



Proven Protection for World Leaders: Dahua Secures Heads of State in China's First G20 Summit

The G20 Summit is an annual meeting of leaders from 20 major economies to discuss global issues. In 2016, China hosted its first-ever G20 forum in the southeastern city of Hangzhou. Securing the leaders of multiple countries is no easy task, and would require many months of preparation by thousands of laborers in order to ensure the two day forum, transportation, and cultural activities ran smoothly.

Challenges

The G20 World Summit was one of the largest security projects the country had ever faced, and extremely important to setting a precedent for future major events in China. 29 leaders including formal G20 members, the European Union, and invited guests, along with other high-ranking officials from all over the world required constant protection over a large area which included Hangzhou's Xiaoshan Airport and the roads leading to it, the main conference areas for the G20 and its sister conference, the B20, multiple hotels hosting country leaders, and the city's main tourist zone: the West Lake Scenic Area.

Solution

Dahua assisted the Hangzhou government in constructing a large-scale, comprehensive security system consisting of over 20,000 devices. Cameras with 40x optical zoom and over 10km range covered large areas, while cameras with Automatic Number Plate Recognition (ANPR) technology scanned roads for dangerous vehicles. Over 500 PTZ cameras guarded critical routes from the airport to G20 and B20 conference areas. Thermal cameras provided unparalleled night vision support along with the ability to detect overheating equipment or fires.

At train and subway stations, Face Recognition was employed to scan for known fugitives and verify tickets. Finally, all cameras were connected to a central cloud system which provided a real time assessment of traffic quality and threats through a traffic status cloud system and processed unstructured video data from cameras to analyze and generate thumbnails and descriptions for easy search and review. Suspicious targets were instantly tagged and tracked, and workers on the ground could be dispatched to keep tabs on the situation.

Benefits

Pulling off a successful G20 Summit was achieved not through luck, but by a combination of over 20,000 devices connected by a unified cloud system and advanced technologies such as face and plate recognition, thermal imaging, and optical zoom. In addition to recording 29,823 traffic violations, Dahua cameras recognized and led to the capture of multiple fugitives attempting to traverse the city. The versatility of bullet, fisheye, and 40x zoom PTZ cameras employed in the security network ensured critical areas had no blind spots, and command center workers could easily direct those on the ground to quickly respond to suspicious behavior. Dahua helped keep world leaders secure in the midst of a prime chance for China to set a precedent for hosting major international government events and the pressure that it carried. This case proves the efficacy of Dahua products combined in city-scale projects, and is a perfect example for future Safe City solutions to follow.



Face Recognition finds fugitives in a crowd



Thermal Imaging can see what humans can't



Cloud monitoring and E-maps makes control easy

ANPR & Smart Traffic Management Automatically Secures Roads

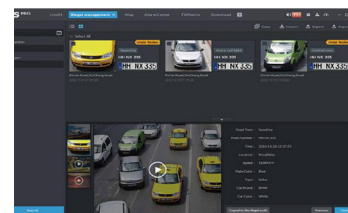
Smart Traffic Management includes vehicle detection features which can recognize over 200 brands and 3000 car models to prepare advanced reports with information such as the time and location a car is seen, as well as its heading, color, license plate number, inspection dates, and other important data. In Hangzhou, the government has enacted a plate number restriction policy limiting the days a car with an even or odd plate number may access the crowded West Lake Scenic Area, as well as restrictions on highways during rush hours in order to prevent congestion on cramped roads. During the G20, cameras with Automatic Number Plate Recognition (ANPR) were employed on all roads to and from the airport, hotels, conference centers, and G20 activities to scan for suspicious vehicles and record traffic violations. By the end of the heightened security period, a whopping 29,823 vehicles were automatically recorded breaking the plate limit policies. ANPR systems allowed the city to accurately capture more infractions with less police on the roads, keeping them safe and focused on protecting more critical Summit areas while saving the city in labor costs, increasing revenue collected from fines, and serving as an effective deterrent to cars clogging up roads.

Face Recognition Matches Tickets with Holders, Finds Fugitives

Facial recognition technology has made great technological leaps over the years with the introduction of Deep Learning and Artificial Intelligence. Dahua Face Recognition can detect a face in less than 3 seconds with a 90% recognition rate. At important transportation hubs such as train and subway stations in adjoining cities, Face Recognition assisted workers in matching passenger faces to their tickets and ID's, verifying their identities. This greatly reduced the amount of man hours spent by increasing the efficiency of identity checks. At checkpoints in Hangzhou, faces were also verified across a blacklist database consisting of known fugitives, leading to the capture of a number of lawbreakers passing through the city.

Cloud Analysis and Real-Time Maps with GIS Integration

All cameras protecting key G20 zones, including both Dahua and non-Dahua cameras, were connected to a central cloud system. This system processed massive amounts of video data in real-time, quickly performing analysis and generating thumbnails and descriptions so that workers could easily search for and review important clips. Suspicious targets were tagged and tracked by the system, which allowed command centers to instantly dispatch police or workers to investigate. In addition, the position and line of sight of PTZ cameras with embedded GPS and G-sensor located at the B20 and G20 conference centers were displayed on a live e-map, giving a precise outlook of the current surveillance situation.



Important vehicle data such as license plate, color, make, and model are recorded in the backend