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A state-of-the-art public safety platform protects people and property. >>

Building a “Very Safe City”

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Karamay is a prefecture-level city in the far northwest of China, near the Kazakhstan border. From the Uyghur language, Karamay means “black oil,” in reference to the petroleum fields near the city. Over recent decades, Karamay has undergone remarkable changes in economic growth, appearance, government services and city management, and public security.

An oil-producing and refining center, Karamay has made substantial commitments in urban development. Thanks to rapid development funded by the local oil industry, the city has twice been honored as a “Pearl in the Gobi” and a “Beauty in the Desert.”

In 2010, the Karamay city government proposed the strategic goal of building a world-class “safe city” of the first order.

Growing Pains

Despite years of continuous investment in ICT-enabled public security, the Karamay city government still faced two major challenges:

First, a low-definition video system failed to fulfill its expected role to support criminal investigations. The surveillance inputs were available only for post-incident backtracking and evidence collection, but ineffective in the area of crime prevention.

Second, the legacy IT system, organized in information silos, could not fully share video files across government agencies. Moreover, key video evidence was occasionally lost due to faults in the video streaming server, further hindering incident investigations.

The overall goals for the video surveillance upgrades were 1) real-time interoperability and 2) reliability.

A Comprehensive Response

Understanding that Karamay’s legacy service systems were built separately and independently, priority was given to building a cloud video platform that would be accessible across city government departments — including a video monitoring and analytics solution for the purpose of developing an “early warning” tracking system.

Huawei designed four discreet security surveillance

networks for Karamay: 1) The first network protects the city limits; highway entrances and exits, airports, railways, and buses with High-Definition (HD) cameras and Radio Frequency (RF) terminals for passenger identification, facial recognition, and license plate number registration. 2) The second network is deployed in residential communities using HD cameras and traffic monitors to track people and vehicles passing, entering, and leaving residential communities. 3) Third is the public space network for populated areas such as city squares, scenic spots, and hospitals. 4) The fourth network is deployed at roadway intersections with license plate recognition technology to track and monitor vehicles. Combined, the four security surveillance networks can monitor and track exceptional events and activities.

The Big Data analytics system at the core of the Karamay municipal data plant performs correlation analysis to predict individual behaviors and generate alarms, if necessary, for police response.

Huawei has provided a converged, visualized command solution for government agencies to flexibly share video resources and collaborate in the tracking of suspicious individuals. When incidents do occur, the converged command platform enables a streamlined response from multiple agencies, including police, fire, traffic, and medical services. The converged platform enables personnel to conduct internal video conferences for consultation and decision-making. Police officers in the field use eLTE broadband trunking terminals to send live video to the command center. These videos can be combined with other surveillance videos acquired throughout the distributed camera network and projected onto a 3D “sand table” used to generate active incident scenarios, land forms, and resource distributions. Video streams can be tagged and redistributed across departments.



The call center and dispatch systems are integrated with Geographic Information System (GIS) maps, so that call center operators are able to locate and notify nearby police officers by simply drawing a box on the map. Once point-to-point contact has been made, the dispatch operators are able to forward field videos, address information, and other detailed instructions to the officers’ eLTE trunking terminals.

One function of the video cloud storage resource pool enables Karamay municipal police headquarters to share video files with branch offices. The result is the ability to facilitate cross-regional analysis and shared retrieval. The earlier problem of information silos is eliminated and incident investigations are able to be cleared accurately and efficiently.

Benefits for All

The Huawei Safe City project is a significant contribution to Karamay building a world-class public safety infrastructure. The project

supports city-wide access to hundreds of camera feeds that enable thousands of police officers to effectively monitor the safety and security of a population of nearly 300,000. In addition to maintaining a vigilant defense against counter-terrorism, it is estimated that the system is saving the cost of employing an additional 3,300 police officers. As a result of the system becoming operational, incident-handling times have been shortened from as much as 30 hours to as few as 30 minutes — improvement by a factor of 60 in emergency response resolution.

Using the massive amount of accumulated crime data over the past decades, the command platform has pre-integrated a variety of early warning scenarios. When exceptions are detected, the analytics platform automatically generates a prioritized alert. The affect is a broad reduction in the rates of crime committed and the broad maintenance of social stability. The political secretary of Karamay has said proudly and emphatically, “We have truly built a very safe city.” ▲



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