

## CASE STUDY

### Bandaranaike International Airport

#### About Bandaranaike International Airport

Bandaranaike International Airport is the primary airport that serves Sri Lanka. Bandaranaike is situated in a Negombo neighborhood north of Colombo, the country's longstanding capital and commercial hub.

Under the management of Airport and Aviation Services (Sri Lanka) Ltd, the airport functions as the hub for the national carrier of Sri Lanka, Fairsair. There are three terminals at this airport, which serve 150 international flights and 10,000 visitors daily from this location. The takeoff ranges for landing are 3,441 meters and 3,350 meters.

A second runway will be added as part of Phase II of the BIA extension project, along with an additional taxiway leading to the second runway.



## THE PROBLEM

The Bandaranaike International Airport initially installed an Altai Chinese branded access point that was outdated and only had a bandwidth of 2.4 GHz band and analog IP telephony and PA system. Older access points may not support the latest Wi-Fi standards (such as 802.11ac or 802.11ax), resulting in slower connection speeds and reduced network performances leading to sluggish internet speeds and decreased productivity for users.

The airport was trying to accommodate their growing demands but their previous setup was becoming overloaded and congested with the amount of users on the network. Also, this solution was costing them more money to maintain with frequent maintenance and repairs due to age-related wear and tear, hardware failures, and compatibility issues.

With the amount of growth the airport has faced, they were needing to provide stronger connections and faster speeds to their visitors. Recognizing the limitations of this decentralized setup, Bandaranaike Airport needed to replace the existing outdated routers with a reliable networking setup from a reputed brand.

## PROVIDED BY SLTMOBITEL

Sri Lanka Telecom (SLT) is the National Information and Communications Technology (ICT) solutions provider and the leading broadband and backbone infrastructure services provider of Sri Lanka. For over 163 years, the Company has served the Nation's need for connectivity, operating on fixed, mobile, and other operational segments. SLT fulfills the needs of over nine million customers on the island through its high-speed fiber, copper, and wireless access network.

# THE NEED

**High Capacity:** Airports typically experience high numbers of simultaneous users connecting to the WiFi network. Grandstream access points are designed to handle high capacity, ensuring that multiple users can connect simultaneously without experiencing slowdowns or dropped connections.

**Coverage:** Airports often have large, sprawling layouts with multiple terminals, gates, lounges, and public areas. Grandstream access points offer robust coverage capabilities, ensuring that WiFi signals reach all areas of the airport, including indoor and outdoor spaces.

**Reliability:** Grandstream access points are known for their reliability and stability. In a critical environment like an airport where uninterrupted connectivity is essential, having reliable access points is crucial to ensuring that passengers, staff, and operations can access the network without disruption.

**Security:** Airports handle sensitive information and require secure networks to protect against unauthorized access and cyber threats. Grandstream access points support advanced security features such as WPA3 encryption, VLAN segmentation, and rogue AP detection, helping to secure the WiFi network and protect sensitive data.

**Quality of Service (QoS):** Grandstream access points support Quality of Service (QoS) features, allowing administrators to prioritize network traffic for critical applications such as flight information systems, baggage handling systems, and security cameras. This ensures that essential airport operations receive the necessary bandwidth and performance.

**Manageability:** Grandstream access points can be centrally managed using Grandstream's GWN. Cloud or GWN Manager software, providing administrators with centralized control over network configuration, monitoring, and troubleshooting. This simplifies network management tasks and helps ensure optimal performance across the airport's WiFi infrastructure.

**Guest Access:** Airports often provide WiFi access to passengers and visitors. Grandstream access points support guest access features such as captive portals, authentication, and bandwidth management, allowing airports to offer secure and convenient WiFi access while adhering to regulatory requirements and data privacy standards.

**Integration:** Grandstream access points can integrate with other Grandstream networking products, such as routers, switches, and gateways, to create a comprehensive network infrastructure solution tailored to the airport's specific requirements.

**Unified Communication:** By integrating the IP PBX with the PA system, the facility gains a unified communication platform. This allows for seamless communication between staff members using both voice and PA announcements.

**Emergency Notifications:** In the event of emergencies, such as security threats or natural disasters, the integrated system can broadcast emergency notifications through the PA system while also facilitating emergency calls through the IP PBX. This ensures that critical information reaches all areas of the facility efficiently.

**High-Quality Audio:** Grandstream PA system delivers high-quality audio output, ensuring clear and intelligible sound reproduction across different zones and environments. This is crucial for effective communication and emergency announcements.

# PRODUCTS DEPLOYED



**GWN7660**  
**Wi-Fi 6 Indoor Access Point**  
Corridors and Meeting Rooms



**GWN7624**  
**In-Wall Wi-Fi Access Point**  
Enclosed spaces - smaller rooms



**GWN7664LR**  
**Outdoor Long Range Wi-Fi 6 Access Point**  
Outdoor Spaces and Parking Areas



**GWN7664**  
**Wi-Fi 6 Indoor Access Point**  
Multiple Floor Locations



**GWN7803P**  
**Enterprise Layer 2+ Managed Network Switch**  
Enterprise Grade



**UCM6308**  
**Unified Communications and Collaboration Solution**  
IP PBX Server



**GRP2602P**  
**2-Line Essential Wi-Fi IP Phone**  
Voice Communication Setup



**WP820**  
**Enterprise Portable Wi-Fi IP Phone**  
Voice Communication Setup



**GHP621**  
**Compact Hotel Phone**  
Voice Communication



**GSC3510 Intercom Speaker Microphone**  
Intercom Solutions



**GSC3505**  
**1-Way Public SIP Speaker**  
Intercom Solutions

## WHY GRANDSTREAM?

The Bandaranaike International Airport deployed Grandstream Wi-Fi 6 Indoor Access Point GWN7660, In-Wall Access Point GWN7624, Enterprise grade Wi-Fi6 Access Point GWN7664, Outdoor Long-Range Wi-Fi 6 Access Point GWN7664LR, and Enterprise Layer 2+ Managed Network Switch GWN7803P for this solution. A total of 387 networking and unified communication devices were deployed to cover the perimeter.

Additionally, The Bandaranaike International Airport also deployed Grandstream's UC solutions which included the UCM6308 IP PBX, WP820 Wi-Fi Cordless IP Phone, GHP621 Compact Hotel Phone, GRP2602P 2 Line Essential IP Phone, GSC3510 SIP Intercom Speaker/Microphone and GSC3505 1-Way Public Address SIP Speaker for their voice communication setup.



## Product Details:

GWN7664 = 20 units  
WN7664LR = 6 units  
GWN7660 = 30 units  
GWN7624 = 60 units  
GWN7803P = 10 units  
UCM6308 = 1 unit  
GRP2602P = 150 units  
WP820 = 30 units  
GHP621 = 30 units  
GSC3510/GSC3505 = 45 units

The Bandaranaike International Airport chose Grandstream solutions over competitors such as Altai, Unifi and Cambium due to Grandstream's brand value as the company's headquartered in Boston, US which has a bigger brand value than Chinese origin product like TP-Link and Altai. Also, Grandstream's access points are DFS band supported which was a major requirement so they wouldn't interrupt the airport radar and radio signal.

**Secure Connection:** It's common for travelers to need to contact family and friends, retrieve boarding passes, and check flight information and airports usually provide Wi-Fi access to passengers and visitors. Grandstream access points support guest access features such as captive portals, authentication, and bandwidth management, allowing airports to offer secure and convenient Wi-Fi access while adhering to regulatory requirements and data privacy standards.

Grandstream's GWN7664/GWN7664LR Wi-Fi-6 supported AP with 700+ user capacity with 4x4 MIMO technology which covers crowded places such as the Bandaranaike that has over 10,000 visitors a day. The GWN7803P (24 ports POE switch which is L2 switch with 360 Watt POE budget) provides the ability to help power maximum devices on the network. All of these devices can be managed using Grandstream's GWN. Cloud or GWN Manager software provides administrators with centralized control over network configuration, monitoring, and troubleshooting. This simplifies network management tasks and helps ensure optimal performance across the airport's Wi-Fi infrastructure.

**Effective Communication:** IP PBX systems facilitate effective communication between airport employees, including customer service agents, maintenance teams, administrative staff, security personnel, and airline staff. The ability of staff members to communicate with one another swiftly and easily boosts operational effectiveness. This was something the airport team was looking for in a solution. Grandstream's UCM6308 was installed as it is a supported PBX server with 450 concurrent call capacity which makes their communication very smooth and uninterrupted.

**Seamless Integration:** VoIP solutions, video conferencing, instant messaging, and mobile applications are just a few examples of the contemporary communication technologies that IP PBX systems can interface with. Flexible communication choices that are suited to the requirements of airport operations are made possible by this integration of Grandstream's GRP2602P which is a 4 SIP and LCD light-supported phone with HD voice quality and the best IP Phone in the budget range.

**Emergency Communication:** PA systems are used to disseminate critical instructions to travelers and airport personnel in the event of emergencies, such as security threats, natural catastrophes, or medical crises. This covers safety measures, shelter protocols, and evacuation protocols. Passengers and workers may need to contact loved ones or seek emergency help in the event of an emergency and need a reliable Wi-Fi connection in the airport. The GWN7660 Wi-Fi6 was installed in the workstation to help strengthen the connection from the towers to central locations within the airport. They also deployed 30 GHP621 (in wall mount phones) at multiple security checkpoints on the premises to help with emergencies and security threats. In addition, the GHP phone, Grandstream's WP820 was given to the security team as this device supported Wi-Fi and was a seamless installation along with the other Wi-Fi solutions.

# THE RESULT

The After a successful install at the Bandarankaike International Airport, the security team now has a centralized and scalable network connecting all locations to enable simple and affordable inter-office communication. The Wi-Fi 6 solution reduces latency and improves responsiveness, making it ideal for applications that require real-time communication and low latency, such as online gaming, video conferencing, and voip calls. This is achieved through technologies like Target Wake Time (TWT), which allows devices to schedule their transmissions to minimize idle time and conserve battery life.

The organization has been able to reduce maintenance and service costs significantly and streamline network management thanks to this robust solution and free management software. Additionally, the Grandstream system offers simple connectivity with platforms and apps from other parties, providing flexibility and enabling it to expand with the business over time. Grandstream IP Phones and the UCM Series on the backend have provided staff with strong and user-friendly endpoints to boost productivity and communication even more. Thanks to Grandstream's robust, scalable, and centralized communication system, Bandarnayeke Airport Authority is thriving more than ever.

