

Reliable Solutions for Entertainment Facilities from Bosch Security Systems

Security, Safety and Communications Products



BOSCH

Invented for life



Green Point Stadium Capetown

An Enormous Responsibility

How to meet the security challenges of sports stadiums and other entertainment facilities – with solutions from Bosch Security Systems.



All entertainment facilities pose security challenges, but sports stadiums definitely top the list. These facilities, in which thousands of people congregate on a regular basis, have to meet especially demanding security, safety, communication and building automation criteria.

Safety risks inside a stadium can include, fire, rioting, vandalism, and terrorism. Outside the premises, similar risks apply for spectators waiting to gain admission or leaving after a game.

Human Safety: the Number One Priority

Progress is constantly being made in all areas of life. This also applies to the construction and renovation of sports stadiums, many of which have become modern urban landmarks.

Because human safety takes absolute priority, the only responsible choice is to take advantage of the best available, state-of-the-art technology, like the products available from Bosch Security Systems that offer a perfect fit for the security, safety and communication requirements of sports arenas.



Security, Safety and Effective Communication for Sports Facilities

High-profile sporting events in particular pose many challenges:

- ▶ Terrorism, fire, rioting and vandalism need to be prevented and/or responded to
- ▶ Athletes and staff require special protection
- ▶ Sections of crowds may need to be separated (e.g., fans supporting opposing teams at soccer games)

Many modern sports stadiums are multipurpose venues that also host concerts and other cultural events. These facilities require professional sound systems that are capable of high-quality music reproduction and that can be used to support evacuations.

Bosch Products and Solutions

Bosch offers a wide range of products and solutions to effectively manage a stadium during both normal commercial operation and large events such as concerts and games. They let you:

- ▶ Efficiently monitor all areas and activities to immediately detect fires, emergencies and threats
- ▶ Detect potentially hostile groups at an early stage to curb the risk of riots and violence
- ▶ Support fast, controlled evacuation of the facility
- ▶ Integrate all safety, security and communications solutions in a building management system
- ▶ Effectively execute press conferences around sports events and support multi-purpose use of the stadium

Solutions from Bosch Security Systems help meet the security, safety and communication requirements for entertainment facilities as set by associations such as FIFA.

Full Circle with Bosch Solutions



IP-based video surveillance systems



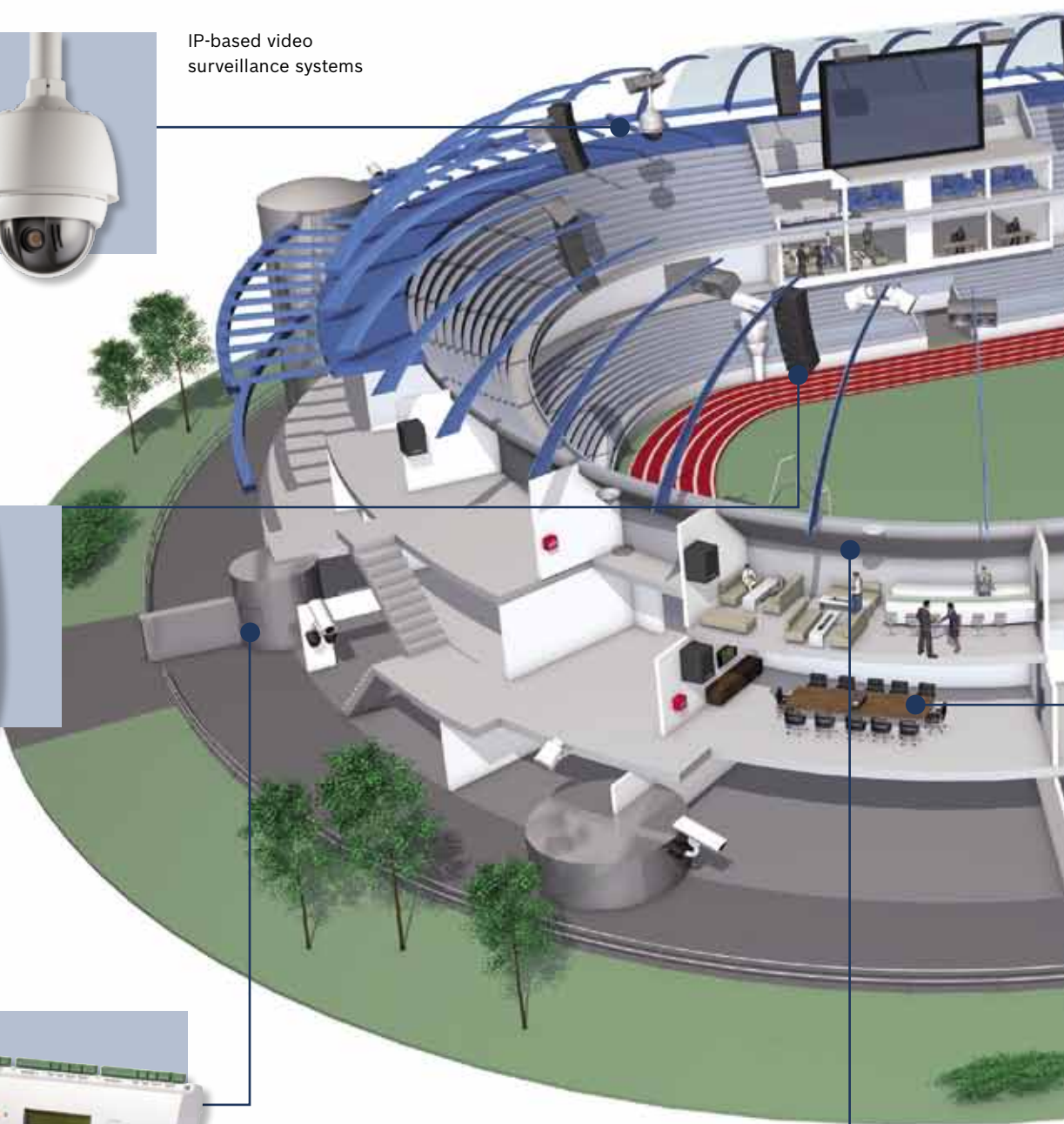
Professional sound systems

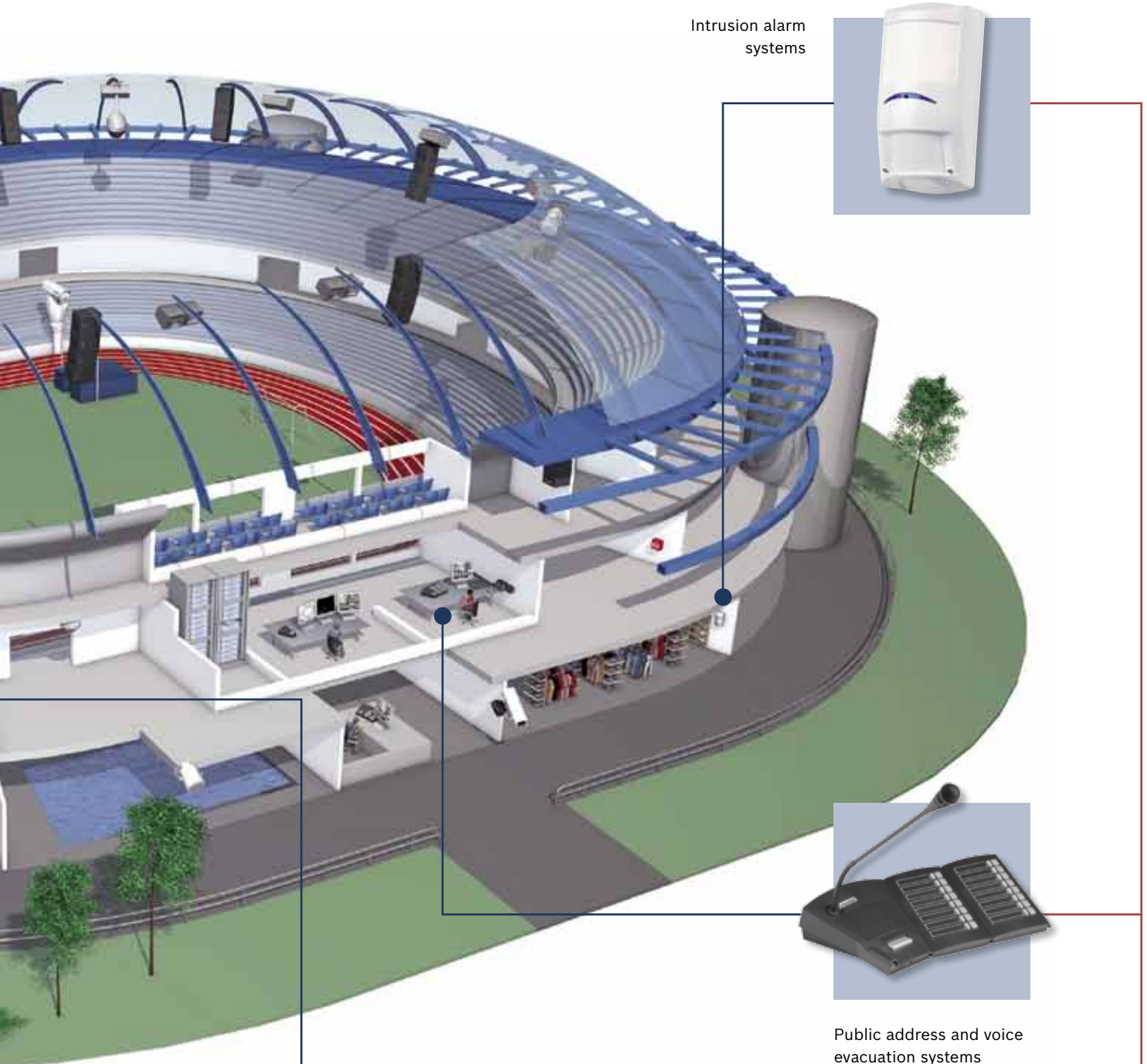


Access control systems



Fire alarm systems





Conference systems

Building Management System



Clamp Down on **Fires**



Fire breaking out within or near a stadium is a major threat. It is vital to quickly detect, locate and verify a fire in order to contain it and protect people and property.

Bosch fire panels and detectors are ideal for this and much more:

- ▶ They apply multiple intelligent criteria to ensure fast, reliable detection under a variety of conditions
- ▶ Modular systems maximize flexibility, e.g. for future expansion
- ▶ They interface with sprinkler, ventilation and public address systems to fight fire events of all kinds



1. Fire
2. Fire detector detects fire
3. Signal to fire panel and alarm notification in BIS
4. Management of voice evacuation system and providing evacuation messages via loudspeakers

Coordinated Evacuation

In the event of a fire or other emergency event, it is vital to maximize safety by evacuating the stadium. Large-scale evacuations take time, and the situation can quickly become dangerous if panic breaks out. Clear announcements support coordinated evacuation to keep everything under control.

Modular public address and voice evacuation systems from Bosch facilitate this. They let you make announcements in certain zones only or everywhere at once. Crystal-clear sound quality from a wide range of loudspeakers ensures full coverage and audibility throughout the stadium.

Vandalism, Rioting and Terrorism

1. Large crowd of fans of opposing teams
2. Live video monitoring of area
3. Initiation of security measures



Vandalism and rioting are major issues in some parts of the world, and the ability to deal with these safety and security risks is crucial. The presence of large crowds in a relatively small space increases vulnerability to these problems, as well as to bomb threats and terrorist attacks.

To avoid problems, it is often necessary to physically separate the fans of opposing teams. Unauthorized individuals also need to be kept out of sensitive areas to reduce the risk of terrorist attacks. Spectators must also be monitored both within and outside the stadium from a central control room.

Bosch Video Surveillance

The Video Management System from Bosch enables complete management of all video surveillance elements. High-resolution CCTV cameras can continuously monitor groups approaching and entering the stadium, as well as bleachers to identify offenders. Special directional microphones can be used to record events.

Bosch Advanced Intelligent Video Analysis (IVA)

Enables early detection of suspicious behavior such as loitering or walking in off-limits areas and alerts the security operator when appropriate. Its “forensic search” function enables fast retrieval of relevant video sequences.

Enhance Security Outside Operating Hours



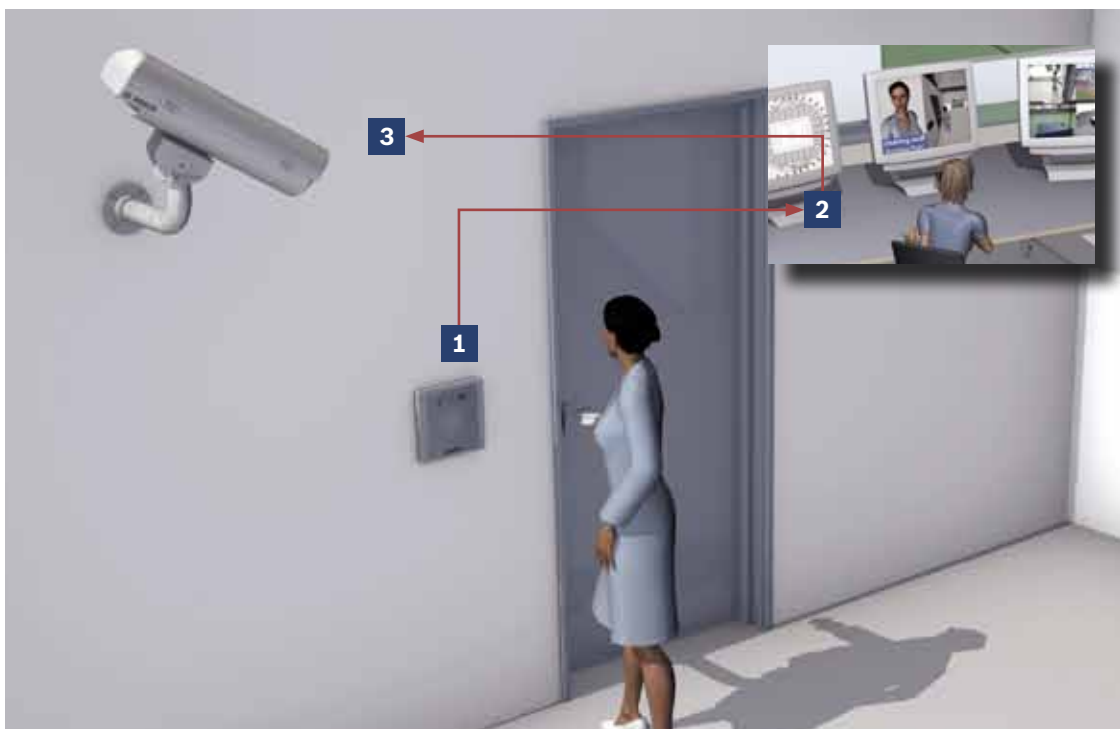
1. Intruder detected by intrusion detector
2. Alarm on operator's building plan at central monitoring station
3. Live video verification of location
4. Immediate action plans

Bosch offers a complete range of intrusion alarm panels and detectors for all types of applications. These ensure increased security outside operating hours while delivering

added value in combination with Bosch's CCTV systems for advanced video verification in case an intrusion alarm is triggered.

Make Sure Only Authorized Individuals **Get In**

State-of-the-art RFID technology restricts access to non-public areas (such as equipment and locker rooms). All unauthorized access attempts are monitored and can be seen with nearby surveillance cameras.



1. Card and identity recognition
2. Saved image and personal information from database
3. Live video verification



Get the Message Across

Effective communication and professional sound are essential not only for dealing with security and safety issues, but also creating a good atmosphere and for holding other types of events such as concerts.

Modular public address and emergency sound systems from Bosch are ideal for live announcements and background music.

More and more stadiums are now multipurpose venues that also host concerts and other events. Rounding out the Bosch portfolio, the Electro-Voice

and Dynacord brands build upon over 140 years of combined experience in innovating professional audio solutions. They offer a full range of highly specialized equipment including microphones, amplifiers, signal processors and loudspeakers that are the industry standards for professional sound systems in sports arenas.

Complete Integration of Security, Safety, Communication and **Building Automation**

A venue the size of a stadium inevitably has multiple security, safety, communication and building automation systems installed. So there is a considerable need to efficiently manage them all.

The Building Integration System (BIS) from Bosch provides a single Web-based control point for monitoring all security, safety and building management systems. This includes alarm management, fast alarm identification via location maps and follow up procedures. It seamlessly integrates fire and intrusion alarms, evacuation, access control, CCTV and building automation systems in a single platform.

Use of the BIS lets a single operator monitor and control all security systems in addition to enabling faster responses to emergencies and greater overall effectiveness.



Realized Projects

Jinan Olympic Sports Center

Occupying an area of 81 hectares, the Jinan Olympic Sports Center was the main venue for the 11th National Games of the People's Republic of China. The Center boasts a stadium with seating for 60,000, as well as a sports facility able to accommodate another 10,000 people, a swimming pool, tennis courts and a 55,000 square meter central terrace.

The Challenge

The center required complex safety precautions and emergency response planning. To ensure the safety of athletes, spectators and staff during emergencies, it also needed a reliable high-performance public address system with crystal-clear sound.

The Solution:

- ▶ 10 Praesideo public address and emergency sound systems for 59 call stations, 8 CobraNet connections for high-quality long-distance communication, over 120 power amplifiers and more than 2,600 loudspeakers of various types
- ▶ An Electro-Voice professional audio system for the 60,000-capacity stadium
- ▶ A TELEX/RTS communication management system, used during the opening ceremony for communication among the performance directors, staff and actors

Extract of References

1. Jaber Al-Ahmad International Stadium, Kuwait
2. Stadium ADO Den Haag, the Netherlands
3. PETCO Park, United States
4. Sharjah Equestrian Centre, UAE
5. MK Dons Stadium, UK
6. Shanghai Stadium, China
7. Parramatta Stadium Sydney, Australia
8. O₂ World Arena Berlin, Germany
9. Loftus Versfeld Stadium, South Africa





The Zagreb Arena

This multipurpose sports hall in Croatia's capital, Zagreb, is part of a site that includes the Arena Center, the city's largest shopping and entertainment center. Originally built for the 2009 World Handball Championship, the Zagreb Arena seats 16,300 and hosts a wide range of athletic, cultural and business events.

The Challenge

Because the Zagreb Arena is a multifunctional facility, it needed to be thoroughly prepared for a wide variety of potential threats. Its security systems had to be well-designed to effectively support responses by staff.

The Solution:

A total Bosch solution was installed with:

- ▶ Nearly 2000 fire detectors and other peripheral devices controlled by a 5000 Series Modular Fire Panel with backup panel
- ▶ Praesideo public address and voice evacuation system with more than 2,000 loudspeakers and a central control unit
- ▶ Electro-Voice professional audio system with over 60 loudspeakers
- ▶ A CCTV system with several hundred video cameras, most of them high-resolution with Intelligent Video Analysis
- ▶ The Building Integration System (BIS) from Bosch to monitor and manage possible alarms from all subsystems based on predefined response procedures

Bosch Security Systems **Commitment**

Bosch Security Systems is an innovative, customer-focused global manufacturer and supplier of security, safety and communications products and solutions, committed to being the first choice for customers. Its products deliver high-quality solutions backed by superb service.

The Same High Standard of Quality Worldwide

All Bosch manufacturing facilities uphold the same standards of quality to deliver first-class, internationally acknowledged product performance. This is backed by continuous improvement of all products and processes.

Bosch products are designed to let you focus on your core business without having to worry about any problems or disruptions caused by product failures or malfunctions.

Leaders in Innovation

Bosch invests heavily in research and development; it channels a double-digit percentage of its sales volume back into these activities. This commitment has consistently yielded reliable, award-winning technology and products to benefit customers.

Customers as Partners

You benefit from the worldwide network of qualified Bosch dealers for planning, project management and installation, whatever your needs are. Bosch runs Partner programs for Europe, the Middle East, Africa, the Western Hemisphere and Asia/Pacific.

The global Bosch sales organization is always near you, no matter where you are located. Count on high-quality service worldwide, and keep up to speed with Bosch Security Academy (BSA) training.

Local Organization and Support

The local presence of Bosch Security Systems makes sure you have access to high-quality commercial and technical services. You can rely on representatives of Bosch and its local partners to provide you with fast support for dealing with your particular issues.



Bosch Security Systems and Its **Family of Brands**

DYNACORD GERMAN ENGINEERING EXCELLENCE

DYNACORD – Preeminence in Professional Audio Design and Manufacture

One of DYNACORD's main strengths is the extensive audio expertise it has acquired since its founding back in 1945, covering everything from mixers to loudspeakers. This, together with the company's traditionally close relationship with users, has spawned many unique solutions to once-vexing problems and built its reputation as a maker of top-flight audio equipment at the absolute cutting edge of technology.

Electro-Voice

Electro-Voice – Complete Professional Audio Solutions

For over 80 years, Electro-Voice has been behind some of the most significant innovations in the history of sound reinforcement. Given this company's success in delivering professional audio solutions, it's no surprise that Electro-Voice products are used in the world's biggest tours and finest installations. It doesn't get any bigger than the Olympic Games, the Soccer World Cup, LIVE 8, Kenny Chesney, the Rolling Stones, the Live Earth Festival, and most recently the AC/DC "Black Ice" tour. And that's just the beginning!

A Tradition of Quality and Innovation

For over 100 years, the Bosch name has stood for quality and reliability. Bosch is the global supplier of choice for innovative technology, backed by the highest standards for service and support.

Bosch Security Systems proudly offers a wide range of security, safety, communications and sound solutions that are relied upon every day in applications around the world, from government facilities and public venues to businesses, schools and homes.



Bosch Security Systems

To learn more about our product offering, please visit www.boschsecurity.com or send an e-mail to emea.securitysystems@bosch.com

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