

NAVYO  
be fluid



## Autonom Cab

The first robo-cab  
on the market



Autonom Cab



Autonom Shuttle

# Table of contents

NAVYA: SPECIALIST AND LEADING NAME IN SMART MOBILITY	4 - 5
-----	
A REVOLUTION IN THE URBAN MOBILITY MARKET	6 - 7
-----	
THE MOST SOPHISTICATED MULTI-SENSOR TECHNOLOGY ON THE MARKET	8 - 9
-----	
A CONNECTED, SIMPLE AND FLUID EXPERIENCE	10 - 11
-----	
A DAY IN THE LIFE OF AUTONOM CAB	12 - 13
-----	
DEPLOYMENT OF AUTONOM CABS AROUND THE WORLD	14
-----	
NAVYA: LEADER IN THE AUTONOMOUS VEHICLE MARKET	15
-----	
VISION AND MISSION: TO REVOLUTIONIZE THE URBAN MARKET	16 - 17
-----	
TECHNICAL SPECIFICATIONS	18 - 19
-----	



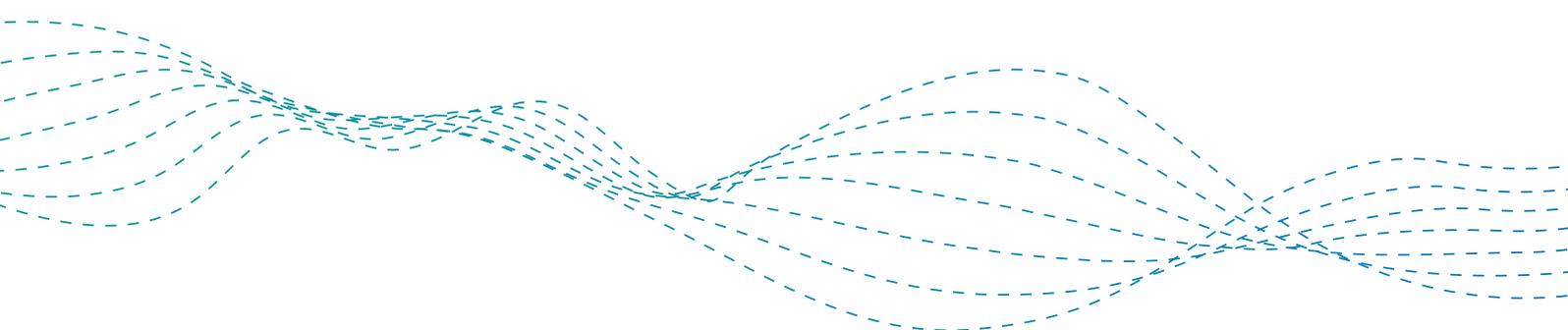
SPECIALIST AND LEADING NAME  
IN SMART MOBILITY

A pioneer and specialist in the autonomous vehicle market, NAVYA assists cities and private sites around the world in improving their transport offerings with its autonomous, driverless and electric solutions.

Revolutionizing urban mobility, NAVYA has conceived, developed and produced the AUTONOM range, autonomous, shared and electric mobility solutions.

**Definition**

**AUTONOM:n.** The first totally connected range of autonomous vehicles for private or shared use. Designed from the outset to be autonomous, the vehicles in the AUTONOM range can communicate with one another and with their environment.

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# Galloping urbanization requires new solutions

Large cities and agglomerations are developing massively.

A United Nations study claims that by 2050, 70%  
of the world's population will be living in urban areas.

This increase in urbanization implies the birth of political and lifestyle  
changes including the development of green transportation solutions  
and car-sharing services.

Autonomous vehicles are the most relevant solution for meeting  
the new challenges facing the world's cities.



# A revolution in the urban mobility market

## Autonom Cab is the first robo-cab on the market

Revolutionizing mobility in cities worldwide by improving service performance and passenger experience, **AUTONOM CAB** is equipped with one of the most advanced sensor architectures on the market.

At the heart of the smart cities, **AUTONOM CAB** fleets provide an intelligent transport service for individual trips in urban centers.

Able to carry 1 to 6 passengers, **AUTONOM CAB** is a fluid, continuous and effective solution that answers users expectations in terms of service before, during and after their trip.

Available as either a private or shared service, **AUTONOM CAB** places an emphasis on conviviality and comfort.

On board, passengers can for example choose to work, benefiting from fully connected technology, or partake in an interactive cultural visit of the city.

They can also choose a playlist, or buy their cinema or museum tickets.

## AUTONOM CAB fleets provide competitive advantages in the mobility market by:



IMPROVING  
SERVICE  
PERFORMANCE



REVOLUTIONIZING  
PASSENGER  
EXPERIENCE



OPTIMIZING  
VARIABLE COSTS

# An unprecedented response to urban mobility

Autonomous, intelligent and clean, AUTONOM CAB, the new mobility solution developed by NAVYA, is offering a revolutionary mobility service.



**On a worldwide scale**, AUTONOM CAB is an answer to urbanization's major challenges, as well as pollution and safety problems, providing a fluid and smart mobility service.



**On a city scale**, AUTONOM CAB aims to make urban centers fluid by providing a solution to traffic congestion, caused in part by privately-owned cars.



**On a human scale**, these new mobility solutions developed by NAVYA - AUTONOM SHUTTLE and AUTONOM CAB - lead users into the AUTONOM era, with a service that is personalized, connected and effective.



# The most sophisticated multi-sensor technology on the market

AUTONOM CAB benefits from one of the most advanced sensor architectures on the market. There are no fewer than 10 Lidar sensors, 6 cameras, 4 radars, 2 GNSS antennae and 1 inertial measurement unit (IMU). These sensors provide at least a triple redundancy across all functions, guaranteeing exceptional reliability.





## 10 Lidar Sensors

Using laser technology to measure distance, Lidar sensors perceive the vehicle's surroundings in three dimensions. They ensure obstacle detection and calculate the vehicle's precise positioning thanks to 3D-mapping. AUTONOM CAB uses the world's two best types of Lidar technology.

- 3 VLP Lidars from Velodyne provide 360° peripheral vision.
- 7 SCALA Lidars from Valeo are capable of seeing at distances greater than 200 meters.

## 6 Cameras

Cameras analyze the vehicle's surroundings, in particular road signs and traffic lights. Thanks to "deep-learning" algorithms, the cameras detect and categorize obstacles.

## 2 GNSS Antennae

GNSS antennae are linked to a GNSS RTK system that provides precise positioning, accurate to the nearest centimeter.

## 4 Radars

Radars determine the position and speed of nearby objects. They ensure long-distance vision.

## 4 Odometry Sensors

The odometry sensor estimates and confirms the vehicle's position and speed whilst moving.

## 1 IMU

The IMU measures vehicle accelerations and rotations, thereby allowing the vehicle to confirm positioning information and improve precision.

## V2X

AUTONOM CAB comes equipped with a V2X (On Board Unit) device enabling it to interconnect with all types of urban infrastructure, particularly traffic lights.

## 4G

The vehicle is equipped with a MODEM enabling communication with the NAVYA supervision center. (even though the vehicle does not need to be connected permanently).



6 seating positions  
2 sets of 3 seats facing each other onboard

# A connected, simple and fluid user experience

## Fluid experience

Thanks to the dedicated smartphone application called NAVYA APP, with a simple click users can :

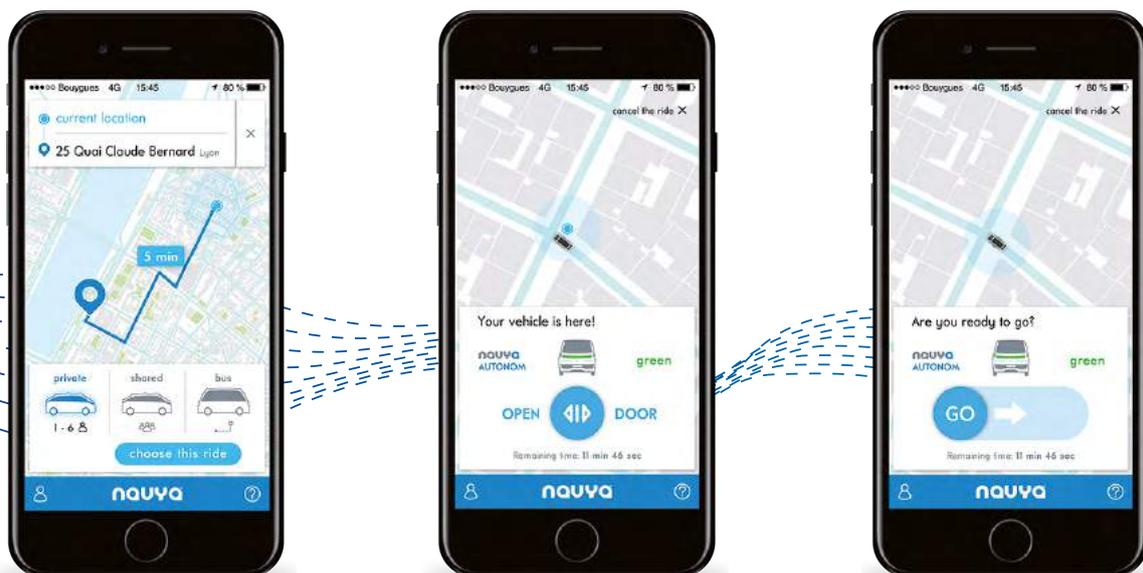
- order an AUTONOM CAB
- open the vehicle's door
- close the vehicle's door to start it up

While inside, using a smart phone or the CAB onboard touchscreen, they can :

- choose their own playlist
- obtain tourist information
- order tickets for a show

Soon, users will be able to :

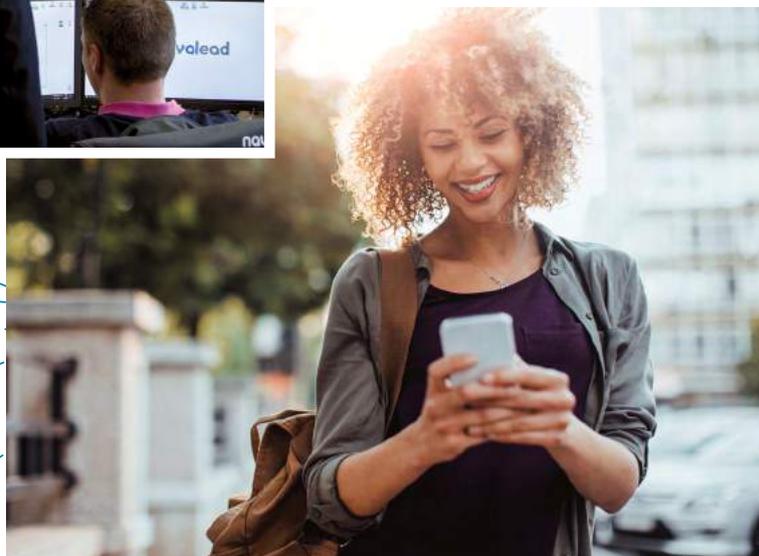
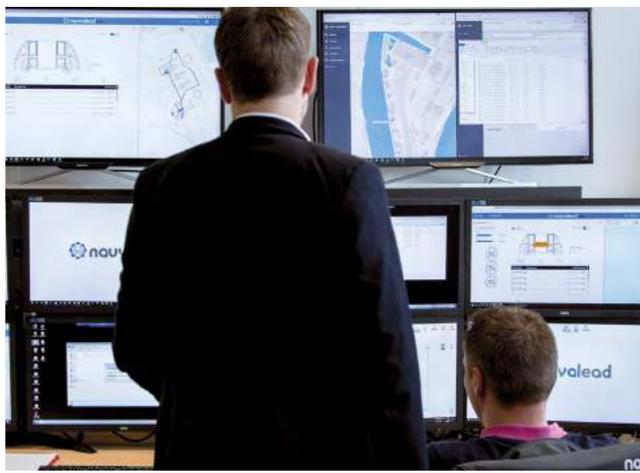
- synchronize AUTONOM CAB with their agenda
- program it to arrive at a set time



# A turnkey mobility service for operators

NAVYA offers its clients a wide range of services to help them manage their fleets, including fleet supervision, vehicle maintenance and an application for passengers.

- **NAVYA LEAD**, the supervision service, can oversee the fleet of AUTONOMS anywhere in the world. The objective is to guarantee service performance and continuity.
- **NAVYA ASSISTANCE**, is dedicated to the maintenance of AUTONOMS, and the service includes replacing and repairing mechanical and electrical parts.
- **NAVYA APP**, the application for travelers, provides easy access in real time to practical information.



# A day in the life of Autonom Cab

## Use case 1

TIME  
SAVING

Lucie spends every day juggling her professional and personal life.

The key to her success is time management.

**7am:** Lucie orders her AUTONOM CAB using the NAVYA APP on her smartphone.

**7:30am:** AUTONOM CAB arrives at Lucie's house. She is able to identify it thanks to the luminous green band. Using her smartphone app she can open and close the door of the vehicle which already has two other passengers on board.

**7:40am:** Comfortably seated inside the vehicle, Lucie can work on the file she urgently needs to finish using the onboard Wi-Fi connection. Not one minute of the journey is wasted which is exactly how Lucie likes it!



## Use case 2

**COST SHARING**



It's the weekend at last! This evening, Jérémie is organizing a meal out with friends.

He expects to have **a chilled-out evening full of good cheer!**

**8pm:** Jérémie privatizes an **AUTONOM CAB** for himself and his four friends who want to make sure the evening gets off to a good start. They also share the cost of the cab ride.

**12:30am:** At this late hour, there is no public transportation available. To top it all off, they have all had a bit to drink. Not to worry, Jérémie orders an **AUTONOM CAB** to go home using his NAVYA APP. A care-free and safe evening for Jérémie !

## Use case 3

**ONBOARD TICKET ORDERING**

Pierre and Françoise are looking after their two grandchildren for the holidays.

Today they are going to the cinema. **They would like a simple and hassle-free trip.**

**2:30pm:** Pierre has registered the journey from home to the city center in his favourites using the NAVYA APP.

**AUTONOM CAB** arrives right on time and the whole family climbs aboard.

**2:45pm:** The movie starts at 3pm. Françoise orders the tickets in order to save time. She even buys the popcorn !

**2:55pm:** The four passengers arrive in plenty of time for the film. They just have to collect their popcorn at the checkout!

**4:30pm:** Pierre, Françoise and their grandchildren leave in their **AUTONOM CAB** without having to wait. This smart vehicle had anticipated their need by offering to collect them for the return journey home.

# Deployment of Autonom Cabs around the world

## Partnerships already in place for deployment

**NAVYA has already signed various partnership agreements with transport specialists, notably KEOLIS in France and RAC in Australia.**

These partnerships will enable NAVYA to roll out fleets of vehicles that will operate on the open road in city centers. The feedback obtained from these trials will be essential for fine-tuning the vehicle's features and optimizing the whole journey.

Working alongside cities and transport operators NAVYA is in a position to deploy the AUTONOM CAB technology in the shortest possible time.

KEOLIS



## The only technology available for sale on the market

AUTONOM CABS, unveiled in November 2017, and whose first road tests will start shortly, are available for sale. NAVYA invites companies and organisations to communicate their transport needs and place their orders.

Do you want to be among the first companies to  
deploy a fleet of AUTONOM CABS ?

[commercialservice@navya.tech](mailto:commercialservice@navya.tech)

# Leader in the autonomous vehicle market

## Navya masters the entire value chain

NAVYA is a pioneer and leader in its market and is one of the only companies able to develop, manufacture, sell and deliver autonomous vehicles. As such, NAVYA masters the entire value chain.



### **Developer:** We use intelligence to serve new mobility

Specializing in the development of intelligent, innovative and sustainable mobility solutions, NAVYA's Research and Development Department renews and continually changes technology's capabilities.

● 120+ engineers and technology experts



### **Manufacturer:** We offer a highly responsive production capacity

A specialist in the production of autonomous vehicles, NAVYA has established a solid and effective Production platform.

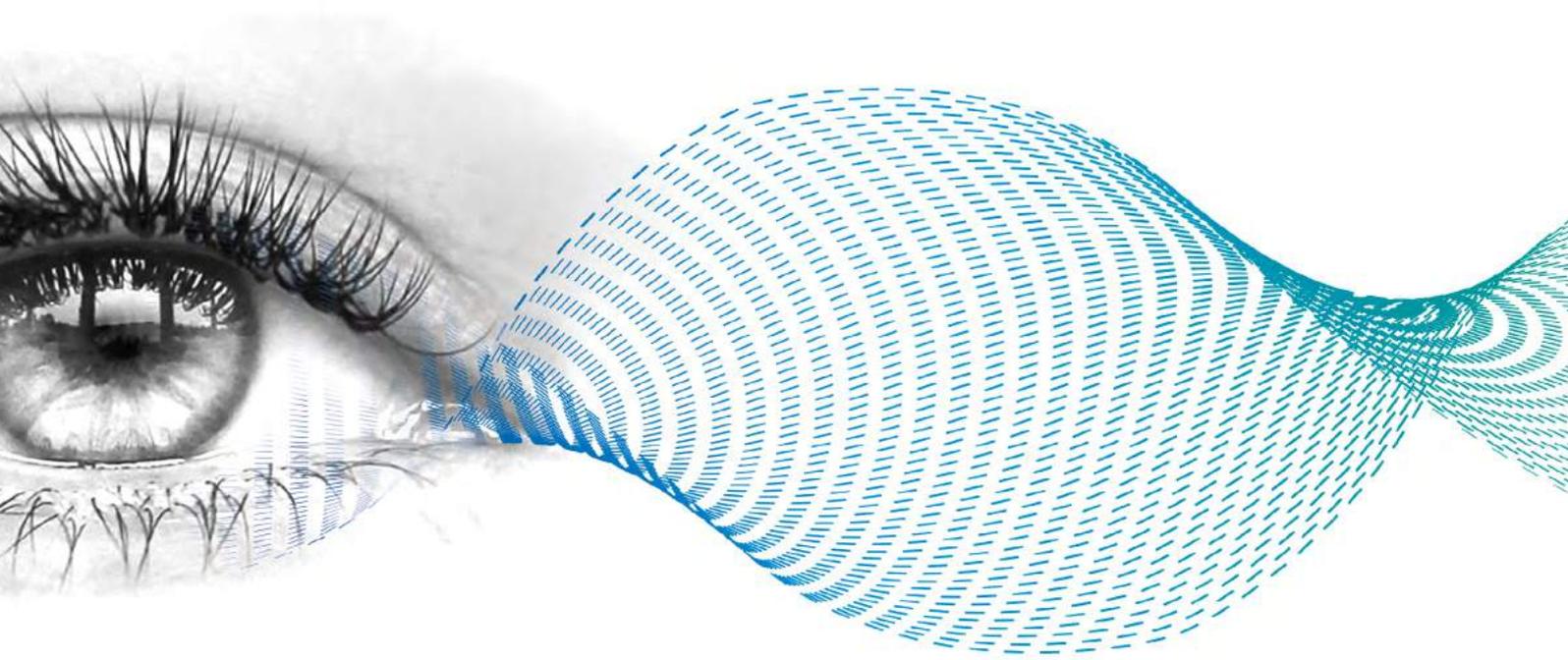
● 2 manufacturing sites: 1 in France and 1 in the United States



### **Service provider:** We provide dedicated and customized services for end-users

NAVYA offers its clients a wide range of services, including supervision and maintenance and an application for passengers, for a fully optimized mobility solution.

# Vision and Mission



## Navya is revolutionizing urban mobility

**Autonomous, intelligent and clean, the mobility solutions developed by NAVYA give humankind new "autonomy". NAVYA's aim is to bring humankind into the "AUTONOM" era with these brand-new solutions.**

A leader and specialist in the autonomous transport market, NAVYA's objective is to develop innovative mobility solutions based on new technologies.

NAVYA has conceived, developed and produced the AUTONOM range, autonomous, shared and electric mobility solutions to ease congestion in city centers and provide an answer to the demand for first and last mile service. With AUTONOM SHUTTLE, already in service throughout the world and the new AUTONOM CAB mobility solution, NAVYA is releasing humankind from automobile dependency and providing human beings with a new type of autonomy.

Set to revolutionize mobility, AUTONOMS provide a new type of mobility service that is simple and fluid, boasting a multitude of totally new uses and functions.

NAVYA frees up mobility at the heart of smart cities and makes it more fluid.



## Navya: from mobility to fluidity

**With AUTONOMS - AUTONOM SHUTTLE as a shuttle service and AUTONOM CAB, for on-demand journeys - NAVYA is offering a continuous and more efficient mobility experience. Mobility is more fluid.**

Serving intelligent mobility, NAVYA's mission is to make cities all over the world more fluid.

Whether complementing existing urban transport methods or running on private sites, NAVYA's AUTONOMS are now THE ideal solution for the first and last mile.

By reinventing travel methods at the heart of urban complexity, NAVYA provides a fluid, connected, safe and clean mobility experience for all citizens.

So that everyone can enjoy their city as a simple space that is pleasant to live in.



# Technical specifications



## Capacity

Passengers 6



## Dimensions

Length *m* 4.65

Width *m* 1.95

Height *m* 2.10

Ground clearance (empty/gross) *m* 0.20/0.14

Tyres 205/55 R19

Vehicle weight *kg* 2,100

Total gross weight authorized *kg* 2,500



## Engine power

Drive wheels 2

Engine Electric

Power *kW* 15 nominal (25 peak)

Maximum speed *km/h* 90

Operating speed *km/h* 50

Maximum slope *%* 13



## Energy

Battery LiFePO4 battery pack

Capacity *kWh* 33

Charging duration for 90% *hours* 9hrs for 16A, 5hrs for 32A

Average autonomy *hours* 10 hours max.

Charging Power point (16 or 32 A)

Charging temperature *°C* From 0 to +40

Operating temperature *°C* From -10 to +40



## Steering

Steering wheels 2

Turning radius *m* 5.50



## Equipment

Door Automatic sliding door

Body Composite

Windows Tinted windows

Visual information External LED panel,  
stretched TFT internal display screen

Sound system 4HP + 4 tweeter + 1 woofer  
+ amp 4\*80 WRMS (FOCAL)

Sound warning Buzzer // Klaxon

Safety Seat belts



## Localization and obstacle detection

Lidars 1	Three 360° multi-layers Lidars
Lidars 2	Seven 145° multi-layers Lidars
Cameras	6 cameras
Radars	4 radars
Central inertial unit	Yes
Odométry	Wheel and engine encoders
GNSS	GPS RTK



## Security

Emergency stop buttons	4
Emergency brake	Automatic
Parking brake	Automatic
V2X	Yes





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