

## Effective Fire Detection avoiding False Alarms in a changing Environment: An Evolving Joint Task in Fire Safety

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### Key conclusions from the March 2026 conference in Zürich

The conference on March 2<sup>nd</sup> and 3<sup>rd</sup> of 2026 in Zürich, highlighted that false alarms manifest in diverse forms and across a wide range of systems, technologies and operational processes, not only in fire detection. They reveal that there is room for improvement along the entire alert chain and within existing safety strategies.

The false alarm statistics indicate that “deceptive alarms” represent the largest share of false fire alarms in automatic fire detection and fire alarm systems, where fire-like phenomena are triggering the detectors. They also indicate gaps in problem awareness amongst building owners and site management as well as shortcomings in system planning and practical application. At the same time, the conference highlighted that false alarms are not merely a technology issue. Their occurrence depends on numerous external factors, including building structure, building management, operator responsibilities, and the level of cooperation with the fire service.

Because many stakeholders contribute to the emergence of false alarms, they also share responsibility for reducing them. False alarm reduction therefore appears as an evolving joint task in fire safety, requiring coordinated action, shared understanding, and continuous improvement across organisational and technological domains.

Throughout Europe, data repeatedly shows that a small group of buildings has a disproportionate impact on the false alarm situation. Approximately 30% of all false alarms originate from circa 5% of buildings. This concentration points to important structural or organizational improvement potential in these specific buildings and represents one of the strongest levers for reducing false alarms. Modern buildings undergo frequent changes in use, occupancy, and risk profile. This dynamic environment increases the likelihood of false alarms if detection systems are not continuously aligned with evolving conditions.

At the same time, the vast majority of fire detection and fire alarm systems operate reliably without causing any noteworthy issues. This demonstrates that application and product standards fundamentally work, and highlights the effectiveness of targeted, case-specific, and site-specific safety concepts and strategies.

A wide range of measures to prevent and reduce false alarms already exists. However, these measures are not yet being fully exploited, largely because standardised documentation of false alarms and systematic incident learning are still lacking across Europe.

Across all discussions, one central guiding principle became evident: false alarms must be minimized without compromising life safety. Balancing reliable detection with operational efficiency remains the key challenge for all stakeholders in fire safety. One technological insight is the growing importance of multi-sensor and multi-criteria fire detectors in achieving this balance.

Looking ahead, reducing false alarms will require a coordinated set of next steps that strengthen information exchange and operational collaboration across all stakeholders. As a first priority, a more systematic and higher-quality flow of incident-related information is needed between all stakeholders, including building owners, planners, installers, service providers, manufacturers, and fire services, to enable learning, targeted improvements, and transparent decision-making. The conference also showed that artificial intelligence opens new possibilities for analysing unstructured incident data, turning previously unused comments into structured insights.

From the perspective of fire services, key actions include gathering the information of greatest value from fire detection and fire alarm systems, beyond two-state fire/no-fire alarm conditions and real/false alarm reports. This can evolve into smarter response models. Financial incentives/disincentives, such as charging for false alarms and reinvesting these resources into educating building owners with recurring false alarms, are considered to be necessary to drive behavioural change.

Manufacturers, in turn, are encouraged to shift mindset and provide recipient-specific and enriched alarm information, potentially defining differentiated information categories to support fire services in their role, and intensifying support for planners to ensure that technologies are applied effectively.

Building owners are a widely diverse group, and their differing levels of awareness, priorities, and operational practices make them a crucial factor in preventing false alarms. Building owners should prioritise quality and investment in building construction, usage, and lifecycle management, strengthen internal responsibility structures, and deepen their understanding of system operation and limitations—supported by increased communication that acknowledges diverse building types.

For planners, installers and service providers, next steps focus on improving information management in buildings. Digitalised building services, continuous monitoring, and updated risk assessments are expected to play a key role in providing these improvements. In particular, appropriate detection technologies for specific environments should be selected, coordination between design and installation should be improved, practical guidelines for installers and service providers should be more effectively applied, and transparent communication with fire services should be ensured.

Together, these measures set the foundation for a shared, long-term strategy in which technical, organizational, and environmental improvements reinforce each other - ultimately reducing false alarms without compromising life safety.

A first step toward a mutual understanding has been taken. The next challenge is to translate this momentum into collaborative activity.