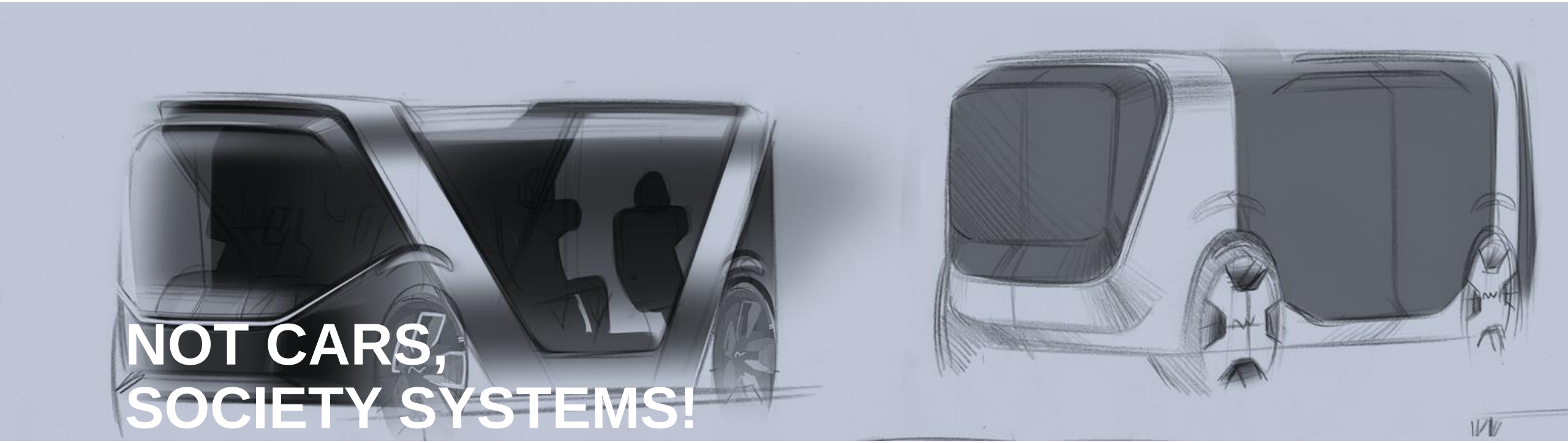


NOT CARS, SOCIETY SYSTEMS!

Keynote at Gulf Traffic 2016

CTO Søren O. Ekelund

NERVE

IN SHORT

Søren O. Ekelund

Founder & CTO

- NeRVe – company invested in by billionaire Ross Jackson
- *The Society Think Tank - non-profit NGO*

First company at age 16

Mechanical Engineer at DTU

Optimization software and service since 1998

Self-taught IT developer

3 years of psychology studies at university

Dev. of autonomous vehicles since 2001

First production electric vehicle in 2009

Dev. of electric vehicles since 2008

WHO WE ARE

Søren O. Ekelund
CTO

Pouline Middleton
CEO

Erica Baluci
Regional Manager, UAE

Jesper B. Rasmussen
Vehicle Business Dev.

Klaus Nissen
Senior Vehicle Dev.

Kalle Nordbo
Senior Designer

Nicolai C. Rotne
Senior Vehicle Dev.

Linda L. Clausen
Psychology Specialist

Nikolaj S. Olsen
Animator

Allan S. Madsen
Vehicle Designer

Naomi Hagelberg
Behavior Specialist

Nils Dullum
Infrastructure Specialist

Small company – brilliant experienced staff – very different backgrounds:

Greater and faster integration of know-how and perspectives

WHY WE SHARE?

Being open and cooperative allows us to work as an easy bridging point to customers' contractors, competitors and authorities, while protecting everybody's IP – making us leading in total society system integration.

Rebuild, trade and service
public sector transport

Technology that most of the
world has never seen

Range of World Records
and wins over many OEMs

WHY WE DARE?

Proven track record - developments others called impossible.

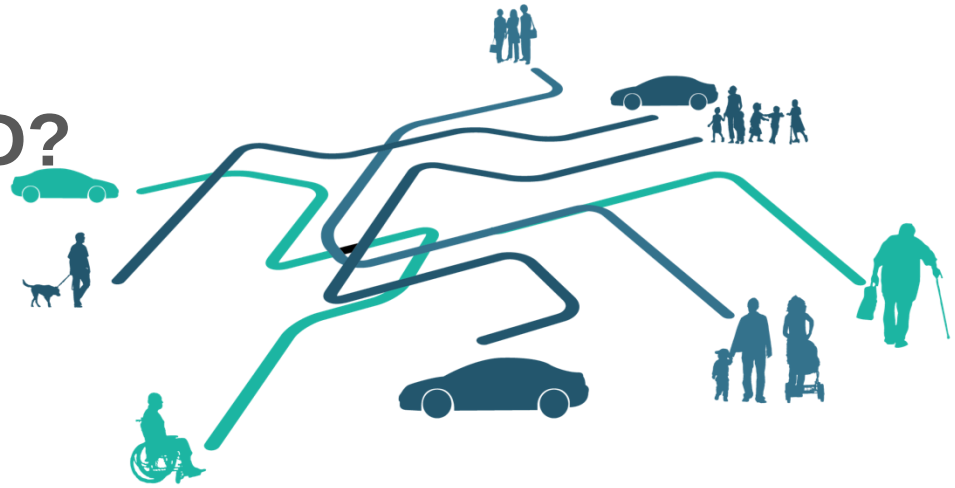
We are called in when OEMs, fleet owners and infrastructure companies have greater challenges than they can handle alone.

‘Impossible’ vehicles

System Integrations

World Electric Tour

SO, WHAT DOES SOCIETY NEED?



People – a place where people want to live

Transport – move from A to B fast, easy and reliably

Energy – with reliable power - progress happens

Economy – vehicles need to provide society monetary value

Environment – noise and pollution troubles everybody

Safety – you need not be scared of the traffic and its risks

Trust – for interaction there must be trust

Social mobility – all lives should improve

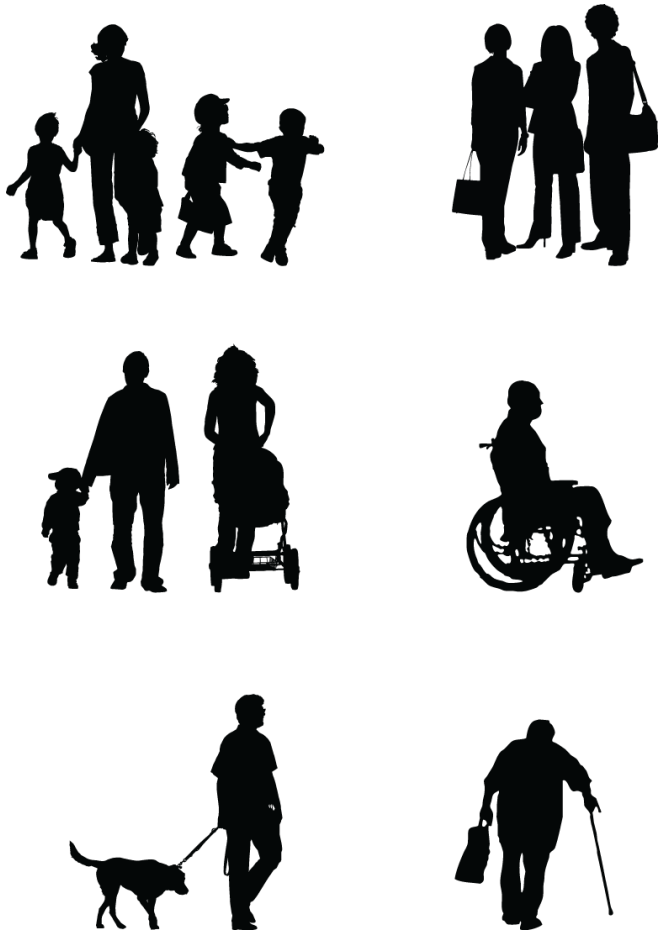
PEOPLE

DIFFERENT NEEDS – DIFFERENT MEANS

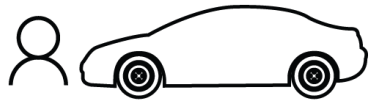
People have all sorts of transport needs

Current cars - not really suited

- Not all family members can drive a car
- You have to hold the steering wheel
- The interior is not flexible enough
- Requires parking space, cleaning, maintenance
- Stands vacant most of time, depreciating and maybe even get stolen



TRANSPORT
GOING NOW AND GOING FAR?



- How to access it when it is far away?
- Use somebody else's car?

A trend we will see much more of:
Privately owned public transport

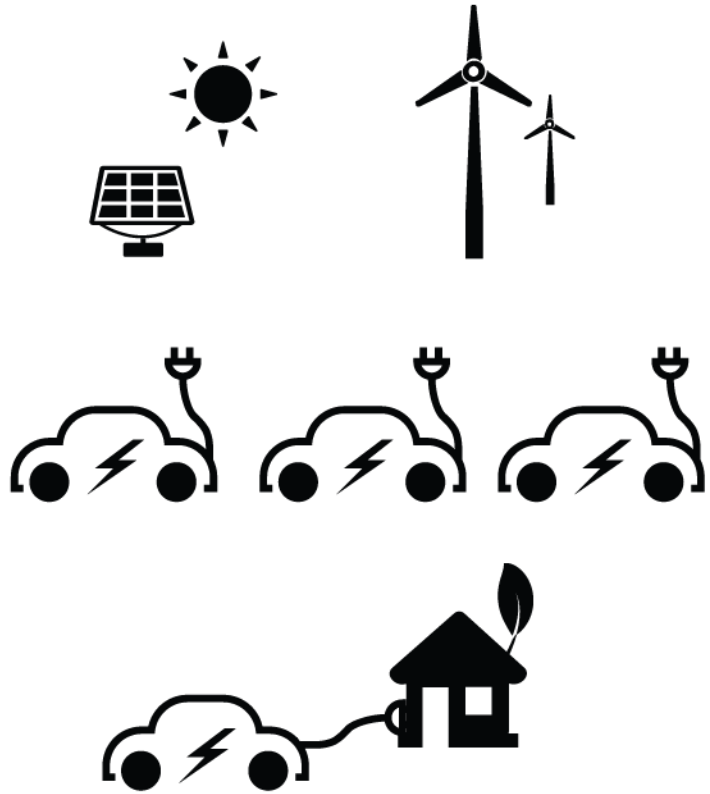
- Providing shared public transport -
big market in near future!

- Draw current car owners into vehicles with qualities they cannot personally pay for

ENERGY
UPS AND DOWNS….

BACKGROUND

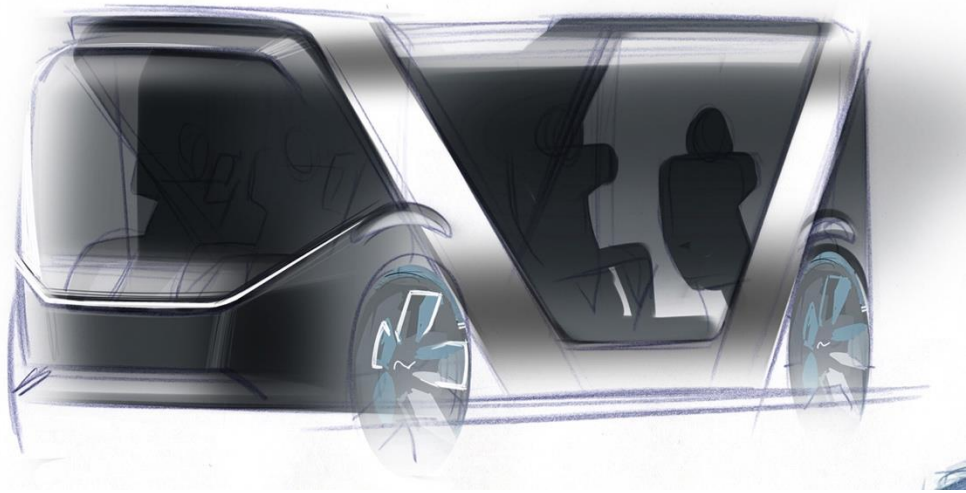
- Society without energy is nothing
- Unstable energy grids - too much or too little.
- A battery alone is not reliable enough
  - e.g. outages or blocked fast-chargers



SOLUTION

- Vehicle hybrid systems with big capacities
  - working as “virtual power plants”
- Balancing loads for electricity grids
  - valuable services to energy brokers
- Reliability of range through fuel cells and biodiesel
- Battery buffer helps fast-chargers where grid is too little

ECONOMY
PAYING YOUR DUES

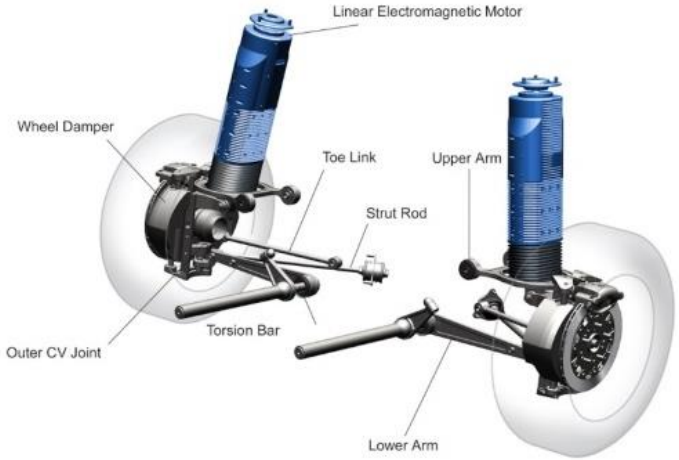


BACKGROUND

- Vehicles require expensive infrastructure
- Hard driving damages and destroys the infrastructure
- Infrastructure costs are paid by society and/or drivers

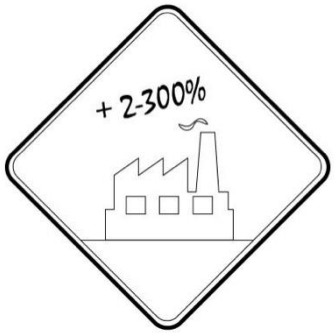
SOLUTION

- Algorithms understand traffic, drive softly and avoid accidents
- Intelligent active suspension = less road wear, comfy ride
- Greatly reduced costs per kilometer of transport



ENVIRONMENT
DON’T STRESS IT

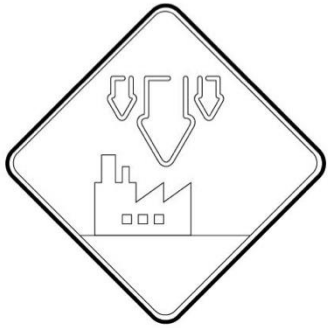
- Electric drives - reduce noise and pollution depending on source = reducing climate change
- Increasing the capacity of vehicles - reducing their numbers = more room for humans and nature



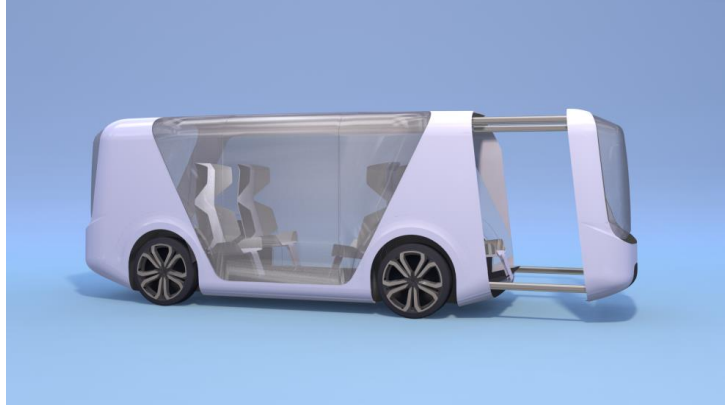
ICE drives – **high pollution**
Non-ICE drives – **bound pollution**

Many cars – **congestion**
Few cars – **enjoyment**

Many cars – **much water**
Few cars – **little water**



SAFETY
DO NOT FEAR A THING



FACT

Autonomous vehicles have **less statistical risk** of accidents –
much safer for BOTH occupants AND the world around the vehicle

- **All-cabin airbags –** completely shield vehicle occupants
- **Extended collision zones** also directly protect the surroundings
- Overview, agility and power to take **extremely calculated actions**
  = **avoid hitting** anything at all where human drivers would collide

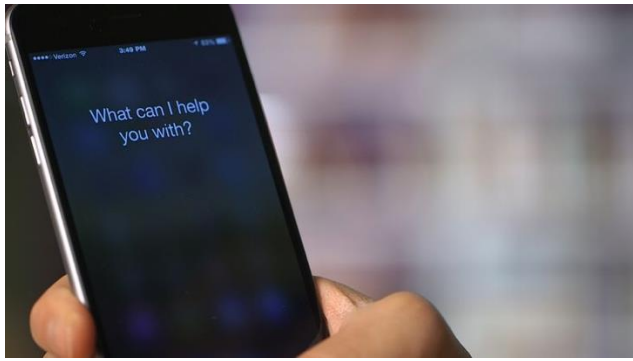
TRUST
INTERACTING WITH THE WORLD

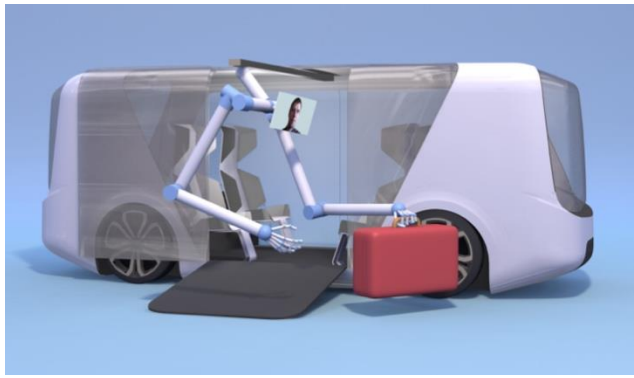
- App’s are everyday life
- What if a self-driving car is in your way?
- Can the car respond to requests from others and how?

Siri and Cortana - simple communication

We can do much more!

- Trust in interacting with a human operator
- Self-driving cars soon getting a “human face”
- Some applications with arms to service you
- Been tested since before 2012





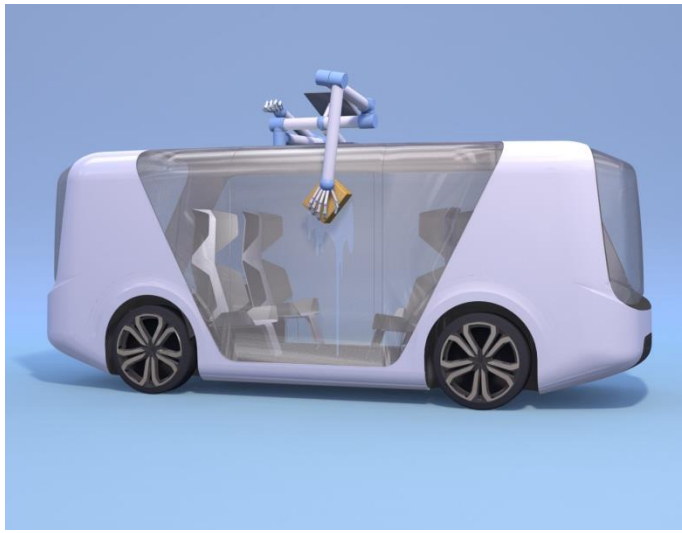
SOCIAL MOBILITY
MOVING EVERYBODY UP!

"A developed country is not a place where the poor have cars, it's where the rich use public transportation"

~ Mayor of Bogotá

BACKGROUND

- Good cars are often expensive
- Transitions occur to initially more expensive electric vehicles
- Hurts the poor, reducing geographic and social mobility



BENEFITS

Autonomous electric cars provides:

- Cheap efficient transportation
- The comforts of having a private chauffeur;
- More mobility, productive time, safety and fun.
  Access to mobility can increase business
- Increase Livelihood of the poor
- Reducing costs in society - poverty payments, the immense costs of riots and revolutions

NERVE

WHAT DOES ALL THIS RESULT IN

- Today's cars and vehicles are far behind
- Automotive industry is in a transition
- Change in capability accelerated much further

NeRVe provides **a'blueprint project';** an example vehicle called **'Smart Cruiser'**

- Built with current but little known technologies
- Taken to market by regional producers and OEMs
- Cooperation with governments shape local vehicles

- **Technology demonstrated by 5 unique super-motorcycles**
- Record holding and with near-impossible self-driving technology
- Showcases **cooperative integration** and **safety by design**

NERVE
STREET RACER

Super high performance
Electric motorcycle

Fully autonomous

0-100 km/h – less than 1.5 sec

Top speed 300 km/h

Pure enjoyment …and safety!

What can it do

- Drive like a pro - without need for motorcycle skills
- Learn in safe mode “how to drive a pro racing machine”
- Make it do amazing stunts without a driver
- Can be called to you, and park itself far from you

- Mostly-confidential technology
- Price tag for the very few
- Completely customized vehicles
- For individual owners on special agreement

See it at our booth.


901.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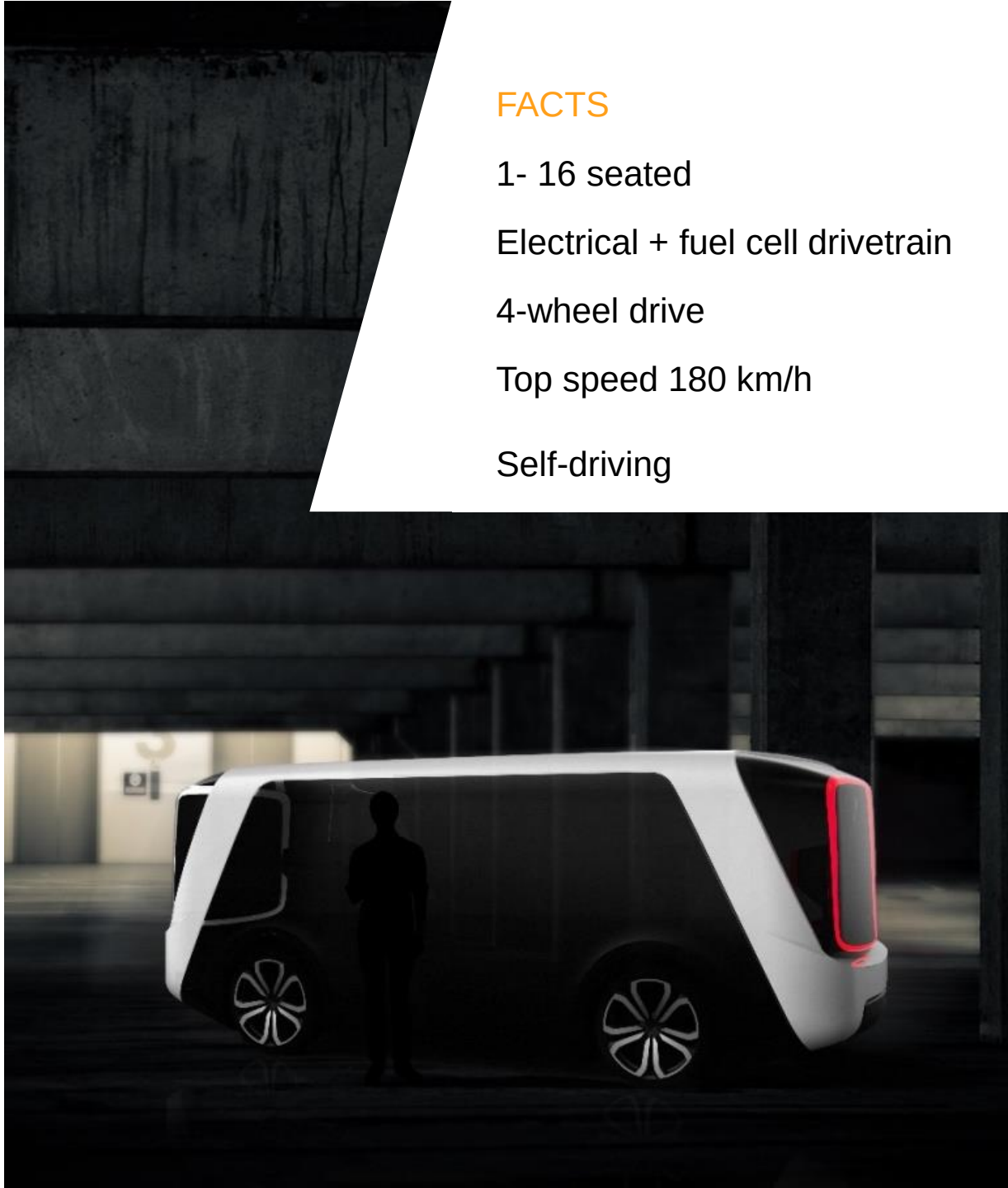
NERVE
SMART CRUISER

‘NeRVe Cruiser’ is a fully society integrated system

- Autonomous bus / VIP transport
- Off-road capabilities
- High Speed - High safety
- A “virtual power plant” for renewable sources
- Emergency power backup in case of blackouts
- Human stewards at control center
- Touch sensitive robotic hands help you
- + goods carrier, street cleaning vehicle, etc.



FACTS

1- 16 seated

Electrical + fuel cell drivetrain

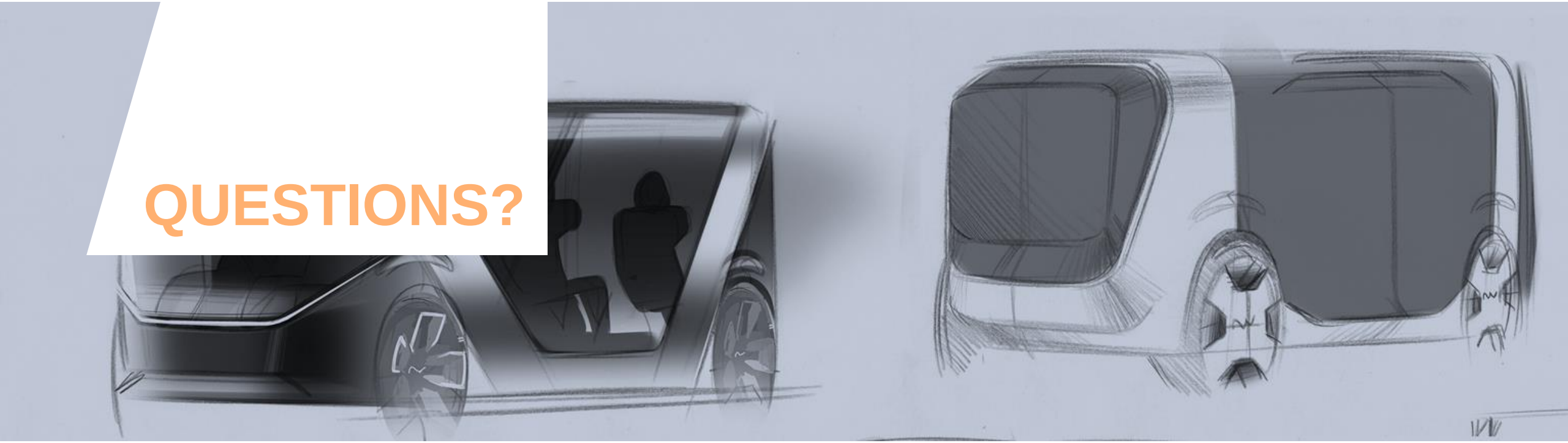
4-wheel drive

Top speed 180 km/h

Self-driving

2011 – Moto Mundo Electric World Tour – current record!

2018 – NERVE Smart Cruiser World Tour – new record!



QUESTIONS?

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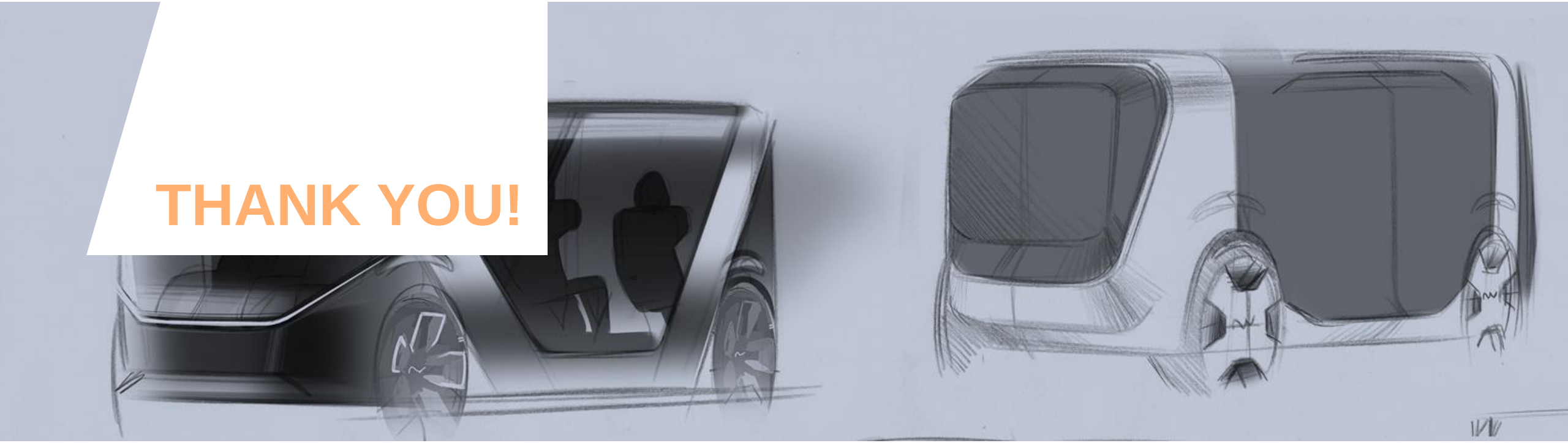

THANK YOU!

Keynote at Gulf Traffic 2016

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