SHARED AUTONOMOUS CARS WILL TRANSFORM CITY TRANSPORT AND TRAFFIC OPERATIONS:
SHARED AUTONOMOUS VEHICLES?

50 Min
real city
real* trips
SHARED AUTONOMOUS VEHICLES?

- TaxiBot: ride-sharing
- AutoVot: car-sharing
- Public Transport: High-Capacity
WHAT WE WANTED TO TEST

all day vs. peak hours

24 hrs

peak hrs

5 minutes

maximum delay from base case trips
WHAT WE WANTED TO TEST

24 hrs. peak hrs.

number of vehicles required to provide the same trips as before:

TaxiBots Ride sharing + Public transport (high capacity)
THE IMPACT ON VEHICLE NUMBERS

Scenario: 24 hours

TaxiBots (Ride sharing) + Public transport (high capacity)

number of vehicles required to provide the same trips as before: 10%
THE IMPACT ON VEHICLE NUMBERS

TaxiBots Ride sharing + Public transport (high capacity) number of vehicles required to provide the same trips as before: 35%
- 80%

Off Street Parking
In our modelled city a shared self-driving fleet would potentially remove the need for all on-street parking freeing an area equivalent to 210 football fields.
+20% Kerb to Kerb space
NOT ALL IS GOOD NEWS

+30% to +90%

kilometres travelled
TaxiBots and AutoVots will travel more than today’s cars

6% - 25% more kilometres travelled due to bus replacement, pick-ups, drop-offs and re-positioning

44% - 103% more kilometres travelled due to replacement, re-positioning
On Demand
8-16 Person Capacity

30 min advance Booking
< 300 m to “pop-up” stop
10 min tolerance for boarding time
Scenario: 24 hours

+ number of vehicles required to provide the same trips as before:

24 hrs

TaxiBots Ride sharing

TaxiBus Ride sharing

Public transport (high capacity)

5 %
BETTER USE OF CAPACITY

+ 230%

8-16 person bus capacity vs 80 person bus capacity
WHAT WE COULD ACHIEVE

-22% & -27%

kilometres travelled & CO₂ emissions

TaxiBots Ride sharing + TaxiBus Ride sharing + Public transport (high capacity)
Tomorrow’s city
LAND USE AND PUBLIC REALM INFRASTRUCTURE
VEHICLES AN EXTENSION OF THE CITY?
THE ROAD OF TOMMOROW?
SAFETY

Collisions

Autonomous driving levels

1-5 mixed & learning curve

0 non automated
1 assisted
2 partial automation
3 conditional automation
4 high automation
5 full automated

%SAE
OPERATIONAL ISSUES
MODE INTERCHANGE

+ ✈️ + ⏰ + OR + 🚄 + 😊 + 🚗 + 🚴 + 😊
FUTURE MODE SPLIT
HOW DO WE DELIVER THE CARGO
New St. ETA 10:20
$ 6 per h
Capacity 80%

New St. ETA 10:20
$ 6 per h
Capacity 95%
SPACE 143
Allocated 143
ETA 1min
A BASE FOR STRATEGIC ASSESSMENT
EXAMPLE: C2X OPTIMUM SIGNALS