For a safer commute - know in advance how crowded your bus is

In Offenburg, WiFi data is used to display the capacity of buses

The city of Offenburg has been looking for a solution to the current critical passenger allocation in its city bus service. The target group of the project is primarily schoolchildren and commuters who have to deal with overcrowded and delayed buses, especially during rush hour. However, the service is also available to all other passengers in Offenburg free of charge. Furthermore, due to the COVID-19 pandemic, additional buses are being used in a targeted manner in order to minimise the high utilisation. The newly developed Bus+ app provides all important information to enable an automated, self-determined distribution of passengers and optimally supports the deployment of the extra buses. In addition, this information can be accessed via a website and thus can also be used without downloading the app.

The project was implemented in cooperation with the Mayor for Finance and Social Affairs, the Department for Digitalisation and IT, the Department for Sports and Schools together with the Technische Betriebe Offenburg, the operator of the city bus service. On the technical implementation side, newcon GmbH cooperated as project manager with the Berlin-based company hotsplots GmbH.

Fast implementation using existing WiFi
All city buses were already equipped with WiFi routers from hotsplots GmbH. Since 2015, Südwestdeutsche

„At first, we had thought of the system for our schoolchildren - but in fact the Bus+ App makes the use of public transport in Offenburg even more convenient for everyone and, in these times, safer."

Hans-Peter Kopp
Mayor for Finance and Social Affairs in Offenburg

Landesverkehrs-AG (SWEG), as the service provider of Offenburg's city bus transport, has offered public WiFi from HOTSPLOTS. The approach of using the routers as a technical basis for displaying live location and utilisation was developed and advanced by newcon GmbH together with hotsplots GmbH.

A particular challenge was the assignment of the buses to their routes. Since not every bus always runs the same route at the same time, this assignment is determined with the help of intelligent heuristics. The real-time location of the buses is compared with the target timetable data and statistical methods are used to calculate which line the journey is on. After extensive testing, the system works reliably, and further optimisations are being worked on continuously.

> „We are very pleased that our home town is courageous enough to come up with an innovative solution. Offenburg is a pioneer with live passenger load and live GPS position"
>
> Philipp Kreit
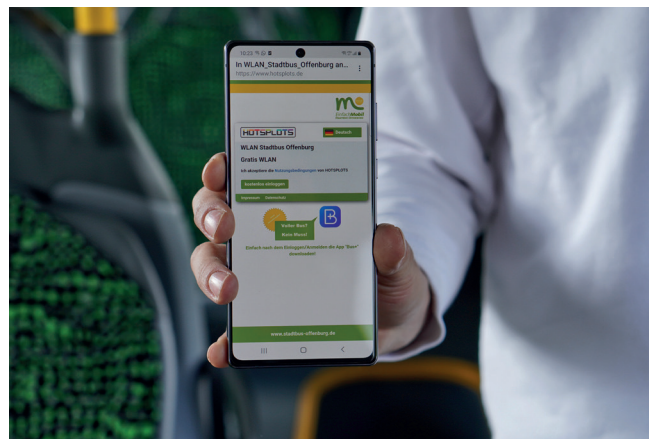> Founder & Managing Director newcon GmbH

Data protection is a priority

With Bus+, newcon GmbH, together with the city of Offenburg and hotsplots GmbH, has created a new way to measure and display locations and utilisation in public transport. In particular, the requirement to develop the system in full compliance with data protection regulations posed a challenge for all those involved, which was successfully achieved with the help of the State Commissioner for Data Protection and Freedom of Information of Baden-Wuerttemberg.

Successful launch with top reviews from users

In the first weeks, the product was very successfully received. Both newcon GmbH and the City of Offenburg consider the more than 1700 active users of the app to be an outstanding success of the project. The success of the application is evident not only from the user numbers but also by the ratings in the app stores. Here, an average of 4.9 out of 5 possible stars was achieved. One user says: „The app is a real support in my everyday life! It allows me to organise my time very flexibly and I am much less annoyed by bus rides or waiting experiences. Thank you for it!"

Innovative solution for cities and municipalities

newcon GmbH would now like to extend the Bus+ offer to other municipalities and districts. Many public authorities have already equipped their public transport with public WiFi, e.g. from HOTSPLOTS, and with Bus+ they can now take the next step towards the Smart City. The service contributes to modern passenger service and makes the use of public transport more comfortable, self-determined and safe. In addition, the attractiveness of local public transport is increased and positive effects on a reduction of CO_2 emissions and the achievement of climate targets are realised.

City bus services in Offenburg

Located in the west of Baden-Wuerttemberg, Offenburg has about 60,000 inhabitants making it the largest town in the Ortenau district. The dense city bus network connects the city centre with the city and town districts. The operators are Südwestdeutsche Landesverkehrs-AG (SWEG) and RVS Regionalbusverkehr Südwest GmbH, operational leadership is in the hands of Technische Betriebe Offenburg (TBO).