NIGERIA'S INTERNATIONAL AIRPORT SECURES ITS FACILITIES AND TRAVELERS WITH PELCO'S END-TO-END IP VIDEO SOLUTION

THE CUSTOMER

Murtala Muhammed Airport Terminal Two (MMA2) is Nigeria's preeminent air terminal. In 10 years of operation it has achieved its objective of becoming a world-class airport operator, setting new standards for the African aviation industry. As the country's first and only privately-funded terminal, its unique structure, ultra-modern facility, world-class terminals, customer service, safety and security are celebrated in the industry. Three thousand passengers move through the terminal each day and it is a secure working environment for more than 2,000 people. Its 800-car multi-story Car Park (MSCP) is the first and largest in Lagos, Nigeria's economic nerve center and financial hub. The airport has been honored multiple times; it was rated the best airport terminal in the country in 2014 by the Federal Ministry of Aviation; received the Most Functional Airport Terminal Award of 2016 by IFC International Limited, an aviation consulting firm; and named Nigerian Airport of the Year in 2017 by WorldStage Limited.

The airport is funded and operated by Bi-Courtney Aviation Services Limited under the PPP (public private partnership) concession agreement between the Nigerian federal government and Bi-Courtney. The terminal has been renovated several times over the years, and has become a benchmark for airport operations in Nigeria. One important component of this is the airport's recently upgraded video security system, which modernized the earlier hybrid system.

THE CHALLENGE

The airport's earlier video security system was comprised of 60 Pelco analog high-speed dome cameras, four Pelco hybrid video recorders and a Pelco matrix/switcher controller. While still functional, the system could no longer meet either the safety and security challenges of the airport in a post 9/11 world, or Bi-Courtney's long-term operational needs. Functionally, it was challenged by what was synonymous with typical analog systems – low throughput, low resolution, low video retention and limited storage. Added to this were the problems of decaying infrastructure, the high cost of maintenance and incessant communication failures.

To ensure that all bases were covered and their needs would be met, Bi-Courtney Aviation Services began the upgrade process by commissioning a consultant for a site survey and issuing an RFP. Based on a number of factors including system design, product features, cost, local support capability and experience, the bid was awarded to BOW Dynamic Systems Ltd. with a Pelco system design.

According to A.O. (Adeniyi) Ajayi, Director, Operations and Engineering of BOW Dynamic Systems, airport management had one primary goal for the upgrade – to offer a safe, secure and pleasant experience to passengers in all parts of the airport, from the parking lot to the lobby and check-in terminals, as well as baggage claim points, cargo areas and apron. Finding the right technology partner was imperative to achieving this goal.

"As a local integrator and experienced Pelco channel partner, we met all of these objectives," said Otunba Ladi Animashaun, MD/CEO of BOW Dynamic System. "Our comprehensive understanding of the airport's needs, combined with our deep knowledge and experience with Pelco products, gave us a competitive advantage over other local and international integrators."

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CASE STUDY: MURTALA MUHAMMED AIRPORT TERMINAL TWO (MMA2)

THE SOLUTION

At the core of the new system design is the Pelco open platform VideoXpert Video Management System (VMS), which is an upgrade from the previous Pelco Endura VMS. The VMS maintains the database of the newly installed Pelco cameras and recording devices as well as integrated analytics software. The VideoXpert platform enables the aggregation of the various systems into a single, intuitive user experience which is accessed through a convenient web interface for system navigation. By unifying operational and security data via a single user interface, airport management has an intelligent end-to-end IP video solution for proactive response to situations within the terminal.

"The benefit of VideoXpert goes well beyond the capabilities of the previous analog environment. For instance, they can now see live video associated with any triggered alarm," said Mr. Adetoye Adeyale, BOW Project Supervisor. "Essentially, it allows operators to better see what they need to see, when it's needed, so they can make faster and more effective decisions that will help keep the airport safer and more secure."

The replacement video security cameras are another critical upgrade to the overall security of the airport with improved image quality, streaming and on-board analytics capability. In total, 187 Pelco cameras comprising 21 different models are in use throughout the

facility so that the best combination of technology, lenses, and other factors are used to meet the needs of each location. For outdoor security around the airport and in the airport lobby areas where the lighting conditions change throughout the day, BOW installed Pelco's low-light Sarix cameras. High-resolution Spectra PTZ dome cameras are used in the parking structure, baggage claim points, cargo area and other parts of the airport, so that in the event of an incident or alert, critical identifying features can be seen in HD detail. Optera panoramic cameras with PTZ capabilities provide additional situational awareness. Most of the cameras feature Pelco's SureVision technology for improved Wide Dynamic Range (WDR) performance and Smart Compression technology for reduced bit rate usage and storage savings.

According to Mr. Akeem Saliu, BOW Project Manager, the cameras' suite of built-in analytics provides the airport's security team with increased advantages that enable them to be more productive and ultimately enhance overall security of the airport and surrounding areas.

He says, "In addition to conventional features such as motion detection or camera tampering, these intelligent cameras have advanced tracking capabilities. For example, it's possible for the system to alert security operators if a person enters a restricted area or walks against pedestrian traffic flow. The camera analytics can even recognize when

a piece of luggage has been left unattended or an individual is loitering, and then notify security."

For video archiving where a minimum of six-months of video retention is required, BOW installed seven VSM servers for a total of 384 terabytes along with three storage pool devices on RAID 6. The VSM provides automatic distributed load balancing and active-active failover within a storage pool to ensure continued recording if catastrophic failure occurs.

The design-build features two control centers; one for operations and one for security. The security center has a video wall with six 55-inch screen monitors, as well as four 24-inch screen monitors dedicated for alarms, event management and analytics reports and two desktop screens for each of the two operator's workstations. The operations center focuses on apron activities, airfield, hangers, and take-off and landing of the aircraft, and has two 46-inch screen monitors as well as two 24-inch screen monitors. Additionally, the operation center client is utilized remotely by both the CEO and CSO; they can call on any camera for forensic purposes or for an overview of operations within the facility.

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THE RESULTS

"BOW's network design, configured by certified CCIE personnel, features a star topology with remote intermediate distribution frame (IDF), which is connected to the main distribution frame with fiber optic cables. The unrestricted architecture is designed to scale and accommodate future growth. Network security, switching and routing complies with industry and cybersecurity protocols. The design, system architecture and project delivery is an unprecedented success both for the aviation industry and the system user," says Adeniyi Lawal, BOW IT Support Manager.

"Our new Pelco system is smart, easy to use and flexible – and exactly what we needed to maintain the safety and security of the airport," adds Captain Williams, MD, Bi-Courtney Aviation. "It's a game changer, giving us confidence and more complete control and providing a higher level of security for airport passengers, workers and operators."

For more information, contact your local Pelco sales representative today.