



integrated

## Case Study—Shenzhen Airport

### Background

Shenzhen Baoan International Airport is situated in a coastal plain of the east bank of Pearl River Estuary, it opened to air traffic on October 12, 1991. The Airport possesses 1 runway (3400mx45m) and 1 taxiway for the movement of the largest passenger and cargo airplane in the world. Now it has a total area of 530,000 m<sup>2</sup> of apron, 53 gate positions, with 24 corridor gate positions. Apart from that, it has an aviation cargo terminal with annual handling capacity of 0.2 million tons as well as the terminal with most passengers leaving and entering Guangdong province.

Currently, ACI announced the annual production index 2003 of 150 major international airports, and Shenzhen Airport is honorably ranked among top 100 airports; top 93 in passengers handling capacity and top 46 in cargo handling capacity in the world.

Shenzhen Airport consequently remains over 15% growth rate, especially cargo transportation which maintains over 23% growth rate for three consequent years. Between 2002 and 2004, the numbers of new opened domestic and international cargo transportation airlines are merely second from Shanghai, which are 66 flights per week.

### User's Requirements

1. Due to high turnover of passengers and cargo in the airport, high security standard should be taken into account.
2. System should function in programming which allows administration personnel to set time limit into proximity card, cancel or re-use proximity card via the terminal server. All access points are monitored by the control unit in the central control room and door access and time zone control can be implemented upon management request.
3. System alarm can be separated in vandalized alarm, illegal usage alarm, and illegal intrusion alarm.
4. The access control system has to be integrated with the fire control system, alarm system, and CCTV (Closed Circuit Television) system with the purpose of facilitating visualized and direct control operations of all entrances and cut off electric power during fire or emergency incident.
5. System should be able to define valid time zone that people is prohibited from entering the controlled area during non-time zone period.
6. Electronic map monitor system has to monitor carry out real-time surveillance and direct operations of access control.
7. System should function in multi-layer nesting to avoid re-intrusion; dual-card door access, and anti-compel.
8. Parking management system interfaces with GPS (Global Positioning System) vehicle tracking system



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9. Elevator management system is required for security reasons; the lifts are only opened to legitimate users with the authorized proximity card so as to control the lift.

### **Project Descriptions**

1. 135 access control points and 1 set identification system. (including 39 registration areas, 14 staff channels comprising 6 vehicle channels, 6 aviation channels, 47 fire service channels, 2 lift areas)
2. For the aesthetic and security consideration of boarding gate, D-series card readers are adopted and installed together with door accessories like key switch and break glass.
3. Authentication is processed via D4 reader and connected to personnel database for real time access to personal data. With the lift control and access control functions, it allows not only both time zone and door access management, but also routes setting to control the flow of personnel.
4. Nested management is adopted which allows legitimate users enter specific area by level but not skip level. Dual-card door access function allows users access under the condition of two (2) authorized cards at the same time.
5. Parking management system interfaces with GPS vehicle tracking system. GPS is auto-inactivated as vehicles pulled into the security zone and auto-activated as vehicles pulled out from security zone aiming to improve efficiency of parking lot management.