

ZKW

Smart Protect

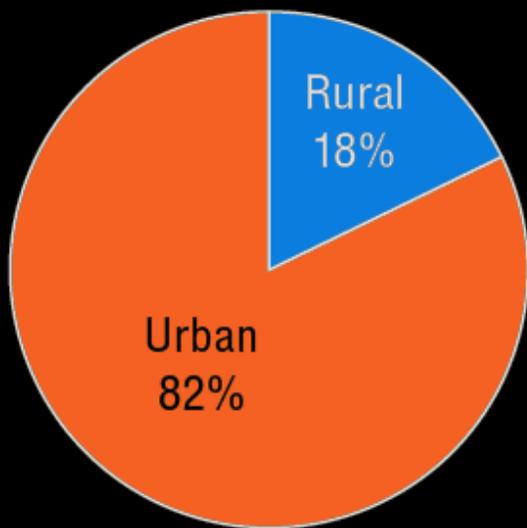
Multimodal sensor light
system for the protection of
VRU

Thomas Reiter

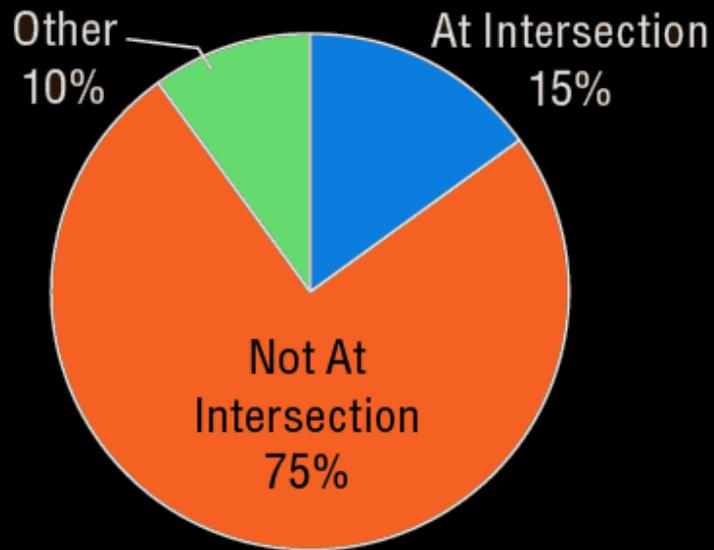


Fatalities in Relation to Land Use, Location and Light Condition

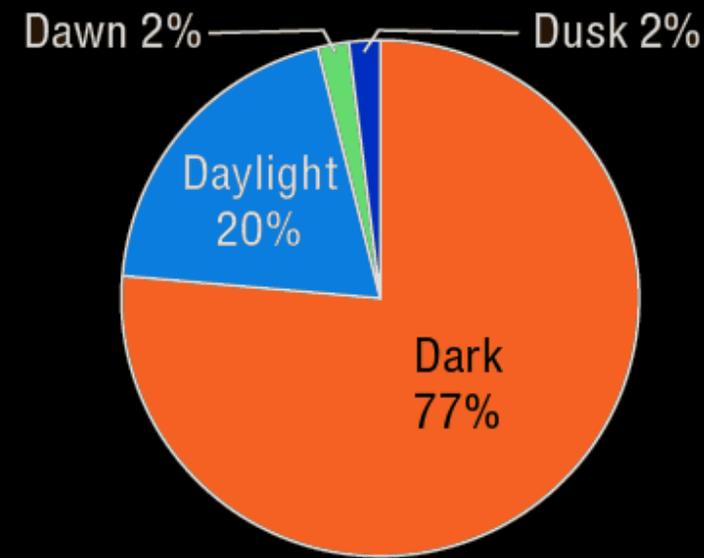
Land Use



Pedestrian Location*



Light Condition



Source: FARS 2020 ARF



> FFG: The Austrian Research Promotion Agency (FFG) is the national funding agency for industrial research and development in Austria

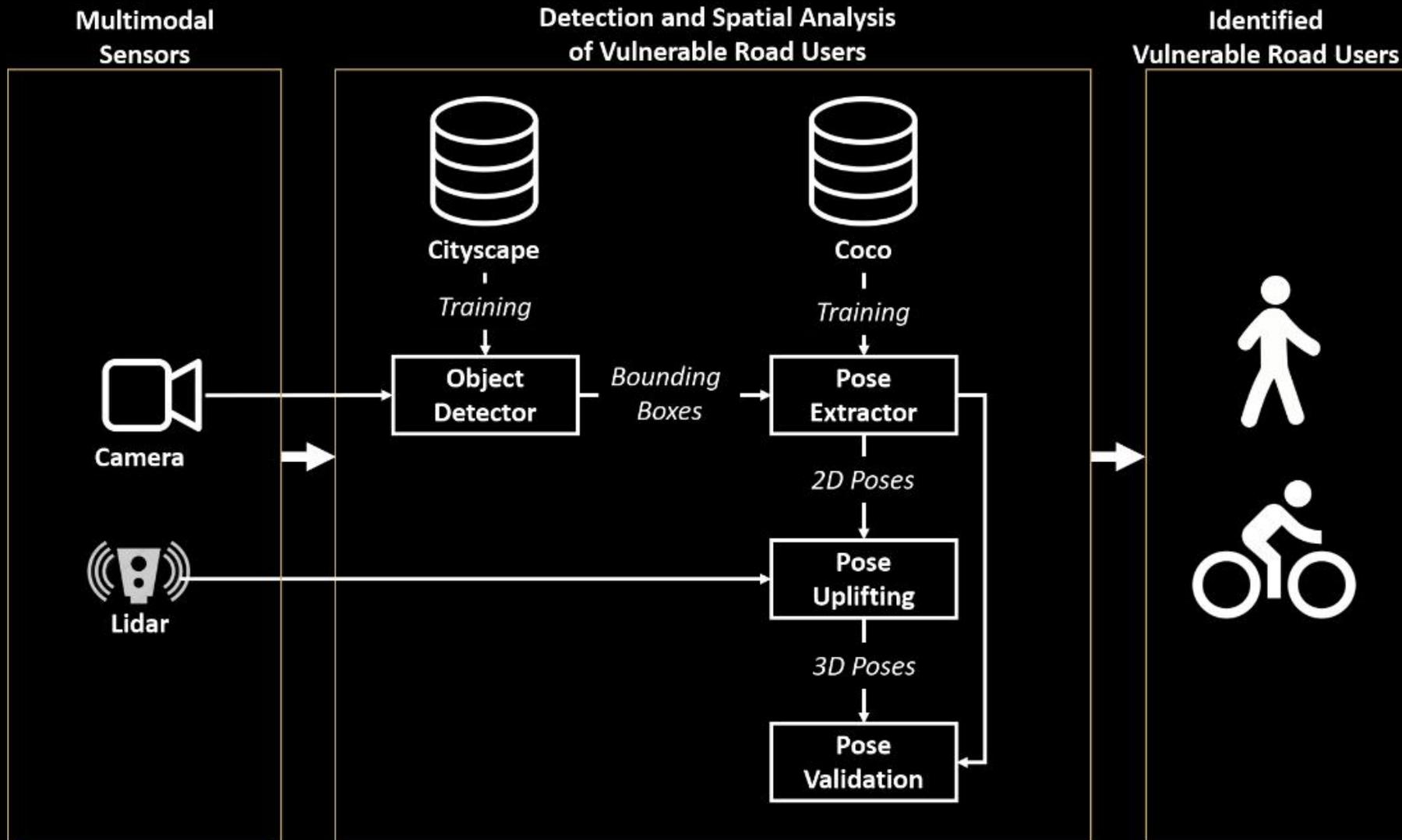
> Runtime: 3 Years (started 2020)

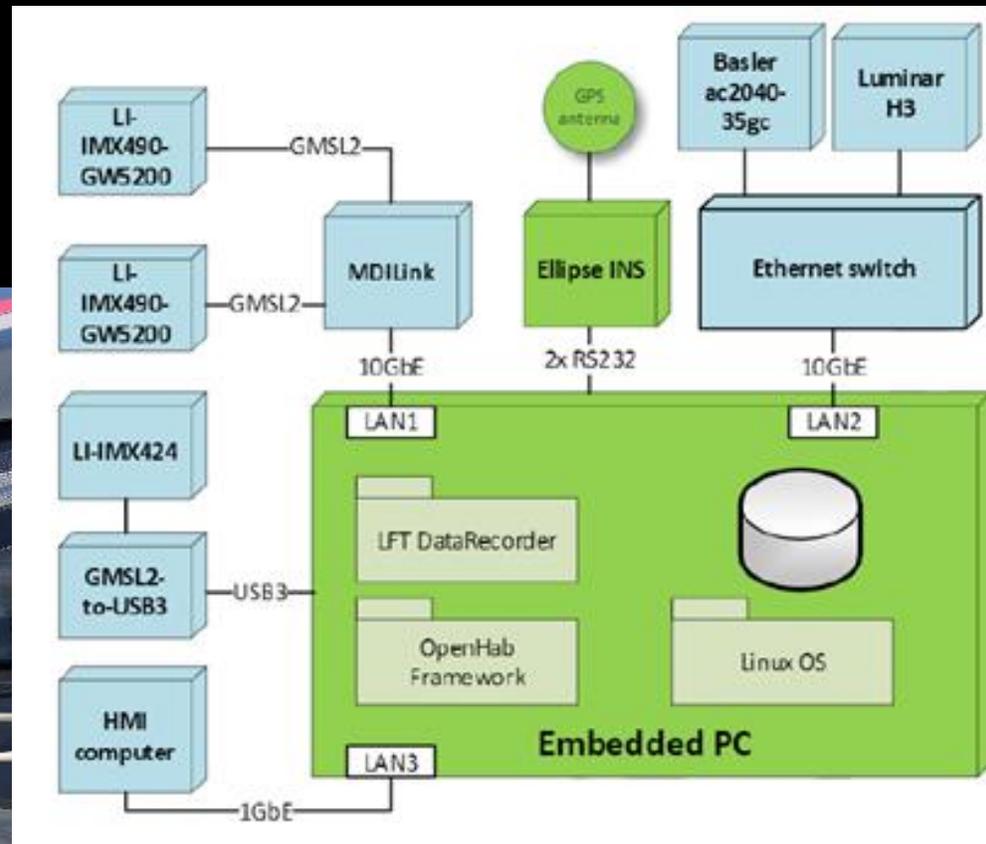
> Consortium:



> GOAL: Development of a robust sensor system that is capable to predict the behavior of VRUs







- > Testcases: Crossing, Overtake, Obstructed Crossing, Junction
- > VRU: Pedestrian and Bicyclist
- > Variety: Speed (10, 20, 40, 60 kph), light conditions, Weather conditions
- > Context: Alert, Distracted
- > Interaction: None, Assign priority, Orientation on the banquet, Handsign
- > Special Attention: Ethic (Stunt woman, Stunt driver), Data privacy measures



Testing in Zalazone





Available -ADAS Surface

Characteristics

- 250x60 m **action surface**
- 400 m long 8 m wide **acceleration lane**
- With **roadmarkings**, cross roads section
- For certified **NCAP/ADAS Test**
- Up to **130 km/h speed**

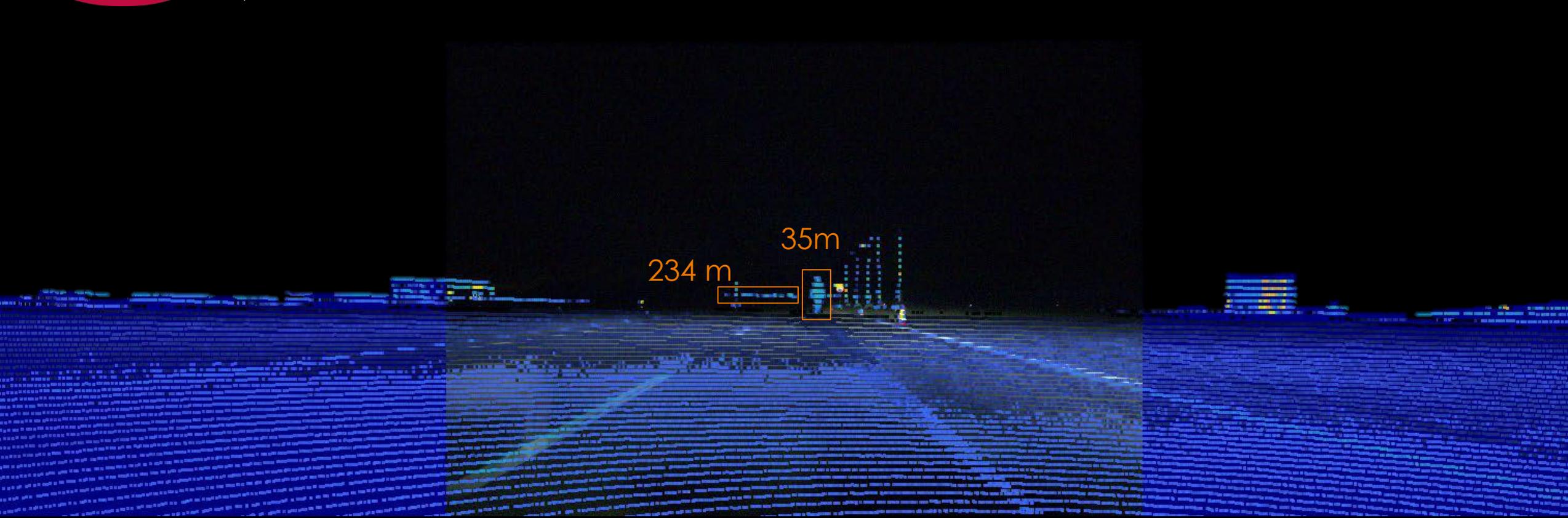


Testing in Zalazone – Junction right turn





Testing in Zalazone – Overtake





Testing at Digitrans - Rain





Testing at Digitrans - Rain



The screenshot displays the CVAT (Computer Vision Annotation Tool) interface. The main window shows a video frame of a city street with several pedestrians. A yellow bounding box is drawn around a pedestrian in the center, with a tooltip displaying the following information:

- PEDESTRIAN 5 (MANUAL)
- Trackable: *(true)*
- Crossing: false
- Waiting to Cross: false

The right sidebar contains a list of objects with their respective tracks and settings:

- Object 2:** RECTANGLE TRACK, Pedestrian. Includes controls for track navigation and a 'Crossing' checkbox which is checked.
- Object 5:** RECTANGLE TRACK, Pedestrian. Includes controls for track navigation and 'Crossing' and 'Waiting to Cross' checkboxes, both of which are unchecked.

The bottom right corner of the sidebar shows the 'Appearance' settings, including options for 'Color by' (Label, Instance, Group), 'Opacity' (Selected opacity slider), and checkboxes for 'Outlined borders', 'Show bitmap', and 'Show projections'.



Thank you!