13th ITS EUROPEAN CONGRESS
FULFILLING ITS PROMISES
Brainport Eindhoven, the Netherlands | 3-6 June 2019

Smart mobility.
Dutch reality.

Smart Mobility – Dutch reality

Putting ITS promises into practice

The ITS promise is to make transport smarter, safer, more efficient and more sustainable.
The demonstrations during the ITS European Congress 2019, at the Automotive Campus in Helmond as well as at the Evoluon in Eindhoven, show the current status of bringing ITS promises into practice. It ranges from commercial available automated vehicles, to on-going new research and development, to nation-wide rollout of dedicated infrastructure in the Netherlands and Europe. It is a complex transition, in which not only technology has to work together but above all people who have to make it a success. We are proud to show you how joined effort has resulted in this ITS dedicated demo-site with 19 demonstrations. Come and experience the ITS reality.

Autonomous vehicles for public transport

When thinking of autonomous vehicles, it is not only about cars and trucks in development, but also about public transport. At the Automotive Campus demo location, two companies offer you the ability to experience their automated mini-buses.

- The company **2getthere** will show their 3rd generation vehicle. It is able to transport up to 26 people operates bi-directional, has doors on both side, has accurate docking, but above all operates at high speed with a maximum speed up to 60 km/h. This vehicle is an upgrade of their ParkShuttle in Rotterdam, which becomes the unique link between the Rotterdam metro network and the Waterbus.

- The company **Navya** will show their 100% autonomous and electric vehicle in urban environment in the Dutch province of Groningen.
  The Navya vehicle can transport up to 15 people. This joint demonstration between NAVYA and the Province of Groningen, will allow attendees to experience autonomous technology through a service that will take care of visitors as soon as they arrive on the campus, dropping them off from one point to another in real condition.

Added value of other domains: Internet of Things, automated shipping and drones

Are you interested in seeing how autonomous driving can benefit from other domains, then visit the demos on IoT, automated shipping and automated drones. The Netherlands with its large and world famous harbour Rotterdam has a lot to offer. Although the fields are different, parallels and added value of their technological knowledge and tools can boost ITS development.

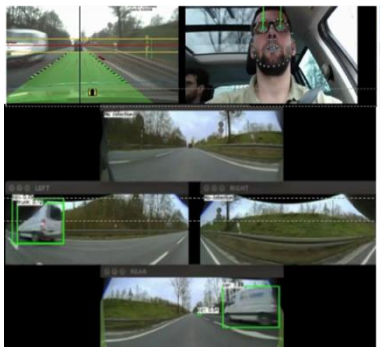
- In the EU project **Autopilot** demo research institute **TNO** and partners will showcase the potential of combining automated driving technologies and Internet of Things (connecting anything, anytime, anyplace, using any service over any network). Experience what a full autonomous driving car can offer when travelling from A to B: ordering a drive, forming a platoon, driving in a platoon, selecting the best route by using road warnings received from other cars/sensors (obstruction or pedestrians), to parking the car in a pre-reserved parking spot (detected by a drone) fully autonomously.
- The company Antea provides autonomous drone systems (**mapture.ai**). Their drone takes off from a box and captures requested data. They will tell you how these drones can be used for traffic related research.
- The Dutch Ministry of Infrastructure and Water Management will give a demonstration of Smash: smart shipping. At the **SMASH** demonstration zone at the pond of Evoluon several research and development parties will demonstrate their latest technology: remote controlled inspection drones, small autonomous ships with navigation and collision avoidance.

Creating public awareness for driver assistance

In the transition towards automated driving of cars and trucks the role of the driver role is key to improve road safety. Road accidents continue to be a major public safety concern and human error is one of the main accidents causes. Supporting systems, like Advanced Driver Assistance Systems (ADAS) are designed to offer drivers an optimal ride comfort, to improve safety and minimise driver errors. However, the driver must remain on his guard and is still responsible for steering the vehicle. To benefit from driver assistance systems, public awareness should be created.

In the next level of automation, so called semi-automated driving or SAE-L3, drivers give control over to the vehicle and vice versa. Intelligent driver systems that can monitor the driver's state and behaviour show promise for our collective safety.

- Recent studies show that many drivers are insufficiently informed, ADAS are insufficiently used or used incorrectly. The **ADAS demo**, a cooperation of 10 car manufacturers and Carglass, wants to draw special attention to the function and usefulness of ADAS, by creating awareness for the systems, by experience what ADAS systems are already capable of and by informing visitors about the limitations.
- In the EU research project **VI-DAS** advances in sensors, data fusion, machine learning and user feedback are used to provide the capability to better understand driver, vehicle and scene context, facilitating a significant step along the road towards truly semi-autonomous vehicles. On this path there is a need to design vehicle automation that can gracefully hand-over and back to the driver. In the demonstration you will see the strategies for semi-automated vehicles for take-over and hand-back.



Research and technology development regarding autonomous driving

See the latest developments on research level going on in automated driving from Universities, research institutes and international cooperation in EU projects, ranging from automation of a single vehicle, to platoons of connected vehicles.

- In the logistical world there is a great need for optimizing transportation of goods, logistic activities and improving accessibility by road. In daily traffic, especially around and into cities there is also an urgency, to improve liveability, safety and comfort. To facilitate this, TNO is working together on Connected Cooperative Automated Mobility (CCAM) to make this promise a reality. At the ITS conference **TNO** will show next level of CCAM by driving connected automated trucks smoothly across an intersection. It is not an experimental pilot case, but the platoon will use existing C-ITS capabilities and infrastructure. You will see how the trucks will get priority and extended green time, taking the dynamic length of the platoon into account.
- The EU project **CONCORDA** (26 partners) contributes to the preparation of European motorways for automated driving and high density truck platooning with connected services and technologies. This consortium showcases truck with Cooperative Adaptive Cruise Control using wifi-p and truck platooning using modern technologies and standards to form a truck platoon on the fly. Data is exchanged across all trucks.
- Eindhoven University of Technology showcase their research on autonomous driving and let you experience what it is like to drive in autonomous vehicles. In the **ATeam** demo you are able to experience how autonomous vehicles interact with intelligent traffic lights using direct short radar, also known as wifi-p technology. The applications that will be shown are: turning at traffic light, searching for a parking spot and parallel parking. In the **i-CAVE** demo a safe and robust living lab of two cars (Renault-Twizzys) will show the difference between automated driving with and without wifi-p communication.
- **HAN University of Applied Sciences** will show how a miniature scaled test bed (RC controlled vehicles) can be used to accelerate development of controls, algorithms and communication related ITS applications. They will showcase self-docking of trucks.
- **Siemens** and partners will showcase the potential benefits of automated vehicles on safety, comfort and traffic efficiency. In the demonstration you will see how roadside sensors combined with

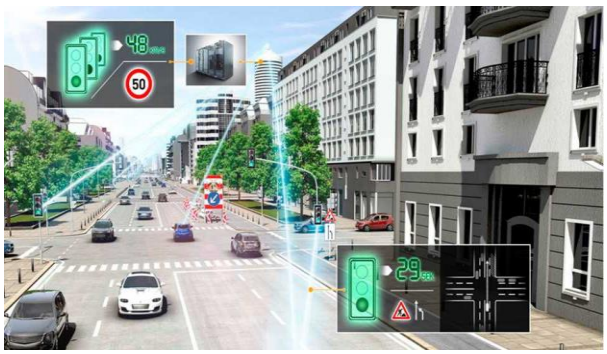
connectivity can in future actively assist automated vehicles when approaching intersections with limited line of sight for the on-board sensors.

C-ITS Services & digital infrastructure

Make digital road infrastructure and services ready for the roll out of autonomous driving functions. Cooperation between the automotive and telecom sector is key to overcome fragmentation and ensure interoperability between ITS-services and make it work in real life conditions. You will see the unique and complete ITS-ecosystem of the Netherlands. You will see that the Netherlands is at the forefront of actual countrywide implementation of C-ITS.

- In the EU project **C-MobILE** European partners work together on deploying urban C-ITS systems and services to deal with specific mobility challenges across Europe. The project aims to help local authorities deploy C-ITS services and raise awareness of potential benefits to all road uses. The step made here is to bring the C-ITS services from pilot testing phase to operation, with the focus on large-scale deployment and interoperability. This project will showcase a selection of urban C-ITS services present in Eindhoven and Helmond that also work outside their original test and design area.
    - Truck with green priority and speed advice
    - Fire truck with green priority and warning other users nearby
    - Red light violation warning
    - Blind spot detection
- Traffic systems vendor **Dynniq** will not only showcase Intelligent Traffic Light Controllers but also services like GreenFlow. The service prevents a stop-start at junctions and gives the road operator full control to tailor traffic policies. Drivers will experience a more comfortable and smoother drive.

- The **EU project MAVEN** shows how a Traffic Light Controller can support automated driving. This demo will show how the intersections and vehicle will interact with each other, exchanging information as lane change or speed advice and vehicle speed and trajectory. During the demonstration delegates will be invited to take a tour in the vehicle.
- Road constructor **Heijmans** will show how Floating Car Data can be used to replace traditional detection methods (traffic jam detection, travel time info, road works warning) in combination with their digital infrastructure.
- **Monotch** and partners will show you the fully connected roadside ecosystem in operation in the Netherlands. It is up and running, integrated with various types of objects from competitive vendors and travel applications from service providers.
- **Talking Traffic** will demonstrate in a bus tour how you can look far beyond your windscreen, by benefiting from new services for road users based on real-time data exchange and connectivity. The talking traffic services are uniform (safe and useful) and throughout the entire country, so all road users receive similar advice wherever they are. Talking traffic services include information on incidents, roadworks, sudden changes in weather conditions, traffic jams, maximum speeds (static and dynamic), matrix signs, closed lanes, parking options, time to red and green.



Site visit possibilities at Automotive Campus

Tue 10.30-11.30, Wed 13.30-14.30, Thurs 13.30-14.30
In this demo tour **TNO** together with partners **Siemens PLM Software** and the **Traffic Innovation Centre** will guide you through several Advanced Solutions, Facilities and Innovative Methodologies for the smooth and effective implementation of Connected Automated Mobility.

The ITS European Congress demonstrations are powered by: