

# Autonomous shuttles in Switzerland

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For the first time in Switzerland, autonomous shuttles could make the rounds of a city center. Researchers at EPFL, in association with the startup BestMile and the public bus operator PostBus, are working on how to integrate these vehicles into the public transport system.

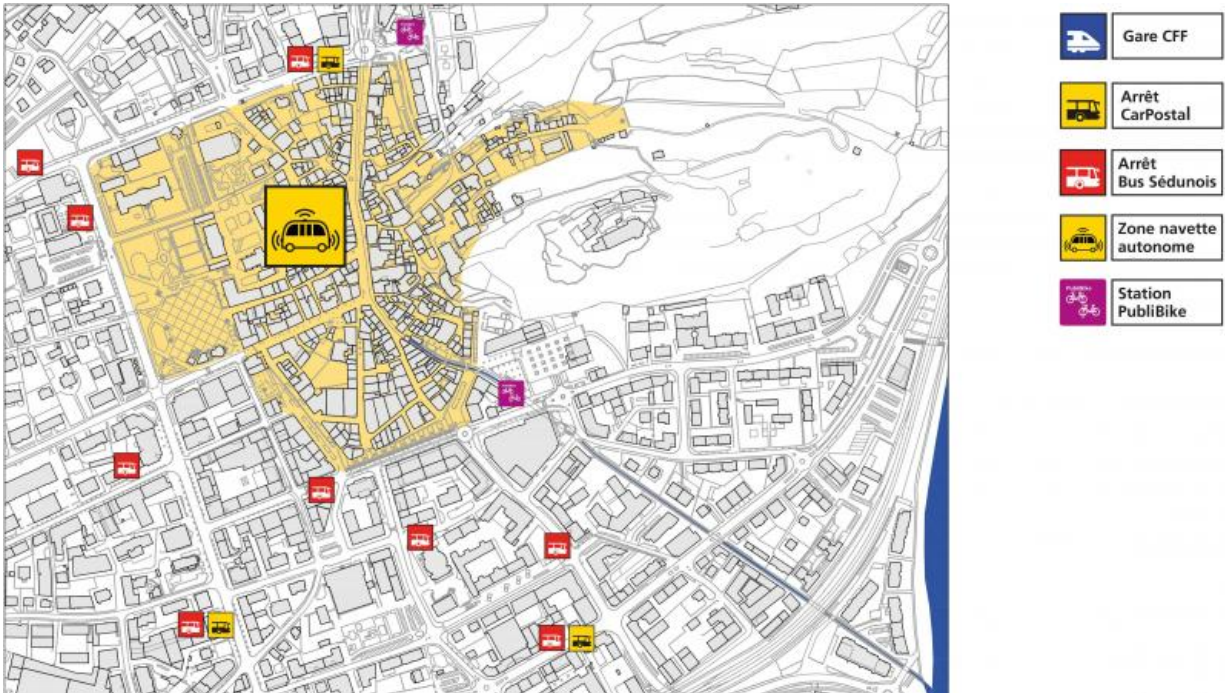
Residents and visitors in the small town of Sion in the Canton of Valais may be called on to test a new mode of [public transport](#) next year: the

driverless shuttle. For the first time in Switzerland, 'smart' vehicles capable of holding up to nine passengers are expected to circulate on [public roads](#). The project is sponsored by PostBus, the leading public bus operator in the country. The eventual goal is to expand the operator's public-transport services, especially in outlying regions. EPFL researchers, working together with the startup BestMile, will develop the system needed to ensure the expanded service works flawlessly and safely, both for the operator and the users.

Autonomous public transport could be used to serve outlying areas where few people live – also known as 'the last kilometer.' The driverless shuttle is flexible: it works on-demand, costs less and takes passengers to areas with better transport links. The technology to achieve this currently exists, but vehicles without a steering wheel and pedals are not yet capable of being operated in the conventional public transport system.

## **On-demand service**

The EPFL researchers, together with BestMile, will tackle this challenge as part of a two-year project supported by the Commission for Technology and Innovation (CTI). The goal is to develop a fleet-management system able to handle the many situations that autonomous vehicles could encounter. The vehicles must learn to communicate with each other and with others on the road for such things as adjusting their speed and determining the right-of-way.



At the same time, a reliable system is necessary to manage the specific needs of passengers, such as on-demand service, booking a ride in advance and flexible routes. The algorithms developed by the EPFL researchers will be capable of managing these factors in real time, without sacrificing safety or cost efficiency. Once ready, the algorithms will be incorporated in the central fleet-management system. By virtue of the tests carried out this past summer on EPFL's campus as part of a Europe-wide project, BestMile has developed fleet-control software that coordinates shuttles remotely and manages their interactions with each other and with outside entities.

## On public roads in spring 2016

This project will include a unique on-the-ground test phase: PostBus would like to run two driverless vehicles in the city of Sion. The electric shuttles, built by the French company Navya, will use embedded sensors to control their movement to the centimeter, identify obstacles and even obey traffic signals, by day and by night. Their maximum speed will be 20 km/hr. PostBus is in discussions with the local authorities to obtain the authorizations needed to operate these vehicles.

The initial tests will take place on a closed site and will probably be completed by the spring of 2016. If the authorities give the green light at the end of this test phase, the shuttles will then crisscross the old town in Sion and its tourist zone and climb up to the Tourbillon and Valère historical sites. The goal for PostBus is twofold: to determine whether using driverless shuttles makes sense in public zones and whether they would be effective in serving isolated areas. The on-the-ground tests in Sion will also reveal the precision of EPFL's algorithms.

Provided by Ecole Polytechnique Federale de Lausanne

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