



Providing reliable live TV broadcast

Objectives

- To provide a reliable, high bandwidth wireless link suitable for live TV transmission
- To operate the link across an urban landscape with significant line-of-sight challenges and obstacles
- To provide high capacity and consistent throughput with near-zero packet loss for error-free TV transmission

Solution Technology

- InfiNet Wireless InfiLINK 2x2 Pro
- 300 Mbps link throughput
- Integrated 28dBi antennas

Customer Benefits

- Fast setup and easy deployment
- Link optimization in real-time through integrated planner & tools
- High reliability and stability
- High & consistent throughput even with high spectral interference
- Reliable NLOS capability
- Competitive costs compared to satellite transmission

Introduction

Digi Sport is a premier sports channel broadcaster in Hungary and part of the Digi TV group: a leading broadcast, cable and internet provider offering nationwide TV, internet, VoIP and 3G services across a number of Eastern European countries.

As part of its mandate to provide coverage of national as well as international sporting events, Digi Sport identified a requirement to provide live broadcast coverage of a national volleyball event taking place at the Sportmax Arena in Budapest, Hungary. The Sportmax Arena is some 3km distant from DigiSport's closest optical transmission node, and typically live event broadcasts of this nature would be conducted through satellite uplink transmission, in order to avoid issues of reliability and to provide continuous live streaming of the event. However, this form of live video distribution can be expensive – with costs including the lease of fully-equipped broadcast vehicles, staff and satellite uplink charges – and so DigiSport took the decision to broadcast the competition across a high-frequency, high-bandwidth wireless link between the Sportmax venue and its optical transmission node.

Challenges

There were a number of key success factors to using broadband wireless technology for live TV broadcast. Firstly, although the distance of transmission across the link was only 2.9km, the link line-of-sight itself was heavily obstructed as it passed directly across the city of Budapest – Digi Sport engineers estimated over 30% of the direct transmission path would be obstructed by buildings.

Coupled with this, heavy interference on a crowded microwave spectrum – as the location of the optical node was also being used by other wireless providers also operating multiple microwave links in the 5GHz spectrum – meant that interference was a high possibility, and so any link would need to be highly spectrum efficient and reliable in terms of bandwidth and packet-loss: live-TV broadcast requires low-latency, high bandwidth (> 200Mbps) and – for IP-TV transmission – with packet loss of less than 0.01% to be deemed technically feasible.

A Customer's Perspective

// The TV link had to operate under difficult circumstances, traveling over a heavily crowded part of the city with complete reliability. An essential part of the requirements was to offer high stability and throughput with a nearly 0% packet loss and very low latency, because the link provided the backhaul for a live TV broadcast.

The InfiNet Wireless link could easily handle all these requirements. We had maximum 1-2 hours to test and deploy the link, and it performed flawlessly during the 3 days of the event. //

László Sánta
Lead Engineer

Solution

The key criteria was to establish a reliable link that was uncomplicated to deploy (and that would not require any licensed-spectrum frequency planning or licences) and which would provide both the capacity and the reliability necessary for IPTV broadcast. InterCrown Europe, InfiNet Wireless's partner in Hungary, worked with Digi Sport engineers to provide a high capacity, non-line-of-sight (NLOS) wireless link solution based on InfiNet's high capacity InfiLINK 2x2 Pro 300Mbps platform, including integrated 28dBi antennas. Key to the success of the deployment were the in-built site survey tools options of the InfiNet Wireless system, which allowed the on-site engineers to optimise the efficiency of the point-to-point transmission path in real-time.

The link was set up, tested and operational within two hours, and was able to perform with a minimum 220Mbps aggregated throughput, and with a packet loss reliability of less than 0.002% (20 lost packets out of 1 million) across the non-line-of-sight transmission path. The link operated flawlessly for the duration of the three day event with 100% reliability, allowing Digi Sport to provide uninterrupted and reliable coverage of the event – 'live' - to its customers.



About InterCrown Europe

InterCrown Europe (www.intercrown.eu) is a specialist in planning, distributing and developing wireless systems for over 20 years. Crown-Tech's portfolio allows our clients to cover every aspect of building their wireless solution, from the simplest client devices to licensed microwave radio portfolios capable of 500 Mbps full duplex data transmission. As a specialist distributor of wireless equipment to the channel and end clients, we ensure we always have available stock on hand, whilst offering competitive prices, fast delivery and build with the expertise in planning and implementation of the wireless solutions for our international and national partners.

About InfiNet Wireless

Established in 1993, InfiNet Wireless is one of the largest privately owned Fixed Broadband Wireless Access (FBWA) development and manufacturing companies in the world. With more than 17 years of intense customer based research and product development, InfiNet's range of wireless connectivity solutions are the preferred choice of global communication corporations and governments who require uncompromising connectivity. To date, InfiNet Wireless has forged a solid foundation in fixed wireless installations, and currently has thousands of deployments successfully deployed in over 50 countries. Its philosophy of providing the most flexible, reliable, cost-attractive and innovative solutions in the industry has helped it to reach the market leader position for Wireless solutions in Russia and Central & Northern Asia, and is the benchmark of carrier grade multiservice broadband wireless access systems.