



CHRIS LEWIS

FIRE & SECURITY

White Paper:
The real benefits of integration



The real benefits of integrating fire and security systems

Many businesses recognise system integration as a means to achieve greater efficiency and profitability, yet its consideration does not generally extend to their fire and security systems.

However, there are real benefits to integration, using the latest IP and centrally controlled solutions gives:

- Fewer false alarms
- Greater control
- Lower maintenance costs
- Reduced overheads
- Potential energy saving

The following White Paper will speak about how these benefits can be realised.

All too often responsibility for a building's fire alarm, CCTV, access control and intruder alarm resides with different parties, and investment in them is generally undertaken to address specific issues, such as legislative compliance or deterring vandalism. Frequently these systems are installed in isolation without a good understanding of the additional benefits that integration would provide.

However, as it becomes easier to integrate building technologies, fire and security should be included in this process wherever possible, to give the greatest ease of control and maximum protection.





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Fire and security integration

In electronics terms, 'integration' is defined as the formation of large and complex systems from less-complicated components, with the result that the effectiveness of the individual parts is enhanced, while their management is simplified and centralised. While it has always been possible to link one electronic components to another, technological advancements, such as the adoption of IP (Internet Protocol), and a general willingness by manufacturers to share the code within their products, means that systems can now be integrated in much more sophisticated ways. Events generated on one electronic device can be passed to another and used to trigger any number of subsequent actions.

The integration of fire and security systems can be 'simple' or 'advanced'. Simple integration utilises switched inputs and outputs (IOs) to link two systems together. An example of simple integration would be a fire alarm output linked to the electronic lock of an access controlled door so that when the fire alarm is activated the door is released.

Advanced integration uses IP technology or RS485/232 serial connections to link two or more systems together either via data cable or wirelessly, and enables bi-directional data and commands to be shared. 'Cause and effect' programming can be used to initiate desired triggers and actions and Graphical User Interfaces (GUIs) can be introduced to improve ease of operation.

An example of advanced integration would be an intruder alarm linked to CCTV and access control so that when the intruder alarm is triggered, CCTV cameras in the activation zone pan to confirm the presence of an intruder and, if established, all doors in the vicinity are locked to contain the intruder until the police can be summoned, otherwise the alarm is silenced and a text message is sent to key holders.



The benefits of integration

- **Fewer false alarms**
Integrated systems can be used to provide confirmation of an incident from several sources prior to an alarm being raised reducing false alarms.
- **Greater control**
Integrated systems can be centrally monitored and controlled on a single Security Management System (SMS). GUIs can make the system intuitive and easy to use, and can incorporate additional features such as building floor plans, popup images, incident notes and messaging services.
- **Lower maintenance costs**
Systems can usually be integrated and maintained by a single specialist system integrator which should reduce the cost of maintenance contracts when compared to the multiple providers maintaining individual systems. A single maintenance contract should also reduce the number of site visits required, and provided system integration includes internet connectivity, fault diagnosis and repair can often be carried out remotely.



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- **Reduced overheads**
Staff costs can often be reduced as a result of the centralised monitoring and control of fire and security systems. Internet-enabled remote access to a site's SMS can also enable multiple sites to be managed from a single central monitoring station.
- **Potential energy saving**
The integration of security systems with building management systems can unlock considerable potential for energy saving. For example, heating, lighting and air-conditioning units can be powered down when the intruder alarm is set, as at this time, the building is known to be empty; meeting room management linked to a building's access control system can ensure that resources such as lighting and projection equipment are only powered on when the room is in use.

According to a recent report from IMS Research, integrated systems will account for over 70 per cent of the total security systems installation and maintenance market in Europe, with integration with HVAC (Heating, Ventilation and Air Conditioning) and building automation systems becoming a key trend in the future.

How integration can add value

Fire system

Upon activation of a fire alarm, system integration might be used to...

- automatically generate a roll call of who is in the building from the access control system log
- automatically open all fire escape doors
- open barriers for the fire brigade to access site
- increase CCTV recording and move cameras to scan the activation area
- alert staff to the precise location of the fire detection on a graphical floor plan
- switch off power to vulnerable equipment, e.g. server rooms, to reduce the impact of damage from sprinkler systems

Intruder alarm

An intruder alarm can be integrated with other systems to...

- text or email staff when the system is set/unset/activated
- prevent access to staff who are not registered with permission to set/unset the alarm
- switch off lights, heating and air-conditioning when areas of a building are alarmed or unoccupied for periods of time
- activate 'out of hours' settings for CCTV and external lighting
- lock doors in high-security areas and prevent access when the alarm is activated
- activate special protection to an area if Smoke Cloak or DNA marking systems are also in use



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Access control

Integrating access controlled doors and swipe cards with other systems can add value by...

- taking a CCTV snapshot of people entering an area when their card is presented to validate the users identity
- switching on lighting and heating in a work area only when a person assigned to that area enters the building
- granting access to meeting rooms based on confirmed bookings in company's calendar system
- providing cashless vending, copying credits, etc. with multi-use cards

CCTV

CCTV can be enhanced through system integration in many ways...

- activation of an intercom system can instruct cameras to focus in and record a vehicle at an entrance
- ANPR (Automatic Number Plate Recognition) can automatically open barriers or gates to authorized vehicles
- Pan-Tilt-Zoom (PTZ) cameras can be programmed to investigate areas where an intruder alarm's Infra-Red beams are broken
- very high recording rates and image resolution can be activated when an intruder alarm is triggered
- live footage can be relayed direct to a mobile device when an intruder alarm is activated.

The choice for integration

Whether you are looking to integrate existing systems or add new technology, to deliver the maximum benefits your solution must be planned, designed, installed and maintained with consideration for your immediate and long-term business needs.

You need to know that your installer has expertise in, and experience of, a broad range of solutions, and will recommend the best equipment for the job. Do they, for example, have industry accreditations to give you peace of mind? Can they put you in touch with other customers whom they have helped to solve similar problems to your own?

According to a July 2010 report from IMS Research, integrated systems will account for over 70 per cent of the total security systems installation and maintenance market in Europe by 2013, with integration with HVAC and building automation systems becoming a key trend in the future. The question for businesses is no longer whether to integrate their fire and security systems, but when.

For more information or a free consultation please call us on 01865 782444 or visit chrislewis.co.uk