



Ministry of Infrastructure and the
Environment



Vehicle Regulation in Europe

Global, EU and national
legislation for Connected and
Automated Driving

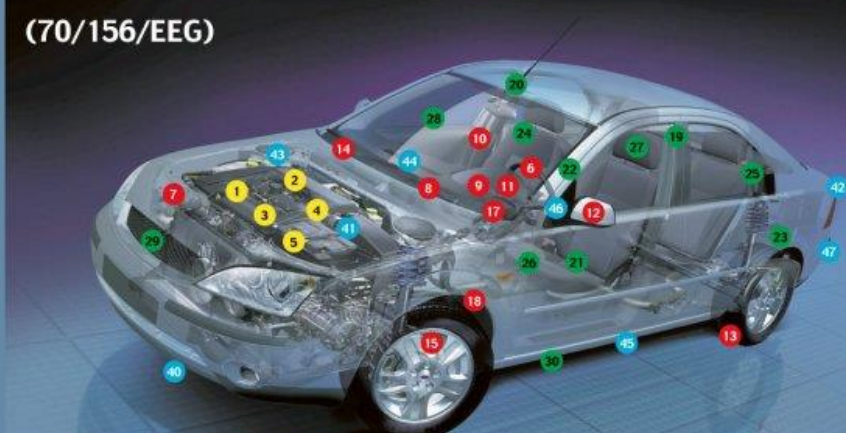
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Driving The Netherlands
Rapporteur for the EU on CAD (GEAR2030)

17 July 2017



Make the EU type approval system future proof

Europese typegoedkeuring voor personenauto's (70/156/EEG)



RDW

Milieubescherming

1. Geluidsniveau 70/157/EEG (R51)
2. Emissies 70/220/EEG (R83)
3. Dieselrook 72/306/EEG (R24)
4. Brandstofverbruik 80/1268/EEG (R84)
5. Motorvermogen 80/1269/EEG (R85)

Actieve veiligheid

6. Stuurinrichting 70/311/EEG (R79)
7. Geluidssignaalinrichting 70/388/EEG
8. Ruitenwissers en -sproeiers 78/318/EEG
9. Anti-diefstal/startonderbreker 74/61/EEG (R18+97)
10. Zichtveld 77/649/EEG
11. Snelheidsmeter 75/443/EEG (R39)
12. Achteruitkijkspiegels 71/127/EEG (R46)
13. Banden 92/23/EEG (R30)
14. Ontdooilings- en ontwasemingsinrichtingen 78/317/EEG
15. Remsystemen 71/320/EEG (R13-H)
16. Installatie van verlichting 76/756/EEG (R48)
17. Identificatie van bedieningsorganen 78/316/EEG
18. Wielafschermingen 78/549/EEG

Passieve veiligheid

19. Bevestigingspunten van veiligheidsgordels 76/115/EEG (R14)
20. Scherpe uitwendige delen 74/483/EEG (R26)
21. Sterkte van de zitplaatsen 74/408/EEG (R17)
22. Gedrag stuurinrichting bij botsingen 74/297/EEG (R12)
23. Brandstoftanks 74/221/EEG (R34)

Scherpe inwendige delen

24. Scherpe inwendige delen 74/60/EEG (R21)
25. Veiligheidsgordels 77/541/EEG (R16)
26. Deursloten en scharnieren 70/387/EEG (R11)
27. Hoofdsteunen 78/932/EEG (R25)
28. Veiligheidsruiten 92/22/EEG (R43)
29. Frontale botsing 96/79/EEG (R94)
30. Zijdelingse botsing 96/27/EEG (R95)

Verlichtingscomponenten

31. Retroreflectoren 76/757/EEG (R3)
32. Markerings-, breedte-, achter-, stop- en dagrijlichten 76/758/EEG (R7)
33. Richtingaanwijzers 76/759/EEG (R6)
34. Kentekenplaatverlichting 76/760/EEG (R4)
35. Koplichten 76/761/EEG (R1/5/8/20/31/37/98/99)
36. Mistlichten (voor) 76/762/EEG (R19)
37. Mistlichten (achter) 77/538/EEG (R38)
38. Achteruitrijlichten 77/539/EEG (R23)
39. Parkeerlichten 77/540/EEG (R77)

Overige voorschriften

40. Sleepinrichtingen 77/389/EEG
41. Onderdrukking radiostoring 77/245/EEG (R10)
42. Plaats voor achterkentekenplaat 70/222/EEG
43. Platen en gegevens 76/114/EEG
44. Verwarmingssystemen 78/548/EEG
45. Massa's en afmetingen 92/21/EEG
46. Achteruitrijinrichtingen 75/443/EEG
47. Koppelingen 94/20/EEG (R55)

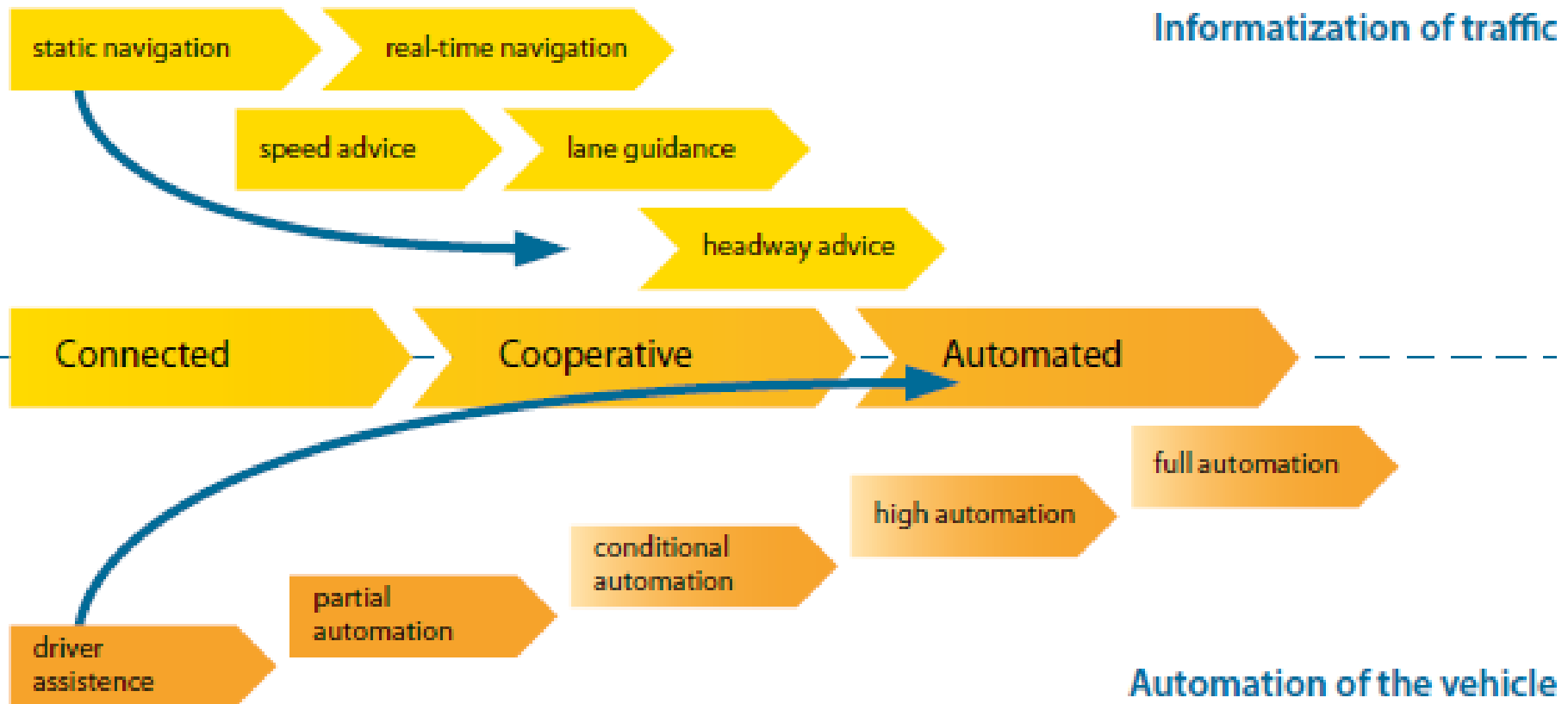


Declaration of Amsterdam

Cooperation in the field of connected and automated driving

14-15 April 2016

EU
2016





Structural high level meetings EU

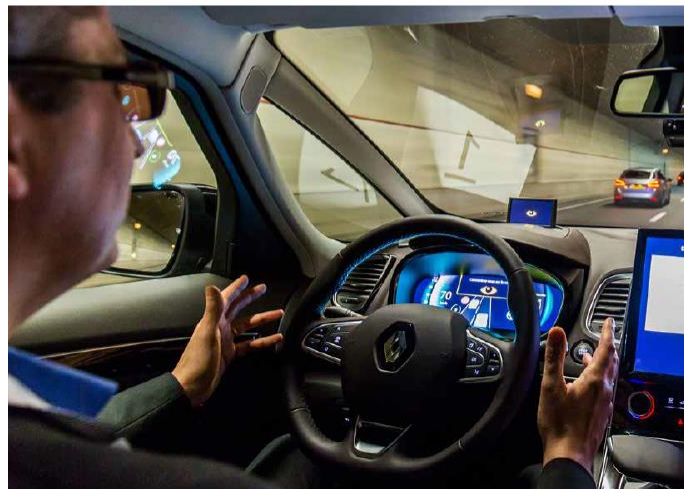


Ministry of Infrastructure and the
Environment

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





- 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 schemes 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



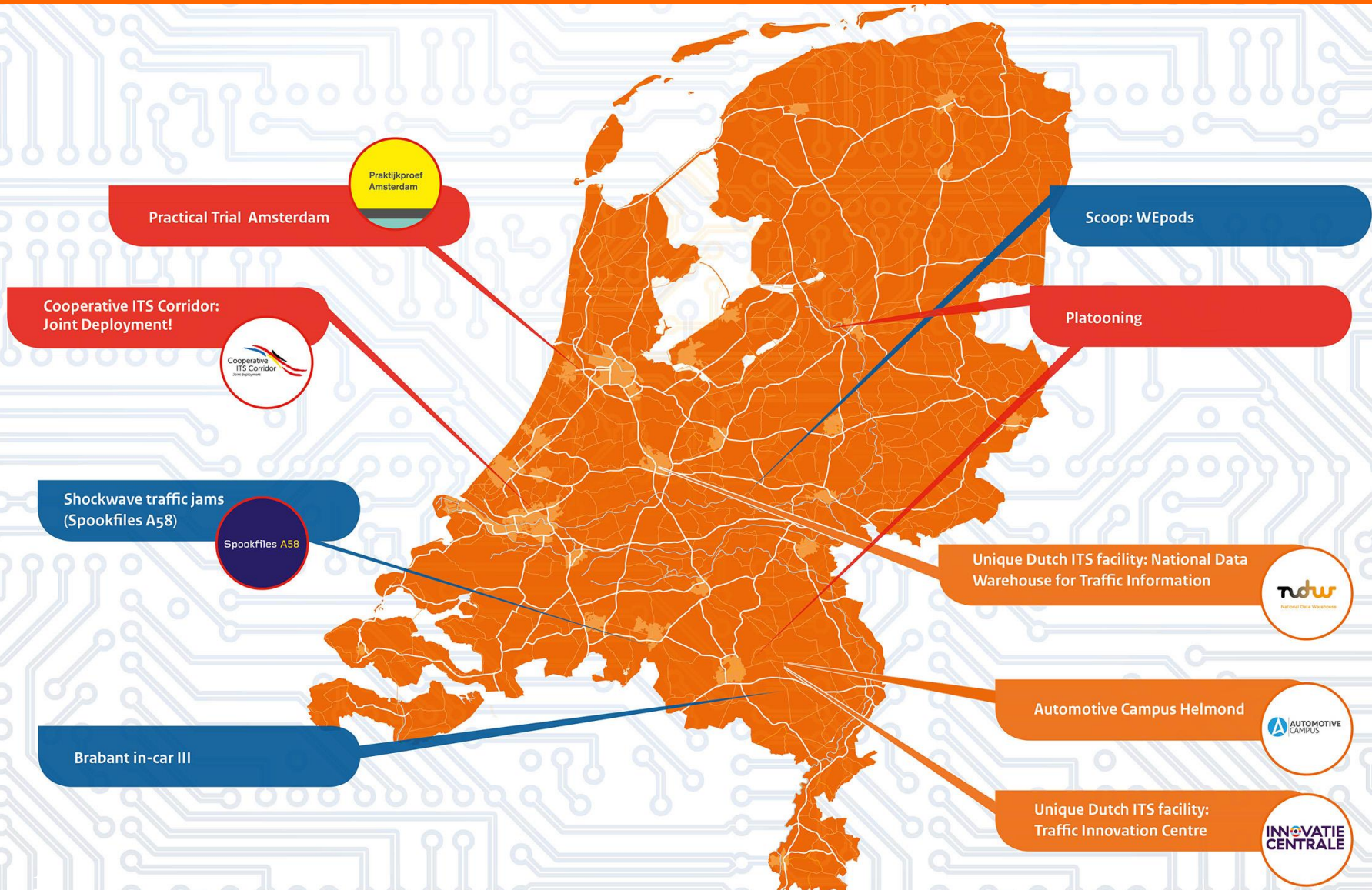


National approach

- 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

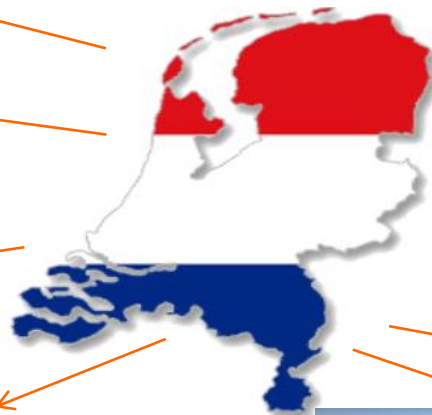
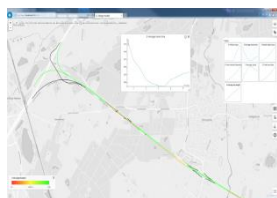
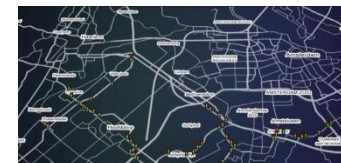


LIVING LAB NL





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



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en Milieu



Rijkswaterstaat
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...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.

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>



Let's put the pieces together...





תודה
Dankie Gracias
شكراً
Спасибо Merci Takk
Köszönjük Terima kasih
Grazie Dziękujemy Dèkojame
Ďakujeme Vielen Dank Paldies
Kiitos Täname teid 谢谢
Thank You Tak
感謝您 Obrigado Teşekkür Ederiz
Σας Ευχαριστούμ 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 Rens Program at Stanford®





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