

Executive Summary

Research Study on Turn Signal Light Road Projections (in T-junctions and intersections)

Prof. Chan-Su Lee

Yeungnam University, Rep. of Korea

Summary:

The study was conducted with both real mock-up tests and virtual reality (VR) simulation on Turn Signal Light Road Projections, with the focus on investigating the benefits for all road users (vehicle drivers, pedestrians, bicycle riders) at intersections and T-junctions.

The study was conducted by comparing turn signalling with and without turn signal road projections. The results show an increase of safety when turn signal road projections are used along with the turn signal (e.g., speed, distance between vehicles to pedestrians). The study also shows a good correlation between real mock-up and VR simulation.

The use of the turn signal road projection was useful for all test participants.

The most effective turn signal light road projection was a chevron style with lines at a 45 degrees inclination.

Turn signal light road projections improves the understanding of the traffic situation and is not considered as a disturbing element.

Intersections

- signal road projection activation time should be limited to avoid road user distraction
- signal road projections should not reach the opposite lane of the road
- no distraction or confusion was observed.
- most of the subjects appreciated the signal.
- all subjects recognized the signal and understood the message.

T-junctions

- The test subjects highly appreciated of the existence of the signal road projection.
- Vulnerable road users (cyclists and pedestrians) experience a high degree of safety and comfort
- No distraction was observed.

Recommendation:

In general, we support the application of turn signal light road projections when using the turn indicator.

A detailed summary of the research study is also available.

29.11.2022 Rainer Neumann (WG-SVP)