Use case Verkeerslichtbeïnvloeding

## 1.1.2 Description Use-Case

For emergency, safety, environmental, traffic flow efficiency and Business reasons it is advantageous to give priority to specific classes of road user (at the moment no other then road users are considered but waterway crossings with roads may pop up at some time). The level of priority will depend on the type of user. At this moment an initial priority is recognizes resulting in the following current priority classification:

 _Emergency vehicles and motorcycles

 _Public transport vehicles

 _Special transportation such heavy goods vehicles

 _Other vehicles.

The priority in each of the classes is further defined depending of the class. For instance emergency vehicles do have active emergency and passive emergency state while public transfer has may have more states, active duty or not and on time or not (with may be even some levels). As for this class difference states for the other classes are also defined.
In this use case, all types of vehicles can request priority for an intersection or road section, and the traffic (light) controller determines in what way it can and will honour the request. Optionally, the requesting vehicle is informed about the action taken by the traffic light based on the request. This reply can be used to assist emergency vehicles in passing an intersection, but would also allow for heavy goods vehicles to calculate their fuel consumption reduction.

## 1.1.9 Normal Flow (as applicable)

An Emergency Vehicle or Public Transport Vehicle or Heavy Goods Vehicle can broadcast a priority request message when approaching an intersection. This message contains information on the status of the vehicle, Punctuality, Line Number or for example Signal Group Number for which the request is made. The receiving R-ITS-S connected to the TLC receives this information and the TLC can decide if the request is viable and if needed can alter the signal phase timing in order to accommodate the request. The R-ITS-S will send/broadcast a response including information that the request is granted or not and what speed is advised to approach the TLC. The V-ITS-S receives this information and can act accordingly.

## 1.1.10 Post-conditions (if any)

The V-ITS-S will broadcast a message (CAM?) on its current location. The R-ITS-S connected to the TLC can determine that the vehicle has passed the intersection and resume its normal Signal Phase Timings.

## 1.1.11 Termination conditions (if any)

There are a few termination conditions to be defined;
1. An Emergency Vehicle has changed its priority status when it no longer needs to use the lightbar and siren and thus the made request isn't needed anymore.

2. A granted request for a Public Transport of Heavy Goods Vehicle is conflicted by a request with a higher priority (for example, from an Emergency Vehicle).

3. The TLC has a technical failure resulting in a reset or shutdown of the TLC while a granted priority request is pending from an Emergency Vehicle. It is foreseen that an "Approaching Emergengy Vehicle" message shall warn approaching vehicles as a backup.

## 1.1.12 Use-Case Illustration (as applicable)
KAR scenario

*Figuur 2:*
*Prioriteit met KAR.*



Virtuele inmeldlus

VRI met KAR-antenne

Virtuele uitmeldlus