Ministry of Infrastructure and the Environment

Vehicle Regulation in Europe

Global, EU and national legislation for Connected and Automated Driving

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Rapporteur for the EU on CAD (GEAR2030)

17 July 2017

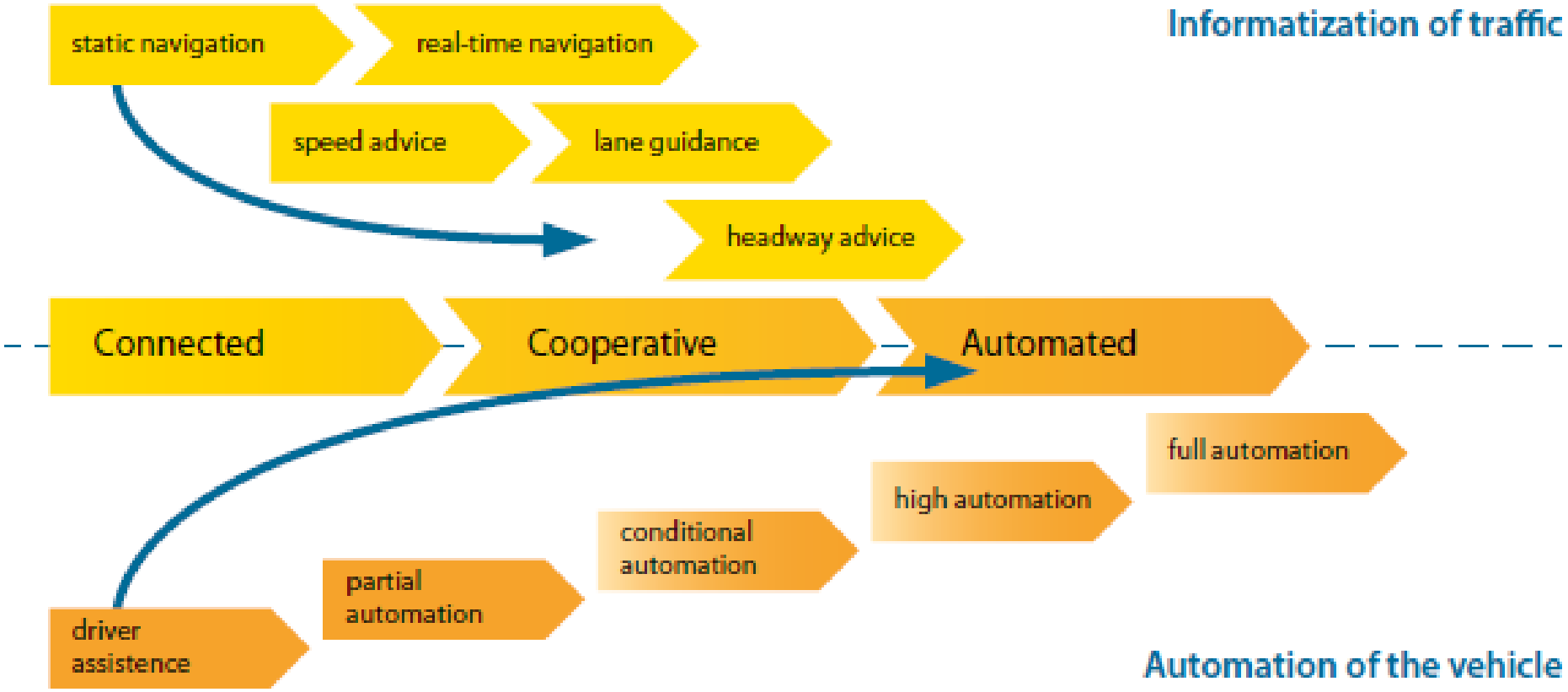
Make the EU type approval system future proof

Declaration of Amsterdam

Cooperation in the field of connected and automated driving

14-15 April 2016

EU 2016


static navigation
real-time navigation
speed advice
lane guidance
headway advice
Informatization of traffic
Connected
Cooperative
Automated
full automation
high automation
conditional automation
partial automation
driver assistence
Automation of the vehicle

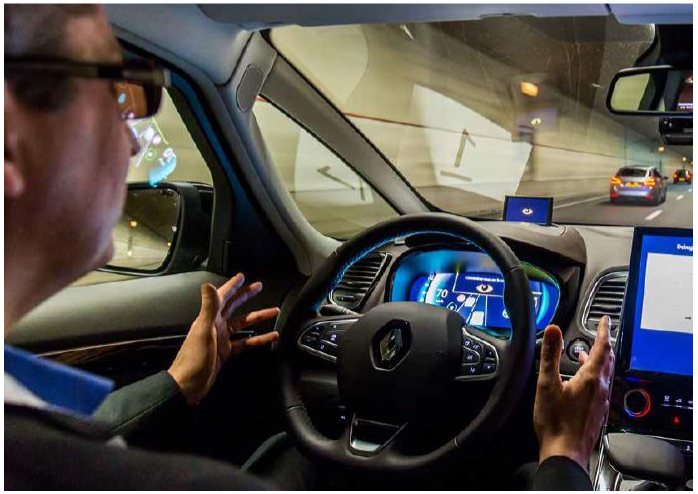
Structural high level meetings EU

Ministry of Infrastructure and the Environment

On our way towards connected and automated driving in Europe

Outcome of the first High Level Meeting

Amsterdam, 15 February 2017



TWO WORLDS MOVING TOWARDS EACH OTHER

Analysis

- Vehicle becomes 'ever changing'
- Use phase is becoming more important because here is where the road safety is determined: focus on surveillance
- Software evolves iteratively (and OTA)

- Approach: Performance Based Standards & Acceptable Means of Compliance

So: regulations should describe the 'what', not the 'how'

Innovations should be proven safe and can be added to AMC

New approach

Transition schemes

1. Data: from static – to dynamic (place and time-bound)
2. Sharing and learning from accidents and incidents
3. Basis of data: from a central database – to the vehicle
4. Driving: from human – to software
5. Approval: from admittance – to admittance with selfassessment on innovative systems
6. Surveillance: from periodic – to continuous/data driven
7. Road safety: from in the vehicle – to the interaction between vehicles and infrastructure
8. Responsibility: from driver to vehicle – Driver Level of Responsibility (DLR)

Two-phased approach to legislating

Phase 1: creating the possibilities for development

- Opening the door for CAD / AV
- Defining legal barriers for market introduction
- Address the societal implications

Phase 2: legislating the right requirements

- Using experience of testing and experiments
- Knowing what to regulate
- Optimizing choice for functional of technical requirements and standards

Global, EU and national framework

UN-ECE wants to move forward on CAD

- Role of the driver is related to new vehicle systems

When the vehicle is driven by vehicle systems that do not require the driver to perform the driving task, the driver can engage in ***activities other than driving*** *as long as:*

- *Principle 1: these activities do not prevent the driver from responding to demands from the vehicle systems for taking over the driving task, and*
- *Principle 2: these activities are consistent with the prescribed use of the vehicle systems and their defined functions.*

- New guidance document for highly automated/driverless vehicles addressing both Geneva and Vienna Conventions

EU program: GEAR2030

High Level Group GEAR 2030

for 2 years ’16-’17, composed by industry, NGOs and Member States.

Objective: build a coherent approach on the industrial development of connected and automated vehicles.

- Working group 1: Adaptation of the EU Value Chain
- Working group 2: *Connected and Automated Driving*
- Working group 3: Global Competitiveness

Strategy 2030 Report expected October 2017

WG2: connected and automated driving (CAD)

- Dedicated working group with car manufacturers, suppliers, member states, insurance industry, telecom providers, NGO's

- Focus on policy, regulatory and financing issues.
- First recommendations for upcoming systems (2020) ready.
- Final long-term (2030) recommendations by September 2017.

Towards 2030

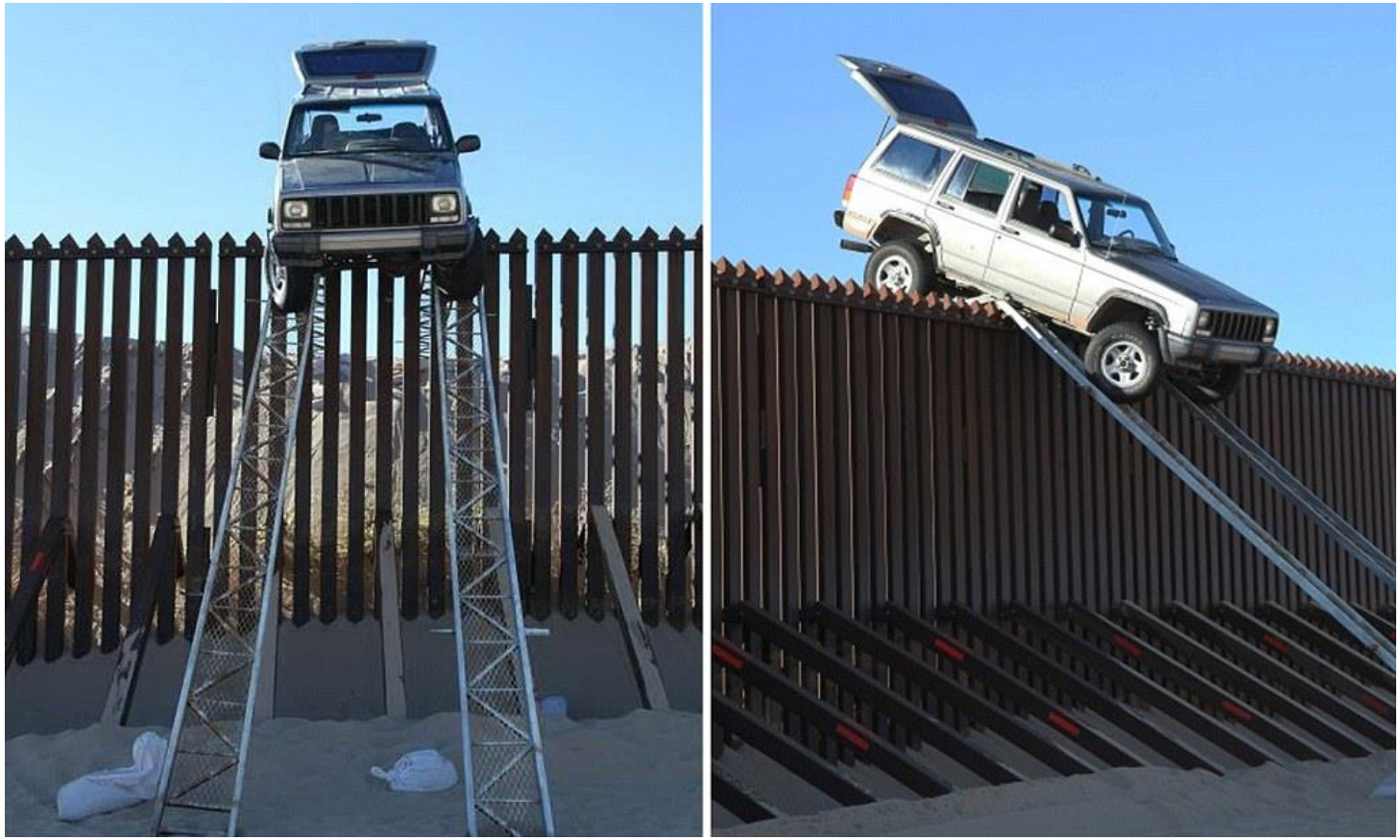
- The EU framework already provides a relevant framework for automated and connected cars expected for 2020.

- For 2030 we will also elaborate on:
- New vehicle approval system in the EU, including innovative systems
- New liability scemes for higher levels of autonomy
- Data in vehicles and data-access related to privacy
- Working with voluntary building blocks for testing, towards mutual recognition
- Helping countries with legislation

Upcoming systems (2020)

- Upcoming systems are: mass market 2020 systems at SAE level 2-3-4 such as:
- - motorway (high speed): highway pilot, platooning
- - city (lower speed): traffic jam assist, manoeuvres at low speed, trips in some dedicated/secured areas
- - dedicated POD-vehicles in separate areas and on open road (level 4/5)
- In the perspective of international and cross border traffic

Large scale Cross Border testing



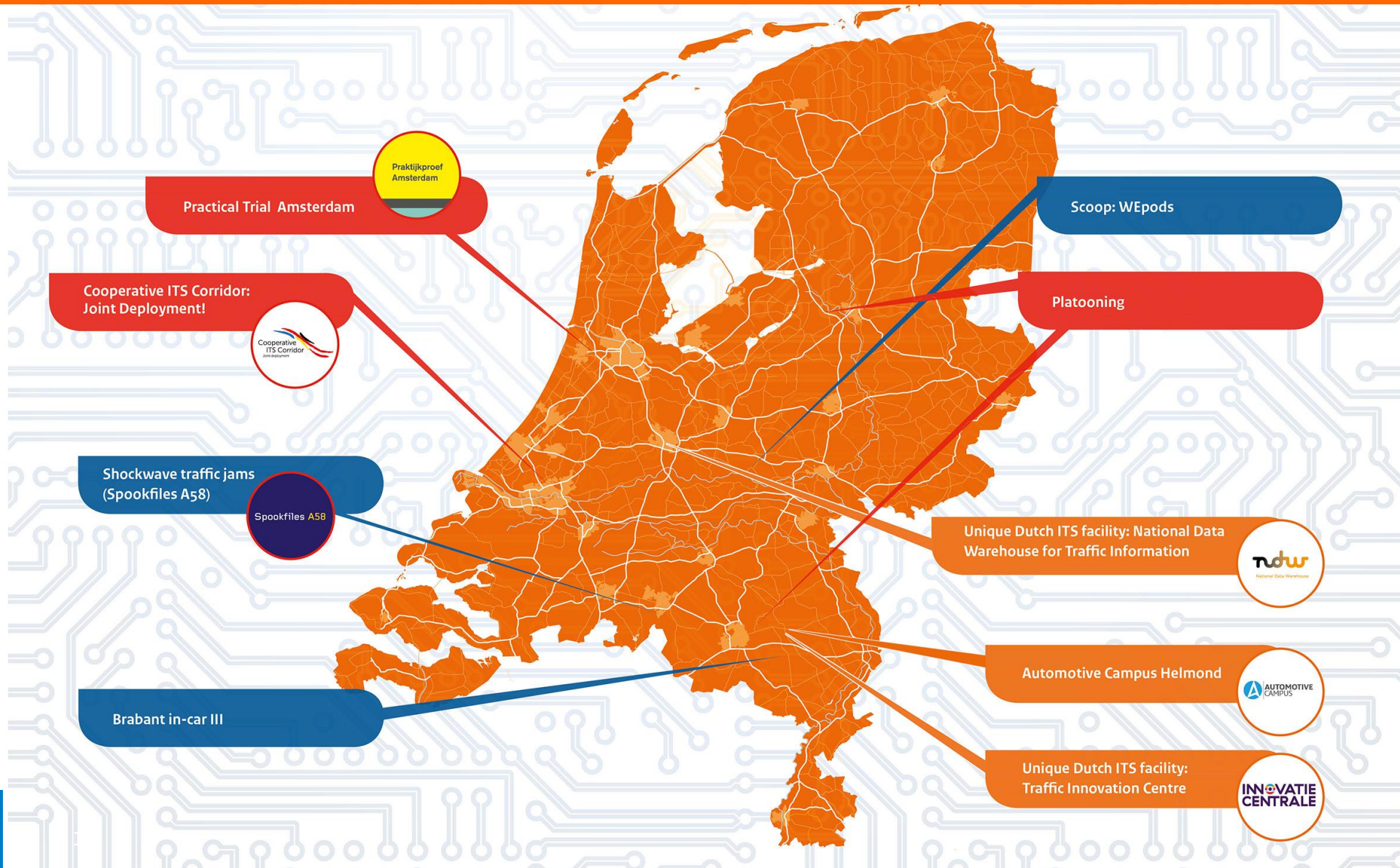
National approach

- Open road testing with driver possible nationwide (2015)
  - One stop shop for exemption at rdw.nl/its
  - Driver in or outside the vehicle is within the law
  - No legal reference to holding the steering wheel
  - Distance keeping is functional: “safe distance”

- New experimental law nationwide (per 2018)
  - Driving on open road without a driver inside the vehicle
  - New approach for the term ‘driver’
  - New testing possibilities for highly and fully autonomous

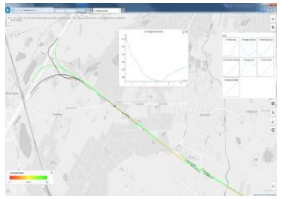
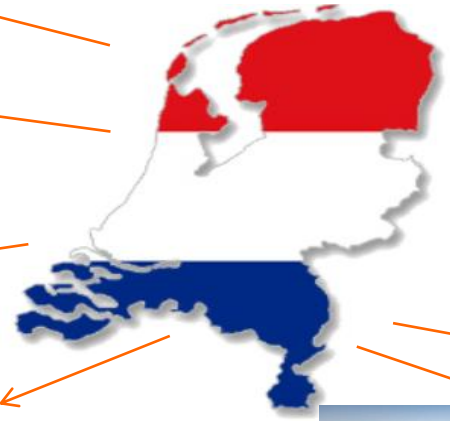

Future BUS

LIVING LAB NL



Closed track
Controlled open environment
Simulation environment
Open environment - real life







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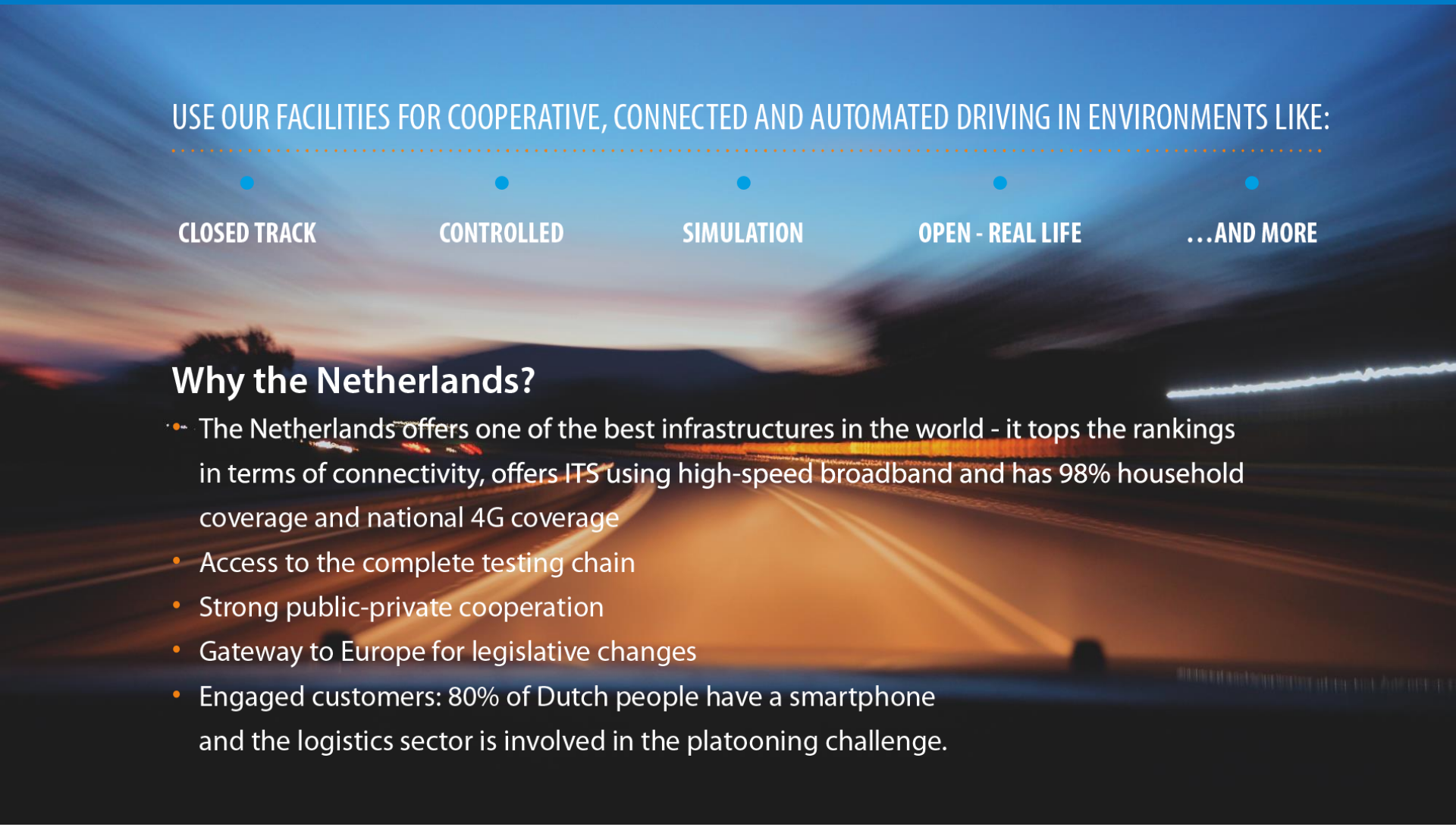


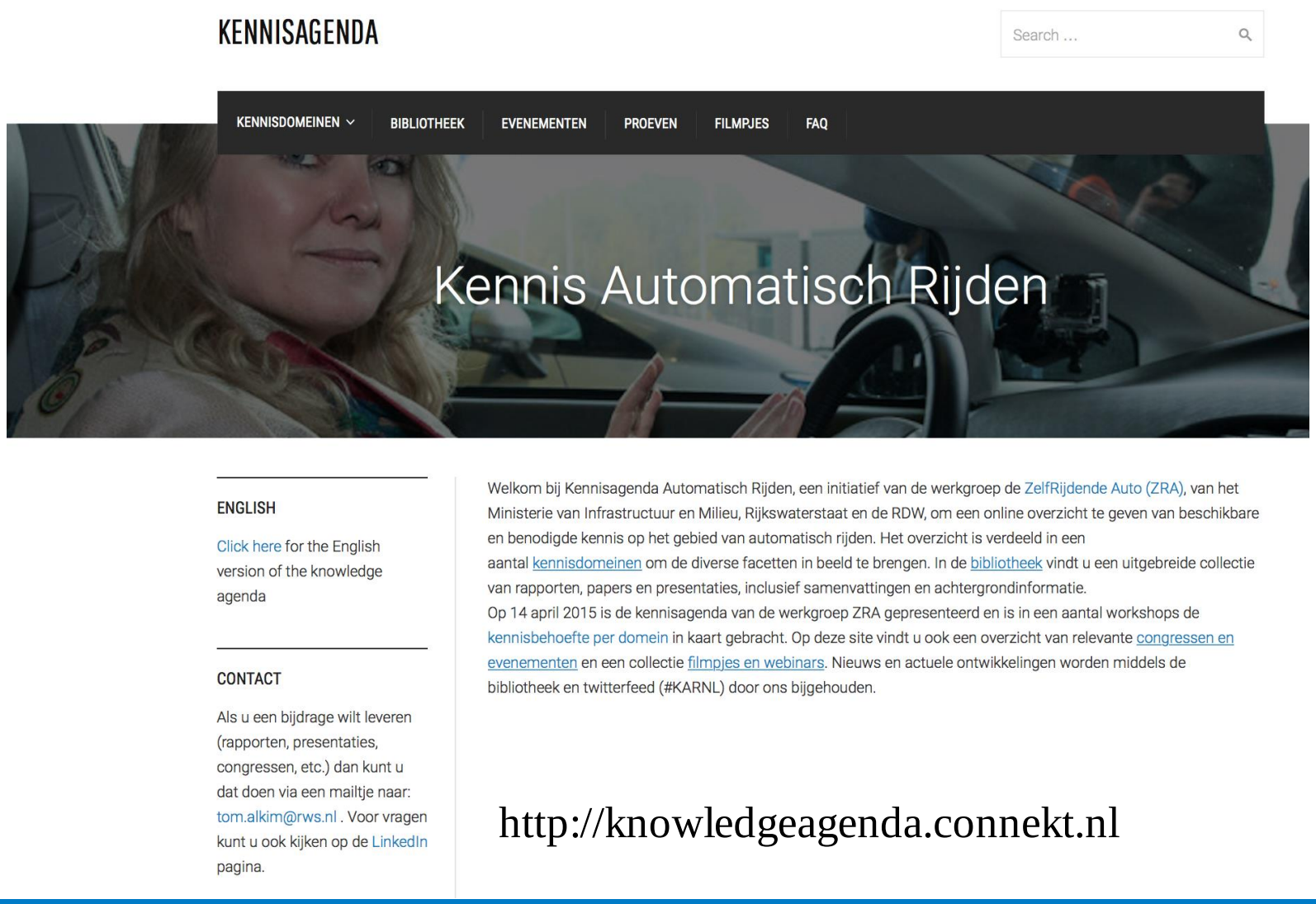
USE OUR FACILITIES FOR COOPERATIVE, CONNECTED AND AUTOMATED DRIVING IN ENVIRONMENTS LIKE:

CLOSED TRACK | CONTROLLED | SIMULATION | OPEN - REAL LIFE | ...AND MORE

Why the Netherlands?

- The Netherlands offers one of the best infrastructures in the world - it tops the rankings in terms of connectivity, offers ITS using high-speed broadband and has 98% household coverage and national 4G coverage
- Access to the complete testing chain
- Strong public-private cooperation
- Gateway to Europe for legislative changes
- Engaged customers: 80% of Dutch people have a smartphone and the logistics sector is involved in the platooning challenge.

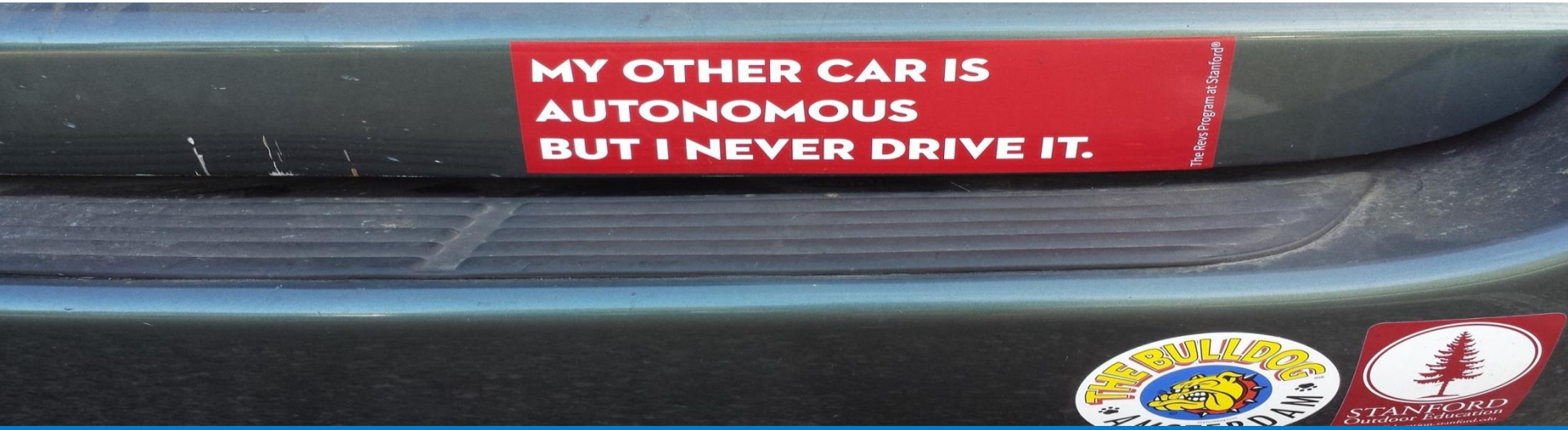
Sharing=caring

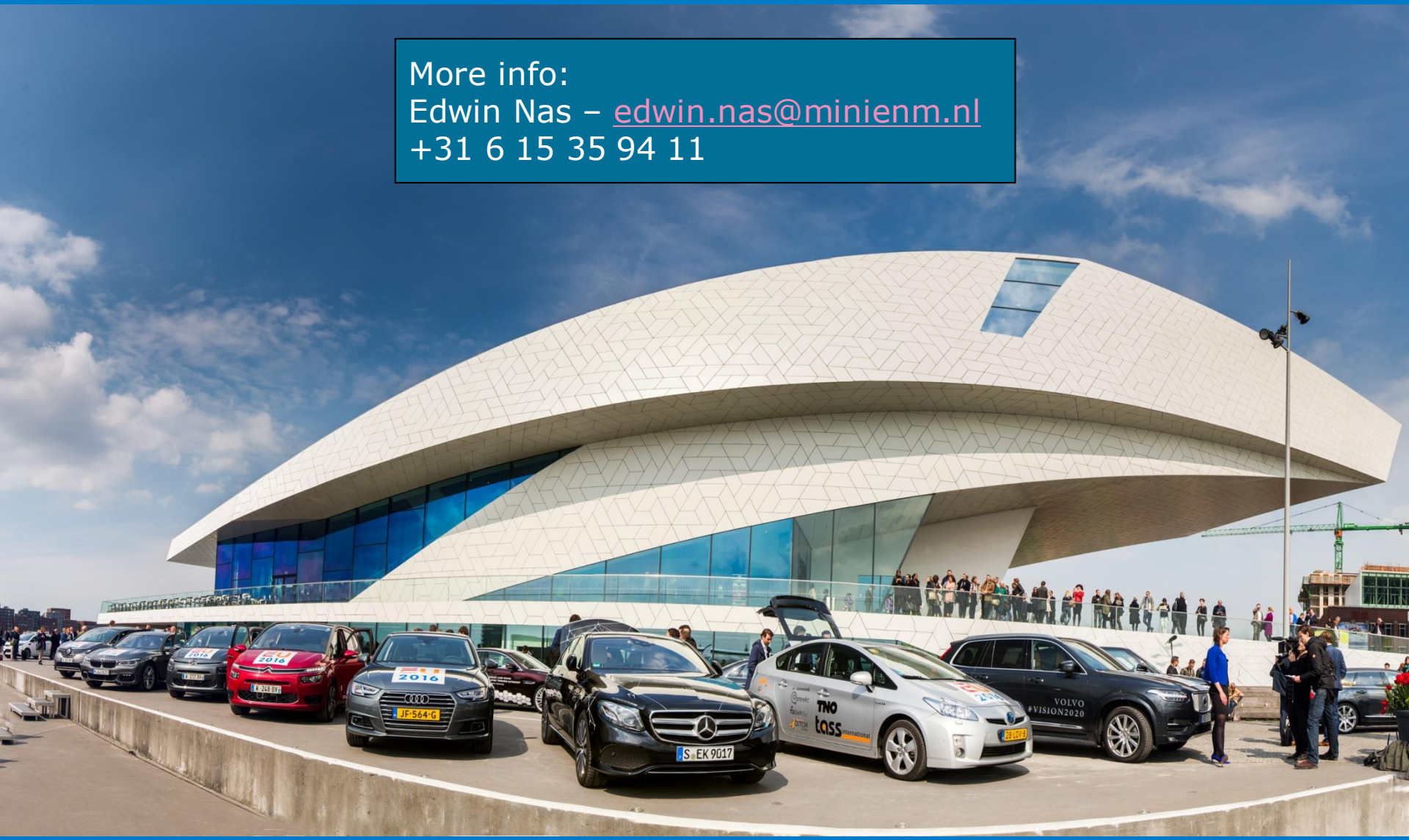


http://knowledgeagenda.connekt.nl

Let’s put the pieces together...


תודה
Dankie
Gracias
Спасибо
شكراً
Merci
Takk
Köszönjük
Terima kasih
Grazie
Dziękujemy
Dėkojame
Ďakujeme
Vielen Dank
Paldies
Kiitos
Täname teid
谢谢
Thank You
Tak
感謝您
Obrigado
Teşekkür Ederiz
Σας Ευχαριστούμε
감사합니다
ขอบคุณ
Bedankt
Děkujeme vám
ありがとうございます
Tack


MY OTHER CAR IS
AUTONOMOUS
BUT I NEVER DRIVE IT.
The Revs Program at Stanford®
THE BULLDOG
STANFORD
Outdoor Education



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