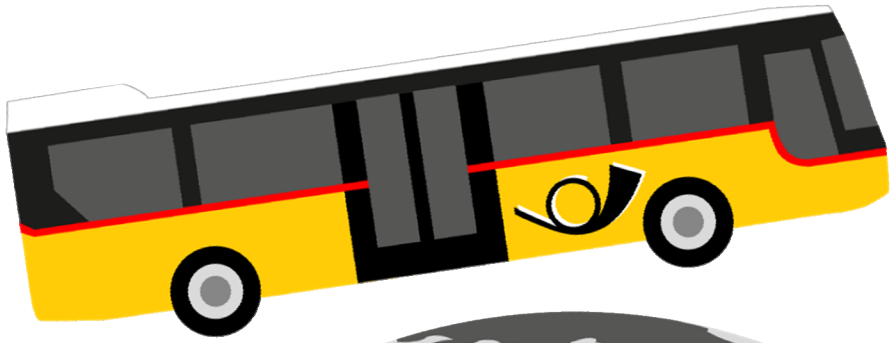
«SmartShuttle»

Autonomous mini-buses in Sion

The yellow class.

PostBus

7 x



Every day, we drive over
7 times around the world.

Over 100 years of experience

«PostBus evolves from a traditional public transport operator to a technology and mobility solution provider»

How do we prepare for future challenges?

Mobility platform

PubliRide

PubliRide

PubliBike

mobility lab SION VALAIS

Mobility lab Sion

E-Ticketing (CIBO)

«SmartShuttle»

Autonomous Driving:

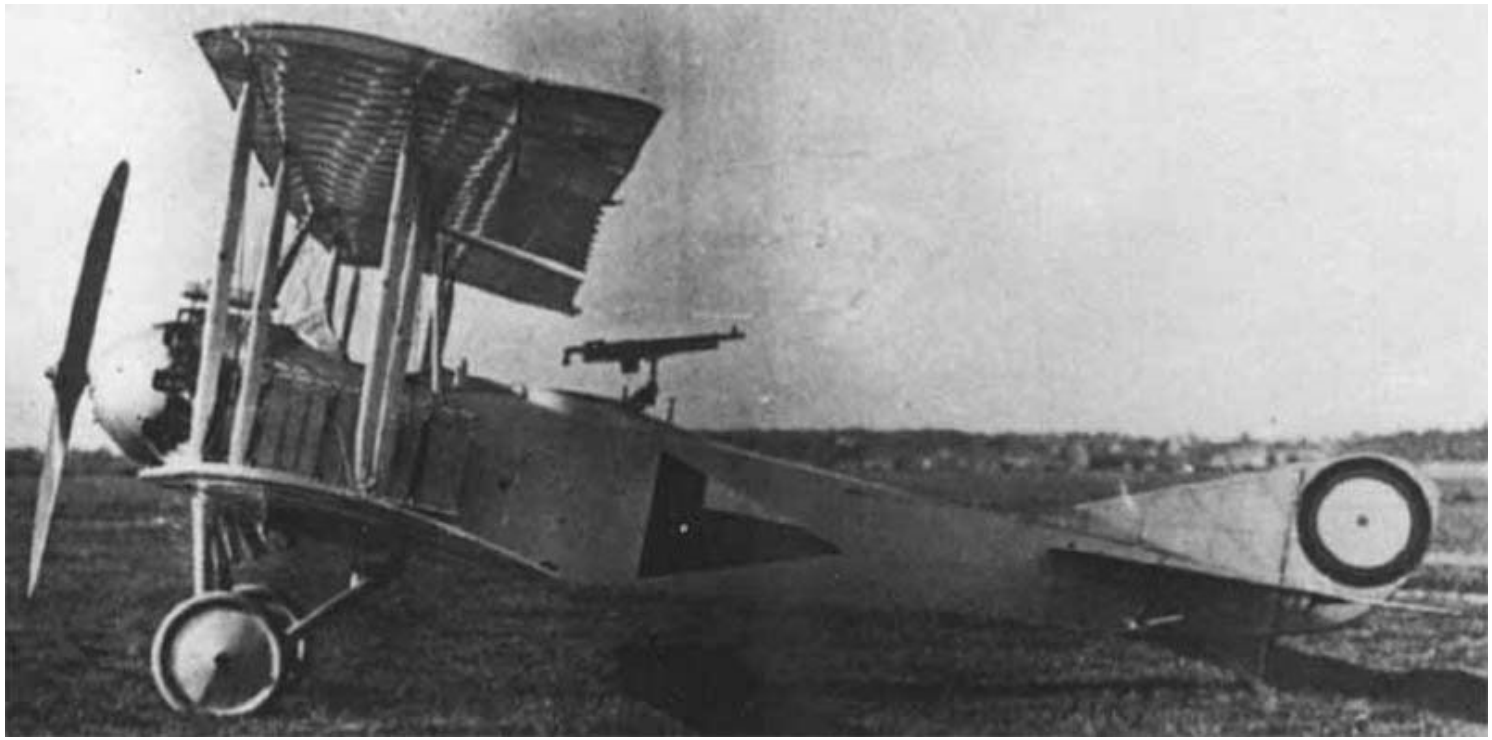
«The topic is still at the very beginning.»

England 1896:
First trials with the «automobile»…

Sion May 2016:
First trials with autonomous vehicles…

…technology can evolve very fast – Wright brothers in 1903…

…the first looping 10 years later…



Sion June 2016:
Welcome to the future!

PostBus «SmartShuttle» Sion –
A unique project in the canton Valais

«Great challenges in the field of
technology, approvals and security»

«SmartShuttle» Sion – The first test of autonomous mini-buses on public roads in Switzerland

x 2

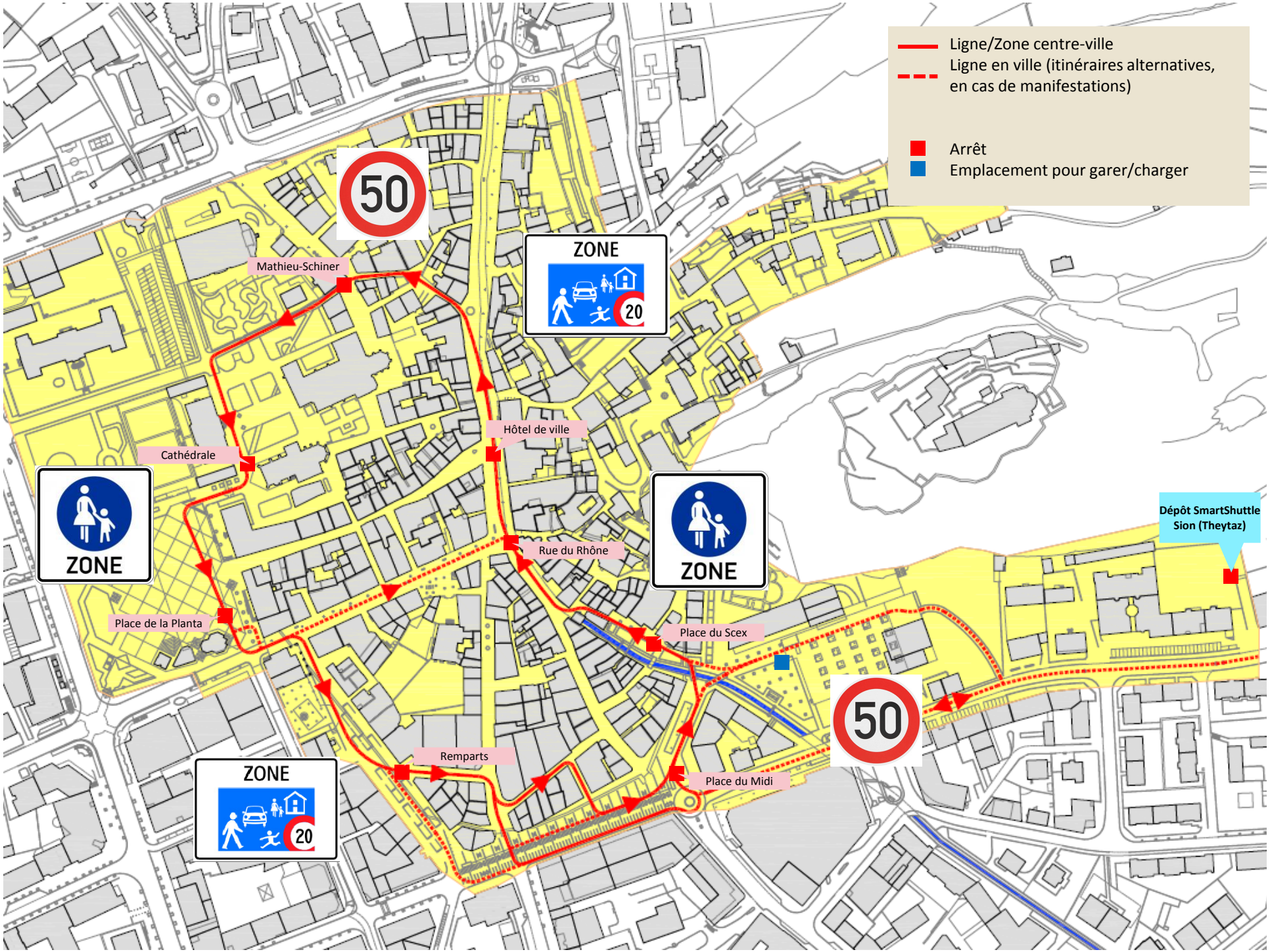
– **Two electric vehicles with autonomous technology**

09/2015 – 12/2017

– **24 months of testing activities**
  – Phase I: Testing on private site
  – Phase II: Operation in public area

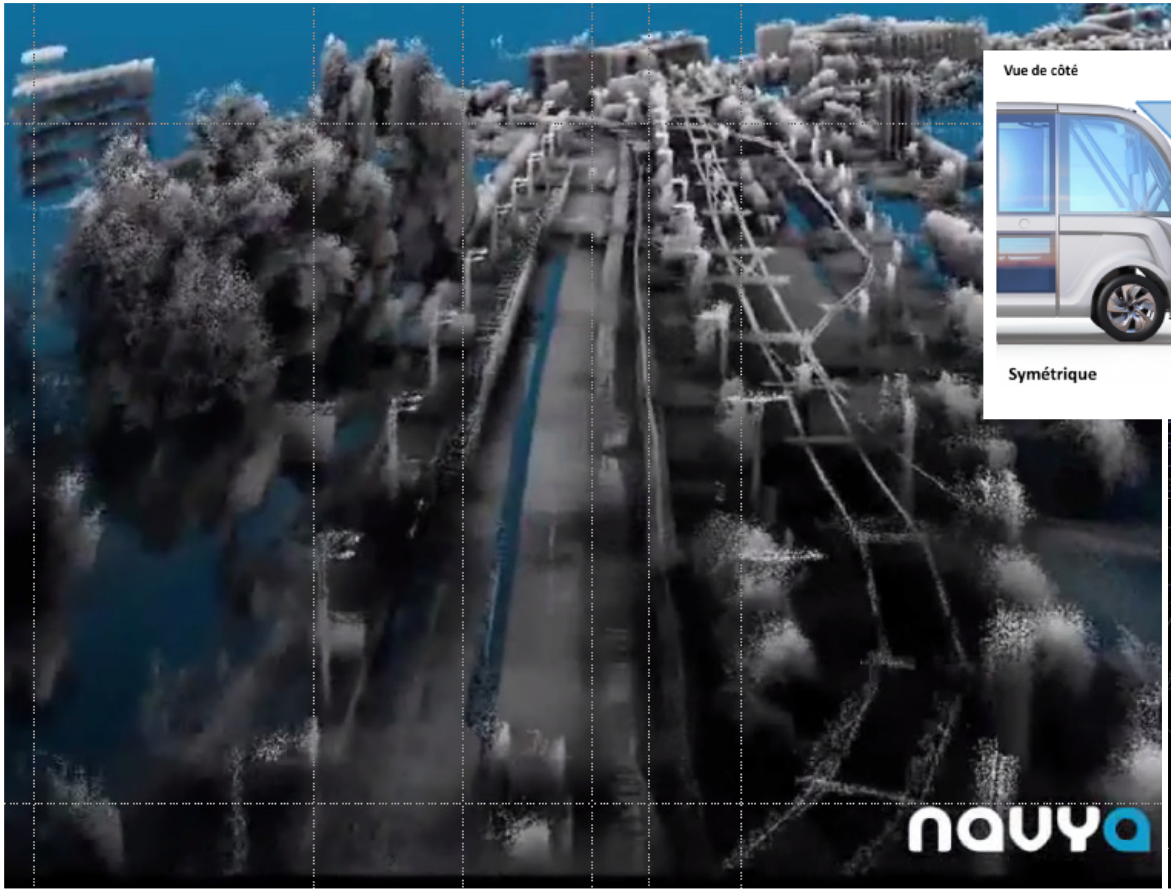
– **Open to the public** (rides are free of charge)

– **App and screen with real-time information**

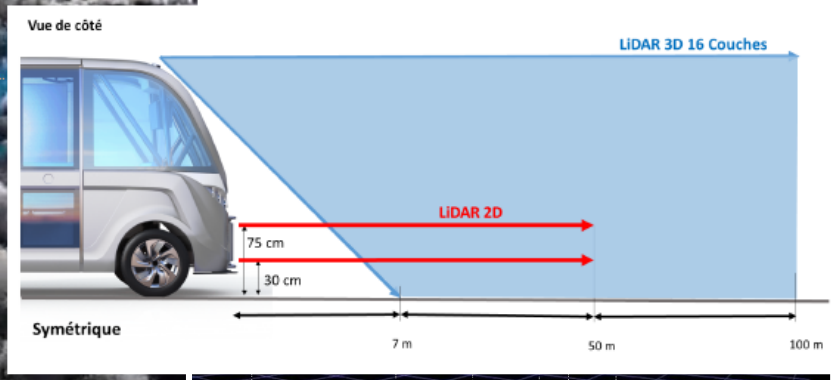

Ligne/Zone centre-ville
Ligne en ville (itinéraires alternatives, en cas de manifestations)
Arrêt
Emplacement pour garer/charger
50
ZONE
20
Mathieu-Schiner
Hôtel de ville
Cathédrale
Rue du Rhône
Place de la Planta
Place du Scex
Dépôt SmartShuttle Sion (Theytaz)
Remparts
Place du Midi

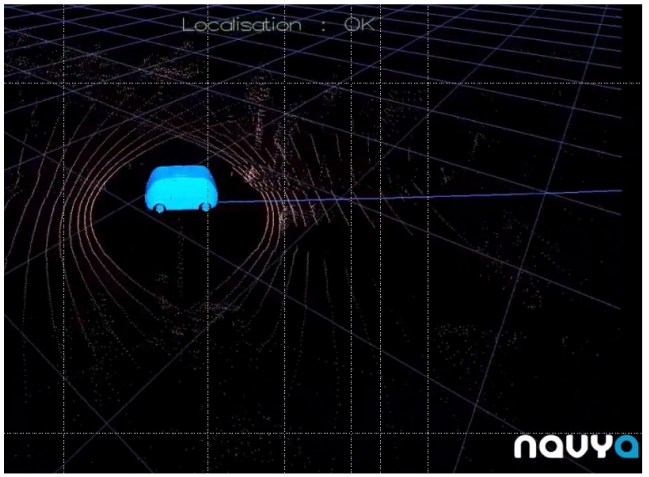
Mapping the World

Virtual rails for automated vehicles

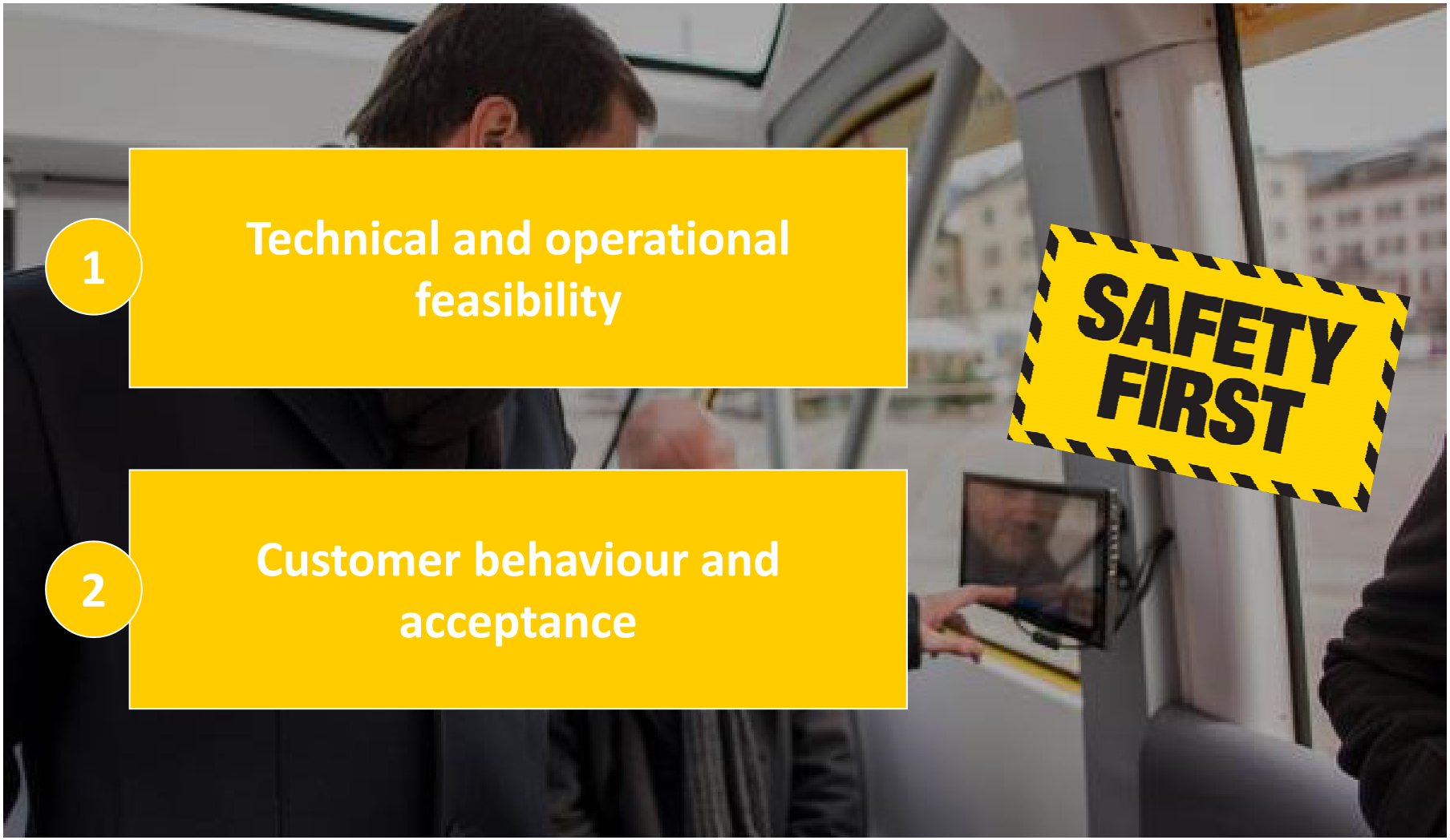


Lidar field of perception





The project addresses two main questions



1. Technical and operational feasibility
2. Customer behaviour and acceptance

PostBus creates the mobility of the future

Project partners

Project owner

DIE POST – Gelb bewegt.

PostAuto

Research & infrastructure

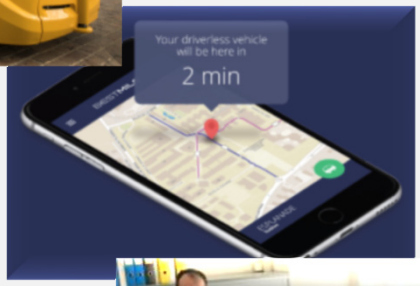
mobility lab – ON VALAIS

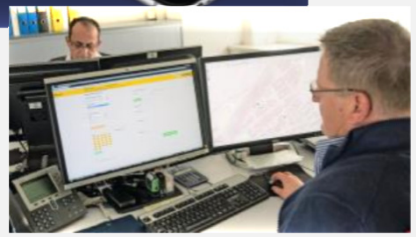
EPFL · Hes·so Valais · Ville de Sion

Partner companies

Technology (Software & Hardware)

BESTMILE – THE MISSING LINK





Operations

nouvo

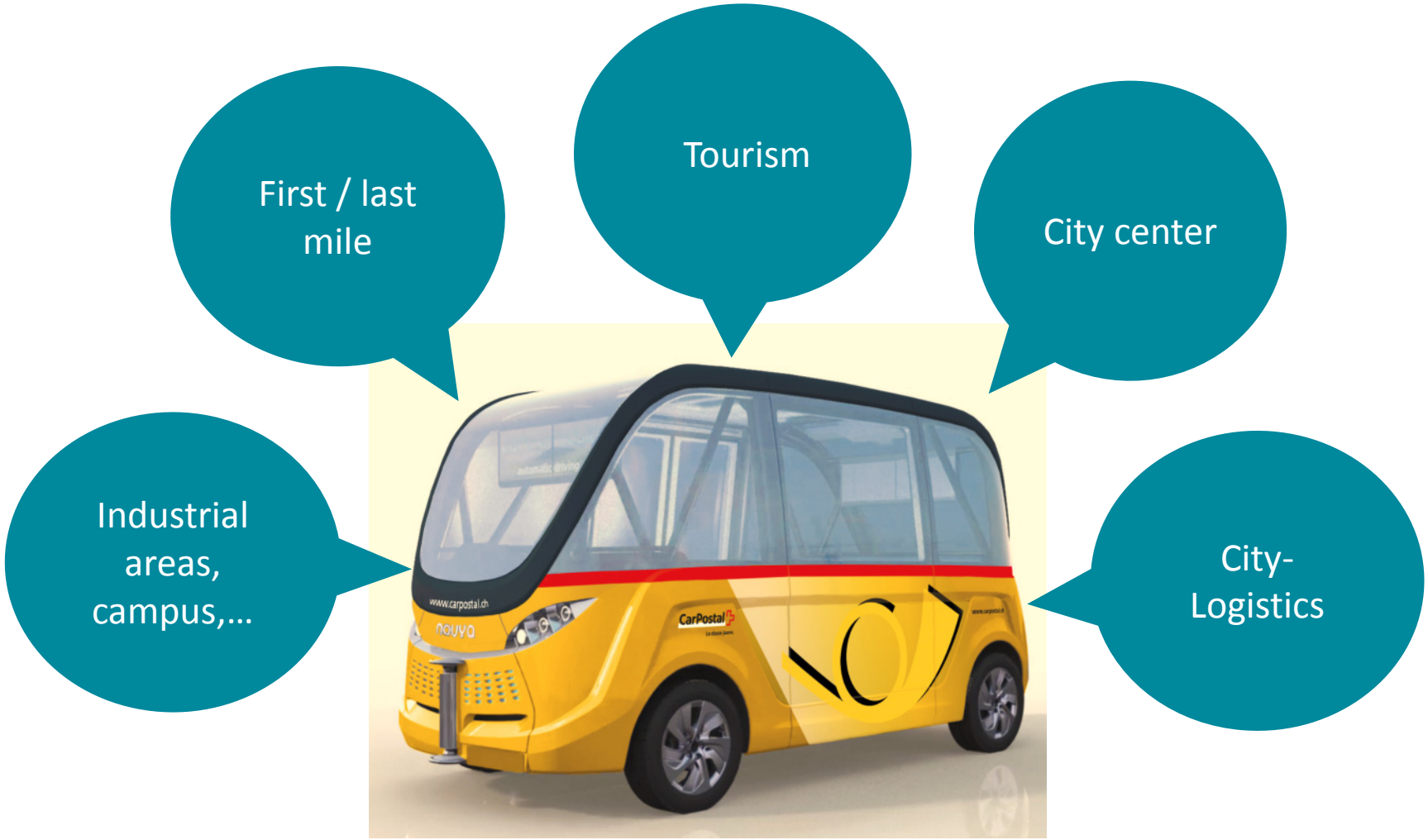
PostAuto

B2B

B2C

What's next?

Different areas of application to be tested



The «SmartShuttle» system is ready, tell us where you want them to take you!

Thank you for your attention!

Ramon Müller
Technischer Leiter «SmartShuttle»
ramon.mueller@postauto.ch
+41 (0)79 670 24 62

Backup

Press release 6th of October¨2016

The yellow class. PostBus

Press release, 6 October 2016

Earliest release date 6.10.2016, 9 a.m.

SmartShuttle

Testing in Sion resumes

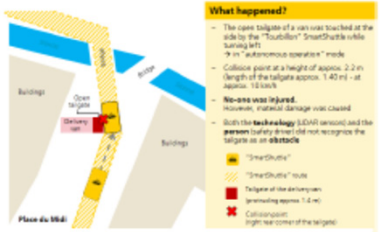
Postbus will resume testing with the SmartShuttles in Sion from today, Thursday. The partners responsible for testing have used the two-week interruption to investigate the causes for the collision with the open tailgate of a parked delivery van. On the basis of their findings, PostBus and the vehicle supplier Navya have taken technical and organizational measures to prevent a similar incident happening in the future.

One of the two SmartShuttles in Sion touched the open tailgate of a parked delivery van between the Place du Midi and Place du Scex on Wednesday, 21 September at 5.40 p.m. Following the incident, in which the van and the SmartShuttle in autonomous driving mode were slightly damaged, PostBus had temporarily suspended testing with both its vehicles. After carefully analysing the accident and what had caused it, PostBus and the vehicle manufacturer Navya have decided to resume testing on Thursday, 6 October 2016. The partners have conducted a thorough investigation into the causes of the collision and taken measures which should prevent such an occurrence in the future. To this end, the technical data of the black box was examined, the various sections of the route were analyzed, what had happened was discussed with the attendants on the shuttle, and the situation leading to the collision was re-enacted at the location.

Distance increased

This is how the accident happened: The SmartShuttle, driving in autonomous mode, had made a slight bend to the left as usual before turning on to the bridge over the Sionne. While doing so, neither the so-called LiDAR sensors nor the attendant correctly recognized the danger posed by the 1.4 metre protruding tailgate at a height of around 2.2 metres, which meant that the vehicle touched the rear right corner of the tailgate. The detailed investigations carried out clearly showed that only a series of events could cause such an incident. Whereas the shuttle easily drove past the first corner of the tailgate, the way the van was parked meant that when turning left, the shuttle touched the rear corner. This was only possible because the "free-floating" obstacle was situated more than 2 metres above the ground. In addition, the attendant on the shuttle did not recognize the situation as being problematic and only initiated an emergency stop immediately after contact with the tailgate.

"SmartShuttle Sion" Project – incident at Place du Midi 39 on 21 September 2016/5.40 p.m.



Increased awareness for safety attendants

Over the last few days, the project heads have conducted various test runs both with the repaired "Tourbillon" shuttle, and with "Valère", the second shuttle. PostBus and the vehicle supplier Navya have implemented technical and organizational measures in order to resume testing. In particular, the safety distance at bends has been increased in addition to fine-tuning a range of minor technical details. Although this may slow down operation, the vehicles can now react much more sensitively to obstacles and stop more quickly. The six safety attendants – three men and three women – have received additional intensive training from Navya and PostBus. They meet every month to exchange their experiences.

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+41 58 338 57 00, infomedia@carpostal.ch

7,000 people transported in three months

The incident of 21 September 2016 was a setback for PostBus and for its testing with autonomous shuttles. The partners are, however, convinced that the technical and operational development can continue. They draw a positive conclusion from the first three test months. The two SmartShuttles "Tourbillon" and "Valère" together have driven more than 1,000 kilometres and transported around 7,000 passengers on more than 800 trips through Sion's old town. The safety attendants on the shuttles continue to keep precise records and to report any necessary interventions. The most frequent intervention was having to drive around obstacles, such as wrongly parked cars, in manual mode. Sometimes, technical disruptions led to one or two-day interruptions to the service. However, PostBus views this as being part of such an innovation project as the operation of self-driving shuttles has not been running for long following their launch on 23 June 2016. Tests are scheduled to end in October 2017.

At the stops, the safety attendants explain how the autonomous shuttles work to visitors from all over the world. Surveys are regularly conducted among customers. Many of them are initially sceptical about the shuttles, but afterwards most of them are very positive about the ride. Their views do not depend on age: In particular, many passengers over 55 are enthusiastic and want to know exactly when and where the SmartShuttles are in operation. It is also interesting that passengers under 20 get onto the vehicle quite naturally as if it were a conventional Postbus. It's now hard to imagine the townscape of Sion without yellow Postbus shuttles. They have also become popular objects for selfies.

Please note the operating hours at www.postbus.ch/smartshuttle

The autonomous shuttles operate on a route in Sion's old town and serve several stops, two of which are fixed: one is at Place de la Planta, the other at Place du Midi (see map on the factsheet). The stop at Place du Midi has a screen that displays the location of the two vehicles in real time. Passengers can also use an app to check the location of the shuttles.
Use of the autonomous shuttles is free of charge and the service offers passengers a flexible timetable. The test operation runs every afternoon from Tuesday to Sunday. There are several factors that determine whether the vehicles can operate: the weather forecast, the condition of the roads, and events and planned roadworks along the route. Passengers should therefore always check the website www.postbus.ch/smartshuttle in advance to ensure that the shuttles are operating.

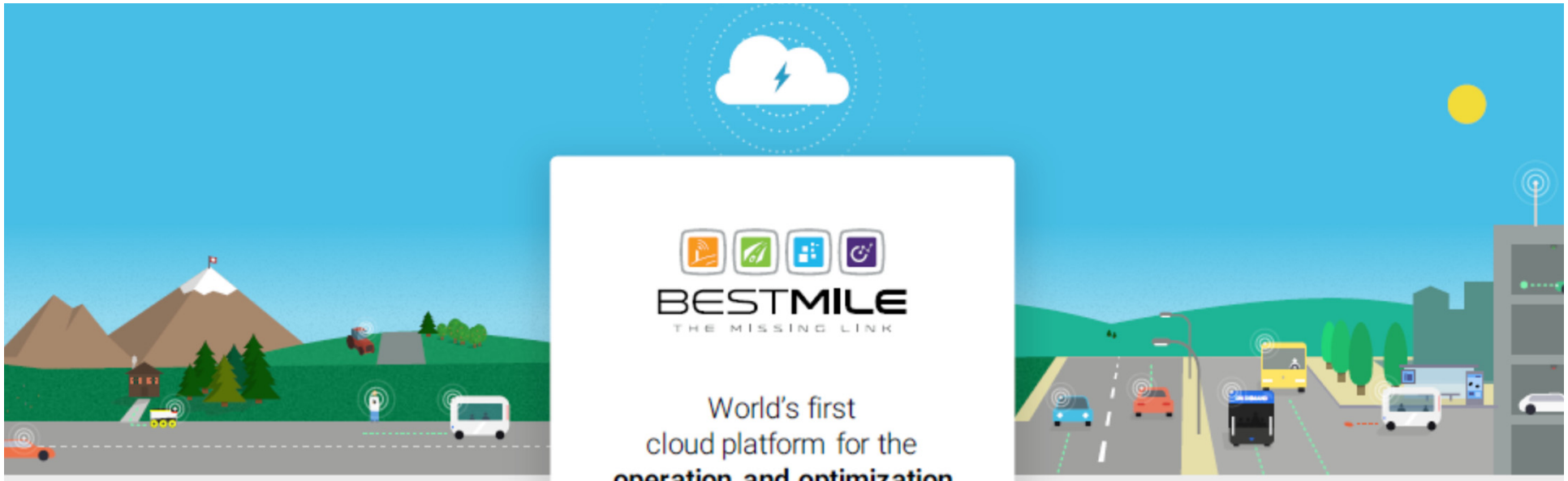
Information:

PostBus Switzerland Ltd Media Unit, +41 58 338 57 00, infomedia@postbus.ch

Enclosed:

SmartShuttles information sheet

PostBus Switzerland Ltd, Belpstrasse 37, P.O. Box, 3030 Berne, Switzerland
+41 58 338 57 00, infomedia@carpostal.ch



BESTMILE

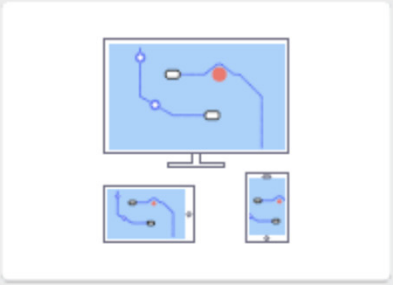
THE MISSING LINK

World's first
cloud platform for the
operation and optimization
of autonomous vehicles

Core Engine

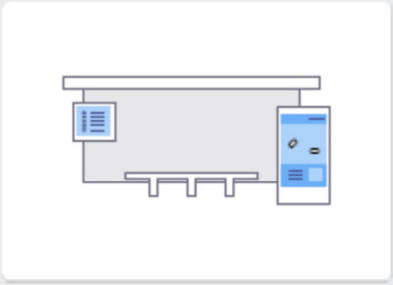
- Real-time dispatching
- Optimized routing
- Charging management

Operator dashboard



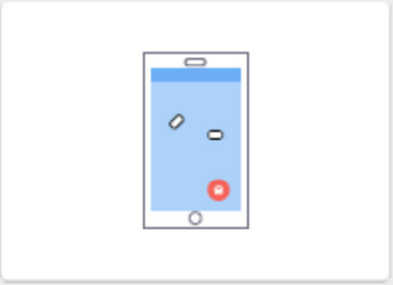
- Live control center
- Helpdesk
- Reporting tools

Traveler info system



- Live vehicle's position
- Estimated time of arrival
- Interactive interfaces

Mobile apps



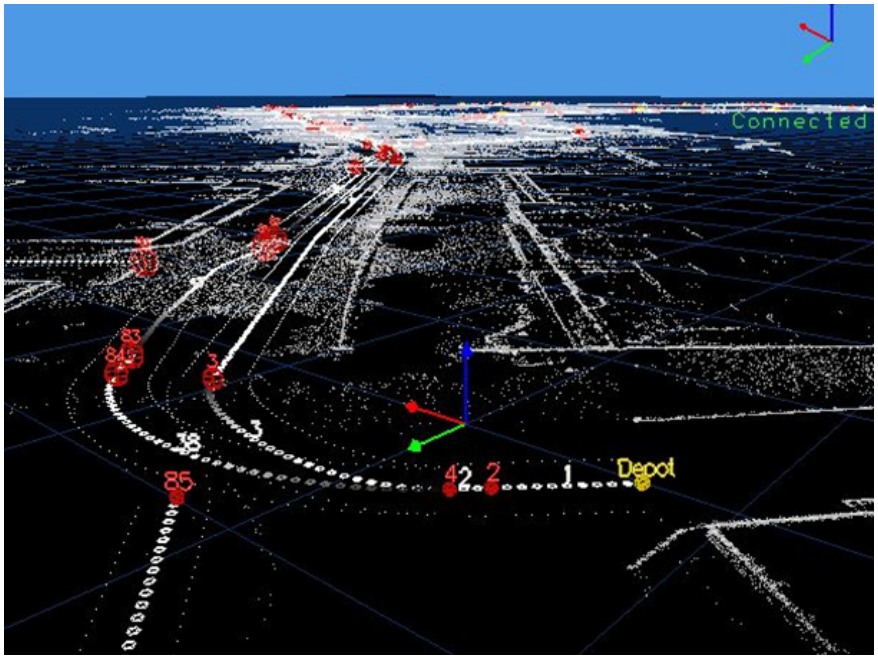
- On-demand transportation
- Live vehicle's position
- Estimated time of arrival

Mapping the World

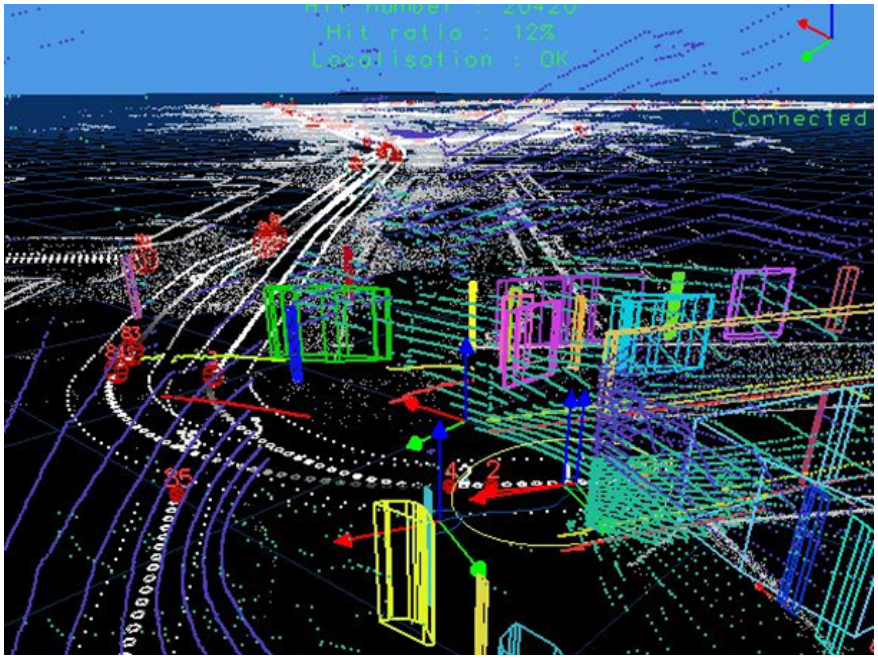
Virtual rails for automated vehicles

In order to navigate the vehicles through the world we need to create a digital map of the environment. The line in the map represents the vehicles' path.

The LiDAR sensors are scanning the environment continuously. Detected obstacles on the path will make the vehicle stop.



LiDAR map



LiDAR map with actual LiDAR data