



Haslam Sports Group scores big win with Celona 5G LAN technology to modernize the stadium experience for staff and fans

CUSTOMER

Haslam Sports Group

VERTICAL

Large Public Venues

LOCATION

Cleveland, Ohio

MARKET POSITION

A global sports and entertainment company HSG's portfolio includes the Cleveland Browns and operating rights to the Columbus Crew soccer club

CHALLENGE

Streamline stadium operations, by improving the reliability and coverage of wireless connectivity for vital express entry and point of sale systems

With tens of thousands of Cleveland Browns and Columbus Crew fans converging on the First Energy and Historic Columbus Crew stadiums in Ohio, getting visitors into their venues quickly and easily was the first order of business for Haslam Sports Group (HSG) owners of the Cleveland Browns and Columbus Crew sports teams.

At game time, entry gates are filled with tens of thousands of expectant fans, eager to get things rolling. With the goal of making long lines and wait times for concessions a thing of the past, HSG turned to recent advances in biometric analysis and private cellular wireless technology that uses new Citizen's Broadband Radio Service (CBRS) spectrum.

According to HSG, the key aim was to have as many fans in their seats at kickoff as possible. But this can be a tall task as fans pour past entry gates just minutes before an event. To reduce entry times into its stadiums, HSG launched an innovative express entry service using an advanced facial recognition ticketing and access control platform from Wicket.

“We believed we could solve these problems, and others, with new technologies designed to better streamline different operational bottlenecks.”

FACIAL RECOGNITION HELPS GET FANS IN FAST

Wicket depends on fast, secure, and reliable network connectivity to authenticate fans in seconds, verifying their identity against a database of uploaded images stored within Wicket's system.

For HSG, the Wicket platform uses specialized software that runs on network-connected Apple iPad Pros to quickly scan ticketholders, using facial recognition to authenticate their identity without the use of tickets or phones.

The Wicket system provides staff with the ability to set crowd count thresholds in designated areas, such as concession stands, and alerts staff to crowd congestion and to monitor for social distancing. Wicket's technology can also support back-of-the-house staff, reducing the risk of missing or misused credentials.

Initially HSG's network operations team made use of the existing Wi-Fi network to operationalize Wicket but quickly found that maintaining consistent and reliable wireless connectivity was a challenge to ensuring the system ran hiccup free.

With so many people and devices in one place and one time, congestion, media contention, wireless interference, capacity constraints and increased noise levels can slow down even the best Wi-Fi service.

According to HSG, the rush of people entering the stadiums often caused connectivity issues for the Wicket system. Network latency, often exceeding 1000 milliseconds or more due to wireless issues, created unwanted delays the various stadium entry gates. Meanwhile, gaining access to the stadium required myriad staff to check tickets, credentials, and man turnstiles.

“Creating a frictionless entry access model is a common problem within large public venues,” said Jeff Patton, Network Manager at HSG. “We believed we could solve these problems, and others, with new technologies designed to better streamline different operational bottlenecks.”



UNINTERRUPTED MOBILITY FOR CONCESSIONAIRES

Inside the stadiums, HSG wanted to improve the ability for concession vendors to quickly deliver food and products to fans wherever they are. Vendors moving around the stadium bowl required more secure, reliable, and consistent wireless connectivity during gametime to conduct business.

But the use of Wi-Fi for this use case proved to be problematic as vendors roamed the facilities with network dependent PoS devices. Wireless congestion, erratic connectivity, network delays negatively impact business operations and tarnish the fan experience. When concession staff move around the stadiums, PoS devices are constantly roaming between different access points, connecting, and reconnecting as wireless signals try to work around changing environmental conditions. This causes packet loss, network disconnects, and service disruption.

A DEMONSTRABLE DIFFERENCE WITH PRIVATE CELLULAR

To address these challenges, HSG turned to Celona's 5G LAN system and has noted remarkable results including:

- Faster stadium access for more fans
- Reduced staffing requirements at entry gates
- Uninterrupted concession service
- Three times the wireless coverage with one-third fewer wireless access points
- More robust end-to-end security
- Custom QoS policy enforcement per application flow or device group
- Direct integration with existing IP network service, security, and policy frameworks

Around its entry gates at First Energy Stadium, HSG installed two outdoor CBRS-based Celona LTE access points to provide native CBRS cellular connectivity to 20 or more Apple iPad Pros being used to support the express entry service. The use of Celona's 5G LAN has proven to reduce network latency for HSG's express entry service by more than an order of magnitude.

Inside the stadium, two more Celona outdoor APs were used to cover the stadium bowl to support concession vendors. Previously more than a dozen Wi-Fi access points had been used to provide wireless coverage in these areas to support the different use cases.

At the Historic Columbus Crew stadium, HSG installed five outdoor Celona APs to provide wireless coverage for the stadium bowl, south plaza entry gates and east parking lots. The company is extending the use of Celona 5G LAN technology to automate its turnstiles. Today, each turnstile must be manned by a staff member. With CBRS and Celona's 5G LAN system, one staff member will be able to now manage five or more turnstiles, allowing HSG to better optimize valuable resources.

"Because CBRS operates at a different frequency, with Celona's 5G LAN system, we no longer experience the typical congestion, interference or latency during crunch time," said Patton. "And this same system helps expedite concession service within our venues."

PoS vendors armed with a small mobile CBRS-to-Wi-Fi gateway to provide long-range CBRS connectivity to the Celona 5G LAN now reliably roam throughout the stadium without worrying about losing valuable wireless connectivity or having to reconnect to network when roaming.

DIRECT INTEGRATION WITH EXISTING ENTERPRISE L2/L3 INFRASTRUCTURE

According to HSG, Celona's 5G LAN system seamlessly integrated with its existing DHCP, firewall and VLAN segmentation.

Celona's 5G LAN system uniquely utilizes the existing IP domain structure, VLAN assignments and IP network service architecture already in use across the existing enterprise LAN. intelligent 5G LAN routing also provides complete access and visibility into user equipment connected to the network behind mobile router gateways that often assign devices to different IP VLANs or subnets.

Patented MicroSlicing™ technology enables HSG's IT staff to easily define and automatically enforce strict quality of service (QoS) requirements, such as latency, throughput, and packet loss, for specific LPV applications and critical devices. This allows HSG to guarantee that the appropriate network service levels are continually being met for each use case.

"Celona's 5G LAN system has not only allowed us to improve the performance and maximize our investment in critical stadium systems but has given us the control we needed without the complexity associated with cellular technology," said Patton, "The fact that the system integrated directly with our existing DHCP, firewalls, VLANs and IP services framework already in place was a big win for us," said Patton.

Celona's 5G LAN system has not only allowed us to improve the performance and maximize our investment in critical stadium systems but has given us the control we needed without the complexity associated with cellular technology,"

CELONA 5G LANs IDEALLY SUITED FOR LARGE PUBLIC VENUES

Celona 5G LANs are purpose-built for the most demanding LPV environments and use cases that require low-latency connectivity and deterministic wireless performance.

Unlike any other private wireless solution on the market, Celona's 5G LAN is a fully integrated end to end system bundling all the requisite components including access points, packet core software, SIM cards / provisioning and cloud-based network orchestration within a single subscription.

To see a Celona 5G LAN in action next to your critical applications and see how you can also realize its significant benefits for return on investment and total cost of ownership, visit us at celona.io/journey.

hello@celona.io | celona.io