Sylter Verkehrsgesellschaft

Success Story – Free WiFi in the Bus

Since September 2016, each of the 23 regular service busses including one e-bus of the German North Sea island Sylt is equipped with free WiFi. The public transport company of Sylt, the Sylter Verkehrsgesellschaft (SVG), implemented this project with the routers of the NetModule.

The Project

To bring the 2.2 million of passengers across the idyllic holyday island Sylt, the buses drive more than a million kilometers each year. On their bus ride the passengers can now enjoy a new offering– free WiFi in every vehicle.

Each of the busses is equipped with a router, which establishes the Internet connection over LTE and simultaneously propagates WiFi for passengers inside the vehicle.

The access is kept straightforward: SSID and password are placed clearly visible on multiple places inside the bus. Before getting access to the internet every passenger is prompted to a landing page where he should accept the terms of use (Stoererhaftung). There is no need for personal information.

The project was carried out by the SVG without any external partners by using the products and know-how of NetModule.

«We are pleased to make public transport on our island even more attractive with this service. The small and compact routers of NetModule offer exactly the functions that we were looking for.»

Sven Paulsen
CEO
Sylter Verkehrsgesellschaft

Requirements

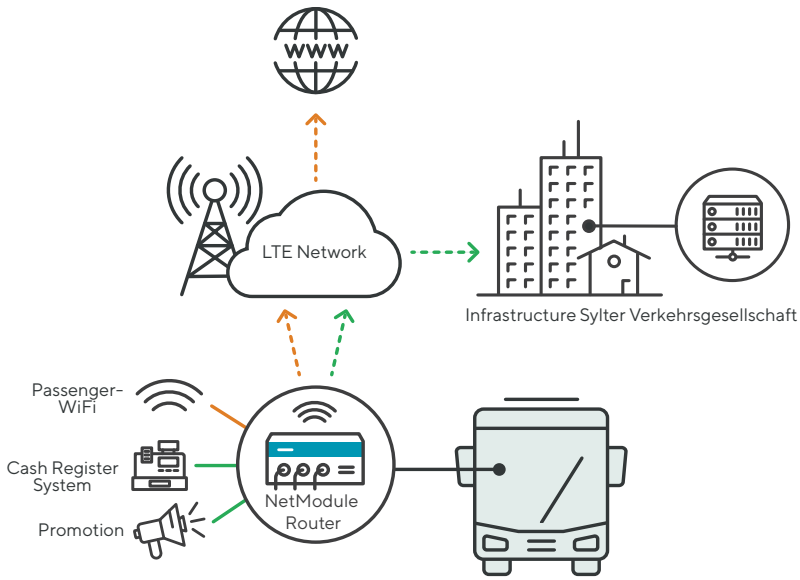
To run the project as planned the routers of NetModule had to fulfill the following requirements:

- E1 certification
- Cellular network connection over LTE
- Possibility to use 2 SIM cards
- Possibility to set up an own access point name (APN) for each SIM
- Possibility to use multiple WiFi antennas

Solution

To provide free WiFi for passengers, each vehicle was equipped with a NetModule router NB2710-2LW-G. They fulfil all requirements given by the SVG. These devices are certified according to E1, come with two LTE modules, six SIM card slots and one WiFi module with two antenna connectors.
In each of the 23 buses, a cash register system as well as advertising screens are installed. These need a secure connection for data exchange with the headquarters of the SVG.

The two applications – on one hand the passenger WiFi and on the other the cash register- and advert-system – should communicate separated from each other. This is where the two LTE modules come to good use. Each of the modules is assigned to one of the SIM cards. One of them is solely communicating with the infrastructure of the SVG while the other is used for the passenger WiFi. The connections are made by making use of an antenna on the roof of the vehicle. It will immediately be detected if 4G is not available and then automatically be switched over to the next available mobile radio standard without the terminals perceive any interruption.



Inside the vehicle the router serves as a WiFi access point. Depending on the size of the bus up to 2 antennas are used to guarantee excellent connection. As mentioned before the passengers can connect with the provided password. The network is password protected to enable encryption. To prevent large file transfers, the connection is closed once the user used up 35 MB. The routers' firewall blocks also every port that is used for file sharing. These measures prevent that individual users can use the entire data volume for themselves.

The SVG is always trying to optimize their infrastructure and services. Therefore, the data usage and the number of people using the WiFi system is logged every five minutes. This way they can see how you could optimize the solution in the future.

To be able to monitor the passenger WiFi, logs about the data consumption of each router are generated every five minutes. These logs visualize how many passengers are online and how much data volume is consumed. This information helps to draw conclusions about how the solution could be improved or where abuses are taking place.