

FTI Engineering Network GmbH

Success Story – Assistance system for rescue workers

In Germany, especially in rural areas, there are too few emergency physicians and their time is even more precious. That's why the company FTI has developed «AVA» – a solution for emergency doctors to support paramedics remotely. NetModule's routers provide the necessary connectivity.

The project

FTI Engineering Network GmbH develops video-based security systems for aviation. Innovative camera, video and sensor solutions are the company's core business.

FTI's latest development is AVA – the Ambulance Video Assistant. Thanks to state-of-the-art technology, AVA makes it possible for the emergency physician to connect remotely via live video transmission while stationary or already on the way to the scene of the emergency, to assess the patient's situation and give instructions to the paramedics on site. For this purpose, a camera system is installed in the ambulance and the mobile patient monitor and the smartphones of the paramedics are also connected to the AVA system. NetModule's cellular routers are used to transmit the resulting data.

Thanks to AVA, the patient's treatment can begin more quickly, improving outcomes and significantly increasing efficiency during emergency physician missions.



«In addition to the technical possibilities of the access point and mesh point functions, the decisive factors for the routers from NetModule were above all the partnership-based communication and support of our project by NetModule.»

Olaf Fleischhauer
Chief Engineer
FTI Engineering Network GmbH



Requirements

Reliable connectivity over the cellular network is essential for AVA. Therefore, the following requirements were placed on the NetModule routers:

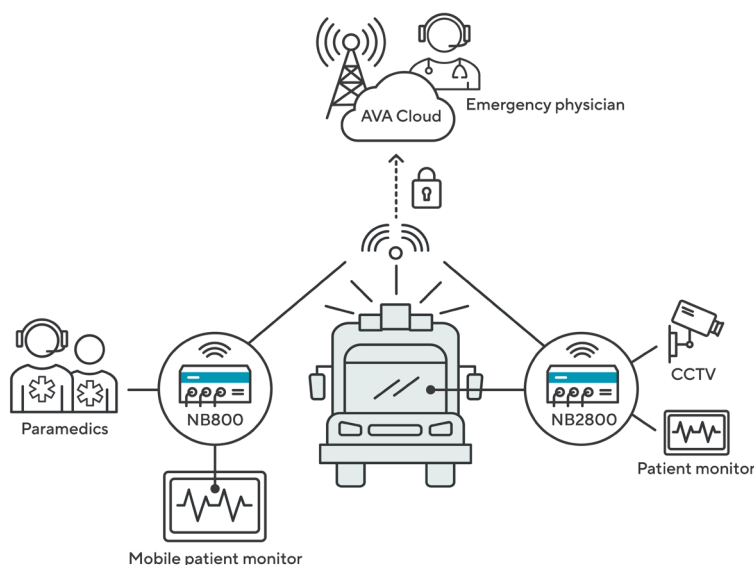
- Industrial grade/E1 certification
- Use of multiple modems and SIM cards
- WLAN access point & mesh point
- Possibility to implement own applications
- Small size and power consumption

Solution

Two NetModule routers are needed for each AVA. One NB2800, which is specially certified (E1) for installation in vehicles, is installed in the ambulance. For the best possible availability and channel bundling, FTI relies on an NB2800 model with two LTE modems. These ensure the connection to the mobile network via several external antennas and thus also to the AVA cloud. The router also has two WLAN access points, several Ethernet ports and GNSS.

The software of the router is based on Linux and contains a powerful communication protocol suite. Customer-specific software extensions, such as the AVA control software, can be implemented independently and cleanly separated from the router software via a so-called Linux Container (LXC). This allows the collected data to be pre-processed before it is transferred to the cloud.

To ensure data protection, all connections to the cloud are protected with VPN technologies, among other things.



The paramedics' emergency kit includes a small NB800 router. It is space-saving and requires little power, so AVA can also be taken along by the helpers and used outside the ambulance. It can establish an Internet connection directly via its LTE modem or connect to the WLAN of its bigger brother in the ambulance using its WLAN module. Via the WLAN, paramedics can also use their smartphones to quickly contact the doctor, ask questions and implement instructions. The patient monitor transmits the patient's read-out vital data such as blood pressure, body temperature, oxygen and CO2 saturation wirelessly to the control center or the emergency physician using the portable router or the router installed in the vehicle. This saves important time on site.

The Ambulance Video Assistant System not only supports paramedics and emergency physicians but can also be integrated into the digital infrastructure of emergency control centers, hospitals, medical care centers and nursing services. Together with FTI, we are proud to contribute to telemedical consultation and advice in the healthcare sector, especially in rural areas.