With VESDA, you will never have to worry about smoke going unnoticed in your Datacom facility.
Smoke causes computer cancer

According to the FCC, 95% of all fire damage within facilities housing electronic equipment is corrosion. The fire may do little immediate damage, however, the chloride and sulfur deposited on delicate electronic equipment will react with humidity in the air to start the corrosion process.

Redundant systems within the same building may be contaminated if they share the same air-conditioning system.

What are the consequences of fire?

The implications of downtime or equipment failure in a data center or telecommunications facility (datacom) are massive. The USA Federal Communications Commission (FCC) estimates that the cost of downtime in a large datacom facility is upwards of US $2 million per hour.

A fire in or near a datacom facility can cause:

- equipment failure or loss.
- latent equipment failure due to smoke contamination.
- service disruption to businesses, services and customers.
- loss of the building or other physical structure.

In 1999 a fire sparked by a dropped tool burnt down a Pacific Bell Telephone Exchange. The incident took down 110,000 phone lines, airline networks, lottery terminals, emergency service communications and security services.

What are the risks?

According to the FCC, the most common instigator of fire events in telecommunication facilities are building systems, especially the power distribution equipment. The trend towards faster, more compact and higher functionality datacom equipment has led to:

- increased power consumption, which has led to higher heat density.
- more time being spent on server and equipment upgrades than on assessing the associated risks.
- inadequate heating, ventilation and air-conditioning (HVAC) systems to support new generation equipment.
- HVAC systems aiding the spread of incipient smoke and fire, leading to equipment contamination.

Unique detection challenges:

- Air movement from air-conditioning interferes with the normal dispersion of smoke; often drawing it away from conventional detectors.
- Smoke dilution occurs in areas of high airflow and in large open spaces; delaying the time it takes for conventional point-type detectors to detect smoke.
- Many HVAC systems employ a filtration system, which will remove smoke particles from the air, delaying the time it would take to detect smoke.

VESDA systems are designed to overcome the difficult challenges present in datacom facilities. VESDA air sampling smoke detection is focused on life safety, asset protection and business and service continuity.
In small facilities one VESDA detector can be used to protect several areas e.g. ceiling, return air vent and under the floor.

Capillary tubes branch off the main VESDA sampling pipe and into the equipment cabinet, allowing the earliest possible warning of smoke within the cabinet.

Sampling across the fresh air make-up vent can be used to prevent the introduction of external pollutants, and to prevent internal detectors from issuing false alarms.

In an air-conditioned room travels with the airflow to the return air vent, rather than to the ceiling. VESDA sampling pipe can be installed across the vent to detect smoke early.

Smoke in an air-conditioned room travels with the airflow to the return air vent, rather than to the ceiling. VESDA sampling pipe should be installed under the restricted area of the raised floor and near high-risk cabling, this enables early detection of any smoke in that space.

The most effective use of a VESDA system to protect a datacom facility, is to install sampling points near the most likely sources of electrical fire, and along the path that smoke will be carried by air-conditioning. The Xtralis Datacom Design Guide should be consulted when designing and specifying VESDA ASD systems.

A VESDA system will ensure your Datacom facility is protected from fire

In 2006, a fire in a cable tunnel in Manchester, UK, wiped out voice & data services to 130,000 homes and businesses. The cost of the ensuing chaos to the area’s economy reached a staggering £10m. Litigation may continue for years to come.

NB: All designs should be tested to comply with VESDA Design Guide recommendations and local codes and standards.
VESDA buys time. Time to respond to a fire threat, minimizing damage and business downtime. VESDA systems are highly sensitive, have a wide sensitivity range and can be strategically positioned where smoke will travel. This enables the very early detection of smoke, and in the unlikely event that a fire cannot be controlled, a VESDA detector can be used to actuate suppression systems. Unlike conventional point-type detectors, VESDA systems actively draw air samples to a central detector, they monitor airflow, and a clean air barrier is used to protect the optics. This ensures that air is reliably and actively sampled for smoke and that the optics are protected from contamination, thereby, reducing nuisance alarms and maintaining the sensitivity of the detector over time.

VESDA systems comply with local fire codes and standards

- NFPA - 75 - Standard for the protection of computer EDP/ Clean Agents.
- NFPA - 76 - Standard for the fire protection of telecommunication facilities.
- TIA - 942 - Telecommunications infrastructure standard for data centres.
- FFIEC - The U.S. Federal Financial Institutions Examination Council recommendations.
- BFPSA - British code of practice for design, installation, commissioning and maintenance of ASD systems.

Companies that have installed VESDA systems

- AT&T
- Sprint
- Vodafone
- T-Mobile
- Charter Communications
- Time Warner Cable
- TeleGlobe
- China Mobile
- Korea Telecom
- AboveNet
- Verizon
- Cable & Wireless
- British Telecom
- Cingular
- IDT
- Time Warner
- MCI
- China Netcom
- SingTel
- Optus (Australia)
- AIS (Thailand)
- TELUS
- Bank of China
- Entel
- DELL
- HSBC
- IBM
- JP Morgan
- Standard Chartered Bank
- Bank of Scotland
- BellSouth
- Qwest Communications
- Orange Telecom
- Telefonica de Movistar
- Lynx
- Nextel
- Telstra (Australia)
- Bank of England
- Telecom New Zealand
- Telmex

Approvals

Call the Xtralis office closest to you, to access VESDA Design Guides and other information.