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Dahua Airport Solution

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HANGZHOU, China /August 30, 2017 Though it has been statistically proven that taking a plane is no more risky than taking a bus, people do have reasons to put extra caution on air travel safety, especially in a time replete with terrorist threats. A major line of defense must be the various sections of the airports, which, as gateway to outside world and transportation hub of the city, has always been on the top safety list of the government and all related authorities. Lucky now we have Dahua Airport Solution, an intelligent security system to help ensure the safety of the airports.



Difficulties in managing an airport security

All airports, large or small, suffer from similar difficulties maintaining safety.

First of all, it requires a complicated collaboration of multiple (sub) systems such as monitoring system, alarm system, access control system, network transmission system and management platform. As is known to all, the more steps and players it takes, the higher likelihood for a mistake to occur.

Secondly, airport in fact includes a variety of places like the terminal area, parking lots, office area, freight area, front desk area (including the square in front of the terminal building), the flight area, the hangar, the perimeter area and so on, each of which operates on vertical management system. Yet due to the diversity of places and the complexity of personnel & cargoes coming in and going out in huge flow, there are too many risky elements to control.

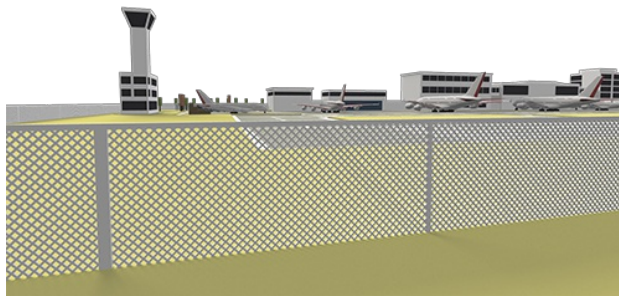
Thirdly, it's not only about accuracy but also about swiftness when it comes to airport security. Safety should bring efficiency and not the other way around. For example, in April 2017, a drone flew into Chengdu Airport resulted in the runway closed down for 80 minutes, the loss of which was estimated as at least 10 million dollars, not to mention collateral damages in the broad sense.

Dahua Airport Solution

Designed to solve all the difficulties mentioned above, Dahua Airport Solution is a unified security system combining multifunctional HD surveillance cameras with deep-learning AI that can analyze the big data to get the target, be it a car, a face or a series of numbers.

In terms of vehicle management: you can adopt all-in-one cameras to capture and recognize license plate of vehicle accessing to airport, which will trigger the alarm when detect illegal, stolen, blacklisted, hit-and-run, crime-related and other suspects' vehicles. Covering the whole route of a vehicle (from entrance highway, to parking lots and then to exit), the surveillance system can effectively assist security guards and police (especially when there is a lack of which) to keep a smooth service and respond quickly when things go wrong, even if it's just something from the car got left behind due to carelessness.

In terms of passenger management: the same full coverage of the aforementioned security system also applies to passenger management, from one's stepping off the car to one's entering terminal building and checking-in area and all the way to the last step to the boarding gate. The HD surveillance cameras endowed with deep-learning AI has world leading accuracy in face recognition and e-passport verification. Any suspect, dare he shows up in the airport area, will at once trigger the alarm.



The Perimeter of an Airport

Dahua Airport Solution also takes care of another crucial part of airport that is the perimeter area. Since there is basically no light to illuminate the area, it is even darker than the apron. One must resort to special equipment like thermal imaging camera to keep the safety of the said area.

Here is an elaborated example of Dahua's solution to one specific airport, which covers a perimeter of 30 km and boasts an annual throughput of 30,000,000 people and 8,000,00 tons of cargoes.

According to the thermal imaging calculation form below:

Resolution	Lens	FOV(H)	FOV(V)	IVS distance(m)	(1.8m*0.5m)People		
					Detection Distance(m)	Recognition Distance(m)	Identification Distance(m)
336x256	7.5	45	35	60	240	60	30
	13	25	19	100	450	110	60
	19	17	13	150	640	160	80
	25	13	10	200	1000	250	125
	35	9.3	7.1	280	1300	320	160
	50	6.5	5	400	1700	430	220
	60	5.5	4.2	480	2000	510	260
	100	3.3	2.5	800	3000	750	380
640x512	9	69	56	35	290	70	40
	13	45	37	50	450	110	60
	19	32	26	75	640	160	80
	25	25	20	100	1000	250	125
	35	18	14	140	1300	320	160
	50	12.4	9.9	200	1700	430	220
	60	10.4	8.3	240	2000	510	260
	100	6.2	5	400	3000	750	380

We chose to use the 100mm lens with a resolution of 640 * 512 and set the installation height at 5M, which should be able to detect 1.8m * 0.5m people within 3000m. The perimeter will be well covered for intruder detection purpose with 10 cameras.

The intelligent analysis of IVS (intelligent video system) requires 10 * 10 pixels, under which condition, each thermal imaging camera can detect and analyze objects within 400m. There is in total 12km of perimeter length in need of such cameras so we place 30 there, which made it 40 thermal imaging cameras in total to solve the problem.



TPC-PT8620C Thermal Camera and Its Capture of an Airport

It should be noted that Dahua's thermal imaging technology has the following advantages: PTZ function, long distance surveillance (which can detect a vehicle 8.8 km away), long distance zoom, binocular lens (optical and thermal imaging lens), strong intelligence (which can detect intrusion) and so on. Compared to alternate perimeter protection equipment on the market today, such as vibration fiber sensor and IR beam sensor, thermal imaging camera has higher accuracy and less false alarm while directly providing video to verify.

Summary

Dahua has established stable cooperation with world renowned platforms like Genetec, Milestone, Avigilon, AXON, ISS, infusing Dahua's Airport Solution with more possibilities. Supported by strong R&D resources and good working relationships earned in multiple previous collaborations with partners, Dahua can ensure seamless integration whether it's front-end IPC or back-end NVR, fulfilling different demands of clients and building a sound security system for the airport.

In future, Dahua will keep investing in R&D of cutting edge technologies into the realm of civil aviation video surveillance solutions. With a mission of "Safer Society, Smarter Living", Dahua will continue to focus on "Innovation, Quality, and Service" to serve partners and customers around the world.

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