

# What ensures that an airport is designed for the future?

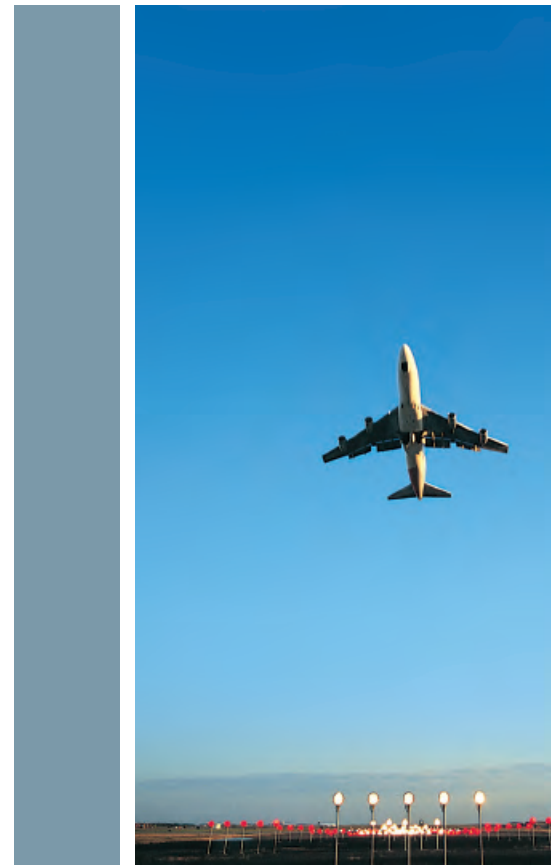


With integrated airport security and safety solutions, combined with an award-winning energy efficiency portfolio.

Answers for infrastructure.

**SIEMENS**

# Mobility and security: airports are the gateway to the world.



## **The megatrend towards large cities and urbanization.**

By the year 2030, the majority of the world's population will live in large cities and the surrounding agglomeration. In industrial nations, as many as 87% of people live out their dreams and work in the city. Among other things, this development will have consequences on mobility, security and energy supplies. These are challenges that Siemens has already started to tackle today: with ultramodern transport concepts, highly developed security and convenience solutions for building and technical infrastructure, as well as environmentally friendly energy solutions. These solutions are also being implemented in airports that, in every respect, are designed for the future.

## **Hubs for passenger and cargo traffic.**

Airports are and will remain the most important hubs for passenger and cargo travel between cities, countries and continents. They are the gateway to the world and are one of the most important trans-shipment centres for goods from every corner of the globe. As a result,

airports have considerable economic significance and give cities an enormous advantage over those without an airport. The rapid growth of urbanization means that, sooner or later, existing airports will have to be extended or new airports constructed so that the regions in question can continue to satisfy the increasing demand for mobility.

## **Wave of innovations for airports.**

In the future, passengers and cargo will need to be handled more quickly and aircraft ground time further reduced. In addition, the pressure of increased competition means that airports need to be made more comfortable and attractive. All this, despite ever-stricter environmental requirements, tighter resources, tougher security guidelines and TSA and EU 2320 restrictions. We can reconcile all these conflicting requirements using specially designed concepts and innovative solutions to heighten operating reliability, increase the efficiency of airport buildings and at the same time make a positive contribution to environmental protection.



**The challenge of environmental protection.**

For modern airports, sparing use of energy and water, air pollution prevention, efficient power generation and intelligent transport and parking solutions should be a matter of course. Innovative technical infrastructure solutions by Siemens minimize harmful effects on the environment, reduce the consumption of resources and at the same time optimize the passenger and freight processes.

**Solutions for the airport of tomorrow – live!**

At the Siemens Airport Center in Fürth, covering some 9000 sq.m, we develop and test the integrated solutions that will be implemented in the airports of tomorrow. We will be happy to demonstrate a full range of solutions, from our airport operation center, mobile check-in and security systems all the way through to baggage conveyors, all live!

**Siemens highlights for passenger and cargo traffic.**

- Siemens rises to the challenge of convenience and increased security guidelines for airports with specially designed concepts and innovative solutions.
- Siemens provides energy solutions that take environmental needs into account and meet the strict environmental requirements imposed on airports.
- Experience the full range of Siemens solutions in action at the Siemens Airport Center in Fürth.

# Innovation and competitiveness: airport operators land at Siemens.



## **Complexity demands flexibility.**

Every day, airport operators are faced with the daunting responsibility of ensuring process quality on the one hand and, on the other, guaranteeing the security of passengers, personnel, goods and infrastructure. Increasing automation, deadline constraints, the complex nature of the various processes and fulfilling official requirements require flexibility in the management of the entire airport operations.

## **Command and control – making the right decision quickly in any situation.**

The Command & Control Center offers precisely the kind of real-time support function needed to react efficiently at any given moment to unforeseen events. The technical integrations platform of the Command & Control Center is linked up with all the various sub-systems and helps airport operators with the implementation of optimized business processes including the management of complex coordination and communication requirements in crisis situations and emergencies.

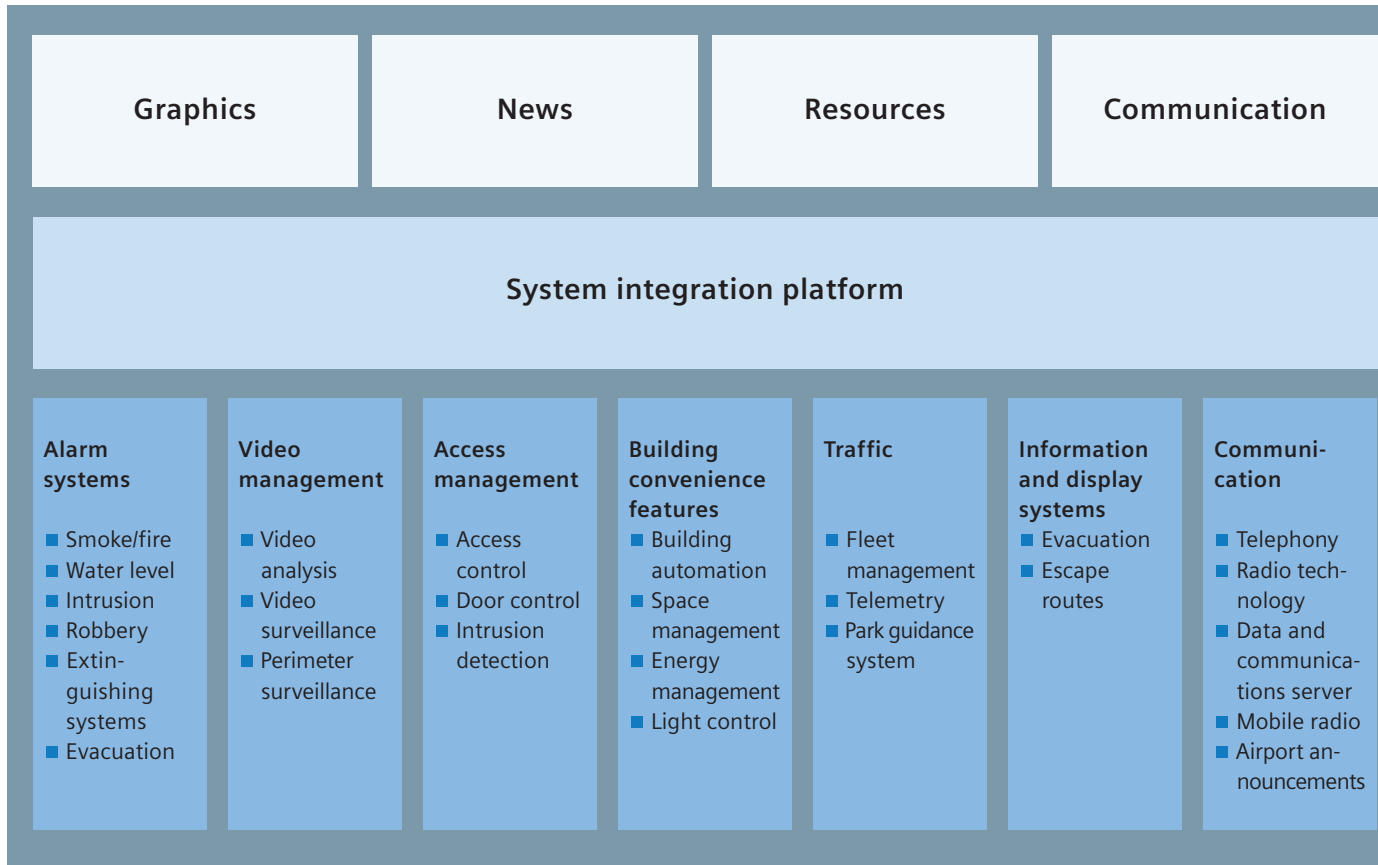
## **Automated surveillance of the entire airport complex.**

Intelligent surveillance solutions from Siemens collect information from various

sensor systems such as video cameras, radar and GPS and compare all activities in the area with the defined security zones. Whenever people or vehicles pass through defined security zones, live, real-time video is automatically displayed to security personnel on a single screen for verification. The signals can be evaluated quickly and securely and the necessary measures implemented either automatically or manually. This represents a considerable cost reduction for airport operators and increased security for the airport as a whole.

## **From number-plate recognition to secure car park surveillance.**

Intelligent car park video solutions by Siemens recognize vehicle number plates and can track vehicle movement, access authorization and identify number plates at any speed, day and night. The date and time of all entries and exits are recorded in a single image. This data can be made available for parking management or access control systems and thus ensure controlled, structured and organized entry and exit system for all vehicles in airport car parks.



**Innovative energy and environmental solutions.**

Siemens offers customized solutions designed to optimize energy efficiency and meet the challenges posed by energy and environmental issues. One example of this is ensuring that airport areas are only lit or climate-controlled when in use, i.e. heated, lit or air-conditioned just before passengers arrive. To optimize this, there is a constant exchange of data between energy management and airport operations. From the design of an energy strategy right through to the actual implementation of commercial measures, Siemens has the right solutions for

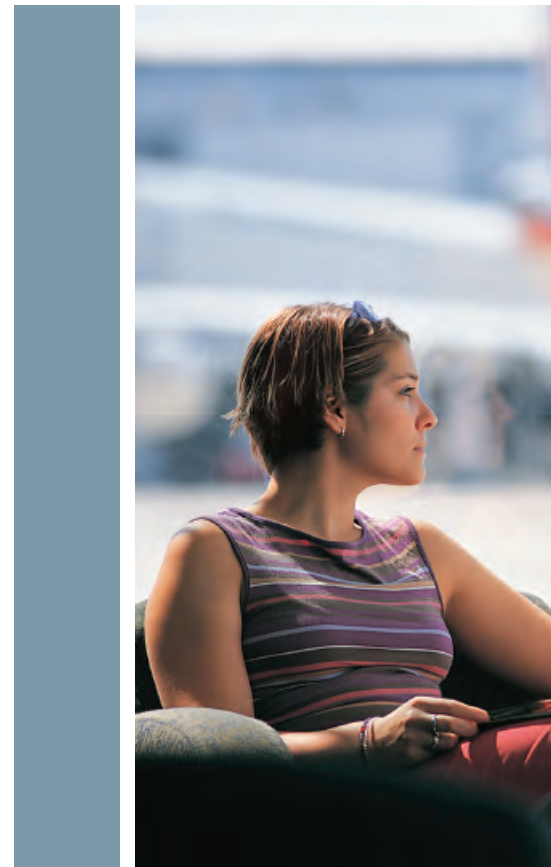
- energy pricing and risk management
- energy conservation and optimization
- energy reliability and security
- environmental responsibility

As you would expect, we also offer energy information services, user optimization programs and training as well as tailor-made financing services.

**Siemens highlights for airport operators.**

- With Command & Control you make the right decisions faster and more efficiently, even in critical situations.
- Integration of all security-relevant subsystems, with direct links to the security center, makes incident management more effective and efficient.
- Security personnel receive live, real-time video on a single screen automatically.
- Number plate recognition registers all vehicle movements, recognizes access authorizations, records number plates and facilitates control of all vehicle entries and exits.
- Siemens offers tailor-made solutions to today's energy and environmental issues and optimizes your energy efficiency.

# Convenience and security: intelligent solutions that appeal to passengers and personnel.



## **Hospitable surroundings enhance the travel experience.**

An airport that is pleasantly warm or cool, well ventilated and attractively lit, where everything runs so smoothly that time simply flies by, creates a positive and lasting impression. As leading building automation specialists, we supply heating, ventilation, air conditioning, light and blind management systems that ensure passengers and ground staff feel comfortable and put the shops, restaurants and bars in the best possible light. All while reducing energy use.

## **A feeling of total safety from the car park to the airplane. And back.**

As a world leader in fire safety, we protect passengers, buildings and business processes with deception-free fire, flame or aspirating smoke detectors. This makes an invaluable contribution to the smooth running of workflows and to security on the ground and in the air. In the event of an incident, voice-activated evacuation systems provide clear information and avoid the outbreak of panic, leading all the individuals affected out of the danger zone in an orderly fashion. Intelli-

gent extinguishing solutions which use an environment-friendly chemical gas or natural gases also help ensure that fires are put out before they have a chance to take hold. Important equipment such as computer and data centers or warehouses, for example, are thus protected not only from fire but also from damage caused by the water or foam used to extinguish it. But video surveillance, access control and alarm systems also play a major role in making passengers feel safe and sound because they are there to help detect in advance and prevent potential attacks. To make travel even safer in the future and to thwart illegal immigrants or terrorists, biometric procedures are coming into more regular use. They make identification procedures safer and less expensive and reduce the workload on security personnel. Intelligent video systems can also be used to detect bottlenecks at check-in, for example. This means airport procedures can be optimized and long waiting periods avoided. All our infrastructure solutions are designed to achieve one aim: to improve the mobility and security of passengers and personnel and at the same time optimize efficiency.



### Surveying terminals for suspicious behavior and abandoned luggage.

Intelligent video solutions by Siemens ensure that conspicuous or suspicious behavior by passengers, or luggage that has been abandoned in corridors, lounges or at gates, check-in and duty free areas can be identified immediately and any necessary measures against drug smuggling, theft, manipulation and terrorist attacks can be taken at the earliest possible opportunity.

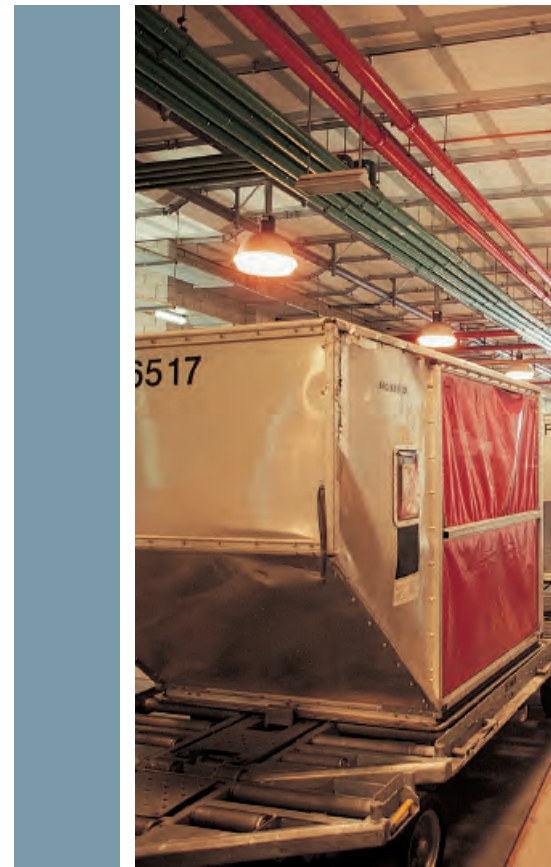
### Multifunctionality for more security and profitability.

Siemens access control systems not only control the times at which the entire ground staff have access to buildings, specific floors, zones and areas. They can also be networked with the time and attendance recording system and connected to the payroll system through a corporate card. These badges also operate as cash-free payment cards in canteens, car parks, gas stations, car washes and more. The system thus increases the airlines' profitability and takes the hard work out of personnel administration.

### Siemens highlights for passengers and personnel.

- Heating, ventilation and air conditioning make life more comfortable for passengers and personnel.
- Deception-free fire, flame and aspirating smoke detectors as well as intelligent extinguishing solutions protect passengers, buildings and business processes on the ground and in the air.
- Faster passenger processing reduces waiting time and creates more space for personnel and passengers.
- Suspicious passenger behavior or abandoned luggage is detected immediately and anti-terror measures implemented at the earliest opportunity.
- Intelligent, networked systems save time and money in terms of personnel administration.

# Individuality and flexibility: tailor-made transportation for your freight.



## **Ideal conditions for any type of freight.**

Freight is freight – not true. Because different types of goods have different properties and need to be transported and stored accordingly. Regardless of whether the goods in question are plants, fruit, animals, valuables or machines, and whether they are in solid, liquid or gaseous form, their storage and transport have specific temperature, protection and security requirements. Ensuring that plants do not wither, animals do not fall ill and valuables are not stolen call for a technical infrastructure that is individual and flexible enough to cope with all eventualities. Because any kind of damage incurred is detrimental to the airport's image, generates handling costs and pushes up insurance premiums.

## **Eliminating theft and loss.**

Mechanical protection concepts for airports start with physical barriers like fences and gates. Electronic protection concepts such as video surveillance, access controls and alarms use state-of-the-art technology to protect freight: motion detectors on doors, gates, windows and light wells detect and report any incidents. Cameras with integrated motion detection and evaluation software supply images only when unexpected movements actually occur in the defined recording area. Radio Frequency Identification (RFID) transponders provide around-the-clock information regarding the freight's current location.





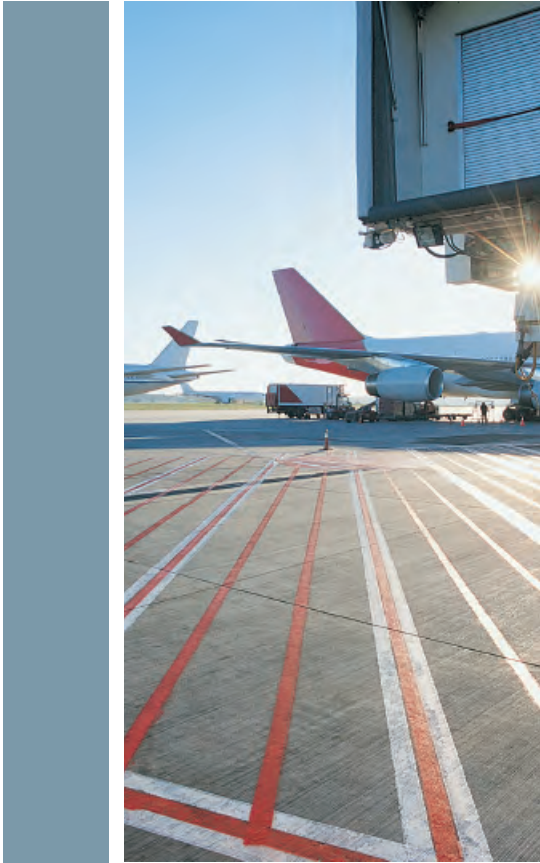
### Ruling out fires and explosions.

To prevent the occurrence of fires and explosions, our high-sensitivity fire alarms provide a foolproof indication of the slightest sign of burning. Countermeasures are automatically implemented: the ventilation is regulated and the security center alerted. However, if the alarm system really does indicate a fire, appropriate action is taken immediately. Siemens employs a suitable gas or gas/water combination for each zone and type of freight in order to prevent further damage being caused by the use of the wrong solution. A decisive factor in successful firefighting, however, is intervention management: the management system employed for the entire alarm and extinguishing process enables swift and effective action. It is only thanks to this first-class service on the ground that freight will be able to continue flying at economy-class rates in the future.

### Siemens highlights for freight.

- Heating, ventilation, air conditioning, air and light management systems guarantee ideal conditions for freight.
- Mechanical and electronic security and protection concepts monitor freight around the clock.
- Thanks to high-sensitivity fire alarms, appropriate action can be taken to nip potential fire incidents in the bud.
- Suitable chemical, natural or gas/water solutions prevent further damage to freight from unsuitable extinction methods.

# Protecting return on investment: investors get the most out of their money.



### **High availability for all systems throughout the building's lifetime.**

An airport is only really profitable for investors when passengers can concentrate on their journey and cabin, ground and security staff on their jobs. Our operating and service packages are fine-tuned to guarantee maximum availability of all installations and systems throughout the building's entire lifespan. System failures and downtimes are thus virtually eliminated. Which is vitally important because system failures can have any number of undesirable side effects: hassle, chaos, extra work, not to mention damage to the airport's image.

### **Energy Performance Contracting saves money for future modernizations.**

Airport operators who take full advantage of the energy-saving potential can use this to finance the modernization of the building's technical infrastructure. All at no extra cost. This is known as Energy Performance Contracting. Under the terms of this service agreement, Siemens functions as a general contractor and carries out any necessary modernization and optimization work, financing it from the guaranteed savings on energy and operating costs during the contract period. Apart from this, Energy Performance Contracting improves operational reliability, increases the value of the building's facilities and plays a major role in environmental protection through reductions in energy use and emissions. From this point of view, Energy Performance Contracting provides the highest possible protection for your investment.



**Your partner for airports designed for the future.**

Partial or integral technical infrastructure solutions that have already proved themselves in over 1000 airports worldwide and comply with all national and international regulations: this is what you can expect from Siemens. But that's not all. Whether you need runway navigation lights or baggage handling, integration of your communications technology or sourcing of your energy requirements, Siemens provides ideal solutions for every conceivable situation that clients seek in vain elsewhere. One thing you no longer need to look for is the right partner for your airport project (see back cover).

We look forward to finding out more about your project and welcoming you to Siemens.

**Siemens highlights for investors.**

- Image damage due to downtime and system failures is virtually eliminated thanks to a finely tuned package of services throughout the entire lifespan of the building.
- Energy Performance Contracting finances future modernization work and reduces your energy and operating costs.
- Our global presence and expertise acquired over the years on over 1000 airport projects worldwide guarantee smooth, hassle-free handling of your project.

# Answers for infrastructure.

## ■ Megatrends driving the future

The megatrends – demographic change, urbanization, climate change, and globalization – are shaping the world today. These have an unprecedented impact on our lives and on vital sectors of our economy.

## ■ Innovative technologies to answer the associated toughest questions

Throughout a 160-year history of proven research and engineering talent, with more than 50,000 active patents, Siemens has continuously provided its customers with innovations in the areas of healthcare, energy, industry, and infrastructure – globally and locally.

## ■ Increase productivity and efficiency through complete building life cycle management

Building Technologies offers intelligent integrated solutions for industry, commercial and residential buildings, and public infrastructure. Over the entire facility's life cycle, our comprehensive and environmentally conscious portfolio of products, systems, solutions, and services for low-voltage power distribution and electrical installation technology, building automation, fire safety and security ensures the:

- optimum comfort and highest energy efficiency in buildings,
- safety and security for people, processes, and assets,
- increased business productivity.



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The information in this document contains general descriptions of technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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