

SWISS TRAFFIC
we innovate mobility

SWIROO
PART OF SWISSTRAFFIC

AI SWISSCARPOOLING AI



Flexible and high-precision Swiss system for automatic vehicle occupancy detection (VOD) in all weather conditions.

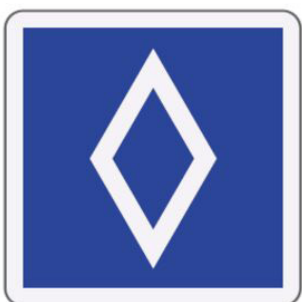
The SWISSCARPOOLING AI system consists of:

- a LiDAR unit to determine the vehicle position
- an infrared light source to illuminate the vehicle occupants and overcome windscreen tinting
- an infrared camera to capture images of the vehicle occupants
- a processor running the deep learning software to:
 - determine the occupancy of front and rear seats
 - identify the licence plates of offending vehicles and
 - securely transmit the images and metadata to a tolling system.

Each unit is designed for one lane. Two units can be mounted on the same pole to serve two lanes. The system is designed to detect vehicles travelling at speeds from 20 to 180 km/h - without Stop&Go. It can recognise the vehicle type (motorbike, car, bus, lorry) and also count the riders on motorbikes.

Areas of application:

- Based on a minimum vehicle occupancy during specific times of day / days of the week
- Bus lanes, reserved access routes, etc.
- Reduced parking fees (public and company parking lots)



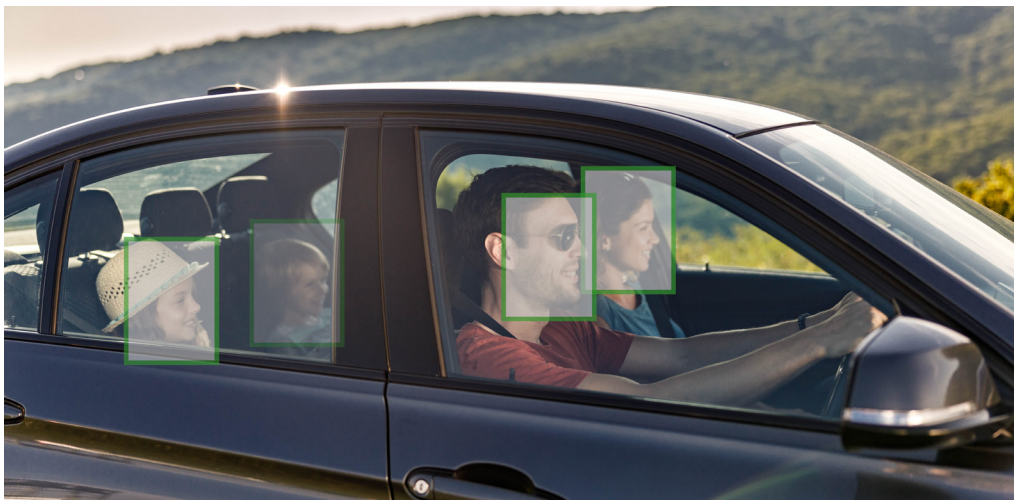
Barrier opens automatically when a minimum number of occupants is present.



Fixed system (totem)



Mobile system



System strengths

Extremely high accuracy: 99.2% vehicle detection, 98.3% correct occupant count (Cerema France pilot test, 2023).

Quick set-up in less than 2 hours per site (with no further need for site-specific training or tuning).

Preservation of privacy throughout the lifecycle, including during fine-tuning, by anonymising images.

Single-camera operation for occupancy detection (fewer parts and less maintenance).

Ability to detect vehicles driving on multiple lanes despite obstacles through extended triggering.

SPECIFICATIONS

Totem

Dimension and weight:
100 x 50 x 35 cm, 50 kg

Mobile

Dimension and weight:
38 x 38 x 57 cm, 45 kg

General

Car speed: 20 to 180 km/h

Power: 400 watts

Operating temperature: -20°C to +70°C ambient temperature



Mobile or fixed system (totem) available.



Anonymous recording of the number of occupants in vehicles.

Data protection

swissCARPOOLING AI has integrated its own patented anonymisation technology. The system can mask personally identifiable information without compromising the readability of the image. Additionally, image blurring can be applied throughout the entire process, including during calibration, ensuring individuals are never recognizable.

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