

# Situation Analysis

FORSCHUNGSINITIATIVE  
K O - F A S



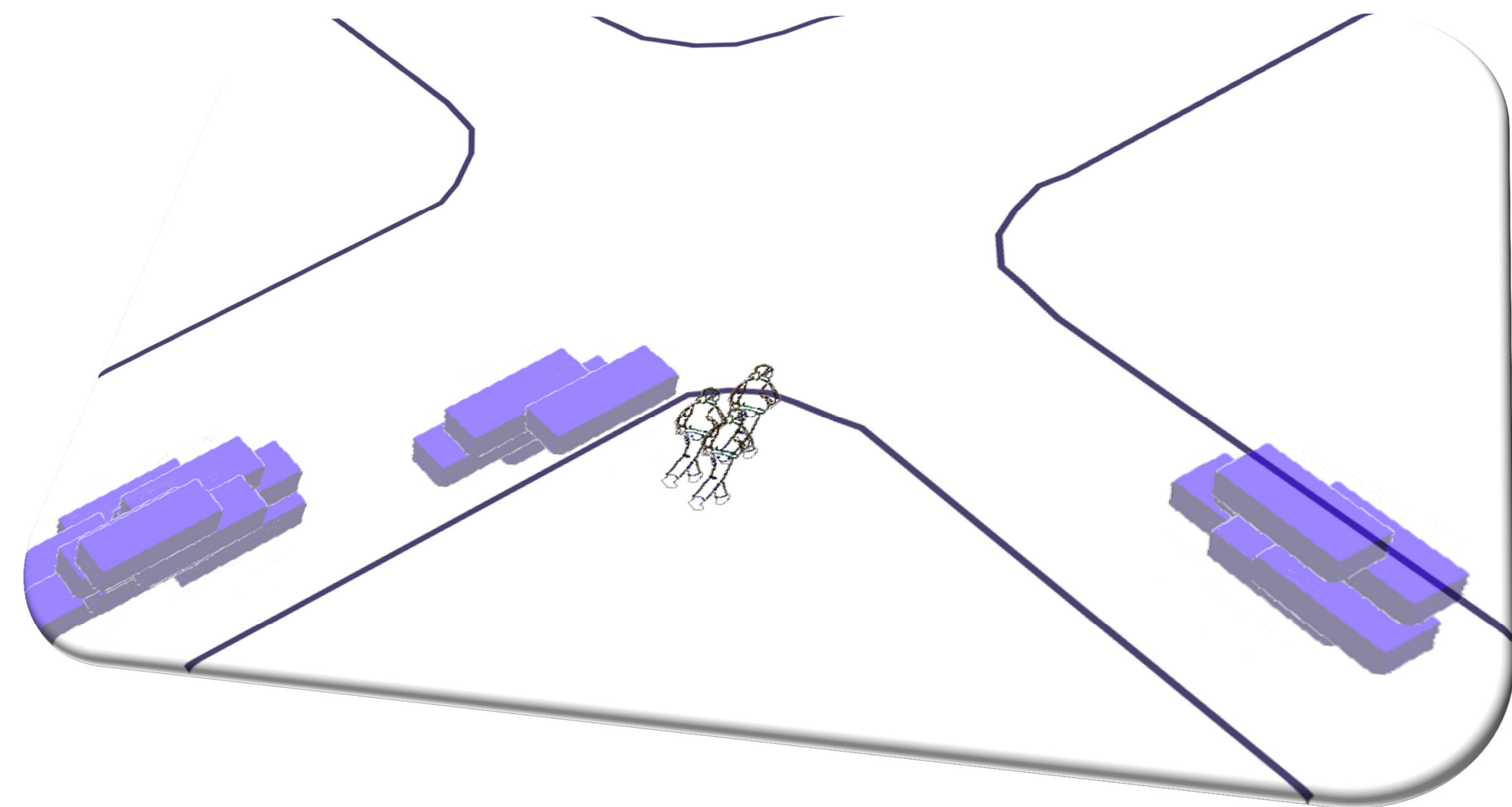
Project Ko-PER

## Correctly handle uncertainties of sensor and localization output

A major challenge with situation analysis is the adequate handling of uncertainties in the input data. Our challenge is to detect hazardous situations as early as possible while keeping the number of false alarms diminishingly small.

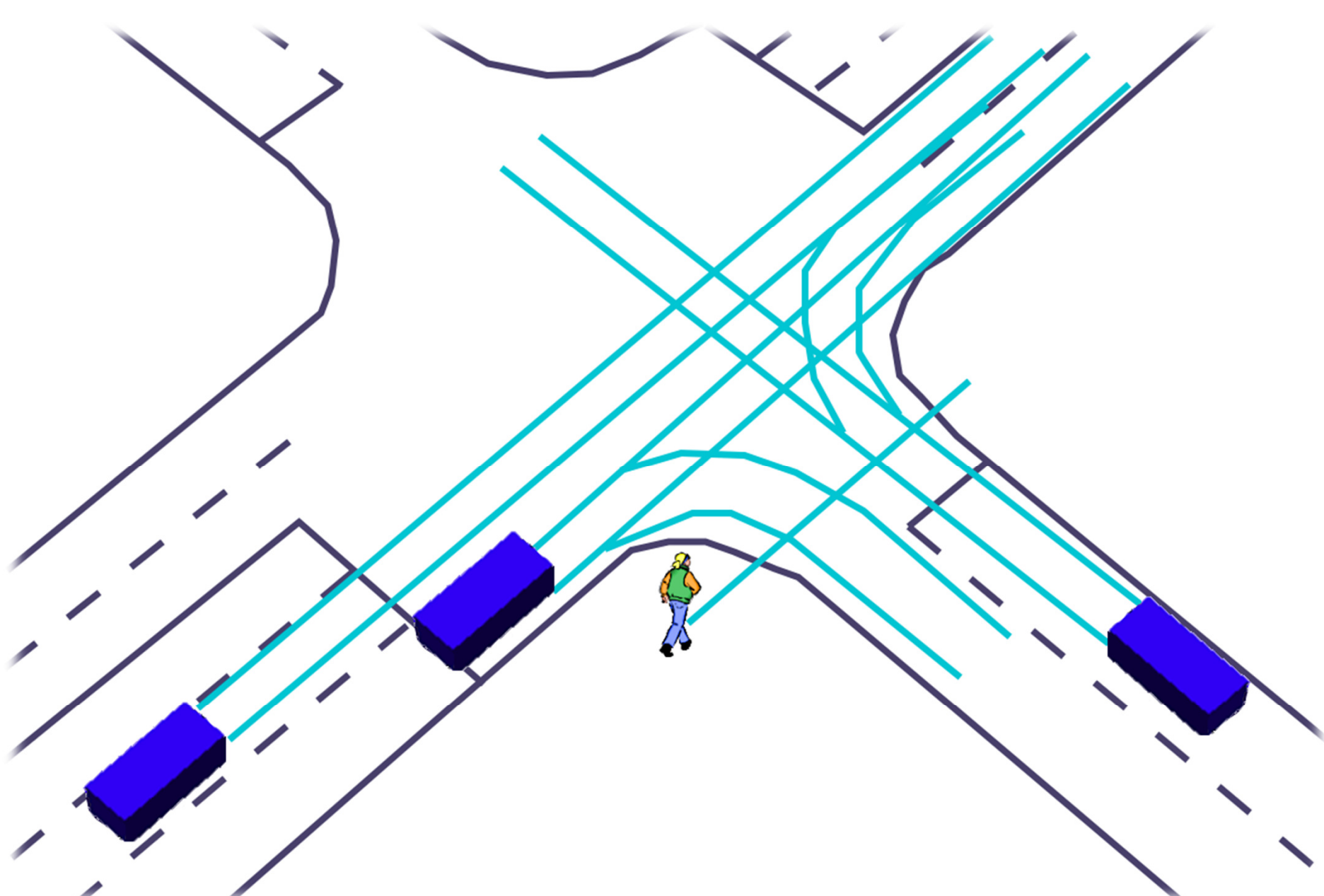
The main questions in the project Ko-PER for Situation Analysis are the following:

- What is a driver's intention?
- Where and when will potential conflicts occur?
- How reliable is the situation understanding?



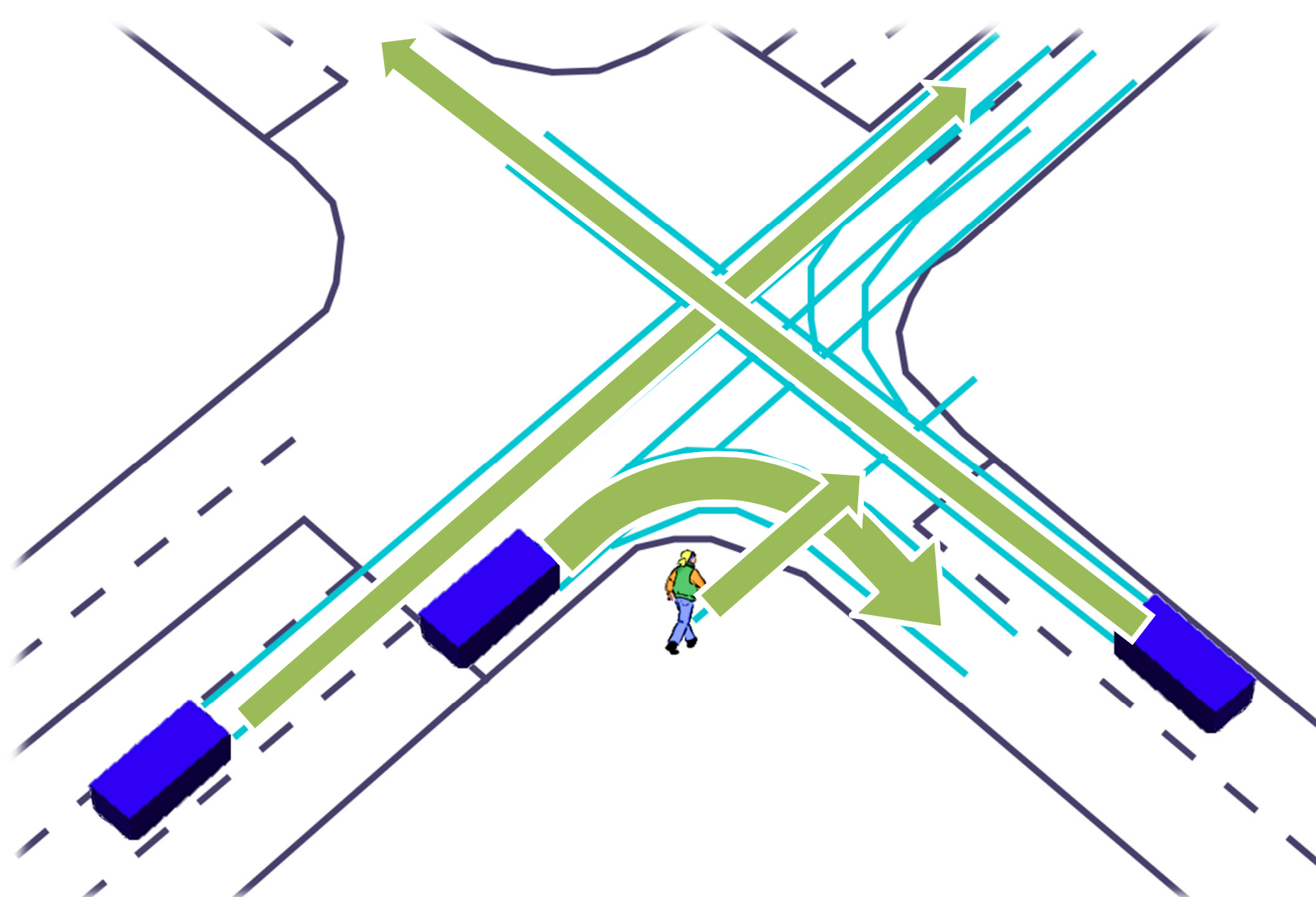
### Understand the traffic situation

Understanding and predicting occurring traffic situations is crucial in order to infer correct criticality measures.



**Map-Based Probabilistic Path Prediction**  
(Daimler AG)

### Predict intentions

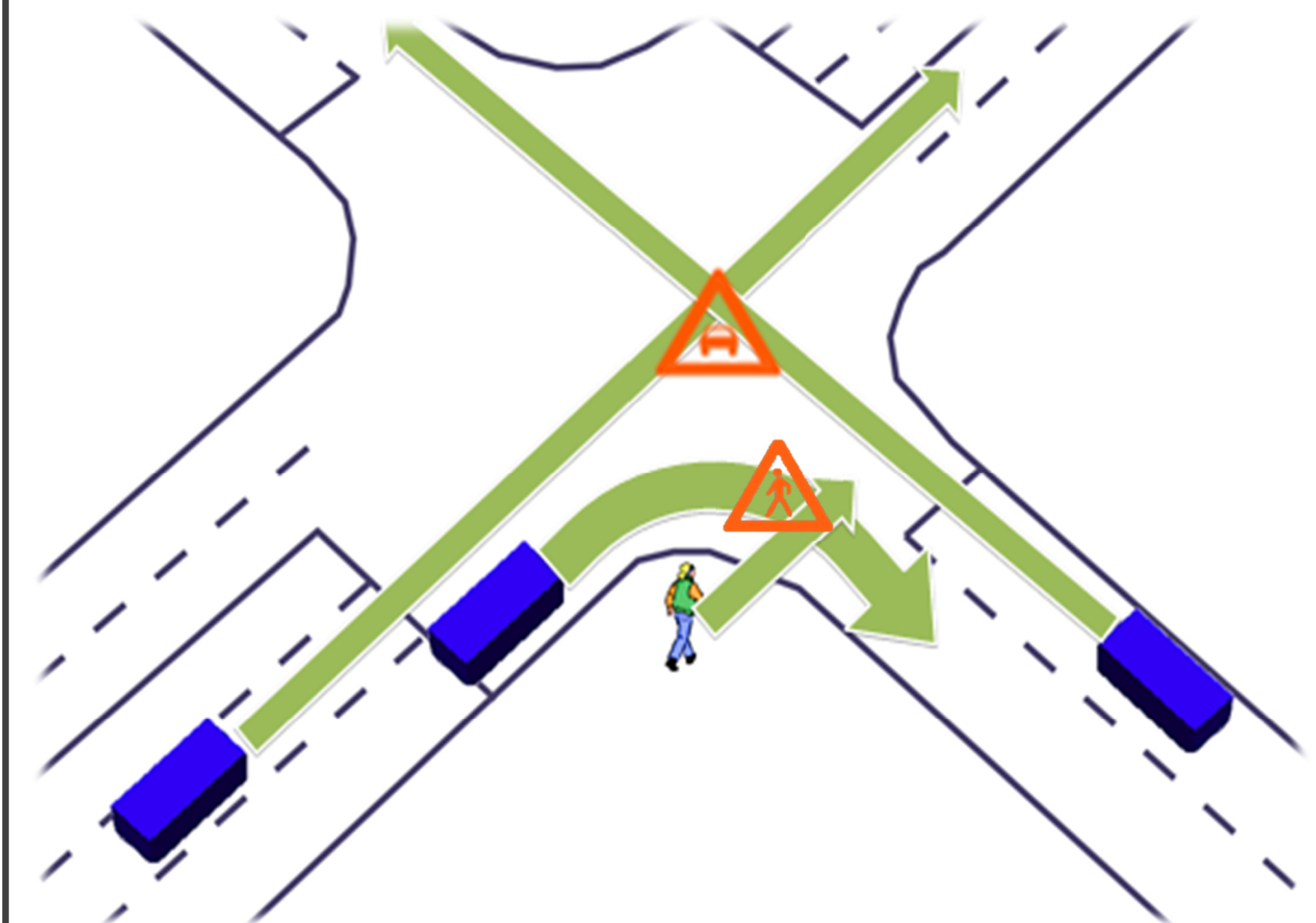


**Driver Intent Inference based on Parametric Models**  
(BMW Group Forschung und Technik)

**Does he run into danger?**  
(HS Aschaffenburg)

### Infer hazardous traffic situations

$$P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)}$$



**Scene Interpretation and Collision Risk Prediction**  
(Daimler AG)

## Warn the driver of potential hazards

The Situation Analysis evaluates the current traffic situation and provides criticality measures. Subsequently these can be used to design advanced driver assistance functions.

In Ko-PER one has chosen audio-visual means to inform the driver and the demonstration participants of a hazardous situation that has been inferred.

For a real-life experience we invite you to participate in our live-demo in Würzburger Straße.

