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wilhelm.tel
Smart wireless turns Norderstedt into smart city

CUSTOMER
wilhelm.tel

LOCATION
Germany

OVERVIEW
The wilhelm.tel GmbH is a regional provider of telecommunications services based in Norderstedt. The company was founded in 1999 as a subsidiary of the Stadtwerke Norderstedt and is under the full ownership of the city of Norderstedt.

CHALLENGES
- Establishment of a comprehensive, reliable wireless in Norderstedt and the entire metropolitan area of Hamburg

- Building an infrastructure that enables a large number of concurrent users in the open

- Deployment of access points that blend into the cityscape

SOLUTION
- Installation of ZoneFlex 7782 Premium Outdoor and ZoneFlex T300 APs

- Establishment of a reliable network solution with consistent signal strength and performance

BENEFITS
- Free access to the internet in large parts of Norderstedt and Hamburg

- Expansion of urban WiFi infrastructure without disturbing the cityscape

- Reliable WiFi in high density areas with many concurrent users

- Raise Norderstedt's attractiveness as business location and in tourism

Powerful network provides reliable coverage

The technological progress is advancing. Even cities are increasingly expected to make use of technical innovations to facilitate their residents' life and provide greater comfort. Despite the development in recent years and the increasing digitization, public Wi-Fi is still a rarity in Germany. For many citizens, however, it is incomprehensible why there isn't a widespread, public Internet access in hardly any big city, despite the technical possibilities. A

publicly accessible WLAN is not only a competitive advantage for tourism but it also increases the attractiveness of a city as a business location.

THE CHALLENGE

Building a comprehensive city WLANs involves some challenges. These range from regulatory requirements for the unflashy placement of access points to different requirements based on conditions of urban building or the different frequenting of certain areas. In Norderstedt these tasks fall within the scope of wilhelm.tel. The subsidiary of the Stadtwerke Norderstedt has also encouraged the development of a

comprehensive public WLAN in addition to the expansion of its own fiber-optic network in recent years. In order to make Norderstedt even more attractive as a center of life for its residents and as a business location, the management decided to equip the city, and at a later stage in cooperation with the partner willy.tel also the Hamburg metropolitan region, with a city Wi-Fi system.

"We want to have Wi-Fi available in all public areas throughout Norderstedt. Thus, the city will become more attractive as a location, especially for tourism. In addition, we can also provide additional services such as IoT and Smart City applications to our business customers," says Malte Kock, manager system engineering at wilhelm.tel.

A wireless system must provide stable coverage in high-density areas such as railway stations without disturbing the cityscape. In order to obtain the necessary permits for the deployment of the access points, it was particularly important in Norderstedt to keep the design with the lowest possible size in mind during the decision. The selection criteria consisted of the performance of the access points as well as being inconspicuous in the setting. It was an important requirement that the access points ensure a consistent signal strength and high performance. In order to provide a reliable high-speed wireless network with such challenges, both a carrier-grade equipment and a profound expertise are necessary for the implementation.

THE SOLUTION

While looking for a provider who can meet these requirements, wilhelm.tel turned to its longtime partner BMAnetworks. The IT system house that specializes in the area of complex IT

"RUCKUS offered by far the best performance in testing. Among other things we have tested how many users can possibly log into the system at the same time within one second. Ruckus not only offered the solution with the most concurrent users. As the RUCKUS system comes without outdoor antennas it is still compact and small despite its high performance. Thus, access points can be installed without disrupting the cityscape".

Malte Kock
Manager System Engineering wilhelm.tel.

solutions, suggested RUCKUS as a solution provider for the wireless coverage for a first project for the Landesgartenschau 2011. Since the deployed wireless solution convinced them thoroughly, RUCKUS was also a candidate for the deployment of a comprehensive wireless for the city of Norderstedt.

"We have been cooperating successfully with BMAnetworks. Therefore, it suggested itself, to work with our established partner and find the right solution together. We presented our concept to the competition and tested extensively, which system is best suited for the project. Besides RUCKUS, Aruba and Motorola were also interested in the project," said Malte Kock.

In complex field and laboratory tests RUCKUS offered by far the best performance. To ensure the coverage and the high performance, wilhelm.tel installed RUCKUS APs T300 and 7782. The RUCKUS patented technologies BeamFlex and ChannelFly weaken interferences and improve performance. Thanks to BeamFlex the signal automatically adapts to the path with the best performance and avoids interference and obstacles. This way the strongest and consistent signal, wide coverage with high performance and a minimum of interferences is guaranteed. The dynamic channel management of RUCKUS' ChannelFly uses BeamFlex to select the best RF channel and thus optimize the signal for each client and each transmission.

In some areas, such as the Elbphilharmonie in Hamburg, RUCKUS R710 802.11ac Wave 2 access points were deployed. These high performance access points allow a higher density of

devices due to the new 4x4:4 and the MU-MIMO technology. This makes them particularly suitable for high-density environments.

"The RUCKUS solution is powerful and the products are the only ones that can be integrated almost invisibly into the cityscape. RUCKUS was able to meet all the requirements that we had imposed on the hardware," says Malte Kock.

With the deployment of RUCKUS hardware, free access to the Internet is already possible via the WLAN network MobyKlick in many parts of the city of Norderstedt and the Hamburg metropolitan region. wilhlem.tel also offers encrypted access to the network to their private customers. Business customers receive an access point, for example, for their café or the waiting room, with which their guests, visitors and customers can access MobyKlick. Other operators and public utilities can purchase the backend system at wilhelm.tel. This way, other cities can benefit from the pioneering public Wi-Fi project and provide their citizens a comprehensive public Wi-Fi.

"With our WLAN, we can offer real value to the citizens and visitors of the town and we receive a lot of positive feedback for this. Even as a business location Norderstedt is becoming more attractive thanks to our new network," concluded Malte Kock.

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