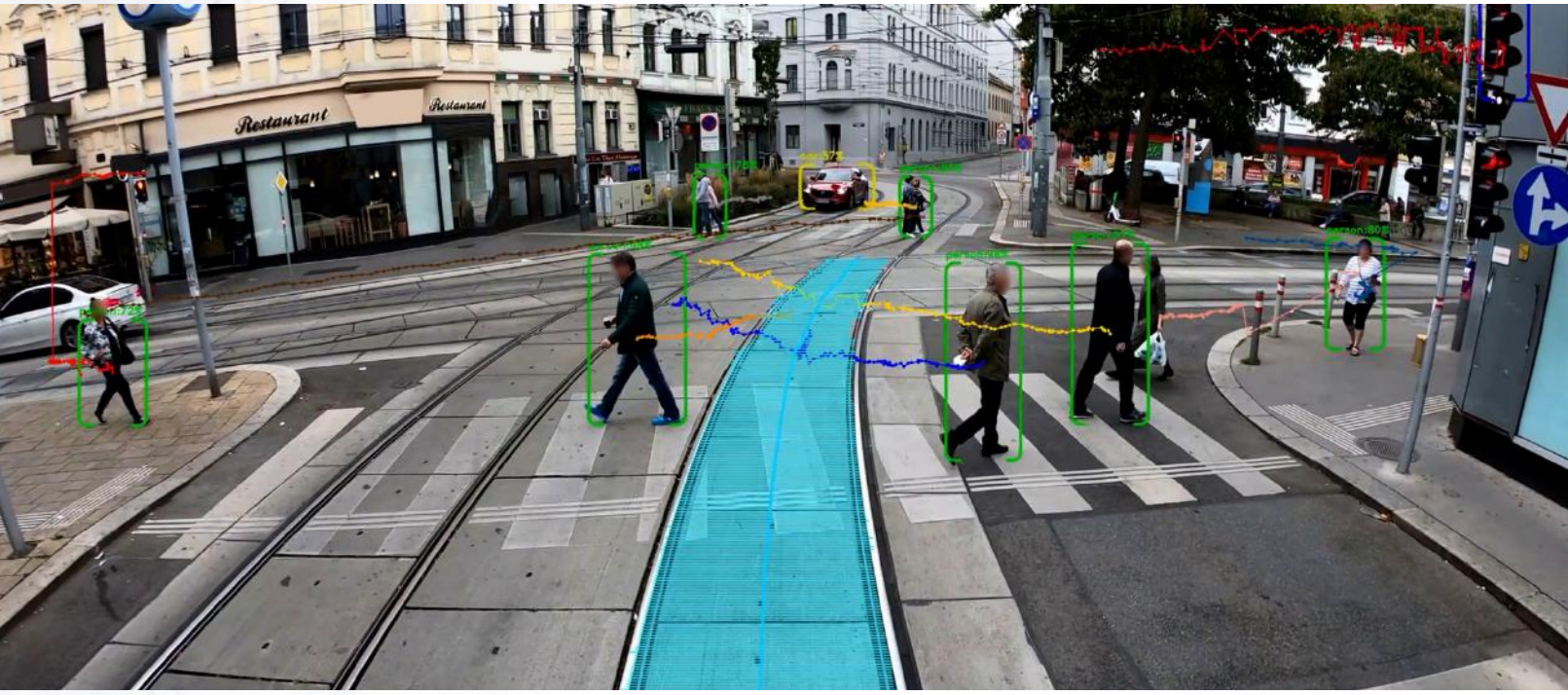# RailEye®
FRONT COLLISION WARNING
## AI-BASED COLLISION WARNING

RailEye® FRONT COLLISION WARNING

The RailEye® Front Collision Warning System from EYYES recognizes critical situations and actively warns the driver with visual and acoustic signals. The system is suitable for all rail vehicles and reliably reports hazards. Thanks to artificial intelligence and the use of high-resolution camera sensors, the system only warns in real dangerous situations.

HIGH-RESOLUTION CAMERA
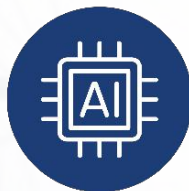
ARTIFICIAL INTELLIGENCE

ACTIVE WARNING

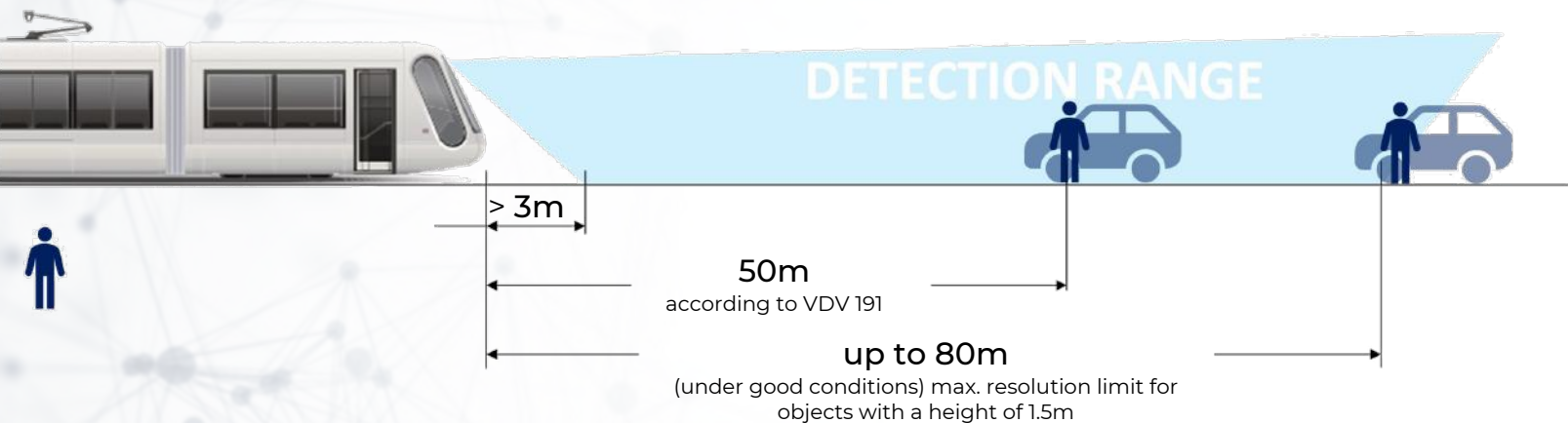**MOTION TRACKING**

TRACK DETECTION

VDV 191 COMPLIANT

RailEye®
FRONT COLLISION WARNING

Product features & functions

- Intelligent warning system using high-resolution camera sensor technology combined with artificial intelligence
- Actively informs the driver in critical situations
- Expected direction of movement of the detected objects is calculated (trajectory)
- The driver only receives a warning if there is a risk of collision (minimized error rate)

- Detects persons, cars, trucks, buses, trams, bikes, obstacles on the track, e.g. rail bumpers
- Detects the rail track path
- Meets the requirements of EN50155:2022 and VDV 191
- Configuration and calibration via integrated web interface
- Expandable with Moving off assistant for the vehicle close-up range
- Possibility of software updates

DETECTION RANGE

> 3m

50m
according to VDV 191

up to 80m
(under good conditions) max. resolution limit for objects with a height of 1.5m

Additional option: Moving-Off Assistant

- Additional Full HD resolution camera with an extra wide-angle lens to create a field of view even behind the A-pillar
- Detection of people, cyclists, motorcyclists and other obstacles directly in front of the vehicle

- Special warning algorithms for standstill or low speed situations to very close objects in front of the vehicle
- Perfectly combinable with the Front Collision Warning Assistant

0,8m

4m

RailEye®
FRONT COLLISION WARNING
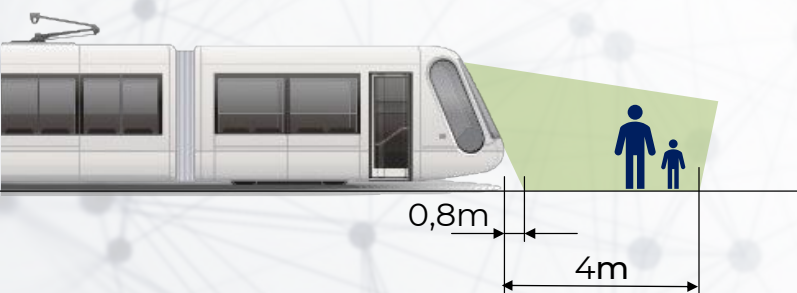
Collision warning strategy

1. If an object (person, cyclist, etc.) is in the danger zone, the total time to collision is calculated. Time To Collision calculation with a value of 3,2 s (value adjustable) generates a signal information. Result could be used for a yellow warning signal or pre-braking.

2. If the calculated total time-to-collision reaches the configured threshold value, a warning is issued to the driver. Time To Collision calculation with a value of 1,8 s (value adjustable) generates an additional signal information.

3. At standstill or low speed and very close objects in front of the vehicle, the calculation of the TTC does not provide any meaningful information. Therefore, the radius of movement of an object to its own vehicle is mapped. If these begin to overlap, a corresponding system information is generated.
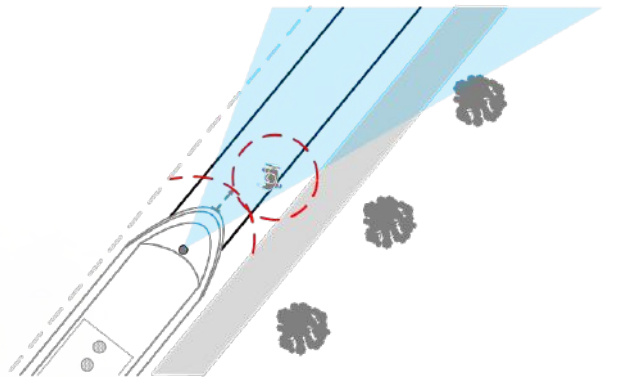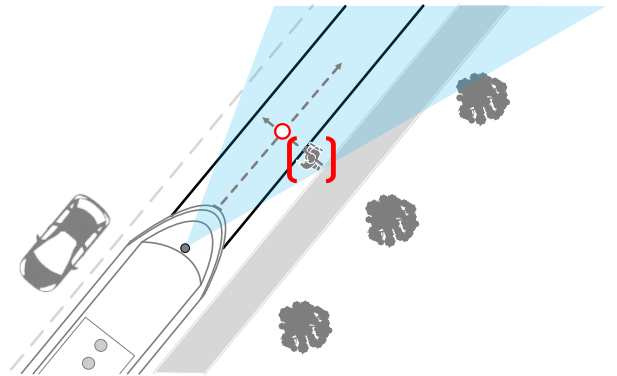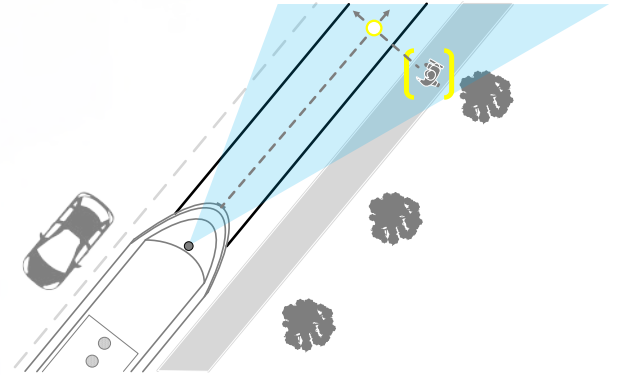
If the driver overrides, no further signalling is generated, e.g. for 5 seconds (configurable via the web interface).

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RailEye®
FRONT COLLISION WARNING

AI Computing Unit

- Compact AI Edge In-vehicle computer
- Built-in NVIDIA® Jetson Xavier™ NX SOM, up to 21 TOPS compute
- Rugged, fanless design with IP67 rating
- Wide range operating temperature of -30~70°C
- 24V DC-in
- EN50155:2017 with power isolation, CE/FCC, UKCA, Emark certified)

Single Forward Facing Camera

- 1/2.9" CMOS sensor for Full HD resolution,
- 1920x1080 px @ 30 frames/second (Extended EYYES HDR)
- housing/funnel depending on windscreen & mounting position

EN50155

VDV 191

we make machines see