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The 27th INTERNATIONAL ELECTRIC VEHICLE SYMPOSIUM & EXHIBITION.

Barcelona, Spain
17th-20th November 2013

CityMobil2 and CATS European Projects

How to combine electric mobility and automation

Michel Parent

INRIA-France

Organized by Fira Barcelona avele

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In collaboration with EVAAP EDTA

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Daimler Autonomous Vehicles

"We want to be the first to launch autonomous functions in production vehicles. You can be sure: we will accomplish that in this decade," Thomas Weber, Daimler head of development said in September 2013.

Autonomous Mannheim-Pforzheim trip in Sept. 2013

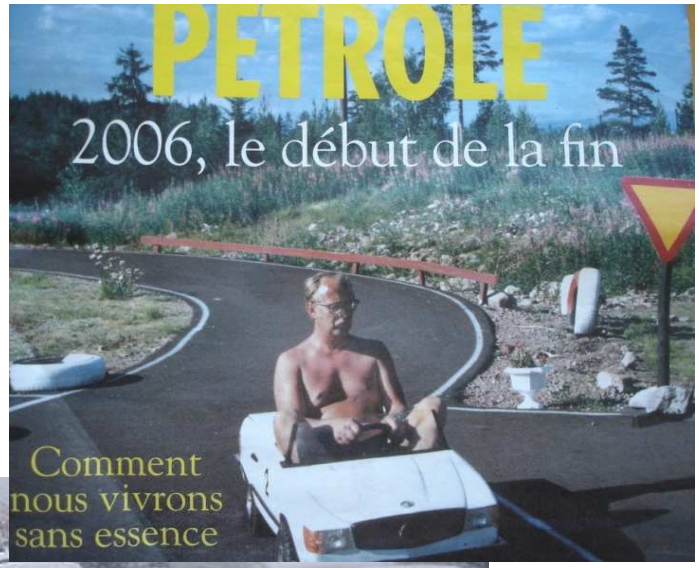
Carlos Ghosn (Renault/Nissan)

I am committing to be ready to introduce a new ground-breaking technology, Autonomous Drive by 2020, and we are on track to realize it (Oct. 2013)

Honda Valet Parking (2013)

Problems of the automobile

- Accidents
- Use of fossil energy (GHG+dependancy)
- Quality of life
- Pollutions
- Health
- Cost
- Equity
- Space



Space*Time Expenditure

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

Parking

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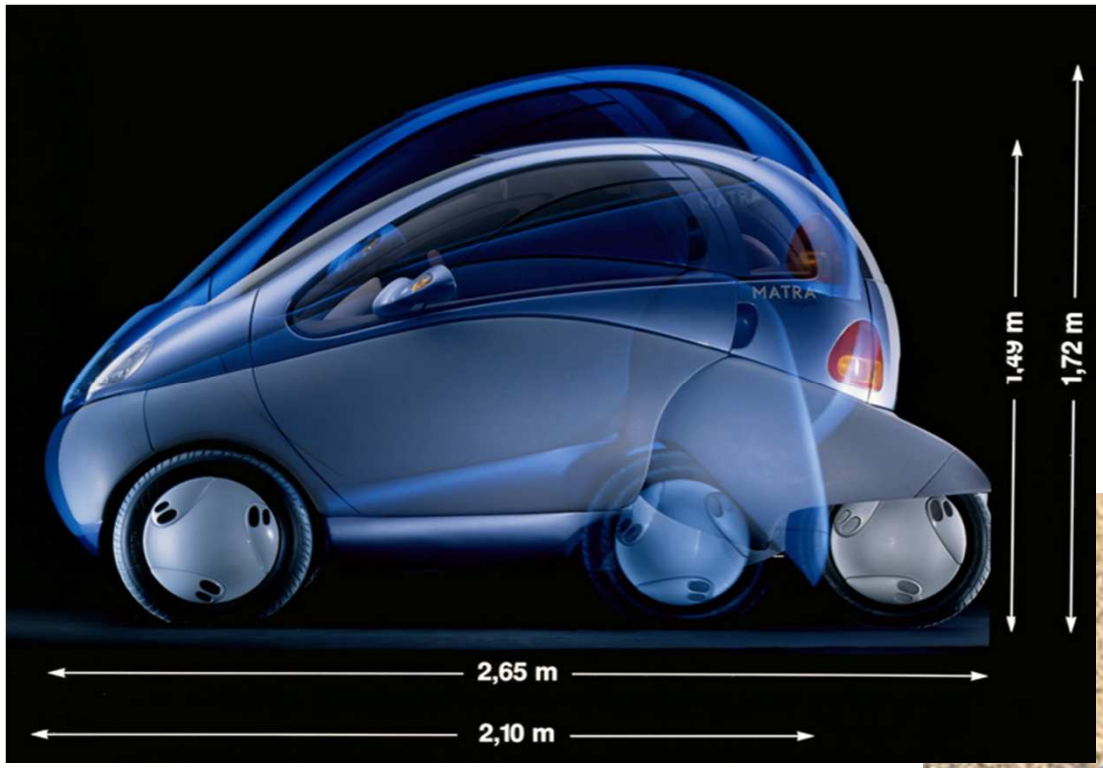
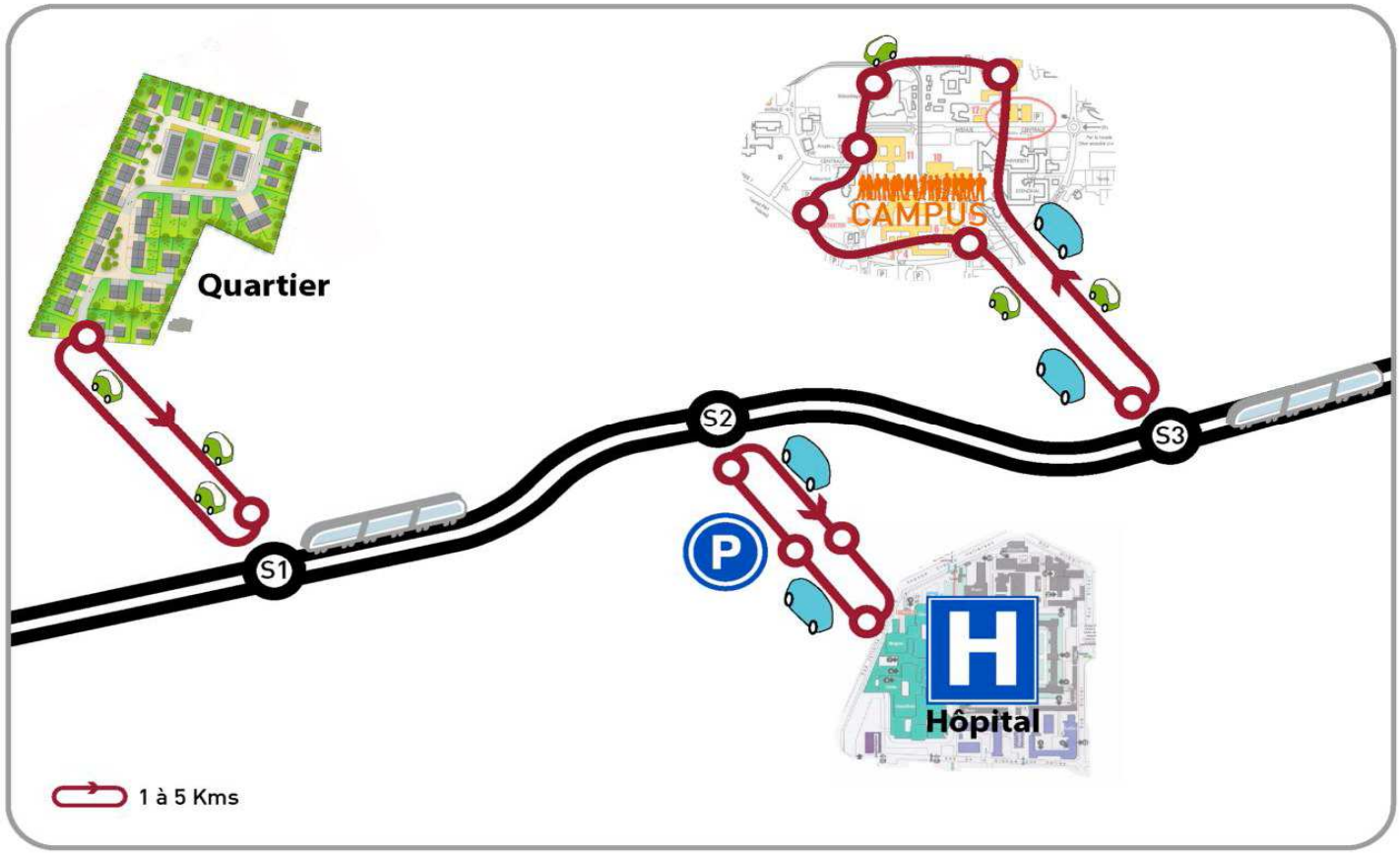
Renault-Zoom (1992)



Peugeot-Tulip (1996)

Witkar, Amsterdam (1970's)

Last Mile Link



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Praxitele (1993-1999)

Liselec - La Rochelle (1998)

Nice Autobleue

- 60 Vehicles (3 types)
- Any location
- VuLog System

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Brussels Zen Car

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Paris Autolib

- 4000 vehicles (one type)
- 2000 stations
- 120,000 subscribers
- Now in Indiannapolis!

La Rochelle Yelo (Mia)

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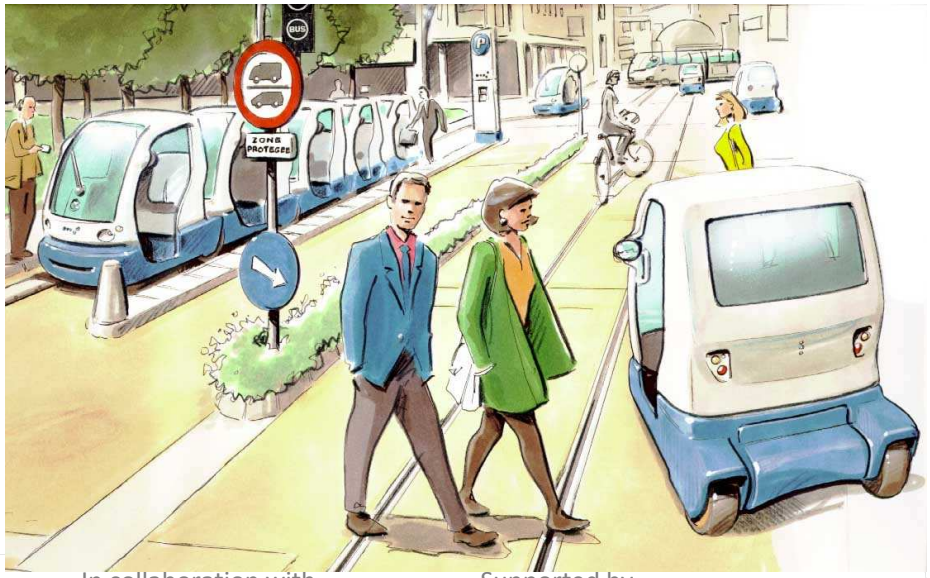
Twizy Way

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

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Cyber

- 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)

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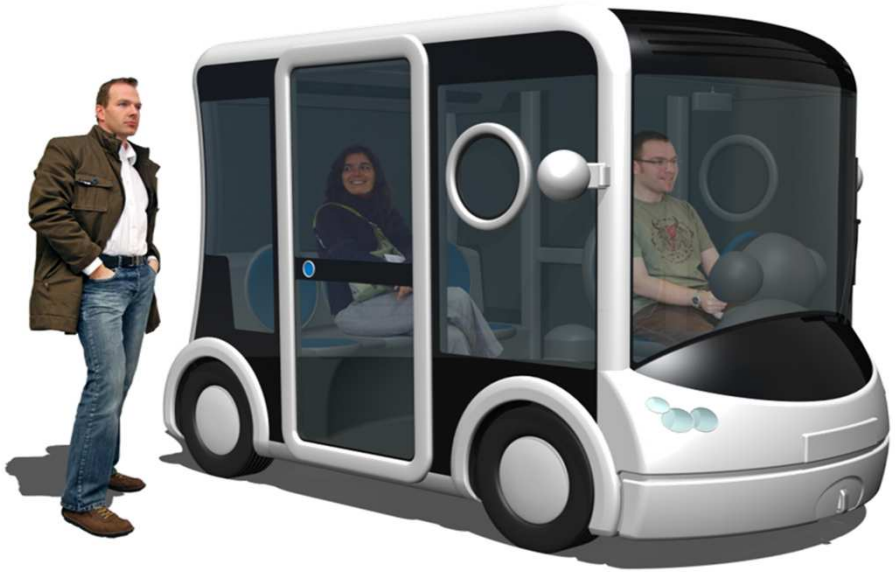
Cristal from Lohr (CATS Project)



CityMobil2 (2012-2017)

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

The ultimate solution would have transportation hubs where all forms of travel intersect, so you can get off a subway and get onto a Segway. Or get off a bus and get on a bike or share a Zipcar". Bill Ford, Sept. 2011.

Political Vision

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

Senator Trégouët, March 2000

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Merci

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www.cybercars.fr

www.citymobil2.eu

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