



What Can They Do Now That They Couldn't Do Before?



Medical Team Communication:

The club medical teams now have reliable connectivity throughout the stadium, and the solution also provides a secondary connectivity option as required per the league.



Crowd Control & Safety:

Through the use of 5G body worn cameras, the club's Operations Team is better able to quickly respond to a major incident, health and safety issue, or a security risk, without leaving the operations control room.



Fan Experience:

Temporary digital signage can now be easily deployed to provide fans with necessary information before, during or after the match. They can view live interviews or replays while queuing.



Point of Sale:

Vendors can connect their point-of-sale terminals, or even their own smartphones to the 5G private network.



VIP/Hospitality Experience:

Visiting VIPs can be provided with temporary connectivity over the 5G private network when the public networks have poor service. This can be with an eSIM on their personal devices, or via a dedicated device provided by the club.

Challenges



Congested public mobile & Wi-Fi networks on match days

On match days, all local public cellular and mobile networks were extremely congested, resulting in an unusable service. This made them an unreliable source of stable connectivity. Public Wi-Fi was also insufficient, offering limited coverage and inconsistent performance. While dedicated Wi-Fi could address some issues, it would require the deployment of numerous access points and extensive cabling infrastructure, making it both costly and complex to manage.



PMR radios not reliable

The existing PMR (Private Mobile Radio) system was not a dependable option either, as it was frequently monopolised by local taxi firms, undermining its reliability as a licensed communication solution.



Infrastructure issues

Bath Rugby does not own the stadium, which sits within the Recreation Ground owned by the local authority. Consequently, much of the club's infrastructure must be set up before and dismantled after every match. A reliable wireless solution would streamline these operations, reducing the number of staff required and lowering both costs and timelines.



Brief Description of Case Study

Bath Rugby sought a reliable, cost-effective, connectivity solution capable of supporting multiple use cases on match days, when up to 14,500 spectators attend. Existing solutions depended on public networks, which were often saturated or provided inconsistent coverage across different areas of the stadium.

With funding support from the Department of Science, Innovation and Technology (DSIT), and in partnership with Telet Research and Antevia Networks, Bath Rugby was able to explore the deployment of an emerging 5G Open RAN (ORAN) solution tailored for stadium environments.

This approach offers significant benefits for sporting venues, delivering improved connectivity at a substantially lower cost than traditional private cellular solutions, while also being much faster to deploy.

Products Used



6 x iRUs n77 band with local PoE++ Switches providing power



1 x iFR located in small IT cabinet behind ticket office



1 x CU/DU on 1U COTS server located in small IT Cabinet behind ticket office



1 x iConn Management system of Antevia products

Solution

Antevia designed and installed a private 5G network using special low-power 5G radios.

Their low power 5G radios were a far more suitable form factor than alternatives on the market, and was discreetly installed around the stadium, whilst still providing the necessary coverage with minimal locations needed.

Bath Rugby and DSIT were impressed by the solution, which does away with complex cell planning, and has no risk of service degradation during cell-to-cell handovers. This consequently reduces RF design service costs, shortens network deployment time, and improves ease of system management.

Using **Shared Cell** technology, a consistently high level of connectivity is guaranteed throughout the entire footprint of the system. Working with the System Integrator Spry Fox Networks, the solution was designed, installed and integrated to the Core Network within a few days, the main external dependency being the connectivity from the stadium to the Internet. The system operates in licensed spectrum, and an Ofcom Shared Access license was obtained via a simple application process.

Antevia's Products



iRU 5G Radio



iFR Fronthaul Multiplexor



RESULTS

A total of just six 5G radios provided excellent coverage across and around the stadium and the fan zone.

Tests on match day worked flawlessly across a range of applications and locations.

Applications tested included video Teams Calls, Push-to-Talk, file upload and file download.

Test locations were spread across the fan zone, the medical center, the operations center and the VIP area. All areas gave fast access with minimal lag on the video.

Comparisons to the public mobile networks and public WiFi were made, and are available upon request.



"Antevia Networks' 5G Private Network has enabled us to provide Bath Rugby with a stable and reliable communications platform to support staff operations, incident management, and medical teams. It has also allowed Bath Rugby to elevate the matchday experience for their fans.

Working with Antevia Networks has been a genuine pleasure, and we look forward to deploying their 5G Private Network solution with a wide range of other clients as part of our future growth strategy."

- Stuart Weaine, Director of Spry Fox Networks

