

# **Airport Solutions** to ensure safety & security from Bosch Energy and Building Solutions

Security, safety and communication solutions



**BOSCH**  
Invented for life



# A huge responsibility

How to meet the security challenges of airports – with solutions from Bosch Energy and Building Solutions.



The multiple roles played by today's airports pose considerable security challenges. These highly complex hubs provide aviation services that create remote links between far-flung places and countries by enabling people and cargo to quickly cross enormous distances. They have also evolved into small cities in their own right with considerable economic activity, thronging with thousands of people from all over the world and populated by companies, diverse services, shops and restaurants, and performing many functions that include border and customs checks. Located at the intersections of dense road, rail, and air transportation networks, they are exposed to numerous security risks that have to be managed, also to back up their reputation as safe, well-organized places with efficient processes. They must therefore meet incredibly demanding criteria with regard to security, safety, communications, and building automation.

The security and safety risks at an airport can include fire, terrorism, smuggling, illegal immigration, and theft. Managing them is a daunting task, since many different areas need to be monitored: perimeters, parking structures, terminals and other passenger facilities, aprons, airfields, etc.

## Human safety: the number one priority

Like in many other areas of life, progress is also being made in connection with building, expanding, and renovating airports and their facilities. Because human safety takes absolute priority, the only responsible choice is to take advantage of the best available state-of-the-art technologies – like the solutions we offer. They are ideal for meeting the security, safety, and communication requirements of airports.



## Security, safety and effective communication for airports

Airports are multifaceted facilities, integrating everything from parking structures and terminal concourses across shopping malls and waiting areas to aprons and runways.

### The many challenges at airports include:

- ▶ Terrorism in its many possible forms – bomb threats, suicide attacks, sabotage, hijacking of aircraft – needs to be prevented and/or responded to.
- ▶ Dealing with fire and explosion risks
- ▶ Special protection for passengers and employees
- ▶ Prevention of illegal immigration
- ▶ Identification and checking of abandoned bags
- ▶ Access control for restricted areas

### Bosch products and solutions

Bosch offers a wide range of products and solutions for effectively managing airport security, safety, and communications. They let you:

- ▶ Efficiently monitor all areas and activities to immediately detect fires, emergencies, and threats
- ▶ Detect potentially dangerous individuals before they can cause any trouble
- ▶ Make clear announcements
- ▶ Conduct fast, controlled evacuations
- ▶ Integrate all safety, security, and communications solutions in a building management system for central monitoring and control
- ▶ Effectively support all processes, including border checks and special events

Solutions from Bosch Energy and Building Solutions help meet the security, safety, and communication requirements of airports and aviation as defined by organizations such as the ICAO.



# Take off with Bosch solutions



Public address and voice evacuation systems

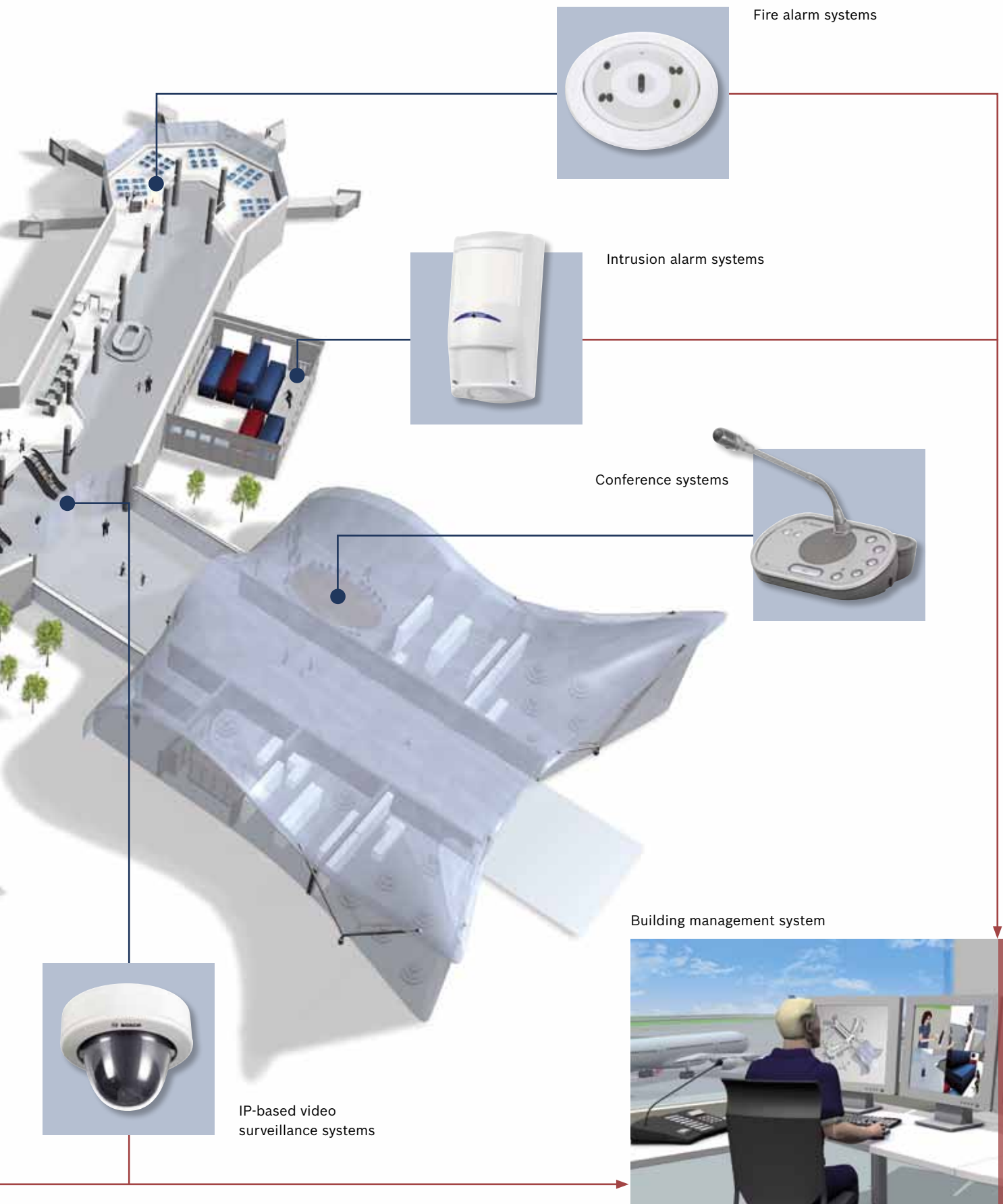


Public address and voice evacuation systems



Access control systems





# Don't let terrorism **get off the ground**

1. Abandoned luggage
2. Identification by advanced intelligent video analysis and alarm notification with the video management system
3. Initiation of security measures



Defending airports from terrorism focuses on dealing with anonymous bomb threats and explosive devices concealed in parked cars, aircraft, cargo, or luggage. The ability to manage these safety and security risks is crucial.

Bosch advanced intelligent video analysis (IVA) enables early detection of suspicious behavior and identification of abandoned luggage. Tracking cameras can help verify or disprove alarms, alerting the security operator as appropriate. A “forensic search” function permits fast retrieval of relevant video sequences.

## **Detect** suspicious activity

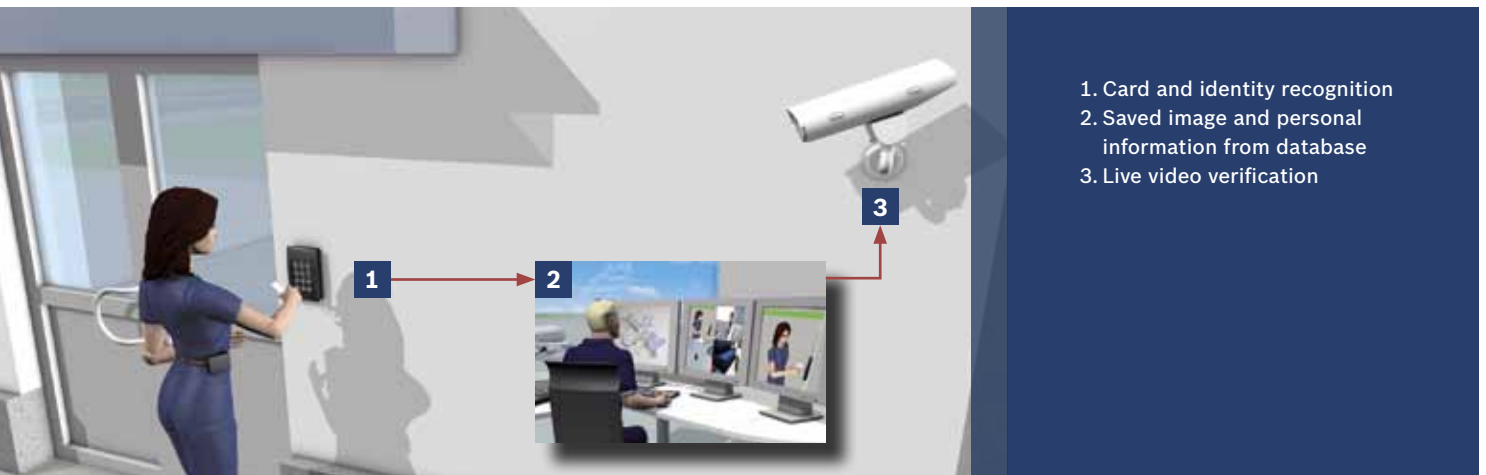


1. Person attempting to climb the fence
2. Identification via thermal PTZ cameras
3. Alerting of security operator

The video management system from Bosch enables complete management of all video surveillance components. High-resolution CCTV cameras can continuously monitor people moving through and spending time in different areas. At airport perimeters, PTZ cameras can

capture persons approaching or attempting to climb the fences at any time of the day or night. Thermal PTZ cameras identify movement in all weather conditions, thus also helping to prevent airport operations from being disturbed by people approaching runways etc.

## Run a tight operation – **keep unauthorized out**



An IP-based access control system from Bosch is ideal for keeping unauthorized individuals from entering gates and restricted areas such as airfields and aprons. It supports a large range of readers, and integration

with video surveillance makes it possible to capture and record access events. Access violations automatically trigger an alarm.

## **Strengthen** checkpoints



Persons attempting to enter illegally can be identified more effectively with ceiling-mounted MiniDome cameras in vandal-proof housings, IP AutoDome cameras for a general overview, or fixed cameras that capture everyone who passes through.

It's easy to change or add cameras to meet new security requirements. If anyone attempts to pass without showing an ID, video images managed with the Bosch video recording manager (VRM) can be used in court as evidence.



1. Fire
2. Fire detector detects fire
3. Signal to fire panel and alarm notification in Building Management System incl. video verification
4. Notification of passengers via voice evacuation system



## Clamp down on **fires**

In order to protect lives and property at airports, it is vital to quickly detect, locate, verify, and contain fires. Terminal halls pose special challenges, with their crowds, high ceilings, large open areas, and long distances to emergency escape routes.

Bosch modular fire panels and detectors are ideal for this and more. They apply multiple intelligent criteria to ensure early, reliable detection – with high immunity to false alarms – and fast responses. A large number of detectors can be connected in loops of up to 3,000 m and networked to cover multiple buildings.

The panels automatically notify the airport fire brigade, in addition to interfacing with sprinkler, ventilation, and public address systems as well as the Bosch building integration system (BIS) to fight fire events of all kinds and coordinate the evacuation of large groups of people.

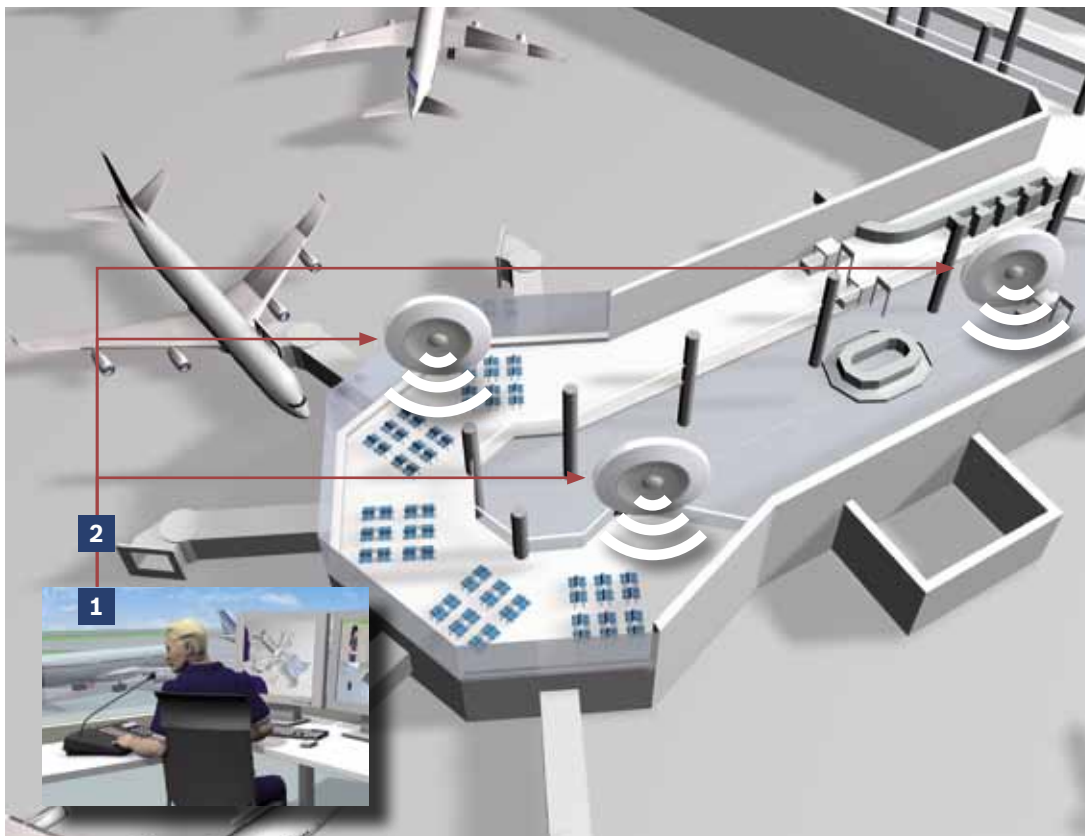


## Get the message across

High-quality public address and voice evacuation systems are essential for dealing with security and safety challenges such as evacuations, making localized and airport-wide gate calls and other announcements, and holding special events such as promotions while integrating with airline databases, gate management systems, etc.

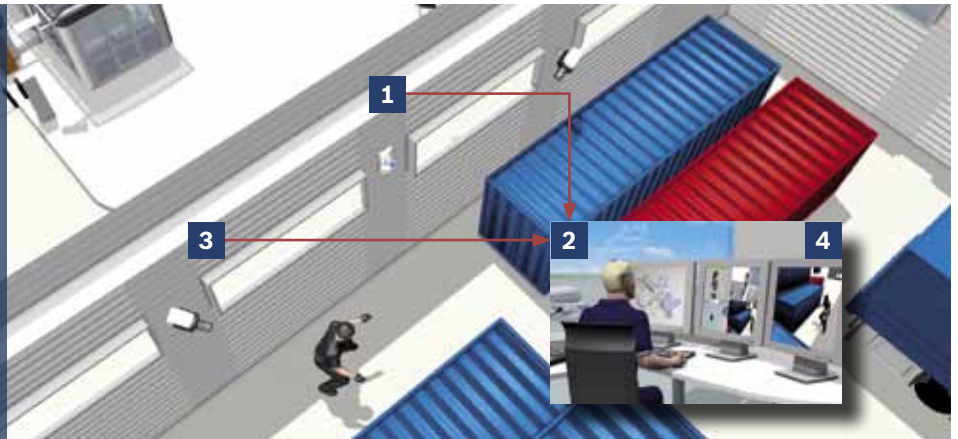
Modular public address and emergency sound systems from Bosch are ideal for all of these applications. They can handle everything from routine announcements to emergency notifications – all with the highest level of reliability and speech intelligibility. The Praesideo digital public address and emergency sound system from Bosch is suitable

for even the largest international airports. It uses a daisy-chain optical system bus that facilitates the use of distributed equipment racks. There are built-in monitoring capabilities and redundancy features include a system bus loop and automatic activation of a spare amplifier to ensure reliable operation.



1. Flight-specific boarding calls
2. Routing of announcements to relevant terminals and areas

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



## Stop thieves

Passengers with luggage can tempt thieves, and stores are vulnerable to shoplifters. There is also a risk of after-hours burglaries with valuables, equipment, cargo, or personal items being stolen from restricted areas such as shops, luggage conveying systems, and cargo handling zones. Bosch can help deal with this as well, for example with intrusion systems to monitor all

doors, vehicle entrances, and perimeters for unauthorized and suspicious persons, and stolen vehicles. If a detector picks up a possible threat, the Bosch video management system equipped with high-resolution video surveillance cameras and intelligent video analysis comes into play to verify the alarm and enable subsequent forensic searches to identify and nab thieves.



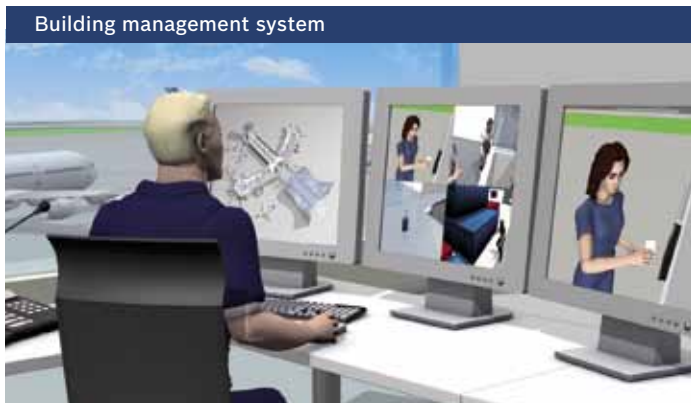
## Make your airport a **top meeting point**

With their direct links to other cities and countries, airports are becoming increasingly popular venues for conferences of all kinds. This includes VIP press conferences hosted at airports for their convenience. The digital congress network (DCN) from Bosch is today's leading conferencing solution:

- ▶ Interpreting facilities for simultaneous translation into up to 32 languages at once
- ▶ High-quality sound reproduction
- ▶ Choice of wired and/or wireless configurations for maximum flexibility and fast setup
- ▶ Recording of all statements and speeches

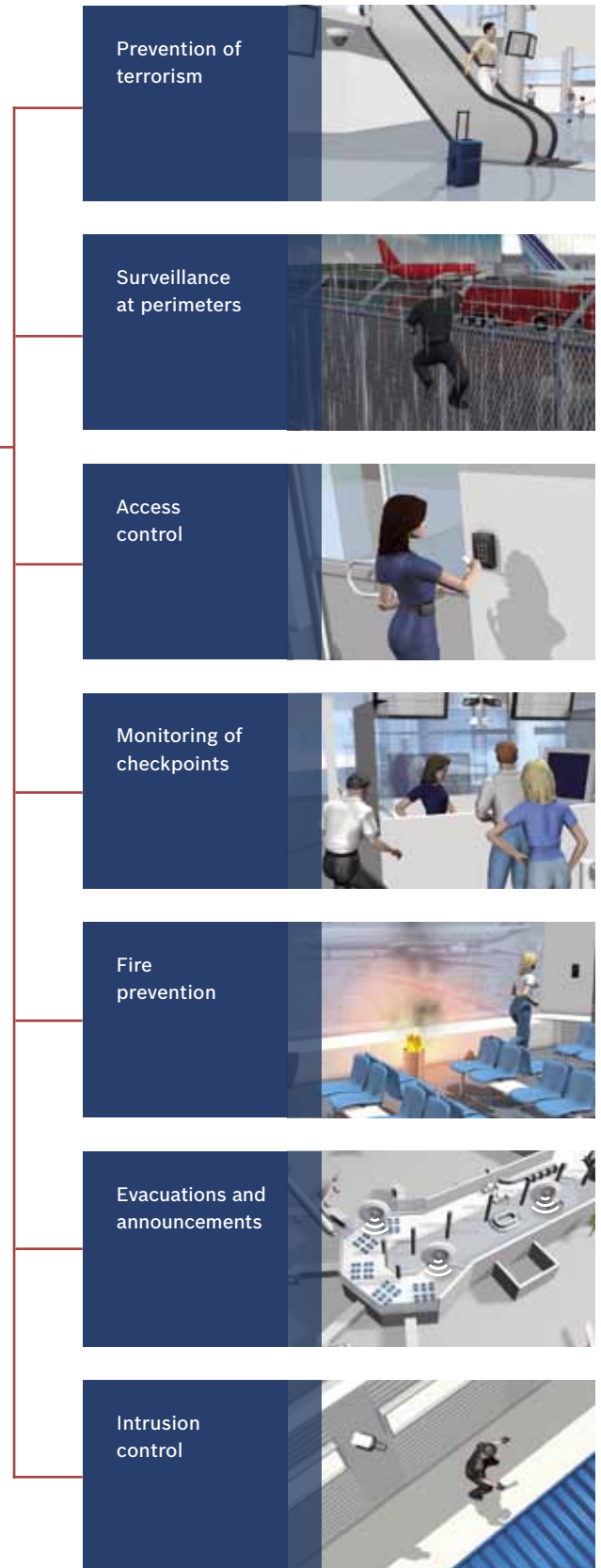
# Complete integration of security, safety, communication and facility automation

With all of the safety, security, communication, and building automation systems installed in a facility the size of an airport, it is a challenge to efficiently manage and coordinate them all.



The building integration system (BIS) from Bosch provides a single web-based cockpit for monitoring all security, safety, and building management systems. This includes alarm management, fast alarm pinpointing via location maps, and follow-up procedures. It also seamlessly integrates fire and intrusion alarms, as well as evacuation, access control, video surveillance, and building automation systems.

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





## Selected reference projects



Athens International Airport

### Athens International Airport

This new airport, which opened in 2001, is a major gateway to Southeast and East Asia as well as the Middle East.

Bosch installed a state-of-the-art IP video surveillance solution that covers everything from the management level to peripherals. It includes the Bosch video management system (VMS) consisting of the fully digital IP video surveillance network upgrade solution with indoor/outdoor fixed and Dome color analog cameras, two redundant Bosch VMS servers for online management, VIP X1600 modular

encoders with the latest compression technology, and the patented video recording manager solution for storing digital video. Intelligence is incorporated from the ground up with video content analysis (VCA). The system has exceeded the users' expectations and raised security standards at airports across Greece.

### Bahrain International Airport

Bahrain International Airport is a major regional hub due to its favorable location in the Middle East.

A public address and voice evacuation system from Bosch was installed here, including:

- ▶ A Praesideo network controller and a large, expandable array of Praesideo amplifiers
- ▶ More than 1,150 constant directivity ceiling loudspeakers arranged in 20 zones
- ▶ 13 Praesideo call stations
- ▶ A PC master call station
- ▶ A special audio server with a customized audio database interfaces to the Praesideo platform and flight information display systems (FIDS) via XML file exchange



## Munich International Airport

Since opening in 1992, Munich Franz Josef Strauss Airport has grown by leaps and bounds.

Its owners have consistently relied on Bosch as a dependable, experienced partner with a strong commitment to quality. Most recently the new terminal 2, the luggage sorting hall and the parking structure were equipped with a fire system

and a door security system with escape route control. The fire system includes 10 fire panels, some 18,000 fire detectors throughout the terminal and luggage sorting hall, sprinklers, smoke removal systems, and audible and visual alarms, connected by 360 km of cables.

## Carrasco International Airport

Carrasco General Cesáreo L. Berisso International Airport is Uruguay's largest and fastest-growing airport, located near the capital city of Montevideo.

More than 1,500,000 passengers now pass through this airport each year. A new terminal opened at the end of 2009 with sufficient capacity to handle up to three million passengers a year, and a new cargo terminal is now also under construction.

Bosch was enlisted to provide state-of-the-art solutions in both new terminals. The modular design of its products and systems was a key driver for this decision:

- ▶ A modular fire panel (5000 series) was installed with more than 300 optical detectors and 14 D296 linear photoelectric barriers for detecting smoke in large open spaces.
- ▶ For video surveillance on the premises, a video surveillance system comprising Dinion LTC0455 cameras and VIPX1600 encoders was chosen.
- ▶ The Bosch building integration system (BIS) was installed to manage the access control system. As platform it also links all security systems together, allowing complete centralized management of all facilities.

# Our commitment

Bosch Energy and Building Solutions is an innovative, customer-focused global integrator for security, safety and communication solutions. We are committed to be the number one choice by consistently offering top-quality solutions backed by superb service.

## **A consistently high standard of quality worldwide**

All Bosch manufacturing facilities uphold the same high standards of quality to deliver first-class, internationally acknowledged product performance. This is supported by unflagging efforts to continually improve all products and processes.

Bosch designs its products so you can count on them to work as intended and are free to focus on your core business.

## **Leaders in Innovation**

Bosch invests heavily in research and development, channeling a double-digit percentage of its sales revenues into these activities. Over the years, this commitment has consistently generated reliable, award-winning technologies and products to benefit customers.







## Bosch and its **family of brands**



### **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. This competence covers everything from mixers to loudspeakers, and together with the company's traditionally close relationship with users has spawned many unique solutions to once-vexing problems, building a reputation as a maker of top-flight audio equipment at the absolute cutting edge of technology.



### **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 should come as no surprise that Electro-Voice products are relied on in airports around the world.

## **A Tradition of Quality and Innovation**

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

Bosch Energy and Building Solutions 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.



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