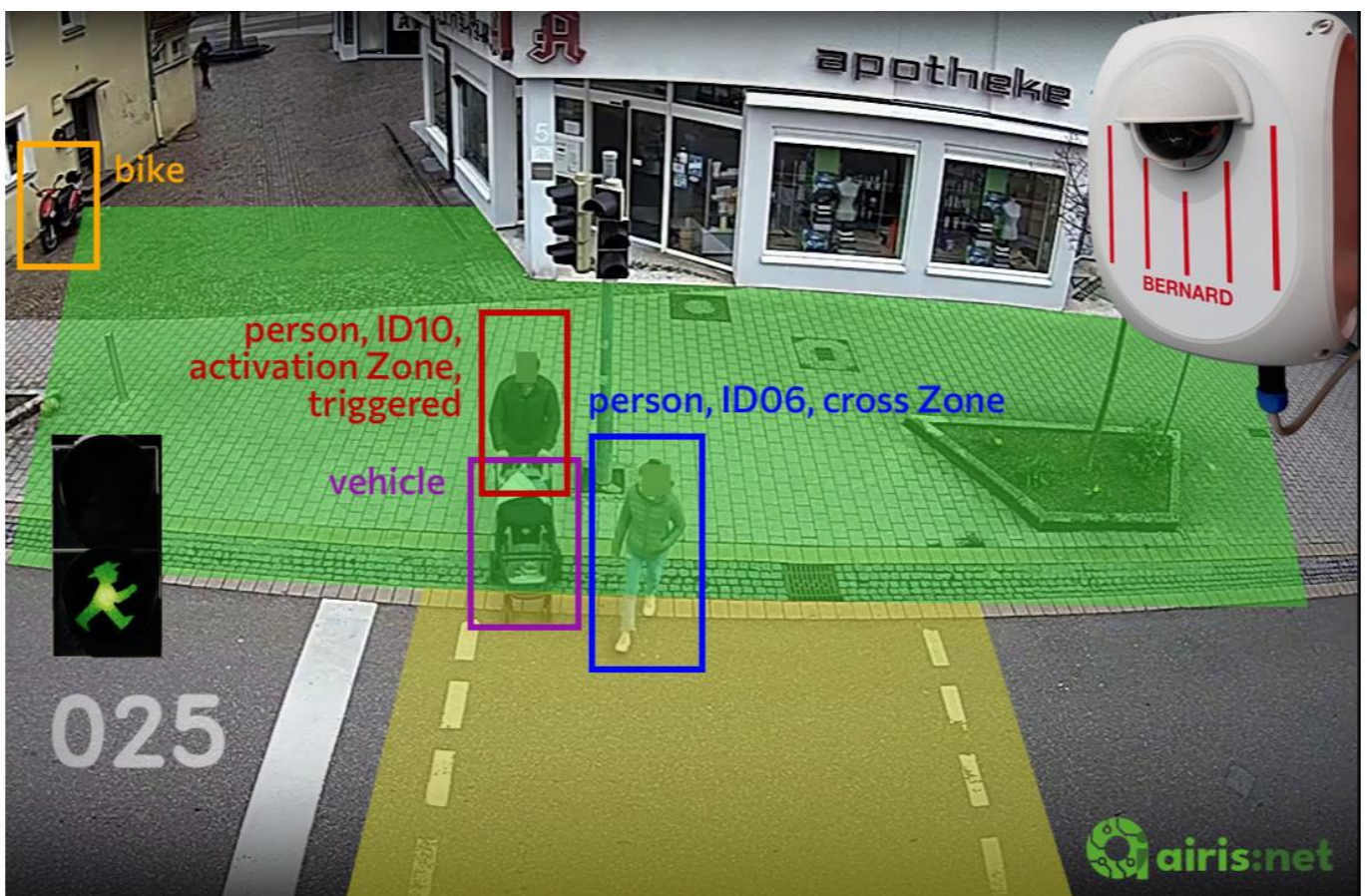


■ BERNARD Mobility Analyzer Pedestrian-AI

Product description



BERNARD Mobility Analyzer Pedestrian-AI

The BERNARD Mobility Analyser Pedestrian-AI (BMA)^{P-AI} is a system for prioritizing vulnerable road users. The system is based on an optical sensor and artificial intelligence technology (AI by irisnet GmbH), in which the captured image material is evaluated and processed directly in the sensor system. The image material is not stored or transmitted, thus ensuring data protection compliance and the real-time capability of the system.

Prioritization of pedestrians

The evaluation algorithm is based on artificial intelligence. Pedestrians approaching the traffic lights are detected at an early stage, classified according to certain characteristics and their position is determined in order to calculate the trajectory of the road users. Among other things, the AI recognizes people and groups of people, their associated equipment (e.g. baby carriages or wheelchairs), as well as motorized and non-motorized road users. The speeds of all detected objects are calculated.

An activation zone and a crossing zone are defined around the traffic lights. People walking in the direction of the crossing in the activation zone trigger the intelligent traffic light control system and the green signal is automatically requested. The algorithm thus recognizes a crossing request at an early stage. However, pedestrians outside the activation zone do not influence the control system. The activation zone can be freely designed and defined on site according to the local geometry of the location.

The detection of the crossing request takes place almost in real time (approx. 1 second or 2 step lengths of the detected person). The changeover to red for cars takes a few seconds, so that the green phase begins when the pedestrian reaches the crossing ford. There is no waiting time for the pedestrian at the crossing ford.

This system therefore not only replaces the conventional request button, but also provides an automated and faster green signal. In addition to the effect of increased comfort for pedestrians, an automated request leads to an optimization of the traffic flow. This control system is also based on actual demand, which also takes into account fluctuations in traffic volumes depending on the time of day, for example.

Green time extension

By detecting and classifying road users, green times for pedestrians can be adapted to their actual needs in real time. If, for example, large groups of people, people with reduced mobility or children are detected, the green phase can be extended up to a maximum value. Regular traffic light control then continues. This prevents premature switching to a red signal for pedestrians, reduces stress for people crossing, reduces near-accidents and thus sustainably increases road safety, especially for pedestrians.

Optional extension for traffic measurements

The BMA^{P-AI} can be used to collect additional data for traffic counts. No additional hardware or software is required for this optional expansion of functions. The data includes counts of motorized and non-motorized road users at the intersection, as well as classifications of people and groups of people, their associated equipment (e.g. bicycles, baby carriages, wheelchairs), as well as motorized and non-motorized road users. This and other data can be used as an important basis for traffic planning and measures, e.g. to increase traffic flow or safety.

Advantages

- More comfort and safety for pedestrians
- Automated and faster green signal request
- Demand-oriented traffic management
- Data protection-compliant data analysis
- Increased road safety
- Contribution to the overall traffic flow
- Optional extension for traffic measurements

Specification

Data Transfer		
Data transmission	LTE to determine the operating states	
	Serial, RS485, for controlling the traffic signal system*	
General		
Operating conditions	-20° C to +50° C	
Power consumption	12 / 24 V DC	16 W
Frequency range	47 - 63 Hz	N/A
Material	Housing: polycarbonate / rain cover: polycarbonate	
Protection class	IP65	
Dimensions	210 x 155 x 140 mm (L x W x H)	
Weight	2000 g	
Mounting type	Mast mounting, clamping range 60 - 150 mm	
Certification		
GDPR-compliant	Yes	

*Corresponding switching scenarios can be individually adapted. For power supply and data transmission, the system is connected to the BERNARD Mobility Controller via powerline communication. The controller is installed directly in the control unit of the traffic signal system and can be connected to the detector module of the control unit via potential-free contacts.

Contact



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