



we make
machines see

EYYES Protect tomorrows traffic world with AI

AI based Traffic solutions

EYYES – We protect tomorrow's world with AI

Camera based perception solutions and use cases

We are EYYES

- » Best-in-class **high-tech, AI-enabled platform** based on in-house developed software and hardware solutions
- » High-performing use cases in the **automotive, railway, traffic safety and manufacturing industries**
- » 30+ Experts in **computer vision, machine-/deep learning and embedded systems**
- » Comprehensive patent protection with **13 registered** and **7 granted** patents
- » **Founded in 2013**, Gedersdorf, subs. in Dresden & Aachen

How it works – AI, software and hardware combined

EYYESNet – Deep Learning

Fully trained CNNs optimized for traffic use-cases



AI Software Framework

Image processing, perception, 2D/3D estimation, segmentation



HW & Software Integration

Full SW stack to process picture from input to output based on LPU



What we do



Advanced object recognition and perception, e.g. driver assistance systems



AI based products and solutions for the aftermarket and OEMs



Use of full software stack with the capability for **easy implementation** in existing systems



Vertical applications in various sectors such as **mobility, manufacturing and traffic**

Global industry leaders trust us



EYES Perception

Artificial intelligence for safe vision, recognition and understanding.

- EYES is delivering the digital capturing of the traffic scenery in front of the camera. The full chain off object detection, object classification, object tracking, and segmentation provides a digital object list. We provide Real-time streaming of object data and metadata.

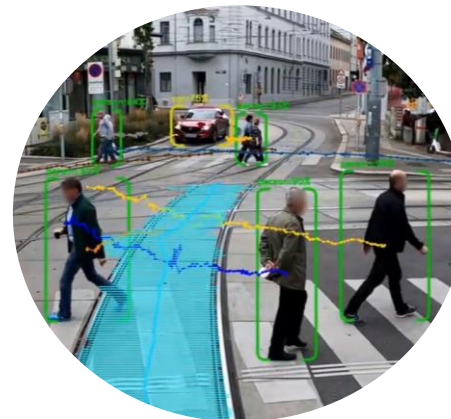
DETECTING



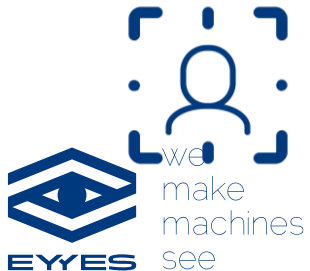
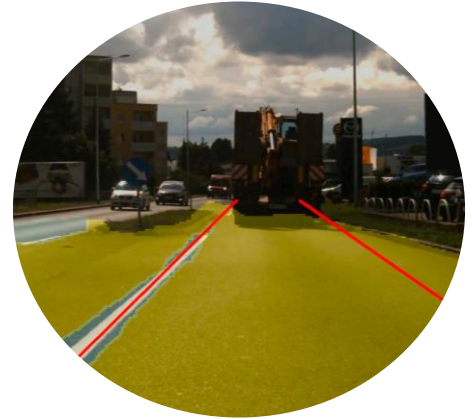
CLASSIFYING



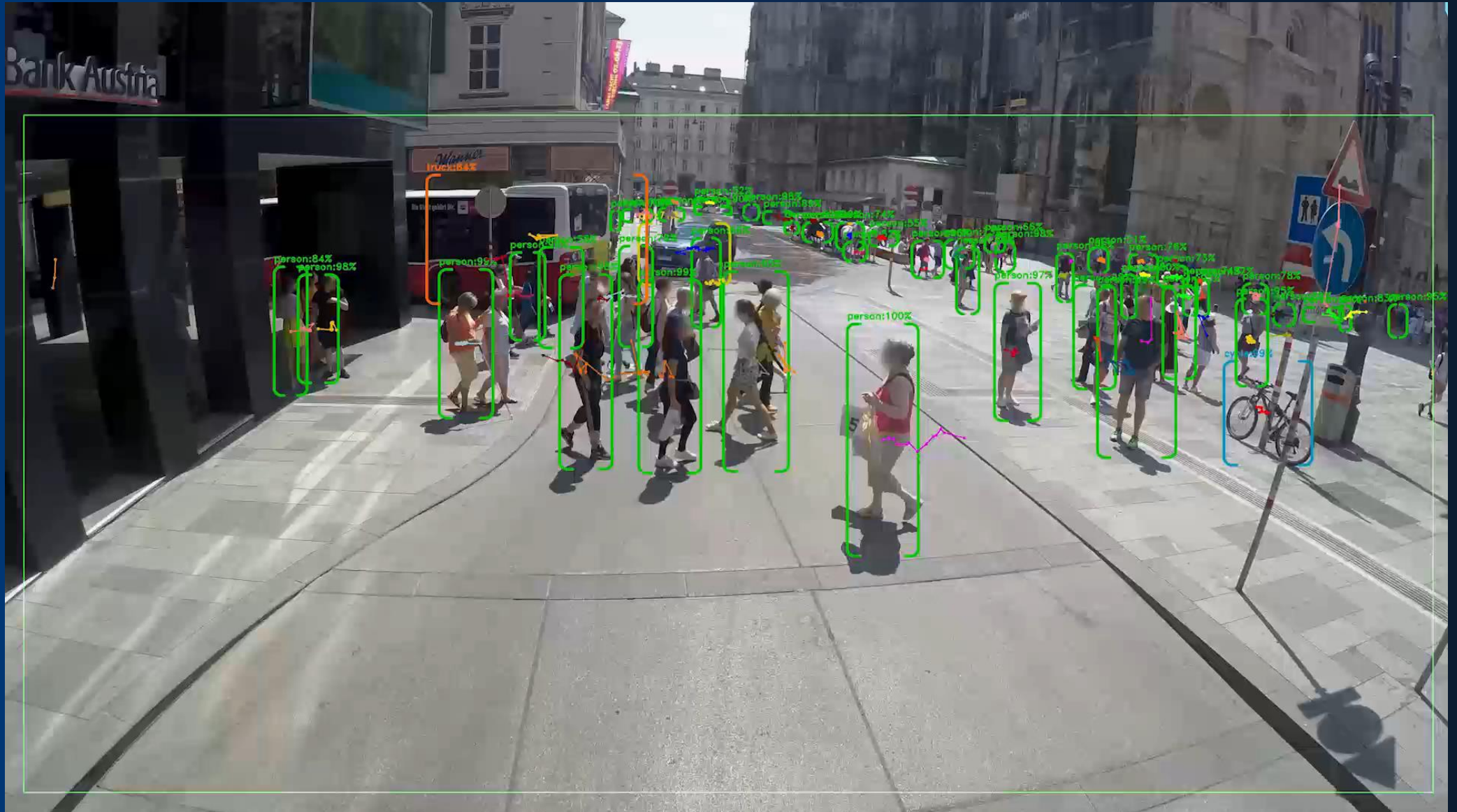
TRACKING



SEGMENTING



EYES AI – Perception Detection Test – City of Vienna





EYES

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machines see

TrafficEye: Intelligent traffic light

TrafficEye Intelligent traffic light control

Functional overview

- optimizes the green phases of the traffic light – replacement of the pedestrian button
- Increases safety
- Improves traffic flow
- Can replace expensive induction loops



Traffic light control Optimisation

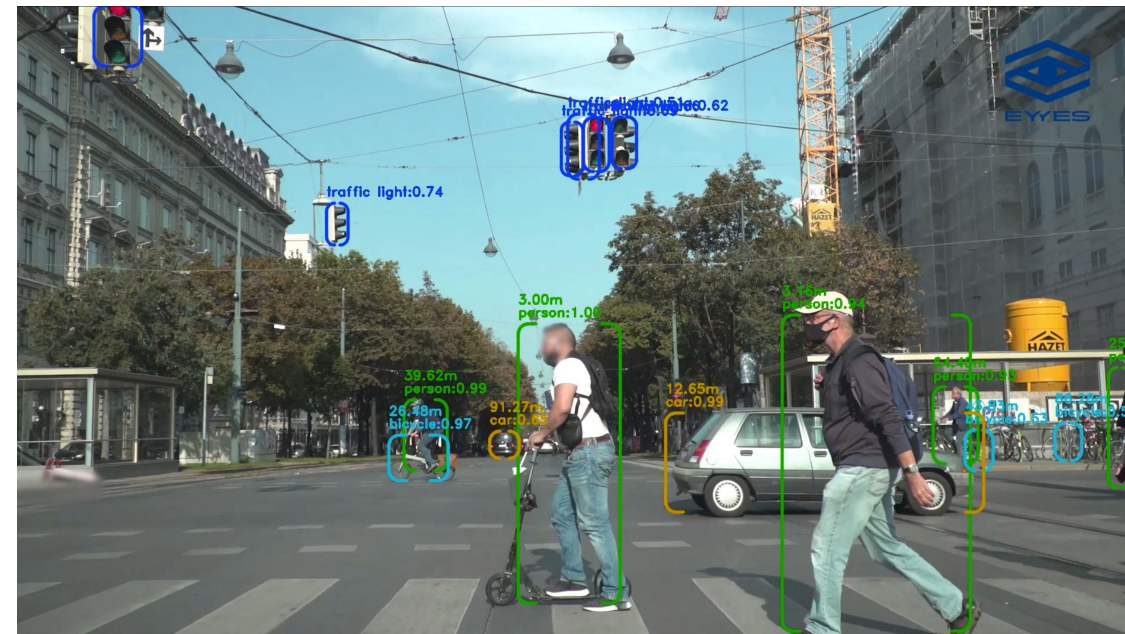
- Intelligent Green Phase Control

Object Detection

- Cars, trucks, buses
- Persons
- Wheelchair users
- Cyclists

System functions

- Presence Detection
- Speed Measurement
- Direction of travel detection
- Counting
- Congestion Detection
- Traffic Statistic Tool



TrafficEye Overview intelligent traffic light sensor

AI Use-Cases

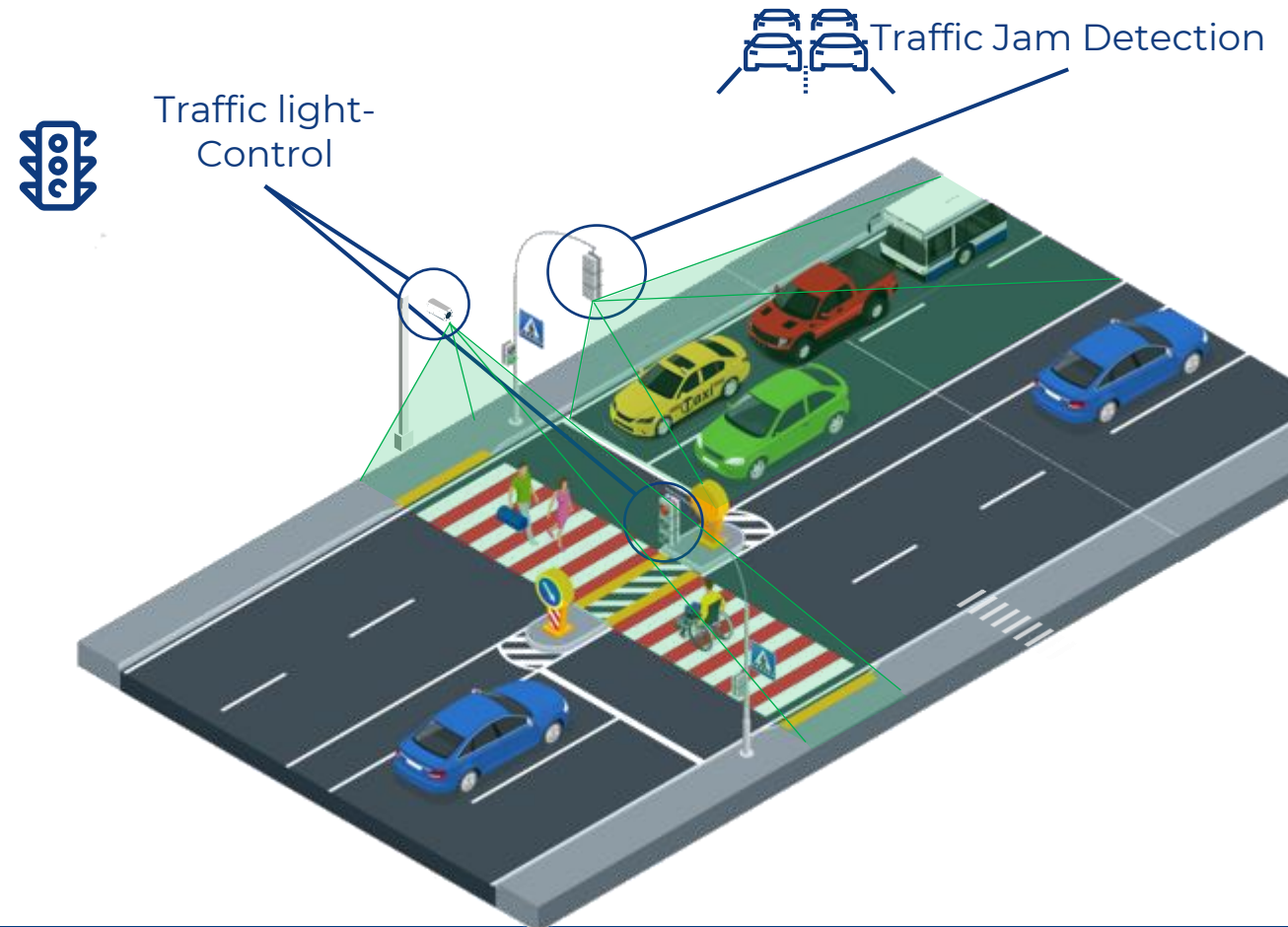
The intelligent traffic light control optimises the green phases of the traffic light and increases safety in the entire intersection area. Thanks to advanced artificial intelligence, we detect all road users and provide all the information to continuously improve the flow of traffic at traffic lights.

Traffic light control optimisation

- » Presence Detection
- » Design (before traffic light)
- » Direction
- » Count
- » Congestion Detection
- » ETA

Traffic data collection

- » Velocity
- » Classification of cars, trucks, bicycles
- » Classification 8+1, according to TLS (including other TLS data such as occupancy rate, distance, etc.)
- » Direction



TrafficEye Smart Ampel

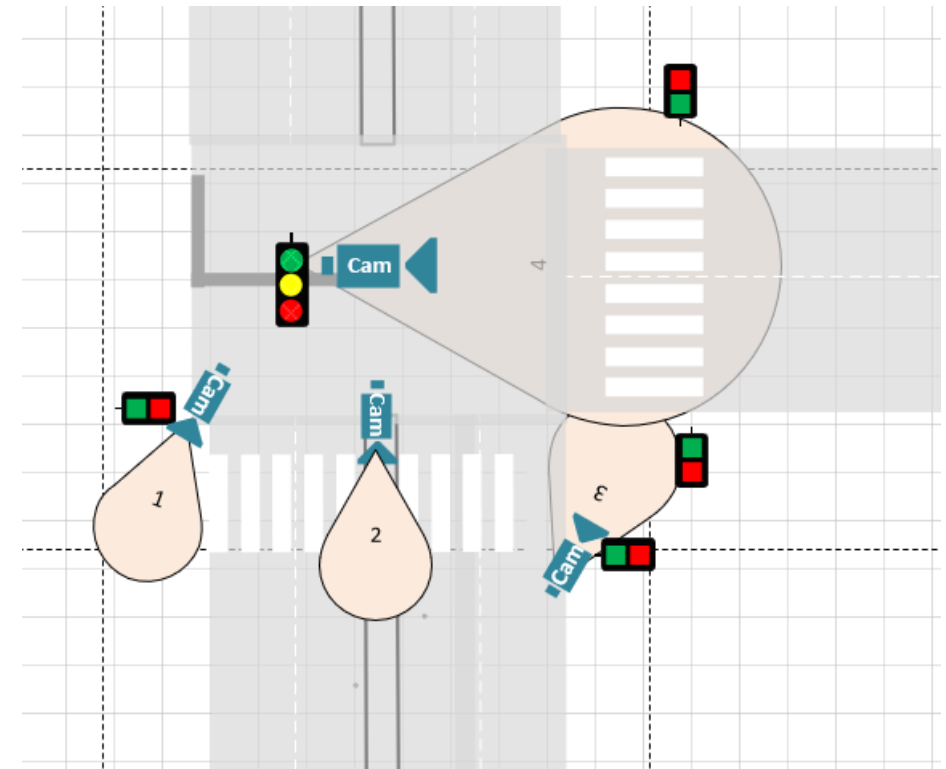
Functional overview

System Functions

- Object recognition: cars, trucks, buses, bicycles, people, wheelchair users
- Application range from 3.5m up to 90m
- Mounting height of the camera: from 3m
- Flexible configuration option for individual zone settings
- Recording of presence, near and far point, direction of travel, traffic jam, estimated time to arrival, number of objects, etc.

Advantages

- Increased safety in the entire intersection area
- Better traffic flow for pedestrians and motorists
- More safety for impaired road users
- Easy integration into the traffic light system



Example: Intelligent traffic light



Camera views from above:
Focus on the people in the defined waiting zone.



Camera view on the whole street with
defined waiting zones for detection of
cars and pedestrians.

CollisionEye: Warning system

CollisonEye: warns service and assistance employees on te highway



CollisionEye Assistance System

Construction sites and roadside assistance

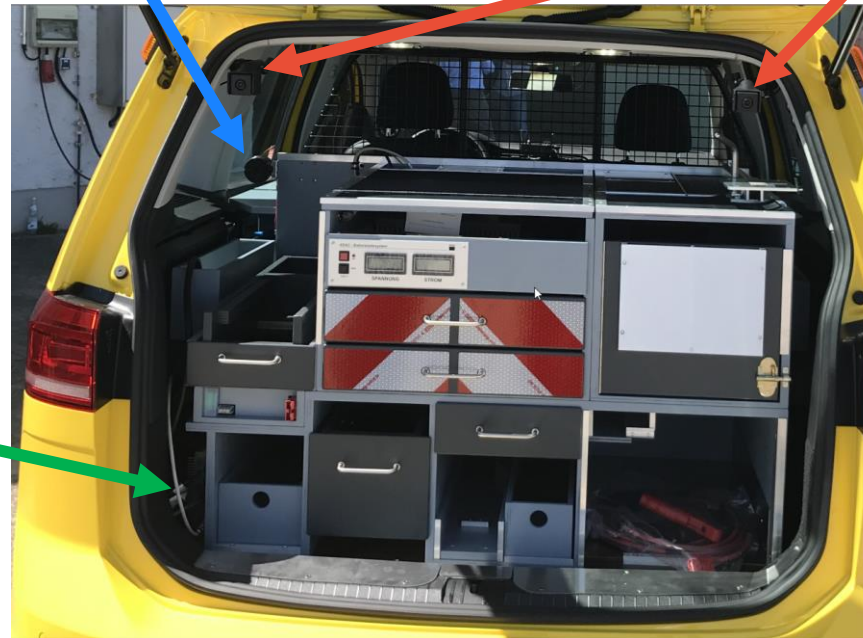
IP-camera



Signaller via Dig I/O



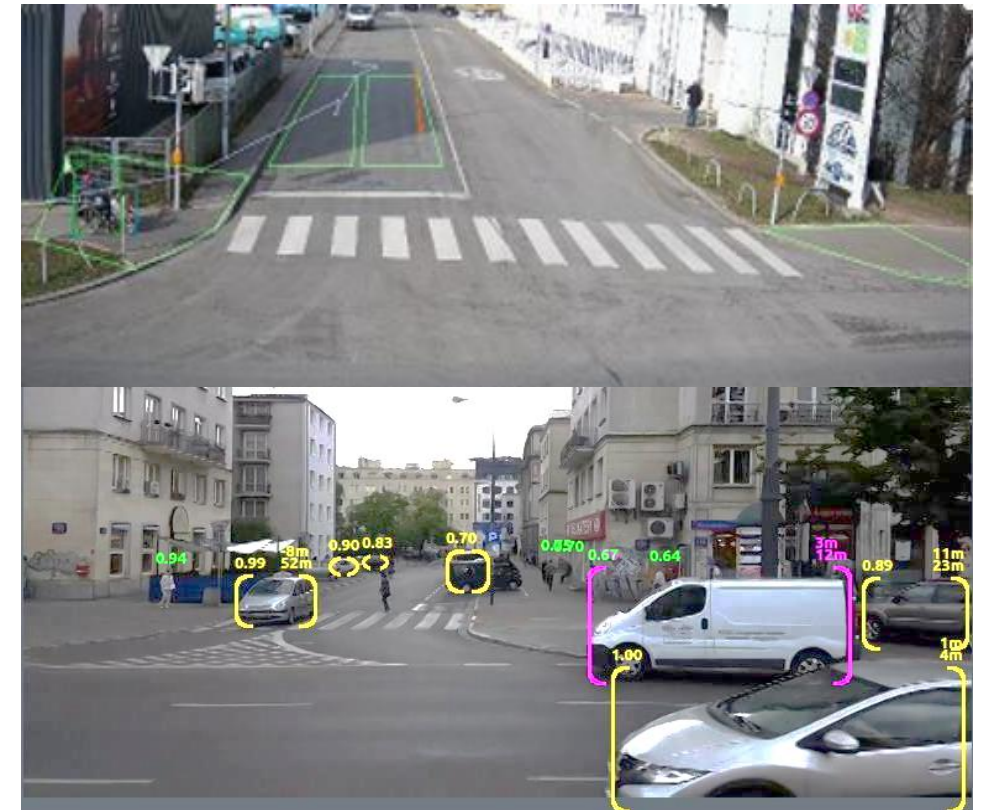
Advanced Driving Control Unit



Summary TrafficEye and CollisionEye

Advantages at a glance

- High quality of detection through ongoing AI training over the last 5 years – has been awarded by ADAC as test winner of blind spot turn assistants.
- 100% IP rights of technology and software
- Future-proof thanks to open end2end software architecture
- Easy web configuration of the software
- Easy camera calibration.
- Short implementation time



Thank You for Your Attention

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