

Document Information

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4.11 Traffic Light Violation Warning (TLVW)

4.11.1 General description

The Traffic Light Violation Warning (TLVW) application enables a connected vehicle approaching an instrumented signalized intersection to receive information from the infrastructure such as Road Side Unit (RSU) regarding the signal timing and the geometry of the intersection. The TLVW is also known as Red Light Violation Warning (RLVW)¹. This application in the vehicle uses its speed and acceleration profile, along with the received information, to determine if it appears likely that the vehicle will enter the intersection in violation of a traffic signal. If the violation seems likely to occur, one or more warnings can be provided to the rider. This application includes also (level crossing) railroad crossing signals violations, where the violation relates to railroad crossings gates that have been activated.

4.11.2 Use case description²

The TLVW application is intended to warn the rider of potential violation of a traffic signal. This application determines when the vehicle must begin slowing down in order to respect the traffic light signals safely and to avoid a violation. The PTW receives SPATEM/MAPEM message from the infrastructure about the locations and eventual current status of traffic lights at an intersection that is nearby. In case the approached intersection applies to the vehicle's direction of travel and there is a high potential risk that the rider could violate a red light, a warning will be triggered.

It is important to consider whether the vehicle is traveling at a velocity that bares a risk of violating the signal so the rider can be warned to reduce speed if necessary.

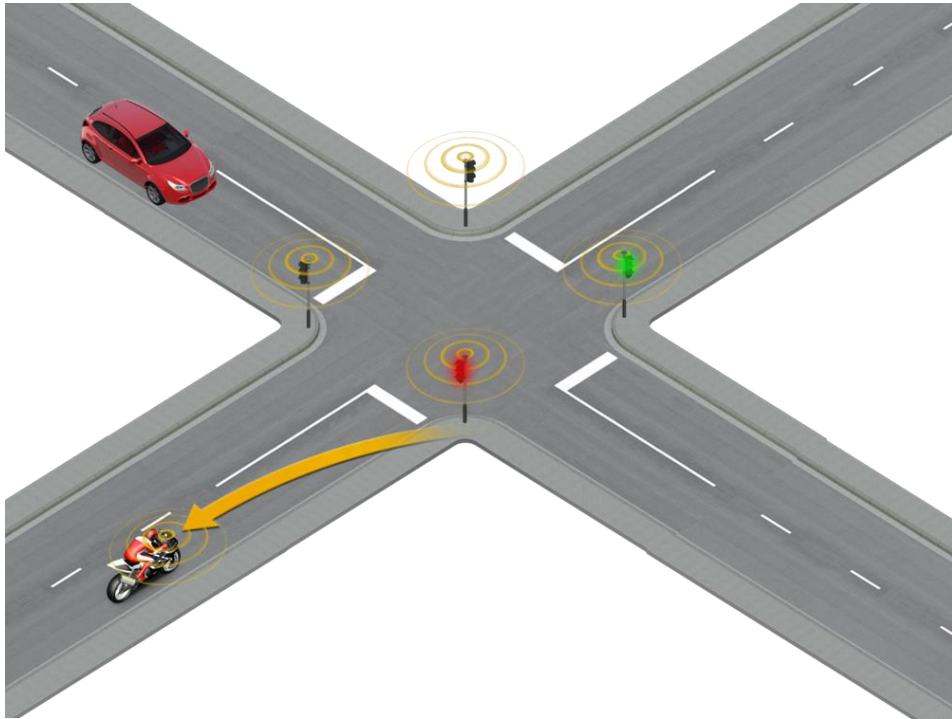
¹ Connected Vehicle Reference Implementation Architecture: Red Light Violation Warning from CVRIA

(<https://local.iteris.com/cvria/html/applications/app57.html#tab-3>, accessed on 16.11.2020)

² Intelligent Transport Systems (ITS); V2X Applications; Part 2: Intersection Collision Risk Warning (ICRW) application requirements specification from ETSI

(https://www.etsi.org/deliver/etsi_ts/101500_101599/10153902/01.01.01_60/ts_10153902v010101p.pdf, accessed on 16.11.2020)

Application Specification



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Figure 1: Use case of TLVW

Abbreviations

Please refer to the abbreviations in Preamble document.