

Highly available IT network infrastructure for the World Cup ski resort Oberhof



Image source: Christian Heilwagen/Oberhofer Sport und Event GmbH

The sports center located in Oberhof is renowned for its comprehensive facilities, including a biathlon stadium, cross-country skiing track, luge track, and ski jump. The international recognition of Oberhof has been significantly enhanced, especially due to the Biathlon World Cup competitions hosted here.

Nowadays, modern IT networks are not just a nice-to-have in sports centers, but an indispensable factor for competitiveness.

The hosting of international events attracts thousands of spectators and a multitude of press and media representatives, which places high demands on a powerful and reliable IT network infrastructure.

Initial situation

The entire previous IT network in Oberhof was managed on a decentralized basis and required considerable administrative effort. In addition, some components were already in “end of life” status, meaning that software maintenance was no longer possible. This was particularly unsustainable due to the lack of security updates. Furthermore, the previous solution included a mixture of different hardware components from various manufacturers. Anything but a good basis for trouble-free and efficient operation – especially during peak times of high-class sporting events.

Objective

In the targeted state, mobile, reliable, and, above all, high-performance Wi-Fi will be available at every location.

To ensure sufficient connection bandwidth, an entirely new fiber optic network has been installed at all sports facility locations.

Additionally, the solution offers simplified administration of the IT network, thanks to a high degree of compatibility and harmonization among the operational components. For instance, configuration adjustments can be implemented quickly.

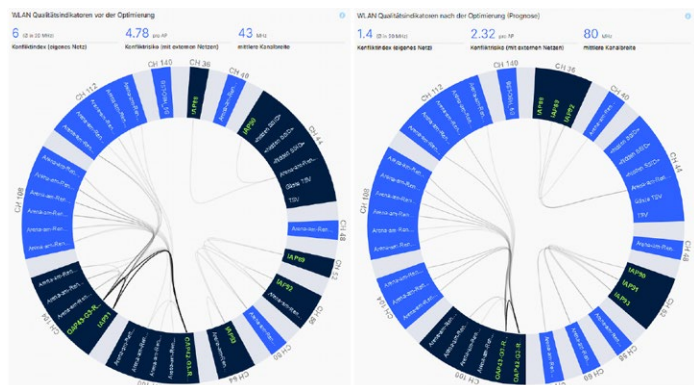


The decision to choose LANCOM was grounded in its extensive product portfolio, which spans from small switches to centrally manageable indoor and outdoor Wi-Fi components. Furthermore, LANCOM's flexibility, exemplified by LANCOM Enhanced Passphrase Security User (LEPS-U), played a pivotal role in the selection process. LEPS-U serves as a flexible solution for Wi-Fi access and enables the configuration of a variety of passphrases, which can then be assigned to individual users or groups.

Solution approach



To increase performance in the IT network, the new automation process **"LANCOM Active Radio Control 2.0"** was used, which enables systemic channel optimization. An SSID was broadcast via LEPS-U to assign separate passwords and VLANs to different users. In the old, less powerful network installation, the Wi-Fi channels were sometimes adjusted manually in order to minimize collisions. This was becoming increasingly difficult, especially at peak times such as during a world cup. Manual optimization was simply no longer possible, as there were many simultaneous users and high bandwidth requirements from professionals such as the press/media centre. The introduction of **"ARC 2.0"** has enabled the successful implementation of automated channel and transmission power optimization. This achievement has resulted in a remarkable enhancement of Wi-Fi capacity and, consequently, a significantly improved performance of the Wi-Fi network for users.



Before optimization

After optimization (forecast)

Outlook

Deutsche Telekom supported the entire project in collaboration with LANCOM Systems, and the new IT network went live in December 2021. The next steps are the integration of the photovoltaic sites and the integration of the building automation, including the control of heat and waste heat via LANCOM GS-3510XP switches, into the IT network.

At a glance

The customer



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Products and services:

Biathlon World Cup
competitions, Biathlon
stadium, cross-country
ski run, ski jump

The partner



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Requirements

- Simplified administration
- Increased compatibility
- Optimized Wi-Fi performance

Components used:

- LANCOM Management Cloud
- LANCOM Active Radio Control 2.0
- LANCOM access points (indoor/outdoor)
- LANCOM switches
- LANCOM central site VPN gateway