



UK AUTODRIVE THE STORY SO FAR

Mark Cund
October 2017

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October
2016

June
2017

Winter
2017

Autumn
2018

DEMONSTRATIONS

Connected Car:
GLOSA
EEBL

Autonomous Car:
Advanced Highway Assist



TRACK

DEMONSTRATIONS

Connected Car:
EVW
ICRW
IVS

Autonomous Car:
Autonomous City Drive



TRACK

TRIALS

Connected Car:
?

Autonomous Car:
Autonomous City Drive
Parking



CITY-CLOSED

DEMONSTRATIONS

Connected Car:
?

Autonomous Car:
Autonomous City Drive
Parking



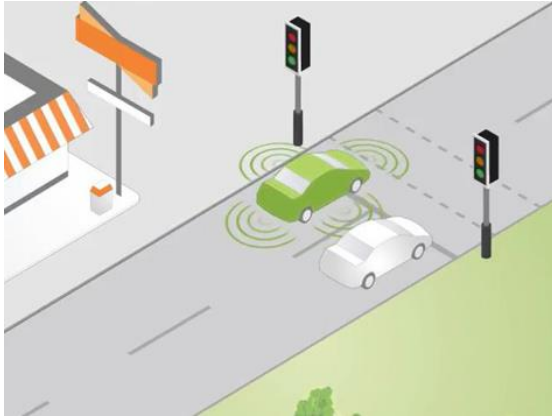
CITY-OPEN

- Location
 - Horiba-Mira
 - High Speed Circuit
- Demonstration
 - Highway driving
 - Overtaking
 - Driver intervention



- Learning
 - Highway path following
 - Sensor limitations (20cm tolerance)
 - Redundancy
 - Highway overtaking logic
 - Sensor limitations
 - Highway intervention logic
 - The concept of driver take-over request
 - Driver does not take control when requested
 - Driver does take control when requested
 - No reliance on a map





Green Light Optimal Speed Advisory (GLOSA)

- Provides host vehicle of traffic light timing
- Potential traffic flow improvement
- Potential efficiency improvement



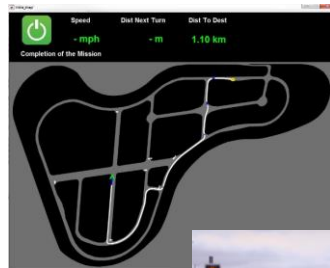
Electronic Emergency Brake Light (EEBL)

- Warns host vehicle of a vehicle ahead that is braking hard
- Helpful in dense driving environment

Learning

- Importance of interoperability testing
- EEBL effective in mixed environment

- Location
 - Horiba-Mira
 - City Circuit
- This demonstrated (without other traffic)
 - Navigation from the location to a selected destination
 - T-junctions
 - Cross-roads
 - Roundabouts
 - Traffic lights



- Learning
 - Mapping
 - Reliance on a map or land representation containing physical features
 - Detailed information is required to feed control system
 - Redundancy
 - Vehicle behaviour to road geometry
 - Bends
 - Hills
 - Junctions
 - Lights

UK AUTODRIVE

June 2017 – Connected Car



Emergency Vehicle Warning



The Emergency Vehicle Warning feature alerts the driver to the presence of an Emergency Vehicle. This will enable the driver to take earlier action to clear the roadway, which will therefore reduce the journey time for the Emergency Vehicle.



03 EVW
Emergency Vehicle Warning

Two level severity based warning

Level 1 warning: The Emergency Vehicle is within 500m of the host vehicle and it has been determined to be travelling in a relevant direction to the host vehicle.

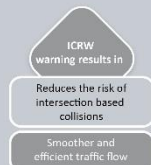
Level 2 Warning: The Emergency Vehicle is within the immediate vicinity of the host vehicle and it is possible that a driver response is required.



Intersection Collision Risk Warning



Intersection Collision Risk Warning uses V2X technology to improve the driver awareness at junctions. The system analyses the surrounding traffic heartbeat messages in order to analyse crossing traffic and warn the driver of oncoming traffic during intersection scenarios. This can be particularly useful in situations where there is limited visibility on the intersection.



02 ICRW
Intersection Collision Risk Warning

The warning system will initially display the amber warning as a crossing vehicle approaches the intersection.

The red warning will be shown when the system calculates that immediate driver action is required in order to avoid a collision.



In-Vehicle Signage



The In-Vehicle Signage feature uses Vehicle-to-Infrastructure (V2I) communication to provide the driver with information from the roadway. Using "smart" signs and gantry displays, the information is sent directly to the vehicle and displayed for the driver, making it easier for this information to be read and understood.

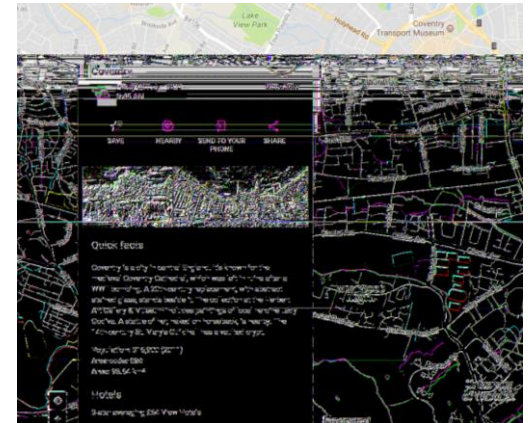
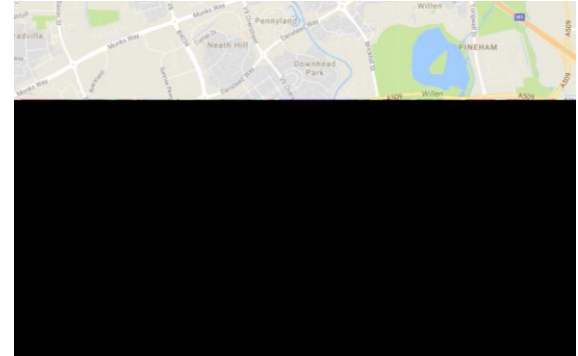


01 IVS
In-vehicle signage

The aspects of this feature that will be demonstrated are as follows:
Variable Text Message Display (Smart Sign)
Speed Limit Notifications
Virtual Sign Messages



- Location
 - Coventry & Milton Keynes
- Will trial (limited other traffic)
 - Navigation from the location to a selected destination
 - T-junctions
 - Cross-roads
 - Roundabouts
 - Traffic lights
 - Collision avoidance
 - Vehicles
 - Pedestrians
 - Vehicle passing
 - Vehicle pacing
 - Vehicle merging
 - Vehicle lane keeping
 - Parking





THANK YOU

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