

CASE STUDY



OVERVIEW:

The city of Monheim in Rhein has around 43,000 inhabitants and is located about 20 kilometers from Düsseldorf and Bonn. Despite its contemplative size, the city has always distinguished itself by its particular innovative character.

REQUIREMENTS:

- Establishing a comprehensive, reliable WLAN network in Monheim
- Building an infrastructure that allows a high number of concurrent users
- Providing access points that fit seamlessly into the cityscape

SOLUTION:

- Installation of ZoneFlex T300 outdoor and ZoneFlex R510 indoor access points
- Establishing a reliable network solution with consistent signal strength and performance

BENEFITS:

- Free access to the Internet in most parts of Monheim
- Easy and cost-effective configuration and installation
- Creation of a future-oriented infrastructure for a sustainable economic development and for the benefit of citizens, visitors and businesses

CITY OF MONHEIM INNOVATIVE SMART CITY THROUGH TECHNOLOGY THAT INSPIRES

Innovative technologies are intended to offer citizens and visitors a higher standard of living and to make cities more attractive as a business location for companies. Smart Cities should provide intelligent solutions with added value for citizens, visitors and businesses. The basis for all projects is an extensive and public WLAN network. However, this is still rare in many German cities.

CHALLENGE

In order to equip a city with an extensive WLAN network, those who are responsible have to cope with some challenges. It is not only necessary to provide access points as invisible as possible, so that they do not interfere with the cityscape. Also, some areas which are highly frequented and urbanly challenging, pose special challenges for access points. The city of Monheim am Rhein has already distinguished itself in the past by being a particularly innovative city. In the course of the economic development program of the city, it was also decided to create a comprehensive infrastructure with glass fiber by 2018, which will be the basis for a future of Monheim as an innovative Smart City.

"A good infrastructure is important for us to attract investors and keep companies in our city. It is now one of the most important location criteria for companies. Moreover, it is our task as city administration to increase the well-being of our citizens and increase the livelihood of the inhabitants. Our Smart City solutions offer every citizen clear advantages," says Martin Frömmer, member and managing director of the City of Monheim.

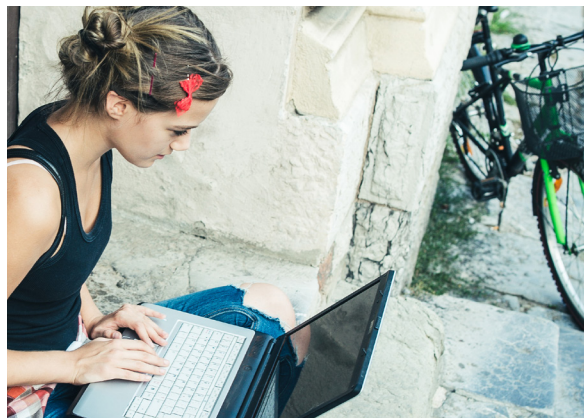
The city of Monheim therefore needed a Wi-Fi solution as a base for implementing innovative smart city projects, including a Wi-Fi portal where local retailers could present their products. In addition, a smart lighting project is being planned e.g. for illuminating corresponding areas in emergencies. For all these projects, the city needs a Wi-Fi system with a stable and comprehensive coverage. In order to ensure this, sound expertise in implementation as well as carrier-grade equipment is required.

SOLUTION

To meet this challenge, the city of Monheim was looking for a suitable provider of Wi-Fi solutions. After comparing different manufacturers, they decided to use Ruckus Wireless as a technology partner because of the convincing performance. As Ruckus Wireless requires 20-30 per cent fewer APs than its competitors for the extensive Wi-Fi coverage, this also meant a much lower investment and maintenance cost for the city of Monheim. The project is financed exclusively from the budget of the city of Monheim, which dispenses with sponsors in order to lead the further development of Smart City in a forward and speedy manner.

"We have compared different providers. For us, it was crucial that the technology of Ruckus Wireless is most innovative. The performance of Ruckus Wireless impressed us: small, smart and unobtrusive. Compared to other manufacturers, the technology convinced us most," Oliver Hilscher Department Manager Information Technology of the City of Monheim.

So far the city of Monheim installed 105 access points at 20 locations. By the end of 2018, a total of 500 APs are to be connected at 200 locations. Approximately 5,000 users are expected per day. In the outdoor area, the ZoneFlex T300 APs were chosen, while the APs



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City of Monheim, Department Manager Information Technology

ZoneFlex R510 are used in the indoor area—both with the patented technologies BeamFlex and ChannelFly. The adaptive antenna technology BeamFlex automatically directs each signal to the most powerful path, thus mitigating interference. This ensures consistently the best signal with as few interferences as possible. ChannelFly's dynamic channel management uses BeamFlex to select the best channel. This means that users are always offered the highest throughput. The AP ZoneFlex R510 also provides high-performance and reliable 802.11ac wireless networks with multi-user multiple-input multiple-output (MU) MIMO functionality. MU-MIMO increases network throughput by serving several clients at the same time. This improves the overall network performance.

In order not to interfere with the cityscape, individual APs were dyed so that they were unobtrusive in their surroundings.

The APs are managed with the Ruckus Wireless SmartZone 100 in cluster mode. The Wi-Fi controller, which is the most economical and powerful in its class, supports up to 1,024 APs from a single location. It is thus capable of delivering reliable Wi-Fi to thousands of simultaneous users.

The Cloudpath solution with onboarding access allows employees to access a secure Wi-Fi network via certificates.

Based on the Wi-Fi infrastructure and together with the Ruckus partner Ituma, the city of Monheim developed an additional service for local retailers and citizens: a Wi-Fi portal where traders can present their offers free of charge. The city does not only want to offer the infrastructure, but also to integrate the citizens with its solutions, services and offers, and to take it on a journey into the future.

"We are very satisfied with the technology of Ruckus Wireless. The access points are very easy to install and configure. The installation took only one day."

For Monheim, the Wi-Fi solution from Ruckus is the ideal basis for further projects and a long-term cooperation on its innovative urban development for the benefit of its citizens. "For us, Ruckus Wireless was an investment in our Smart City future", says Martin Frömmer.