

Airports



In our worldwide transport networks **airports** are the most important national and international hubs for the transport of people and goods of all kinds. A large airport will handle 20 to 70 million passengers and up to 450,000 airplane movements per year and transports cargo of up to 3 million tons of freight. Some airports have over 60,000 employees.

The highly complex infrastructure of an airport is similar to that of a large city.

In addition to airport-specific sectors, such as passenger handling, luggage transportation, airport terminals, air traffic control, hangars and takeoff and landing strips, there are numerous facilities that are also found in a large city.

Airports are responsible for the safety of the passengers and visitors on the airport premises and are liable for transportation damages. Due to their societal and economic importance, they are a potential target for attacks of all kinds. The responsible security personnel must be permanently on alert and able to recognize and quickly respond to any irregularities on the expansive premises. This cannot be accomplished just with the continuous presence of security personnel in all areas.

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| **Cameras:** From simple color cameras to high-resolution megapixel cameras, thermal imaging cameras, or speed dome systems and **high-speed pan/tilt systems**

| **Video server:** From flexible hybrid recorder to redundant, highly available IP-camera server, endlessly expandable, centrally or locally connected in the network.

| **Video management:** From a virtual alarm-controlled video matrix over all servers to a professional, freely configurable security management system

| **Video analysis:** From simple motion detection to highly efficient classification of objects and their movement behavior

| **Picture storage:** From integrated hard drives to redundant RAID systems

| **Operation:** from multifunction operative devices to customized graphic user interfaces

Examples of specific sources of danger in airports:



Terminals

Abandoned objects (luggage, boxes or similar) that could contain disguised bombs (explosives) present a particular danger in terminal areas. After such an object has been discovered it is very difficult to determine whether a suitcase has only been accidentally placed somewhere unattended or whether a terrorist attack should actually be considered.

The suspicion of an attack alone forces those responsible to evacuate the building. Specialists are brought on to clarify the situation, departure times are delayed and the reputation of the airport suffers. Often it is discovered that no danger exists, after considerable costs have been incurred.

The GEUTEBRÜCK **video analysis algorithms** recognize definable objects in the active camera pictures and record their movement behavior. Depending on the configuration, objects such as unattended suitcases can be identified. The situation is then reported and displayed on the monitor in the guard station, with the corresponding history.

At the same time the graphic user interface unmistakably shows which camera in which area recognized the irregularity. This makes it possible to precisely locate the event within the large, complex airport premises.

By observing the history of the event, the security personnel can immediately determine who has left the suitcase and analyze where this person is and whether or not the situation has become dangerous.

For the realization of this example, we recommend the following products:

Megapixel cameras

VA Class video analysis

GeViScope hybrid server

MultiMap graphic user interface (GUI)



Airfields, runways, takeoff and landing strips

The start and landing of an airplane are the most critical moments of its flight. The air traffic control must ensure that no unauthorized persons impedes the start or landing procedure. Disturbances in these time critical situations cause massive follow-up costs.

Airports have the problem that the airport ramp control and air traffic control in the tower often cannot see the ramp, runway and takeoff and landing strips.

The solution is a carefully planned GEUTEBRÜCK camera system, which is integrated in the airport video security system.

In addition to the blanket video surveillance coverage with fixed cameras (megapixel cameras with wide-angle lenses), ARGUS high-speed pan/tilt systems, equipped with megapixel cameras and motor zoom lenses, are positioned at strategically important locations.

Note: *Due to the enormous dimensions of the premises, even high-resolution fixed cameras can only deliver pictures in which airplanes can be recognized in detail but persons or other objects are difficult to identify.*

The live pictures of the fixed cameras are monitored by the GSC/VMD video motion detection integrated in the system and report critical movements in up to 128 detection fields, which are freely configurable in function, position, size and sensitivity.

If an object moves in a detection field, a high-speed pan/tilt head system moves (controlled by the video management system) to a predefined fixed position. The system zooms to the corresponding area and shows the section enlarged on the monitor. Movements of the object in further detection fields of the fixed camera are automatically tracked (object tracking). It is thus ensured that every critical movement on the airfield can be identified quickly.

Simultaneous recording of the camera pictures stores not only that the event for subsequent analysis, it also makes it possible to transfer the pictures of the incident via the network in all areas of the airport, e.g. tower, police, fire department, security, etc.

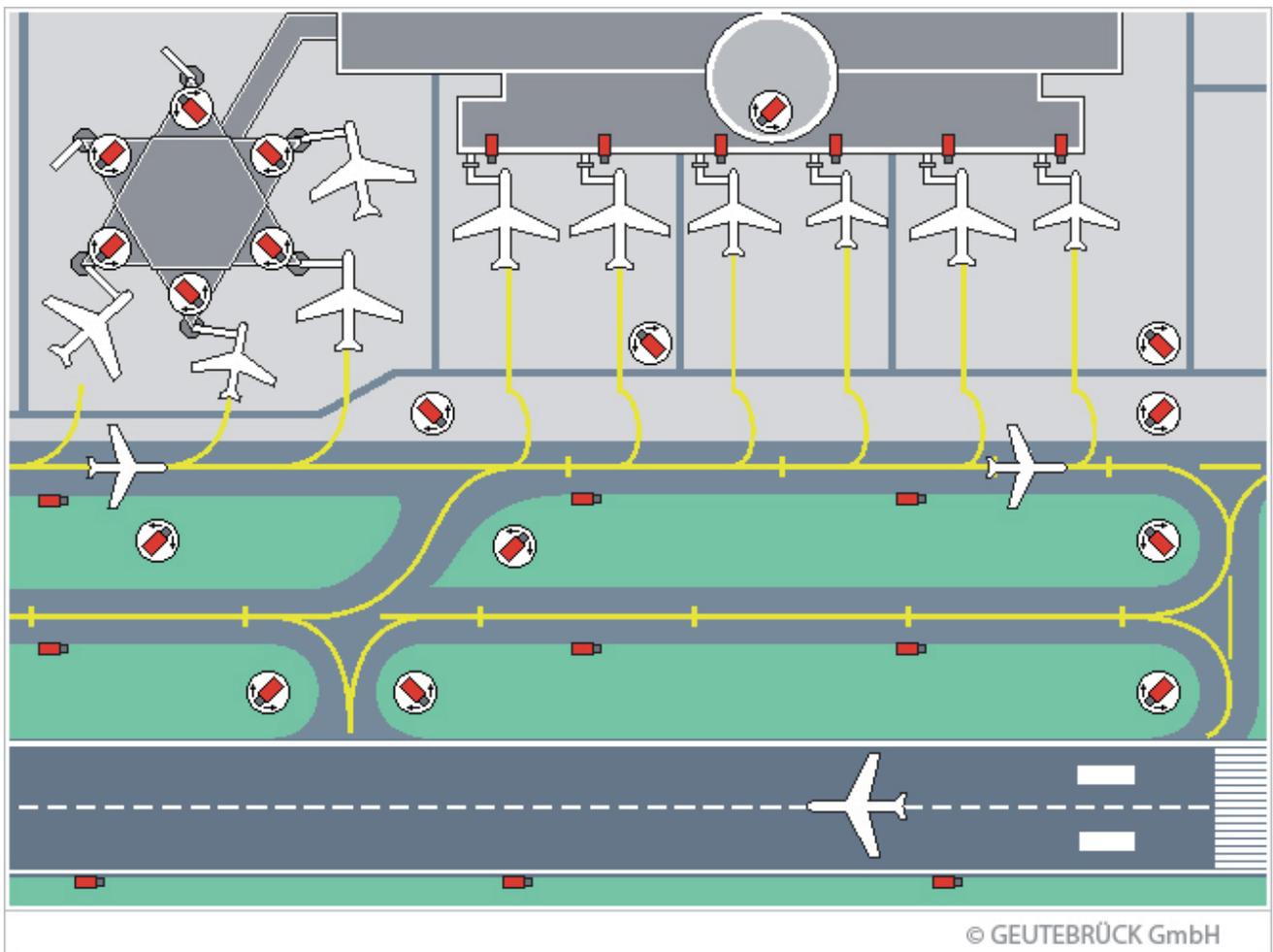
Of course, all fixed positions of the ARGUS high-speed pan/tilt head systems can also be directly selected over the interactive layout graphic. This makes it easier to quickly approach specific areas, whereby precise manual control of a P/T camera in telephoto range (zoom) requires more time.

The rotation of a pan/tilt camera with a joystick by 1 degree moves the picture of an object at a distance of 500 meters by 9 meters!

For the realization of this example, we recommend the following products:

- Megapixel cameras
- ARGUS high-speed pan/tilt head system
- GeViScope hybrid server
- GeViSoft video management system
- MBeg/GCT-3X-LAN multifunction operating device
- MultiMap graphic user interface (GUI)

Example: layout of airport grounds



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