detectors, and for a high ceiling such as an atrium, lifts may also need to be rented.

This testing process can be disruptive to the building's operations and occupants, and for sensitive environments such as a pharmaceutical lab or hospital operating room (OR), cleaning and decontamination may be required afterwards before those areas can be returned to service.

On-site facilities staff may also face schedule disruptions – for example, if an on-site technician must be assigned to accompany the inspection-service provider.

From direct testing expenses to indirect costs such as closures and cleanup, the costs to a building are not trivial. Yet up to now, there have been few alternatives to regular physical testing. Keeping life safety devices functional is essential and complying to local and national guidelines is critical.

**How to meet it digitally**

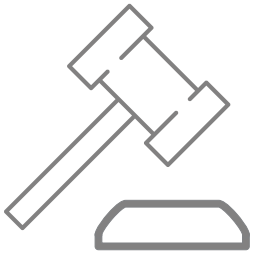
Traditionally, the fire protection industry has been slow to adopt new technologies; however, code changes, such as updates to NFPA 72® and the introduction of NFPA 915, embrace remote services.

Given these new guidelines, technology providers and building service companies have sought ways to introduce some level of automation into the compliance-testing process – but in general it has remained labor intensive, still requiring a technician to physically access each detector for smoke- or heat-gun testing.

As with the commissioning process, a cloud-based system such as CLSS can take full advantage of these remote-service guidelines to overcome the labor challenges of manual testing.

Paired with self-testing detectors, a cloud-based system can now automate compliance testing. Technicians no longer need to directly access detectors– instead, the system monitors and tracks each detector's self test.

This greatly increases the speed and accuracy of compliance testing – and it means there is no longer any need to close or disrupt spaces within the building. For sensitive areas such as ORs and labs, that also means that no decontamination is needed; each space can remain in service throughout testing.



## AUTOMATED COMPLIANCE REPORTING

**The challenge**

Compliance reporting often proves to be another slow, drawn-out process. As a result, compliance officers for large and medium facilities often must wait weeks or months to receive an inspection report once testing is complete.

If the inspection identifies issues, this can feel like wasted time during which system functionality and reliability could have been addressed sooner.

**How to meet it digitally**

A cloud-based service that can automate compliance testing should also be able to automate reporting, converting the data from the inspection into a full report.

In the case of CLSS, there is no delay for this – the compliance report is automatically generated as soon the inspection is complete and then is available any time on demand.

This type of automated reporting can provide compliance officers with immediate access to essential findings and the opportunity to take action sooner when needed.

## REMOTE SERVICES AND MONITORING

**The challenge**

Maintenance for fire safety systems has traditionally depended on a regular schedule of inspections and maintenance activities by on-site technicians who must check components manually.

If life safety equipment fails outside of that inspection schedule, then someone must be dispatched to determine the problem and how to fix it, and this may require multiple visits. Depending on the scope of the failure, this could also disrupt building operations and occupant use.

Multiple "truck rolls" to dispatch technicians as well as any disruptions to the building can become costly, particularly if they occur frequently due to aging infrastructure and devices.

**How to meet it digitally**

Remote service capabilities are comparatively new to fire safety, and automation for commissioning and compliance testing are only the first of the ways that remote service capabilities can improve and simplify life safety.

With a cloud-based system such as CLSS, remote service can also enable continuous remote monitoring. This gives a more precise view of system functionality and equipment health so that maintenance issues can be addressed sooner and more cost effectively.

This also presents the opportunity to use analytics or even machine learning for predictive maintenance that recognizes potential issues before they occur – thus further reducing the risk of equipment failures and disruptions to the building.

Similarly, cloud-based access enables users to manage the fire safety system without needing to be on-site.

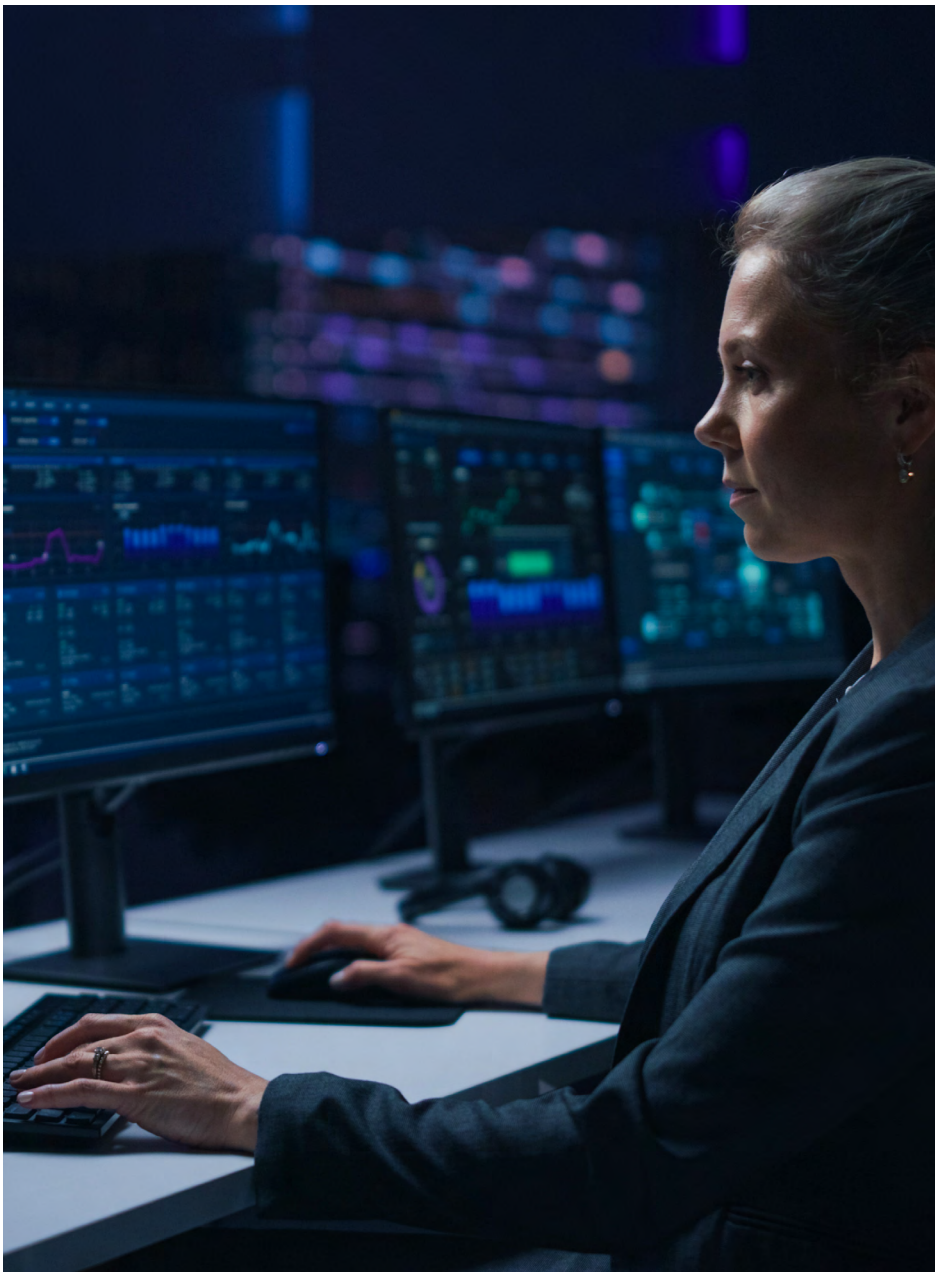
For system issues that don't require an on-site technician, this means issues can potentially be both identified and resolved remotely, saving the time and cost of dispatching a technician.

If a technician is needed on-site, they can be dispatched with much better insight into the issue, increasing the likelihood that they can fix it on the first visit.

## CYBERSECURITY

### The challenge

To date, cybersecurity and data privacy have raised concerns about the risks of connected systems – understandably, given the steady cadence of news about cyber breaches.



### How to meet it digitally

Secure, reliable integration and cloud connectivity is achievable by planning multiple layers of data security, such as a secured network, robust firewalls, data that stays encrypted from end to end, and multifactor account authentication.

It's also essential that software and hardware are designed according to cybersecurity best practices by building privacy, encryption, and security into each application and device from the start – rather than merely trying to add safeguards after the fact.

As a founding member of the ISA Global Cybersecurity Alliance, Honeywell takes cybersecurity seriously. We know how to protect a building's operational technology (OT) environment.

With CLSS, we incorporate all of the above security measures, along with options to integrate its network independently if needed, without connecting to the building's Internet infrastructure.

## LOWER TOTAL COST OF OWNERSHIP

**The challenge**

The total cost of ownership for a life safety system can become quite high when there are multiple instances of building disruption, system downtime, lengthy compliance audits, and corrective actions to resolve compliance gaps.

Unfortunately, these costs have often seemed like unavoidable necessities with traditional fire safety systems.

**How to meet it digitally**

Digitalized and cloud-based fire safety systems such as CLSS are changing the balance sheet for total cost of ownership by enabling buildings to operate their systems with much greater consistency and accuracy, and with less manual labor and intervention.

Among the ways a cloud-based systems helps keep costs lower, more predictable, and more consistent:

- Automation such as self-testing capabilities streamlines inspections and maintenance.
- Remote oversight and more precise maintenance keep the system running more effectively.
- Lower risk of needing to dispatch technicians for unscheduled service calls.
- Lower risk of system downtime or disruption to building operations, including fewer false alarms.
- Lower risk of compliance gaps and associated costs.

Finally, by improving ease of use as well as the continuity and consistency of the life safety system, a digitalized system can help reduce the overall need for human intervention in the management of these systems – which can then help facility managers preserve their skilled technicians for other priorities

## THE NAME BUILDINGS TRUST: HONEYWELL

Helping buildings achieve safer, smarter, and more efficient operations has been the bedrock of our business for generations – which is why today, Honeywell technologies are in more than 10 million buildings worldwide.

How? We've established expertise in each part of the job – from developing the software and equipment, to integrating open systems, and engineering the performance that a complex site depends on to get results.

**Find out what digitalized life safety can do for your building**

Honeywell Connected Life Safety Services (CLSS)

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