Pulsar

Wagon identification and condition monitoring

Problem description

Pulsar for optimizing processes and security in private networks

Harbors, terminals, and chemical parks often lack precise train data upon arrival, relying on inaccurate wagon lists. This leads to issues with wagon sequence, load position, and liability for damages.

Our solution uses various sensors, such as cameras and microphones, to capture and analyze train data and provide accurate information within minutes.

This helps optimize operations, prevent disruptions, reduce liability risks, and enhance safety and productivity.

Solution description

Pulsar for optimizing processes and security in private networks

The Pulsar is an innovative, AI-driven monitoring system consisting of various cameras, microphones and other sensors that are installed in a weatherproof housing.

Thanks to its compact design, it can be set up within 1-2 days and does not require any intervention in the track or a superstructure of the track.

In operation, the system recognizes an approaching train and captures all relevant information about the train as it passes by. This information is made available a few minutes later in our online dashboard or transmitted directly via an interface.

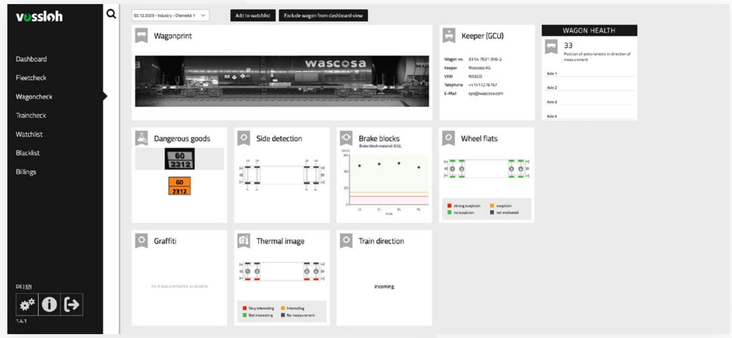
The Pulsar is available in different versions:

- The standard Pulsar is fully equipped and upgradeable
- The MicroPulsar excludes information about brake block thickness and potential wheelset damage and is upgradeable with a camera mast
- For a first glance at the technology, the mobile Pulsar is fully equipped and can be used for testing

How it works

Main Features

- Exact wagon sequence of the train, simplifying inbound handling processes by comparing it with the wagon list
- Recognition of the UIC wagon number, helping to identify and assign the respective wagon
- Recognition of BIC codes of containers or ILU codes of semitrailers, helping to speed up loading and unloading processes
- High resolution images of wagons allowing to check for external damages and - depending on wagon type - for loaded cargo
- Brake block thickness in millimeter complemented with images of the brakes helping to identify which brakes need to be replaced
- Information on suspected wheelset damage in relation to the bogie, supported by an audio file to listen to



Mobile Pulsar

Pulsar

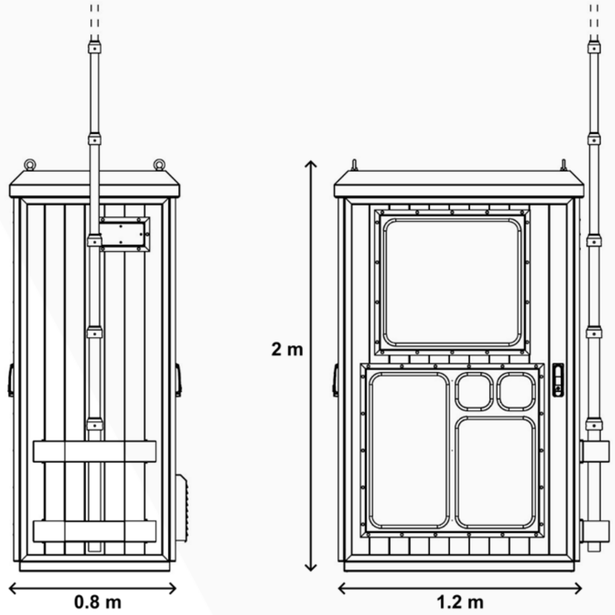
Wagon identification and condition monitoring

Additional Features

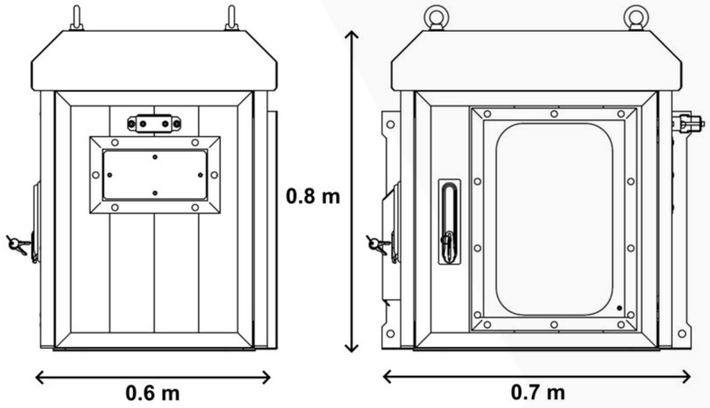
- Grafitti area on the wagon in square metres
- Hazard number & UN number for hazardous goods information
- Upgradable to record wagon top images (camera mast)
- Upgradable to record thermal anomalies of the wheel

Standard Pulsar

MicroPulsar



Technical drawing standard Pulsar



Technical drawing MicroPulsar

Pulsar

Power	110-230 V / 50/60 Hz AC
Dimensions (without mast and base plate)	**Standard Pulsar:** 1.2 x 0.8 x 2 m **MicroPulsar:** 0.7 x 0.6 x 0.8 m **Mobile Pulsar:** 3.8 x 1.8 x 2.1 m
Weight	**Standard Pulsar:** 300 kg + base plate **MicroPulsar:** 50 kg **Mobile Pulsar:** 750 kg
Sensor systems	Pulsed monochromatic or colored LED / camera systems (2x Standard Pulsar + Mobile Pulsar, 1x MicroPulsar) RFID detection system Two stereoscopic directional microphones (Standard Pulsar + Mobile Pulsar) Thermal camera extension (Standard Pulsar + Mobile Pulsar)
Installation time	1 – 2 days, no trackwork required
Max. distance to track	Up to 8 m
Max. speed (LED/camera + RFID systems):	200 km/h
Min. req. speed for acoustic system	~40 km/h
Connectivity	LTE / 5G, LAN possible