Collision Avoidance By TBL
(Transponder Based Localization)

TBL enables driver assistance and collision avoidance functions in intersectional scenarios

- Localization and tracking of visible and occluded vehicles
- Calculation of potential collision paths
- Object classification and plausibility checks
- Driver information and warning
- Alerting and (autonomous) intervention

(Demo) Action Concept and Warning Strategy

Concept comprises the following steps:

1. **Detection**: The system is aware of a potential risk of collision
2. **Information**: The driver is informed about an existing ROC he should pay attention to
3. **Warning**: High ROC, driver must react immediately
4. **Alert & Intervention**: System triggers an autonomous braking for collision avoidance

Demo Part 1: Path Prediction and Object Classification

- Probe-vehicle (smart) is occluded but within the detection area of the Onboard Unit (OBU)
- Ego-vehicle (S-Class) user interface (UI) shows relative position of smart and potential trajectories of the S-Class
- Changing steering angle bends movement trajectory bundle of S-Class
- Collision path with smart or close passing can be adjusted
- S-Class moves towards smart to show localization quality (differentiation between collision course and close passing)

Demo Part 2: Collision Avoidance Driving Scenario

- S-Class and smart vehicle start at position 1
- Both cars are on collision course and would crash at position 2
- The S-Class localizes the smart and calculates ROC
- The S-Class system informs and warns the driver, if he does not react at all
- Two seconds prior to the impact the S-Class initiates an autonomous braking to avoid the collision

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