

MAVEN

Managing Automated Vehicles Enhances Network



WP4 Road automation

Deliverable n°: 4.3

Scheduling and signal timing strategy field prototype

Dissemination Level: PU

Version	Date	Release	Approval
1.0	05-10-2018	Robbin Blokpoel (DYN)	Michele Rondinone (HYU)



1 Demonstrator deliverable

This deliverable is classified as a demonstrator. However, the ECAS portal does not allow submission of videos and therefore this document serves to provide a link to the actual videos of this deliverable. The infrastructure systems demonstrated in the video are further described in D4.1 and the communication between vehicle and infrastructure in D5.1. A demonstrator deliverable with a simulated system was already released as D4.2.

The first video shows the improved countdown stability of the adaptive traffic control algorithm. Since this is difficult to visualize, a video from the Groningen test site of XCycle is used for this, which has a special dynamic sign connected to display the countdown. MAVEN and XCycle worked together for the development of this functionality. Therefore, the same algorithm is deployed in Groningen and Helmond for the two projects. The video can be found here:

http://adas.cvc.uab.es/maven/wp-content/uploads/sites/16/2018/09/bicycle_countdown.mp4

Note that this video may not play in all browsers, the best way to view is to download and play from the hard drive using VLC player.

The second video shows the complete system deployed in Helmond. It has the plan stabilization, but this is not visualized in the video. The key element is the external queue model interface and the response of the control algorithm to the new MAVEN inputs. This is demonstrated by equipping a vehicle with a V2X On-board unit communication module transmitting the new V2X messages designed in WP5 to provide intended turn direction to the algorithm. The video can be found here:

<http://adas.cvc.uab.es/maven/wp-content/uploads/sites/16/2018/10/MAVEN-test-event.mp4>

Seven test runs were executed to observe the behaviour in the real-world. Priority was not given because that would only apply to platoons in the MAVEN context. Despite equal prioritization compared to other traffic, positive effects could be observed at the controller in three test runs that can be attributed to the extra information provided by the MAVEN vehicle. These included shortening of green time for a direction where the vehicle wasn't going, which was possible because the vehicle was the last in the platoon and earlier green because the vehicle appeared in the arrival pattern for that particular direction before reaching the stop line detector.

The third and last video shows the AGLOSA system. As already explained in D4.1, the algorithm is implemented in SUMO. Therefore, in the beginning of the video a SUMO footage is visible. The same SUMO algorithm is directly running on the traffic control hardware on the street, therefore vehicles in the SUMO simulation represent real vehicles detected by the road sensors and V2X communications. As a result of these detections, the RSU attached to the traffic light controller provides AGLOSA information to the approaching vehicles. This is visible in the vehicle as it can be seen in the video. The video can be found here:

<http://adas.cvc.uab.es/maven/wp-content/uploads/sites/16/2018/10/AGLOSA.mp4>

