

AUTOMATED DRIVING

AN
INFRASTRUCTURE
PROVIDER'S
PERSPECTIVE



HADRIAN final event
Graz, 9th May 2023

A|S|F|i|N|A|G
GUTE FAHRT, ÖSTERREICH!

„Automated driving“

What do you think of first?



Car, truck,
vehicle, ...

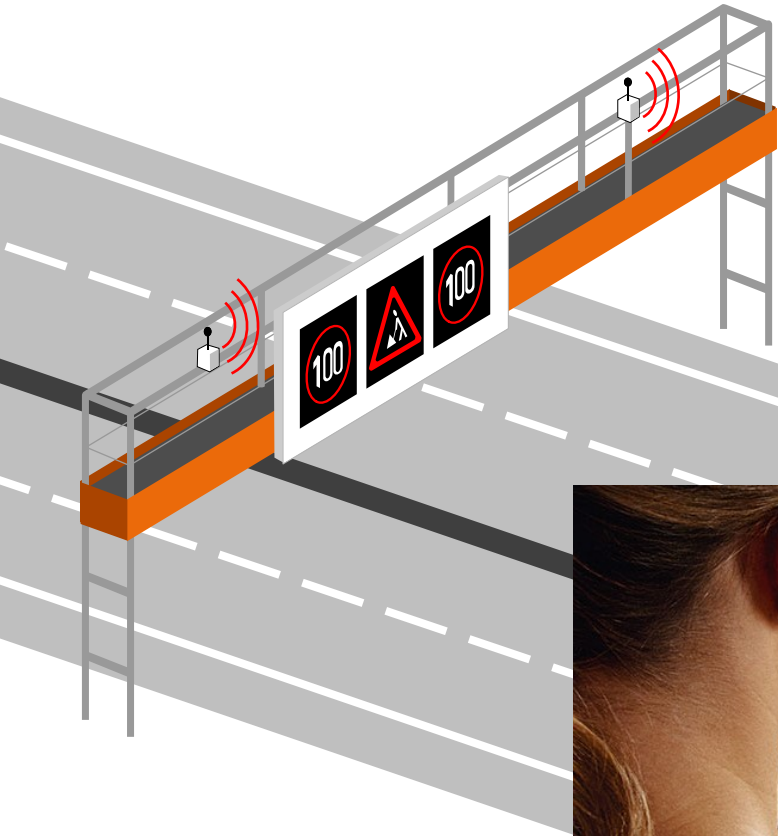
? Infrastructure ?



HADRIAN FINAL EVENT | KEY NOTE ASFINAG

INFRASTRUCTURE **ENLARGES THE DIGITAL HORIZON OF VEHICLES** AND SUPPORTS AD DECISION MAKING
(= ISAD, INFRASTRUCTURE **SUPPORT FOR AUTOMATED DRIVING**)

- **INTELLIGENT SPEED ADVISORY**
- **COLLECTIVE PERCEPTION**
- **ROAD CONDITION INFORMATION**

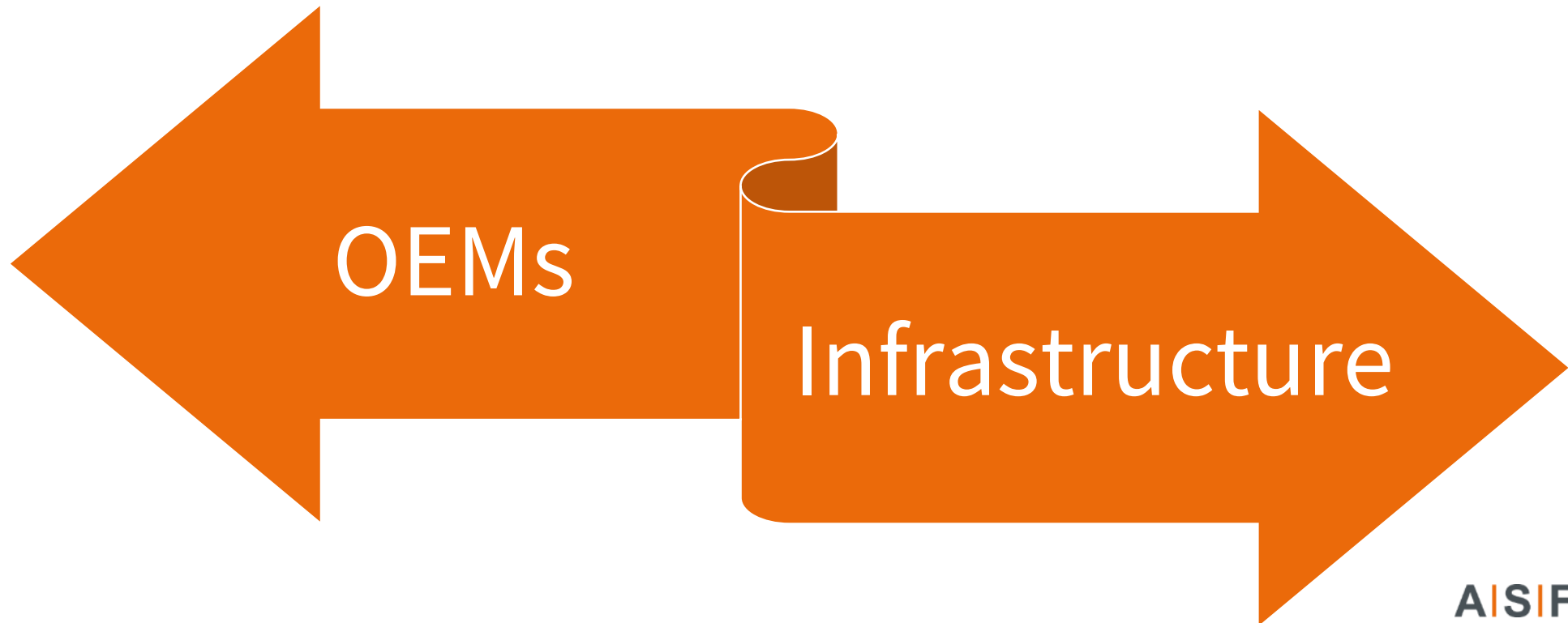


- 📍 Environmental sensors
- 📍 Traffic flow sensors
- 📍 Traffic density detection
- 📍 Vehicle counting
- 📍 Object recognition
- 📍 ...

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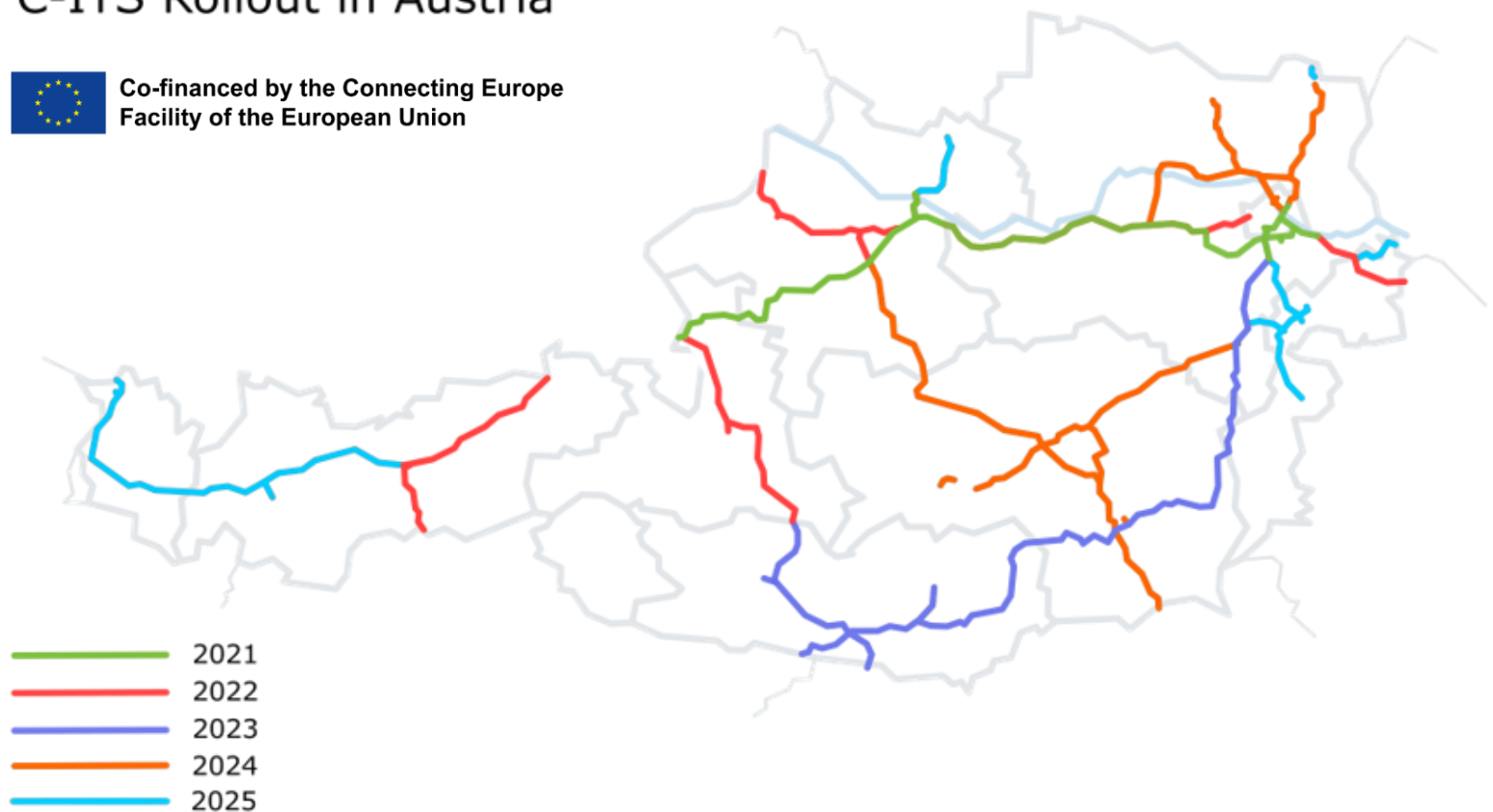
MUTUAL BENEFITS
BY EXCHANGING DATA
BUT HOW?



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C-ITS Rollout in Austria

 Co-financed by the Connecting Europe Facility of the European Union



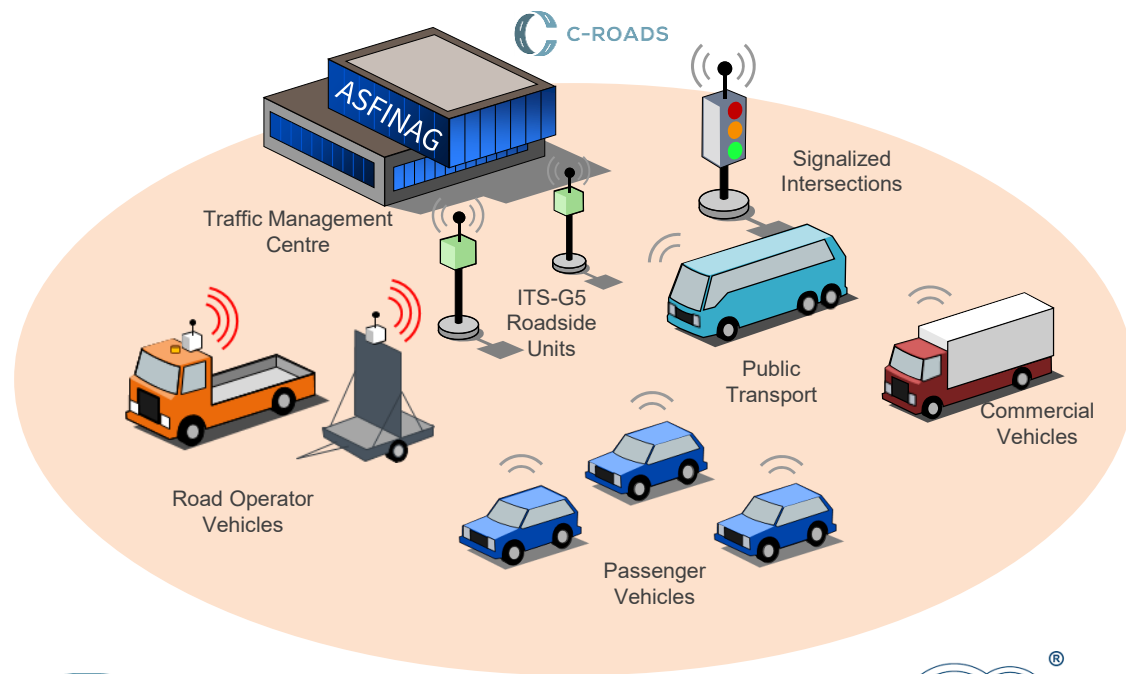
Yunex RSU 2X

- 📍 525 C-ITS units in total on Austrian motorway network
- 📍 on average ~4 km
- 📍 Currently ~250 installed (A1, A12, A13, A10, A8, A7, Vienna region)

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WHY ARE WE DOING ((C-ITS)) ?

BECAUSE IT ENABLES A **DIRECT** BI-DIRECTIONAL CHANNEL BETWEEN ROAD INFRASTRUCTURE AND VEHICLES



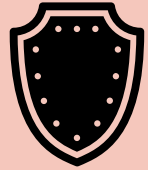
C-ITS units as part of ASFINAG 's infrastructure



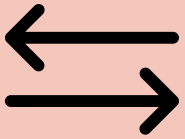
 Co-financed by the Connecting Europe Facility of the European Union

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WHY ARE WE DOING ((C-ITS)) ?



Increase road safety



Optimize traffic flow



Support automated driving

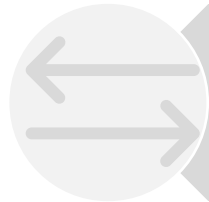
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WHY ARE WE DOING ((C-ITS)) ?

C-ITS DENM RWW/HLN messages



Increase road safety



Optimize traffic flow



Support automated driving



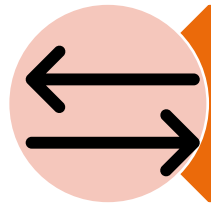
C-ITS Roadworks Warning in VW ID.3

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WHY ARE WE DOING ((C-ITS)) ?



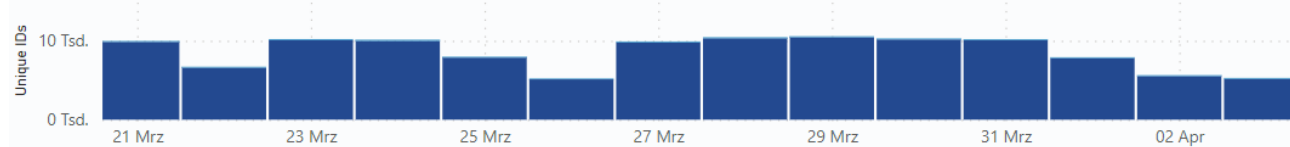
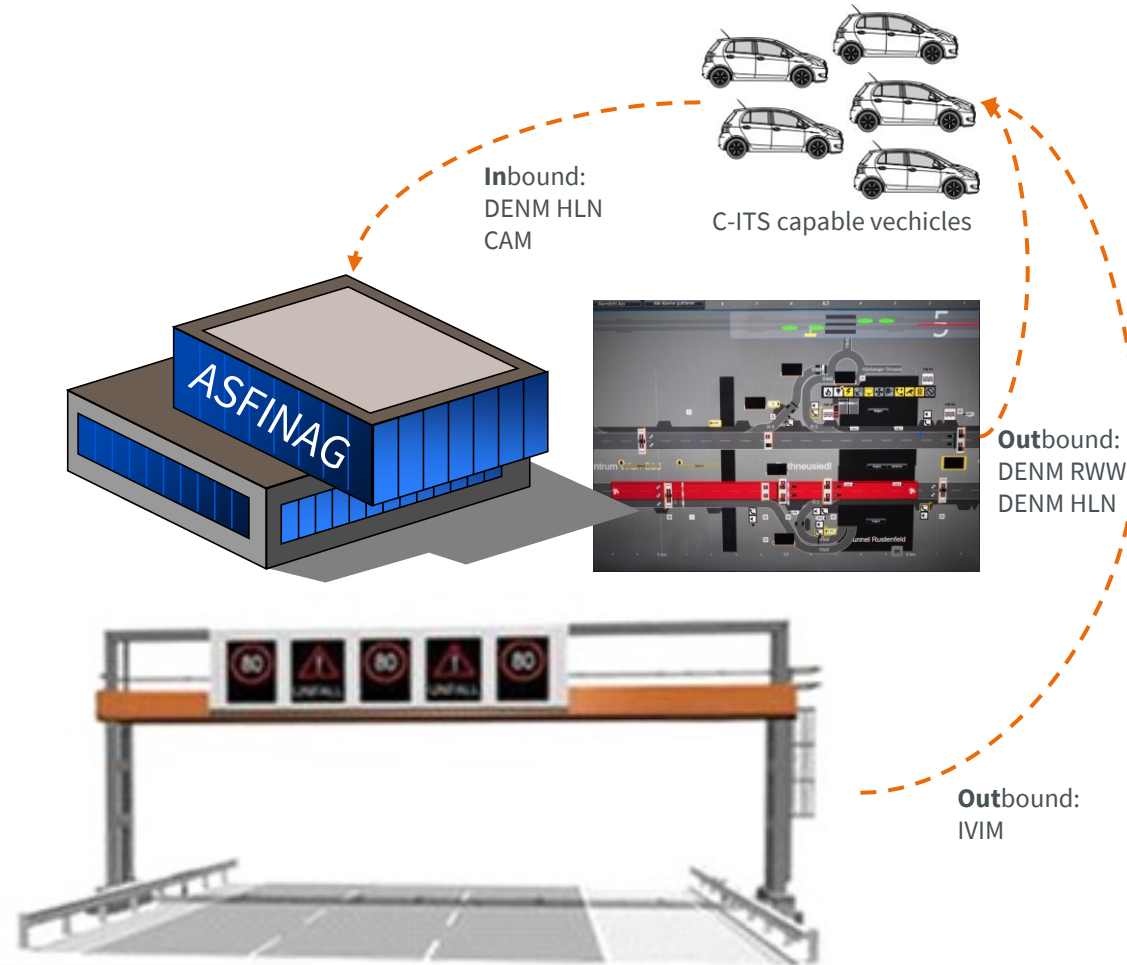
Increase road safety



Optimize traffic flow



Support automated driving



7-10k C-ITS vehicles travelling every day on motorway network (trend rapidly ascending)

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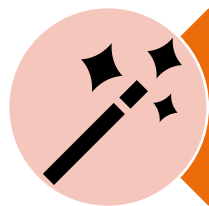
WHY ARE WE DOING ((C-ITS)) ?



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Optimize traffic flow



Support automated driving

AVG „Automated Vehicle Guidance“ based on IVIM v2

Use Cases C-ITS for Automated Driving

UC01: SAE level clearance for automated vehicles

UC02: Platoon support information for automated vehicles

UC03: Situation based distance gap for automated vehicles

UC04: Vehicle type and lane specific speed limit for automated vehicles

UC05: Vehicle type and lane specific speed recommendation for automated vehicles

UC06: Contextual emergency corridor information

UC07: Collective perception of objects on the road

UC08: Information about ITS-G5 equipped objects and persons on the road

UC09: Traffic situation awareness based on CAM

UC10: Long term road works warning

UC11: GNSS correction data

Source: ECo-AT Extended Release 4.0

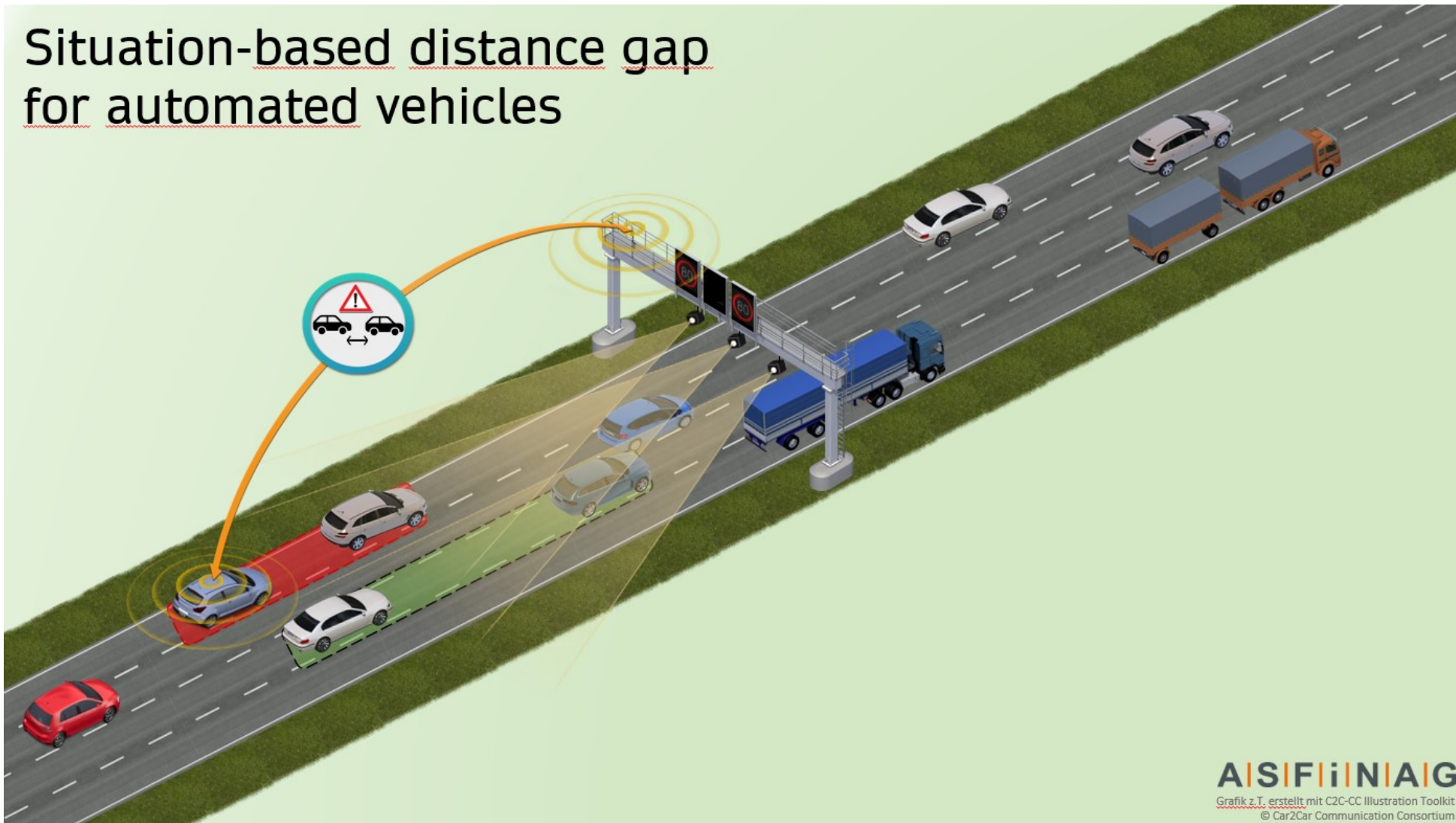


currently piloting. Coming 2024/2025

ASFINAG

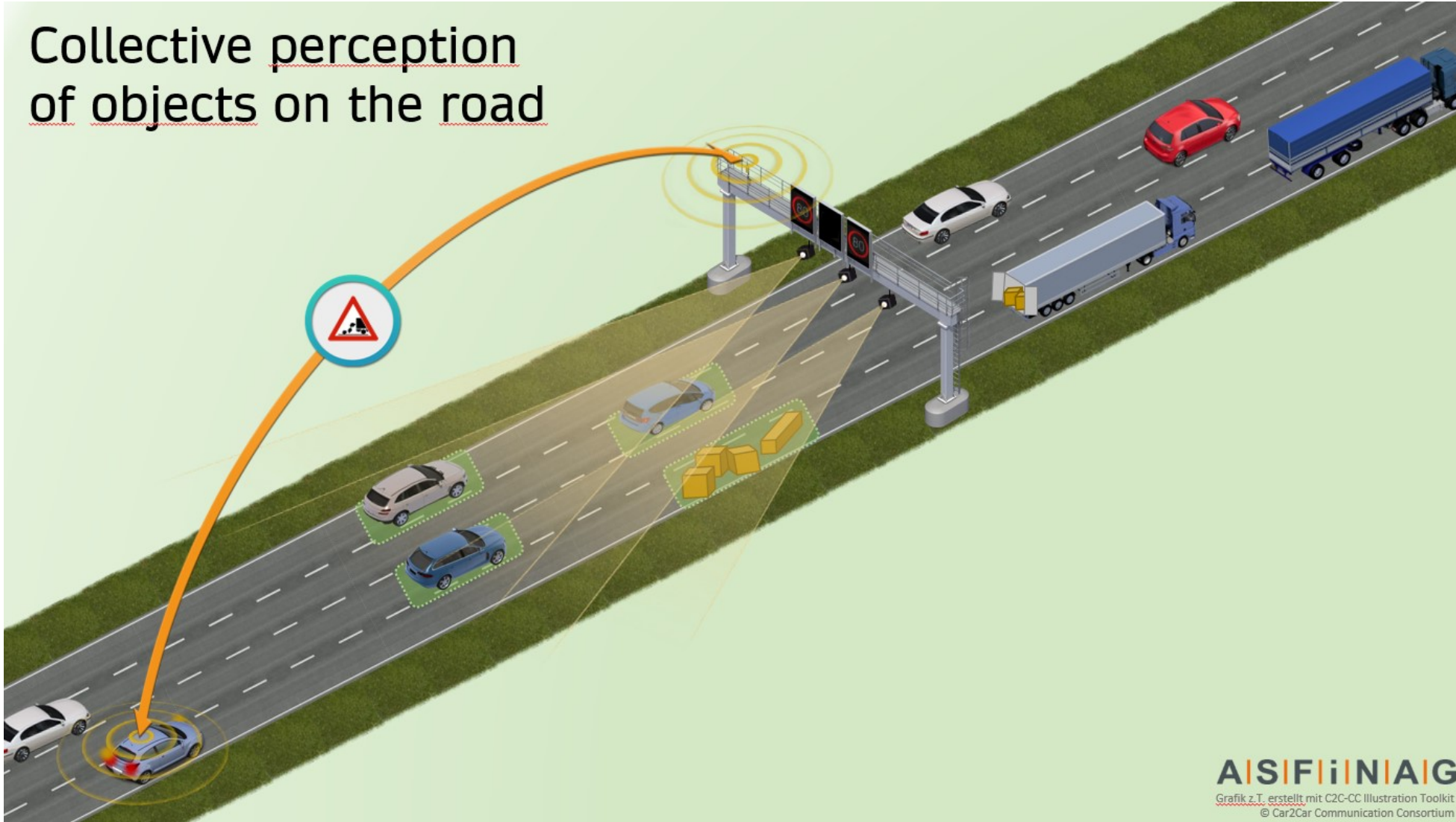
HADRIAN FINAL EVENT | KEY NOTE ASFINAG

Situation-based distance gap
for automated vehicles



HADRIAN FINAL EVENT | KEY NOTE ASFINAG

Collective perception
of objects on the road



-0.01429069763207292

MISSION C-ITS



English: <https://www.youtube.com/watch?v=BuV3K9LJklw>



German: <https://www.youtube.com/watch?v=oc9St4SYoqI>

asfinag.at



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