



Connected and Automated Driving

International cooperation in view of The Declaration of Amsterdam

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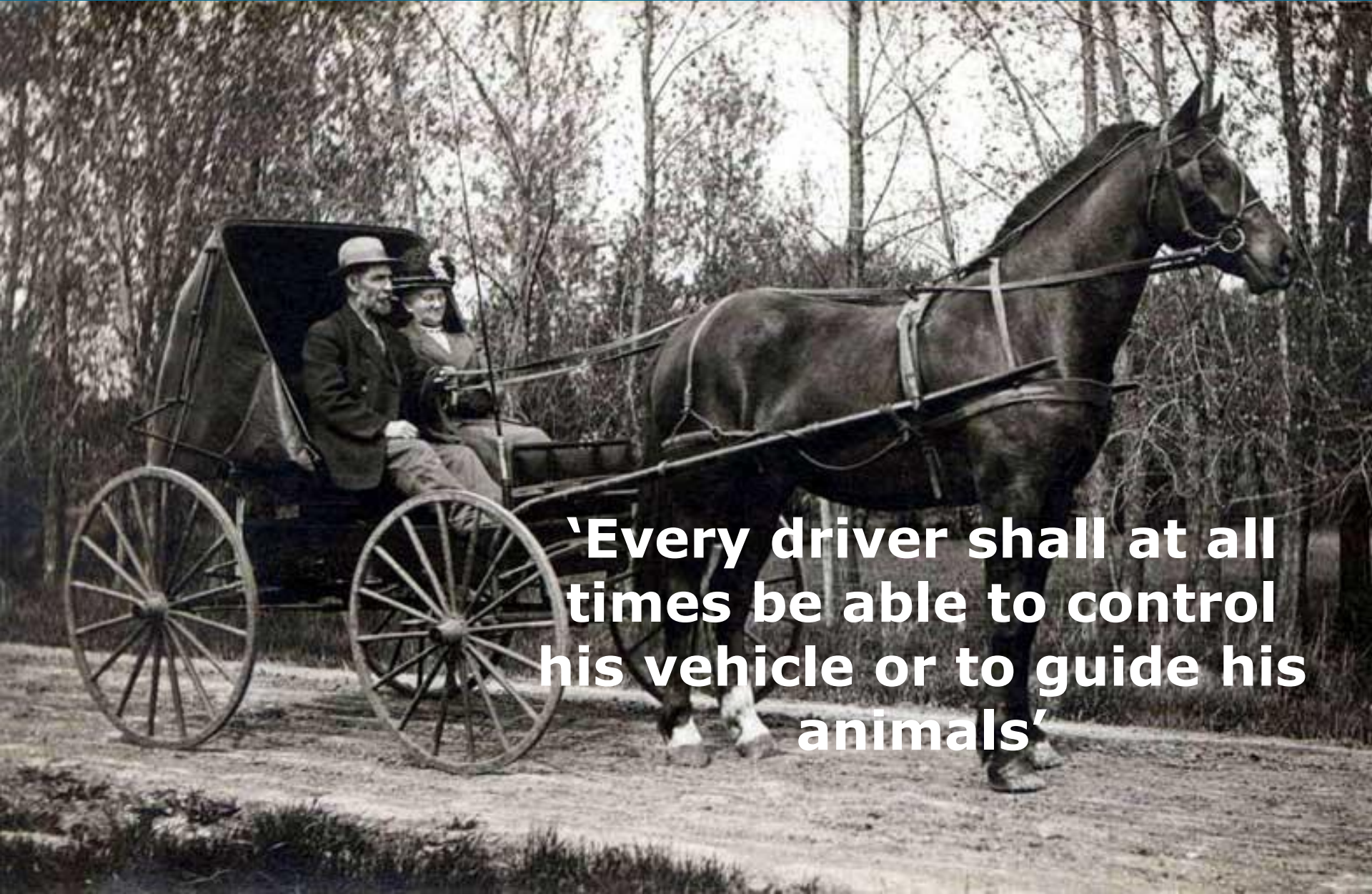
Rapporteur to European Commission for CAD



National and international activities needed

1. Why do we nationally in the Netherlands believe in a future with Smart Mobility?
2. Why is the Declaration of Amsterdam so important?
3. What do we as the Netherlands do (national and internationally) to follow up on the Declaration?

Continuous Improvement or shift?



'Every driver shall at all times be able to control his vehicle or to guide his animals'

Safety performance?







3%

7%

6%

INSPIRATION

INSPIRATION

INSPIRAT

Good for the environment & saves fuel



POTHOLE ALERT RESEARCH

Jaguar Land Rover is researching a new connected car technology that will allow a vehicle to identify the location and severity of potholes, broken drains and manhole covers. It will then share this data in real time with other vehicles and with road authorities to help them prioritise repairs.



Data also shared with road authorities, together with GPS location, to aid repairs



The Cloud

Camera (in front windscreen) could take an image of the pothole



Auto-Report

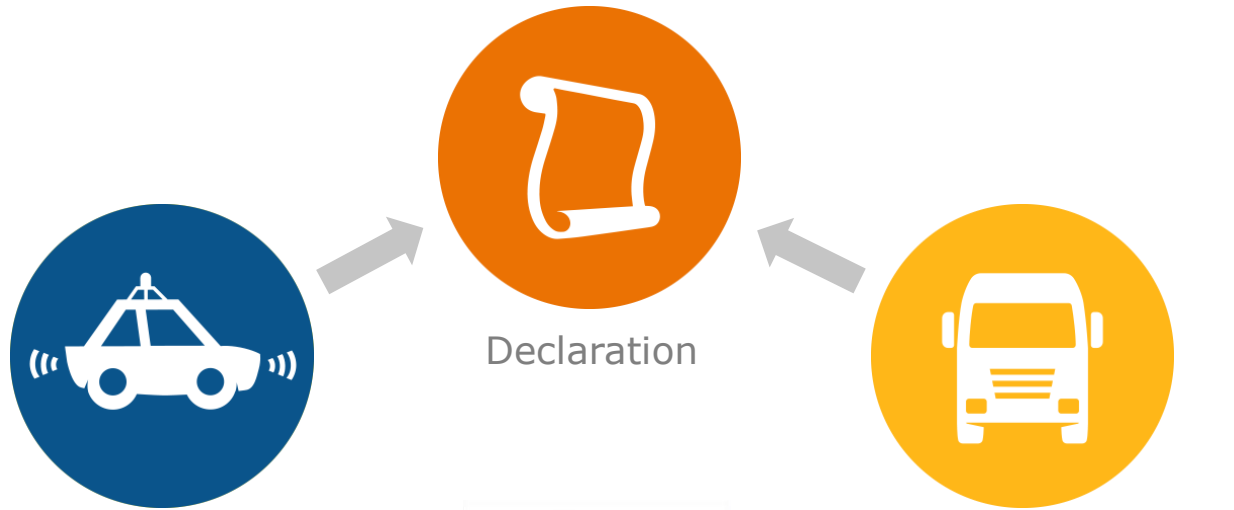


SONAR DETECTOR
Detects &
reports to cloud
location & depth

Pothole

Car cloud also scan the road ahead





Experiencing self-driving vehicles

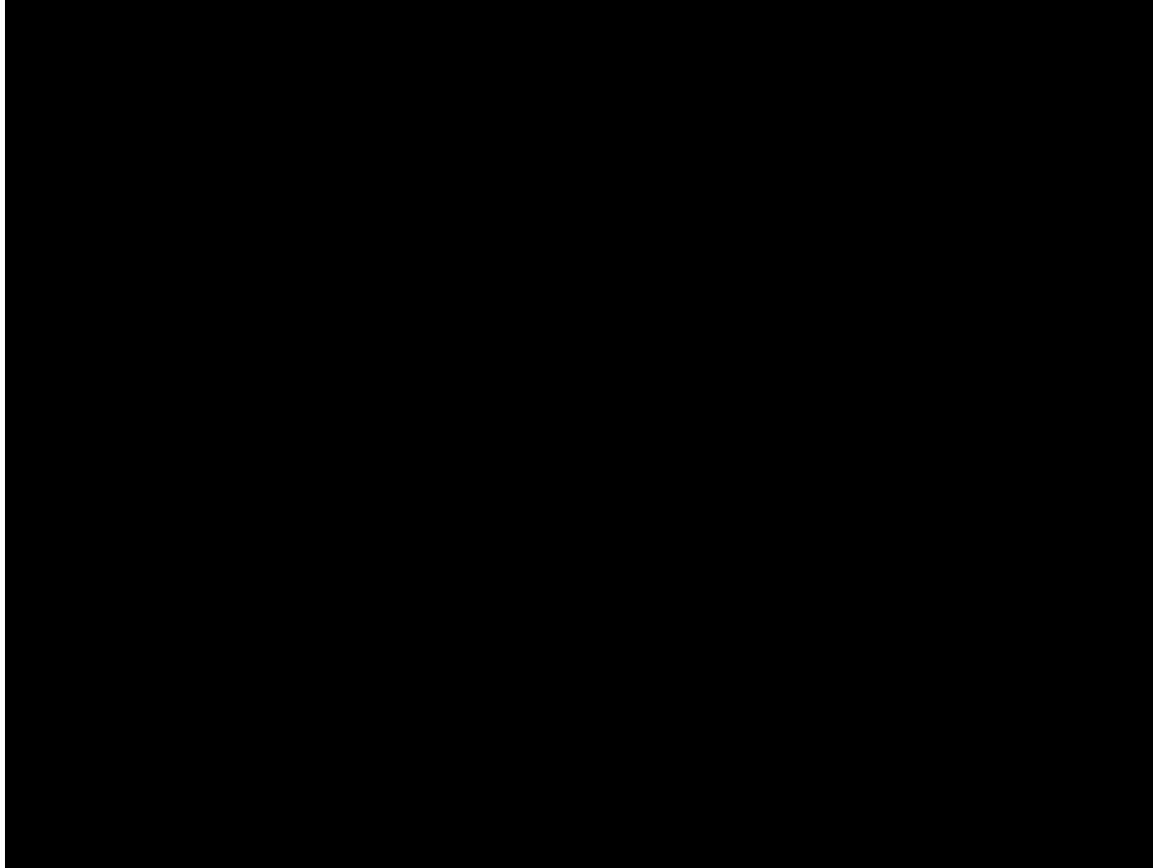
Declaration

European Truck Platooning Challenge





Signing the Declaration



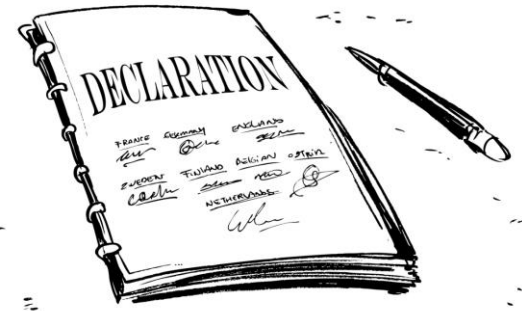


Declaration of Amsterdam

Cooperation in the field of connected and automated driving

14-15 April 2016





Joint Agenda

- **Work towards a coherent European framework by 2019** for the deployment of interoperable connected and automated driving;
- **Adopt a “learning by doing” approach, including cross-border testing and cooperation**, sharing and expanding knowledge on connected and automated driving and to develop practical guidelines to ensure interoperability of systems and services;
- **Support further innovation** in connected and automated vehicle technologies to strengthen the global market position of European industry;
- **Data sharing** is important for purposes of learning and allowing third parties to deliver services **...while ensuring privacy**, which requires us to make this a priority from the start.







Automated driving through
Amsterdam (16 km)

10 Participants &
25 (highly) Automated cars

Renault

BMW

Daimler

Jaguar/Land Rover

PSA

Tesla

Volvo Cars

Vedecom

Audi

DAVI/TNO

25 vehicles lvl 2-4





International follow up for regulation

- Declaration is now the leading policy vision document for the EU
- Vienna and Geneva treaty are explicit that every vehicle shall have a driver
- Netherlands and UK, Finland, Spain are drafting a guidance document under UN-ECE Working Party 1 (informal working group on CAD)
- Give more definition and common interpretation of the terms “driver” and “in control” for future market introduction (before 2020?)



Dutch follow up for regulation

- In The Netherlands we will continue to perform tests: learning by doing
- Create future proof legislation to enhance innovation possibilities
- Drafting new legislation: Experimental law for testing without having a driver in the vehicle
- Under construction: held internetconsultation
- Will allow tests with automated vehicles with driver, but possibly outside vehicle or with operator & distracted driving tests



The Cooperative ITS Corridor NL-DE-AT





Wij geloven in
mogelijkheden...







Truck Platooning - Real life cases

Intended, to be elaborated in 2016 - 2018

(First inventarisation, 31 mei 2016)

CLUSTER: NIGHT DISTRIBUTION

Corridor	Shipper	Carrier	OEM
Eindhoven – Zoelle A50 Zoelle – Utrecht A28	Vanis/ Groupage	Sanders Fritom Degema	DAF / Scania Mercedes-Benz / Volvo / DAF Mercedes-Benz/ MAN
Hengelo – Den Haag/Rotterdam A1, A28, A2, A20	Rekcontainers DHL	DHL Parcel	

CLUSTER: RETAIL

Corridor	Shipper	Carrier	OEM
Geldernalsen – Zaandam A2	Ahold	Peter Appel, Simon Loos	DAF, Mercedes-Benz
Tilburg – Gent A58, E9, E17	Ahold	Peter Appel, Simon Loos	DAF, Mercedes-Benz
Tilburg – Heerlen A58, A2	Ahold	Peter Appel, Simon Loos	X
Veghel – Heerlen A50, A2	Jumbo	Jumbo transport	Scania
Heteren – Assen – Groningen A50, A28	Kruisvat	Treibeke	Scania
Heteren – Gent A50, A58, E19, E17	Kruisvat	Treibeke	Scania



CLUSTER: LVC (Long Vehicle Combination)

Corridor	Shipper	Carrier	OEM
Roermond – Breda A58, A2	Rockwool	Kappers Rier	DAF



CLUSTER: FOOD

Corridor	Shipper	Carrier	OEM
Rotterdam – Dinsburg A16, A58, A87 Rotterdam – Veghel A5, A75	Unifover	TBC Kuarne + Nagel	Iveco



CLUSTER: BULK/PIECE GOODS

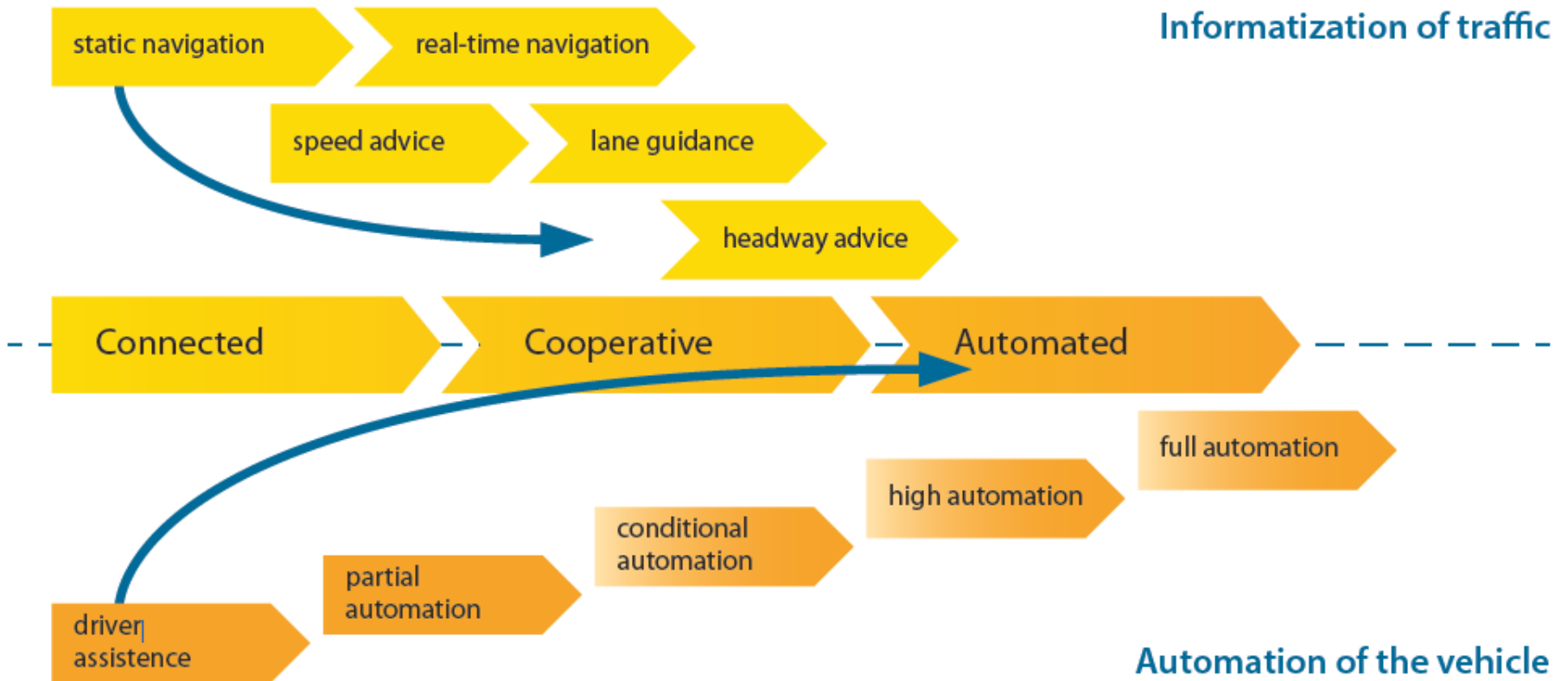
Corridor	Shipper	Carrier	OEM
Rotterdam – Loosdrecht A15, A16	Yusen	De Rijk Group	
Amsterdam – Dordrecht, A5, A10, A7	BVB Logistics	BVB Logistics	
Schiedam – Grootenwaard A20, A16, A15, A50, A75	BVB Logistics	BVB Logistics	
Amsterdam – Harderberg A1, A28, N50, M28, M50, N50	BVB Logistics	BVB Logistics	
Rotterdam – Bergen op Zoom A15, A16, A17	Grief	Van der Wal Transport	
Rotterdam – Utrecht, A15, A4, A20, A2, A2	Grief	Van der Wal Transport	
Riermond – Utrecht, A75, A2	Rockwool	Van der Wal Transport	
Riermond – Steywijk, A75, A50, A52	Rockwool	Van der Wal Transport	
Hoogerland – Heyen A28, A50 etc.	SCA	Rening	MAN/Mercedes
Hoogeveen – Steensoord/Lagge (Fr)	Ardagh	Rening	MAN/Mercedes
's Heerenberg – Gent A2, A55, A50, A67	Varis	Raben	Mercedes-Benz
Oss – Gent A50, A67			
Essen (Dtlld) – Den Bosch/Zoeterwoude N1, A2	Henken	Rening	MAN / DAF
Wijges (Dtlld) – Zoeterwoude/Den Bosch	Henken	Rening	Rening
Stembert (B) – Zwolle, A2, A75, A50, A28	SCA	Rening	MAN / DAF
Stembert (B) – Tilburg, A2, A58	SCA	Rening	Mercedes-Benz



CLUSTER: GREENPORT (flowers)

Corridor	Shipper	Carrier	OEM
Bleiswijk, Aalmeert Naaldwijk – Rijnbrug, Seldre – Venlo A4, A15, A2, A75	Royal Flora Holland	Van Duyvenbode Van Zaal Wiemtrana Geranco Getru	Volvo/ DAF/Scania
Bleiswijk – Madrid A20, A4, A15, A16 --> through Madrid		Van Zaal	







Wij geloven in
mogelijkheden...





Dutch tailor-made exemption procedure *for large-scale testing on public roads*

1

Intake

- Internet application (Access point RDW)
- Functional description check
- Traffic safety advice
- Adequate road selection with road authorities...

2

Desk research

- In consultation with the applicant
- Test plan
- EMC
- FMEA
- Insurance
- ...

3

Testing on a closed proving ground

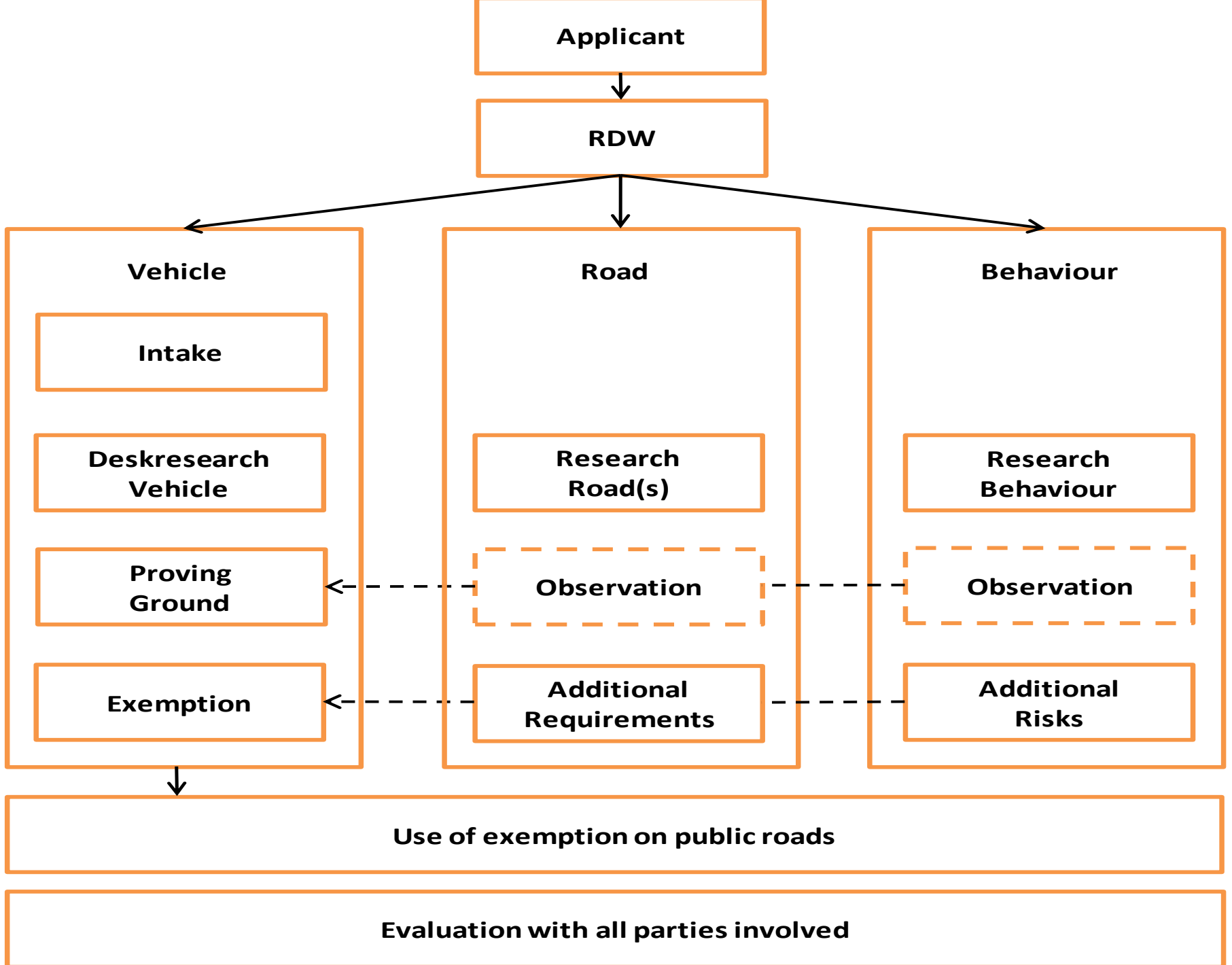
- Physical inspection of the vehicle(s)
- 'Happy flow' testing
- Stress testing
- System robustness

4

Admittance with an exemption

- With requirements and conditions, for example: insurance, test times, day/night, test location, duration, weather conditions, monitoring and logging
- ...

<http://RDW.NL/ITS>



Synopsis



- 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 (AMC)

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

Innovations should be proven safe and can be added to AMC

We can learn from aviation, also on safety management systems (SMS)



KENNISAGENDA

[KENNISDOMEINEN](#) ▾[BIBLIOTHEEK](#)[EVENEMENTEN](#)[PROEVEN](#)[FILMPJES](#)[FAQ](#)

Kennis Automatisch Rijden

ENGLISH

[Click here](#) for the English version of the knowledge agenda

CONTACT

Als u een bijdrage wilt leveren (rapporten, presentaties, congressen, etc.) dan kunt u dat doen via een mailtje naar: tom.alkim@rws.nl. Voor vragen kunt u ook kijken op de [LinkedIn](#) pagina.

Welkom bij Kennisagenda Automatisch Rijden, een initiatief van de werkgroep de [Zelfrijdende Auto \(ZRA\)](#), van het Ministerie van Infrastructuur en Milieu, Rijkswaterstaat en de RDW, om een online overzicht te geven van beschikbare en benodigde kennis op het gebied van automatisch rijden. Het overzicht is verdeeld in een aantal [kennisdomeinen](#) om de diverse facetten in beeld te brengen. In de [bibliotheek](#) vindt u een uitgebreide collectie van rapporten, papers en presentaties, inclusief samenvattingen en achtergrondinformatie. Op 14 april 2015 is de kennisagenda van de werkgroep ZRA gepresenteerd en is in een aantal workshops de [kennisbehoefte per domein](#) in kaart gebracht. Op deze site vindt u ook een overzicht van relevante [congressen en evenementen](#) en een collectie [filmpjes en webinars](#). Nieuws en actuele ontwikkelingen worden middels de bibliotheek en twitterfeed (#KARNL) door ons bijgehouden.

<http://knowledgeagenda.connekt.nl>



תודה
 Dankie Gracias شكراً
 Спасибо Merci Takk
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 Grazie Dziękujemy Děkojame
 Ďakujeme Vielen Dank Paldies
 Kiitos Täname teid 谢谢
Thank You Tak
 感谢您 Obrigado Teşekkür Ederiz
 Σας Ευχαριστούμ 감사합니다
 ඔබටන
 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 Rees Program at Stanford®





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