

## Gelderland initiative

**Why is the province of Gelderland getting involved in this initiative?**

The province wishes to invest in public transport, and foster initiatives that may result in new modes of public transport. The province of Gelderland has initiated this WEpod project because it chimes with the ambitions regarding new, flexible, sustainable, and social mobility.

**Why is the Netherlands investing in self-driving vehicles, whilst Google and Tesla seem to be able to accomplish much more than the small Dutch consortium?**

This project is not aimed at passenger cars, but rather on an intermediate format that complements public transport. It involves a form of group transport across a fixed route. The consortium thus concentrates its efforts at the end of the spectrum covered by Google and Tesla.

## Test

**Can this first test phase still result in the WEpod not taking to the public road?**

The test phase is starting on the public road right away, on the premises of Wageningen University and Research Centre. This makes this test special right from the start. It goes without saying that the experience gained in the test phase will be taken into account in the further development of the vehicle, boosting the expertise level of all parties involved. Large-scale innovations need time. That is why we are launching this comprehensive test phase.

**When will the WEpod drive the entire route on the public road?**

That is highly dependent on what we learn during the test phase. We will start off with driving a short route on the public road and when this proves successful, we will extend the route. Later on, we will be driving with guests. This is scheduled for the summer of 2016, provided the test phase is completed successfully.

**Is this really a world first? Similar vehicles are already driving on the public roads elsewhere in Europe.**

Many initiatives have been launched across the globe. They all contribute to the future of automated driving. Most of these initiatives involve a vehicle with a driver, with the car gradually taking over more duties from the driver. The WEpod starts at the other end of the spectrum: fully automated, without a direct driver. A unique feature of the WEpod is that it is a vehicle intended for the public roads, yet without a steering wheel or pedals. The WEpod offers new prospects for the missing link in the public transport chain: transport before and after.

**Can “ordinary passengers” also ride along in the test phase?**

The WEpod will initially be driving with test engineers or project partners. Following a successful test phase, employees and students on the Campus will be given the opportunity of travelling with the WEpod. On the Ede route, the vehicle is primarily intended for transporting guests of the University. We are planning to offer seats to interested residents of the cities of Ede and Wageningen too in the future. It depends on the first test period whether and when we can achieve this. The vehicles will regularly be assessed, and require another exemption before they are allowed to transport passengers.

**What if the WEpod damages other vehicles, road users, or the public space?**

We expressly aim to prevent personal damage. Prudence is a top priority. Hence our careful approach involving a test phase, low speed, and driving under favourable weather conditions. Material damage is insured through AON/ Allianz insurance company.

**Can the test fail?**

All the information gathered in the test is valuable to this development and of use for the future. This means that in that sense, the test cannot fail. We will take the experience gained into account in the follow-up phase; it will be documented and shared with all the (technical) partners. The process will also be evaluated.

## Sustainability

**How sustainable is the WEpod?**

The WEpod is an electric vehicle and most charging stations deliver sustainably generated power. Automated driving is also sustainable, because it is potentially safer, quieter, and more predictable. It boosts environmental quality.

**How harmful are the batteries?**

We use the same type of batteries as the automotive industry. These are state of the art when it comes to battery technology. Should new, better, and even more sustainable batteries become available, the vehicle can be fitted with those.

## Vehicle

**What is the WEpod?**

WEpods are driverless vehicles that do not have a steering wheel or pedals. They are fully automated and are electrically powered. Main features:

* 6-person cabin, automated door and platform lift for wheelchairs
* Height 275 cm, width 199 cm, length 393 cm, wall-to-wall turning circle 9 m
* Maximum speed 40 km/h (in the test phase the WEpod drives at 25 km/h)
* Electrically powered with a range of approximately 100 km

**How does the WEpod navigate?**

Good navigation is vital for self-driving vehicles if they are to follow a route safely and reliably. To this end, a special highly detailed map of the route is made. In addition to the layout of the road, this map also displays all visible objects (trees, lampposts, etc.). The orientation follows from a combination of highly accurate satellite measurements and relative positioning vis-à-vis fixed objects along the road (trees, etc.). Thus, the vehicle’s exact travel line is projected on the map. The (maximum) speed for each section of the road is also determined. Such a map is something completely new; its exact definition was developed in this project.

**How frequently will the WEpod be driving?**

The WEpod will be driving a fixed circle line on Wageningen Campus, in what we call the Bus Mode. The WEpod will stop at certain fixed locations at the main buildings and the central stop of the regular bus service. This we call the Taxi Mode. Following a successful test phase, we will expand the route towards Ede-Wageningen railway station. We will operate a demand-driven WEpod service on this route, carrying guests that have made reservations beforehand. We will properly inform local residents regarding the WEpod schedule.

**What traffic rules apply to the WEpod?**

The WEpod is subject to all the traffic rules that apply to other motorised vehicles.

## Safety

**How is safety guaranteed?**

Cameras, radar sensors and laser sensors provide the WEpod with correct information on its surroundings so that it can anticipate necessary actions. Various on-board computers combine all the data and give commands, including to the braking and steering systems. In this way, the vehicle can respond to other roads users and sudden changes. In addition, a control room monitors the WEpod. For the time being, a steward will always be present in the vehicle, whose job it is to pay attention to traffic and answer any questions from passengers.

**The Google car test has been postponed because safety could not be guaranteed. How are you able to provide such a guarantee?\***

We are entering a comprehensive test phase. For the time being, the WEpod will only be driving on Wageningen Campus. That experience will ultimately determine whether the vehicle will be introduced on the public road.

**What are the odds of the WEpod becoming involved in an accident?**

Several precautions have been taken to prevent accidents. The vehicle features multiple technologies. It stands out, it has an illuminated news trailer, and a steward is present inside the vehicle. All this enhances safety.

**The WEpod only drives 25 km an hour, won´t it hold up traffic?**

We have selected a route that mainly encompasses roads with a 30 km speed limit. On busy sections with a 50 km speed limit we will be driving in a semi-automated mode, in which the steward controls the speed and steers the vehicle.

**Will the WEpod “see” my child (dog, cat) suddenly crossing the street?**

The vehicle responds faster than a human could, but its braking distance is the same as that of ordinary vehicles. The sensors on the WEpod immediately release a signal that activates the braking system. The operator in the control room will decide whether or not the vehicle can continue on its way after the (emergency) stop. Cameras enable the operator to assess the situation. For the time being, the steward inside the vehicle will bear this responsibility.

## Funding

**How much money has been invested in this WEpod and who are the co-funders?\***

The province of Gelderland has invested 3.5 million euros and is the sole funder. The municipal authorities are investing manpower into the project, and potentially infrastructure adaptations. Together with university students, the Christelijke Onderwijs Groep Vallei & Gelderland- Midden (COG) is developing a sustainable parking garage for the WEpod, which is linked to various educational programmes for pupils and students. Various innovative and technical partners are investing time and expertise in the WEpods project.

**Why isn’t the State contributing to this test?**

The State has enabled us to launch this initiative by amending the law in order to allow testing on public roads in the Netherlands. Based on the test procedure for self-driving vehicles, the RDW has granted exemption for test drives with the WEpod. In addition, the State is also working on knowledge development, an important component of this project.

**So what have you already learned from WEpods?**

With respect to the execution of the tests it is still too early, because we are just starting on the road. But we have gained considerable experience in the process leading up to where we are now. For example, that it is complicated to assess a vehicle for admission with a license number without a vehicle category, in combination with an exemption for the self-driving features. Perhaps we need to add a self-driving vehicle category to our vehicle registration files. With these experiences in hand, subsequent assessments of regular self-driving vehicles will probably be much simpler.

**When will the market adopt this initiative, including in financial terms?**

The province of Gelderland will fund the WEpod project up to the summer of 2016. The investment chimes with the ambitions regarding new, flexible, sustainable, and social mobility. The Province is aiming for market partners assuming financial responsibility for this initiative.