





Cybercars: the first fully automated urban vehicles on the market

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ETH Summer School – July 7, 2014

Market Segments

- Military vehicles
- Trucks/Buses
- Farm equipment
- People Movers
- Fleet vehicles
- Private vehicles

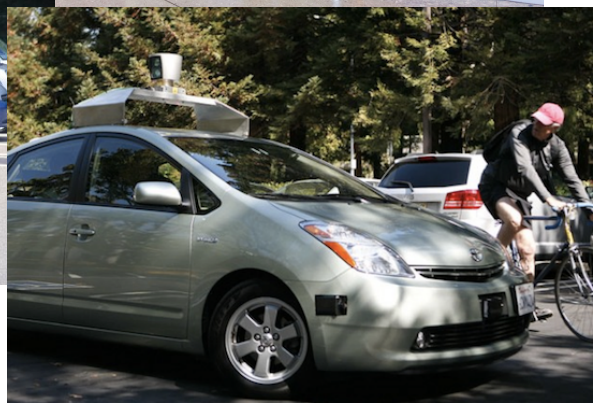












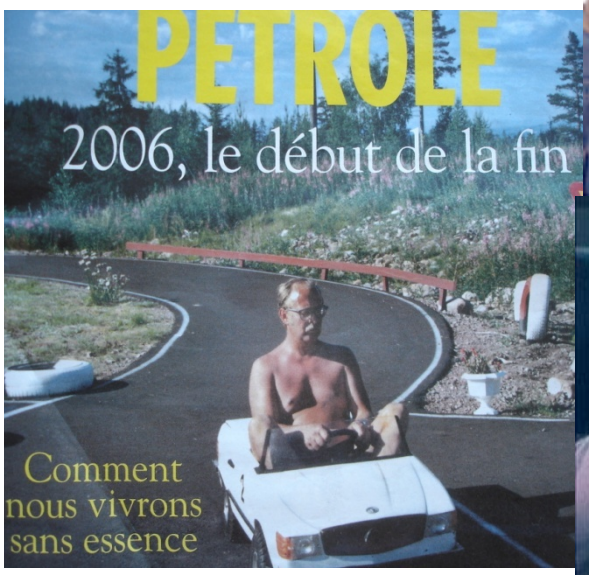
Problems of the automobile















Space*Time Expenditure

Moving (4 km) :	Parking (8h) :
-Pedestrian: 1 m2*h	-Pedestrian: 0
-Bicycle: 1 m2*h	-Bicycle: 8 m2*h
-Moped: 2.0 m2*h	-Moped: 12 m2*h
-Car: 9 m2*h	-Car (street): 80 m2*h
-Bus (30p): 0.3 m2*h	-Car (parking): 240 m2*h
-Tram (200p): 0.1 m2*h	-Bus/Tram: 0







Tiny Cars







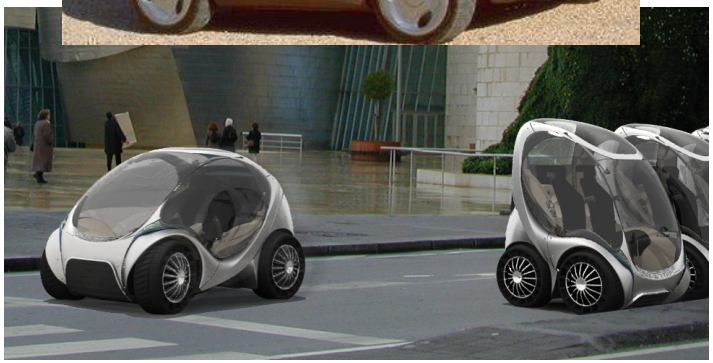












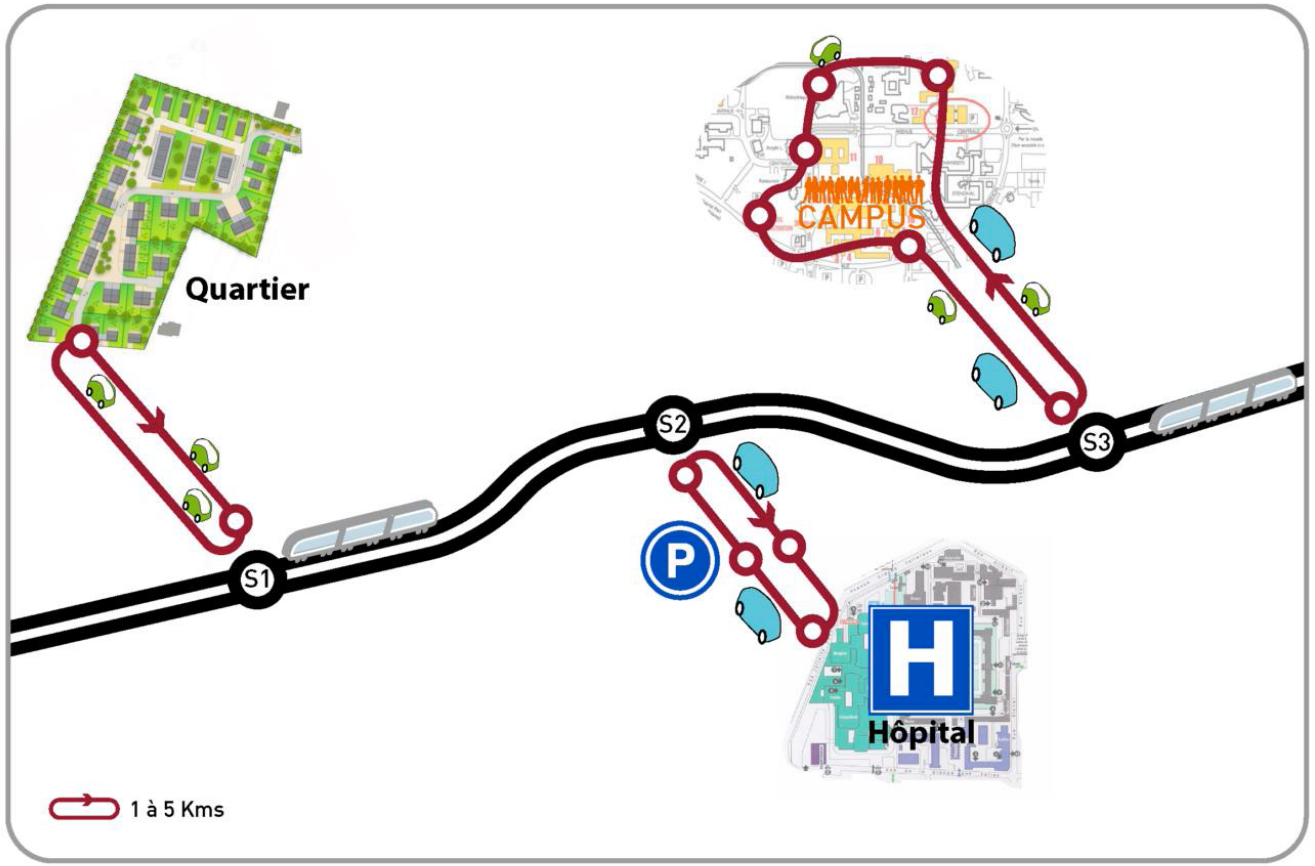


Witkar, Amsterdam (1970's)





Last Mile Link



Praxitele (1993-1999)





Car Sharing









CAR2GO IS COMING





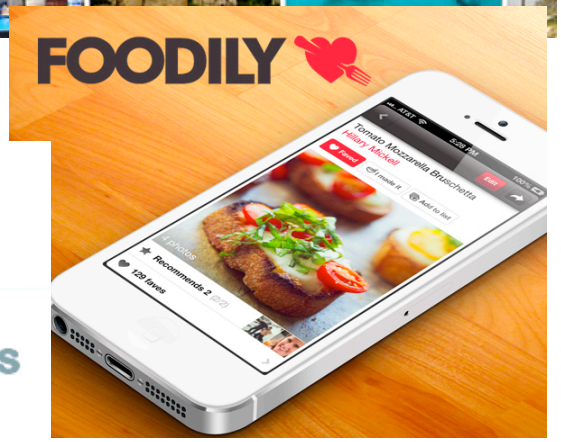
autolib'



Economy of Sharing







WhipCar Rent the Car Next Door.

Spride Share

RelayRides

find your home-swap today!

house exchange

the best way to find a mutual exchange!

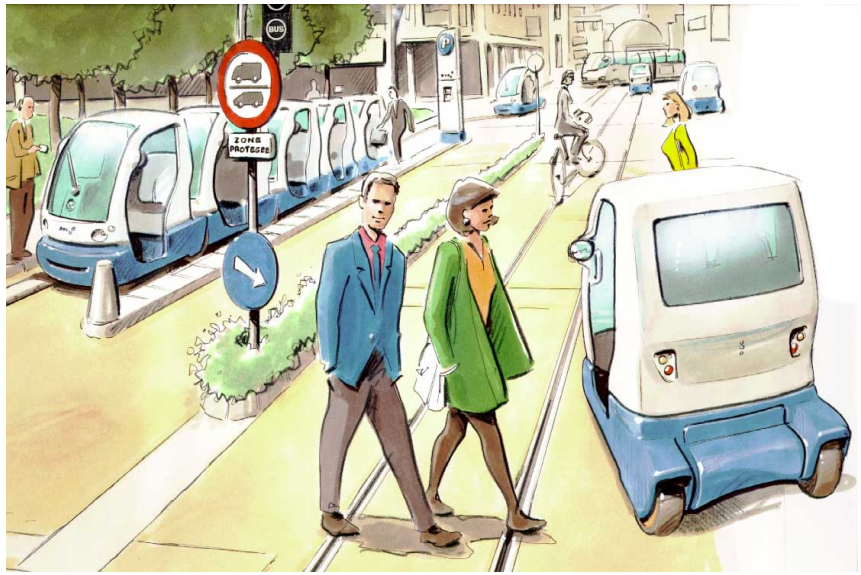




Time Saving Social Sharing Tools

Concept INRIA/INRETS (1991)

Small Public Urban Vehicles
Assited driving
Platooning
Automated Parking
Automated tracks
Complement to other modes



Platooning (INRIA-1994)



INRIA CyCab (1996)



Schiphol ParkShuttle (1997)



ParkShuttle-2 Rotterdam





Cybercars Story







First concepts in 1990's
First exploitation in 1997
CyberCars/CyberMove en 2001
Demonstrations Antibes en 2004
MobiVIP (2004)
CyberC3 (2005)
CyberCars2 (2006)
CityMobil (2006)
Cristal-CATS (2007)
CityNetMobil (2008)
CityMobil2 (2012)







2GetThere – Masdar City (2010)



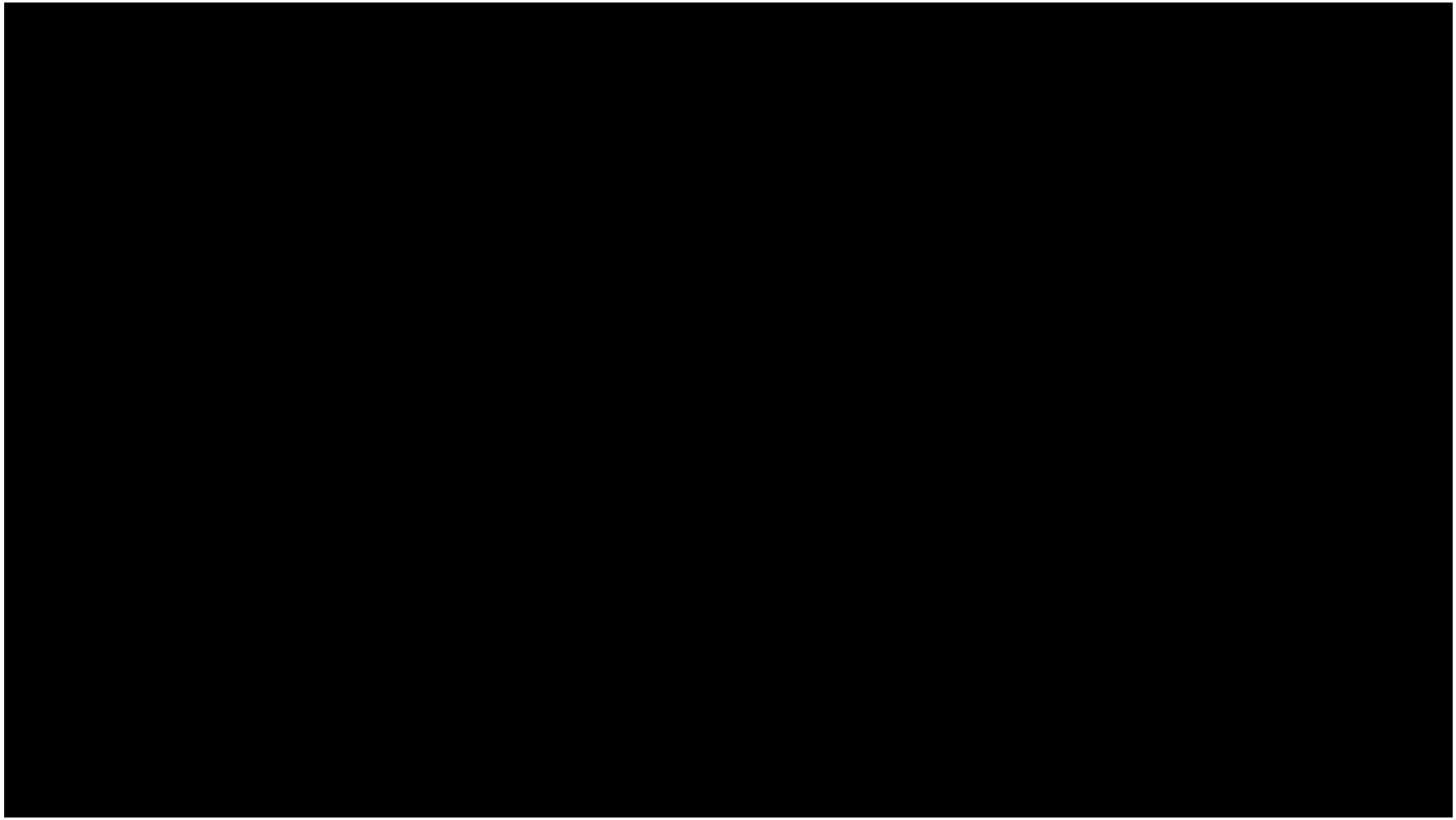
Heathrow Terminal 5 Station



CityMobil in La Rochelle (2011)



CityMobil La Rochelle (2010)





CityMobil2 (2012-2017)

35 partners
5 manufacturers
12 cities
12 vehicles to be built
4 large scale demonstrations
10M€ funding from EC







Current technologies

- Static maps (usually with SLAM)
- Fixed guidance (virtual rails) on network
- On-demand dynamic routing
- Localisation (usually DGPS+SLAM)
- Obstacle detection (lidar+U.S.)
- V2V and V2I communication (WiFi+GSM)
- Central synchronization (fixed/dynamic block)

Problems to be solved for the development of Cybercars

- Interpretation of the Vienna convention
- State legislation/certification
- Safe operation in mixed traffic
- Behavior understanding (cars, pedestrians,..)
- Cheaper sensor suite (vision?)
- Software development/testing suite
- High throughput
- Vehicle design/manufacturing
- Business model (operator?)

Political Vision

In twenty years, only cybercars will be allowed to enter most cities in industrialised countries.

Senator Trégouët, March 2000



Google cybercar

Pleasure of driving?



Merci

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www.cybercars.fr

www.citymobil2.eu