



## TECHNICAL COMPONENTS OF THE SOLUTION

AUXIL uses a client-server architecture

The system core runs on the server and stores all the data



The dispatcher's client application is used in the office by the supervising dispatcher



The operator's client application is installed on an industrial onboard computer, which is located in the cabin of each unit



Data exchange between the equipment and the server occurs via a wireless network (WiFi, LTE, 5G).



The software within the system has an open-source code, which makes the product more flexible and allows for independent maintenance and development of the system.

## OFFICE APPLICATION



The software on the server and onboard computers uses the same technology stack, which facilitates system support.

- Operating system – latest supported Linux distributives, ubuntu, debian, Rocky, etc.
- PostgreSQL database
- Backend - Python
- Front end – web – JS with a minimized number of dependencies



Dispatch center

## ONBOARD COMPUTER



The software can be installed on any industrial computer. However, we recommend using an IP65-rated onboard computer equipped with an external GPS antenna and communication capabilities. The software can be installed on computers that meet the following requirements:

- CPU – architecture x86-64, Intel Atom, i3, i5, i7, Celeron
- 2GB RAM +
- 32GB HDD +
- Interfaces (communication with equipment): USB – at least 2 ports, RS232/485 – 2 ports, CAN/J1939 – 1 port
- Interfaces (communication with server): ethernet, WiFi, LTE
- Bluetooth module

## OPTIONS FOR THE AUXIL EQUIPMENT COMPOSITION

### Standard AUXIL kit

Industrial onboard computer



GPS antenna and communication



### High-precision kit



GNSS receiver



High-precision antennas



Inclinometer



### 3rd party systems interface



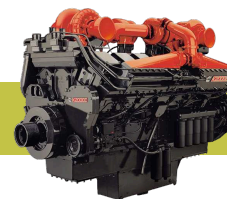
Payload control systems



Fuel monitoring systems



Tire pressure monitoring systems



Asset health monitoring systems



Driver safety systems

## ONBOARD COMPUTERS



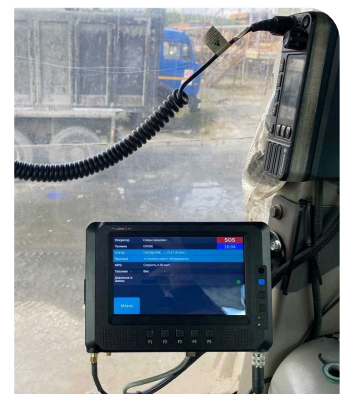
[Advantech TREK 773](#)



[Ruggon MT7000](#)



[OneRugged 10J](#)



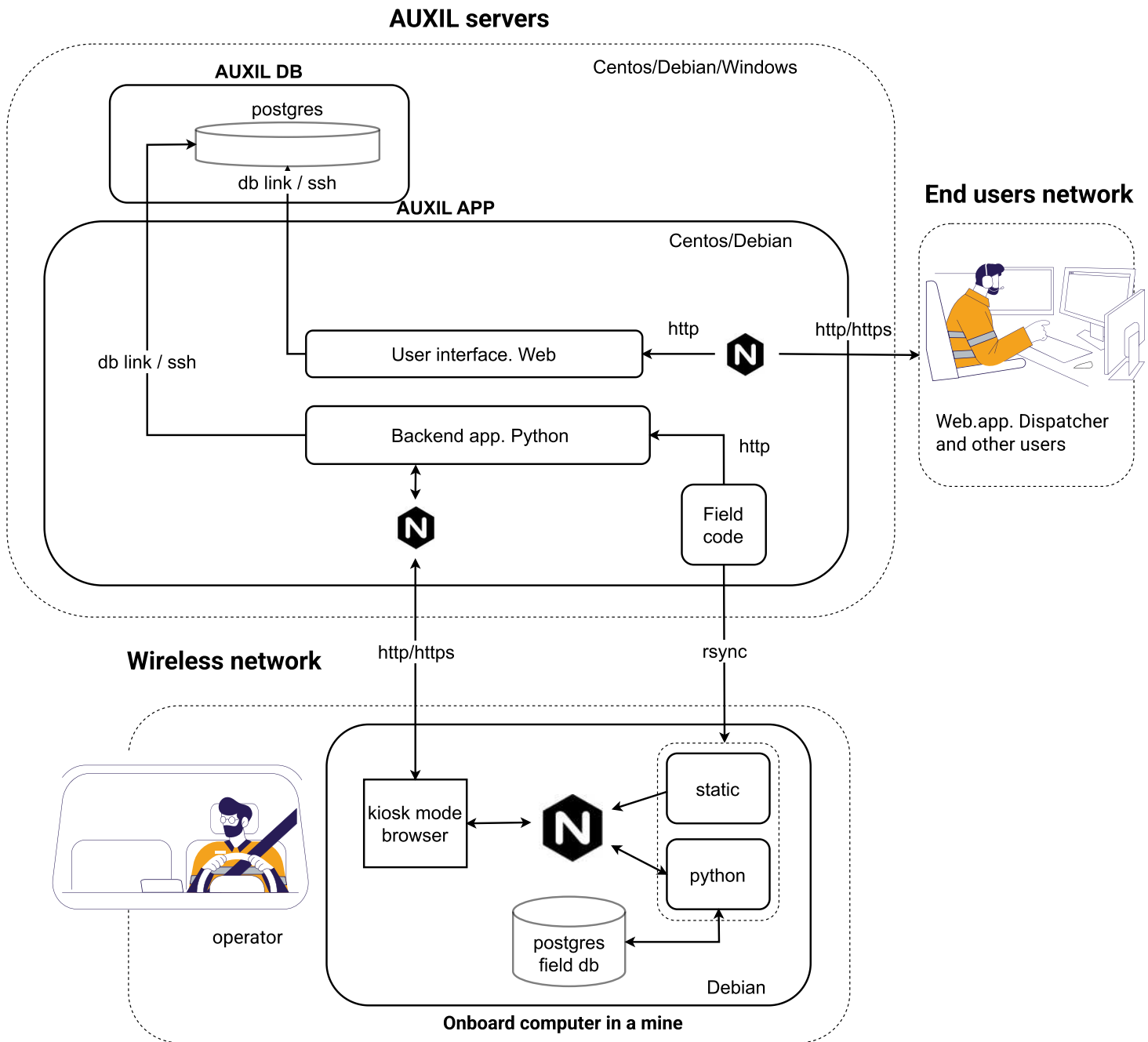
Onboard computer in a cabin

## EQUIPMENT DATA READING



- To obtain data on the operation of machine components and their usage in work cycles, it is possible to connect the machines' electronic systems to the AUXIL hardware
- Data from the controllers of Komatsu, Cat, BelAZ, Epiroc, Sandvik, and others is available

## AUXIL ARCHITECTURE



## MINING ART

- **Availability** - We use hardware in our solutions that are openly available on the market, which reduces the overall project cost and simplifies subsequent maintenance.
- **Reliability** - All equipment comes with a manufacturer's 1-2 years warranty. Our software meets 99.9% SLA requirements.
- **Flexibility** - Our software is open to modifications tailored to your business needs. You can make adjustments independently.
- **Transparency** - Forget about subscription fees for technical support and services. You pay for the provided services only.
- **Experience** - Since 2015, we have been developing and implementing our own software solutions for the mining industry.