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Ensure Equitable Access of Vehicles to the Infrastructure by Digitalization

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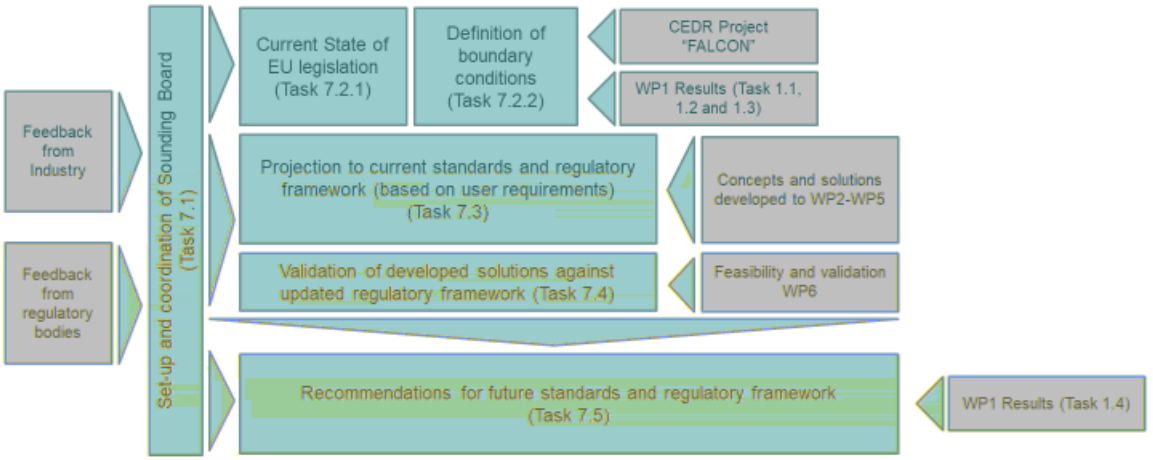

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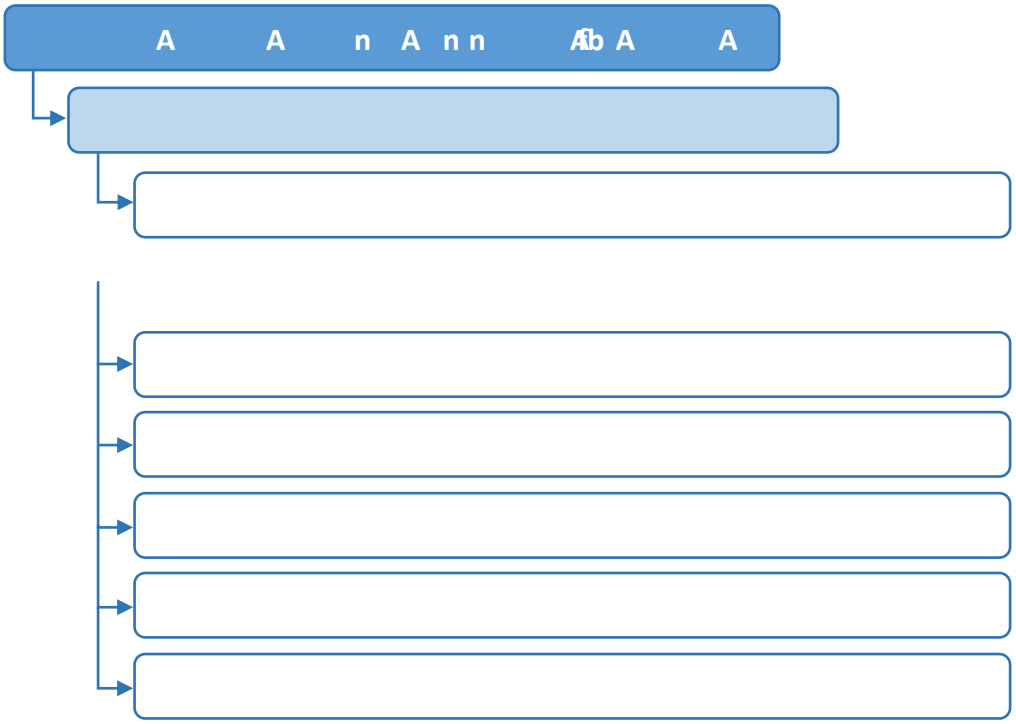

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[1] https://unece.org/sites/default/files/2020-12/ECE-TRANS-2021-6e.pdf

[2] https://unece.org/DAM/trans/main/wp1/wp1doc/WP1_Resolution_Brochure_EN_web.pdf

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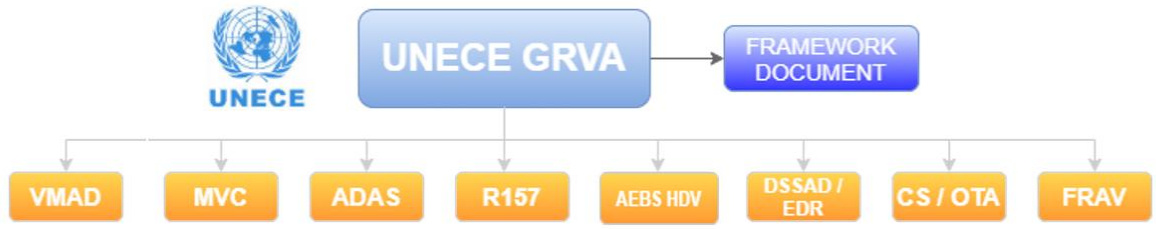

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[3] https://wiki.unece.org/display/trans/ADAS+-+7th+session

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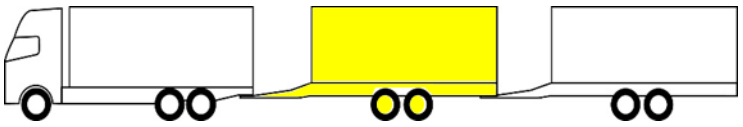

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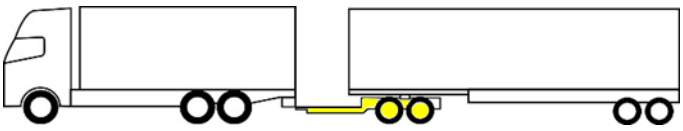

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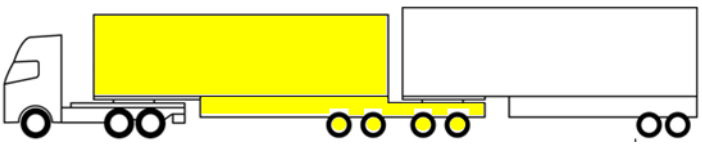

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[5] https://ec.europa.eu/clima/policies/transport/vehicles/vecto_en

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[6] CLIMA.C.4/SER/2019/0003 - Support Preparation of Legislation on Trailers Certification: https://etendering.ted.europa.eu/cft/cft-display.html?cftId=4833

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[7] https://ec.europa.eu/clima/sites/default/files/transport/vehicles/heavy/docs/report_bodies_trailers_en.pdf

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Requirements should therefore be introduced to improve direct vision to enhance the direct visibility of pedestrians, cyclists and other vulnerable road users from the driver's seat by reducing to the greatest possible extent the blind spots in front and to the side of the driver

should be exempted from the requirements relating to the standard dimensions

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[8] For the simulation method, in is important to remark that the mathematical model used for this calculation shall be previously validated through comparability with real tests.

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***Recommendations*A**

No.	Column 1	Column 2	Column 3	Column 4	Column 5
	Item	Symbol [2]	Function	Illumination	Colour
1.	Master lighting switch Tell-tale may not act as the tell-tale for the position (side) lamps	 1, 18	Control Tell-tale [12]	No Yes	 Green

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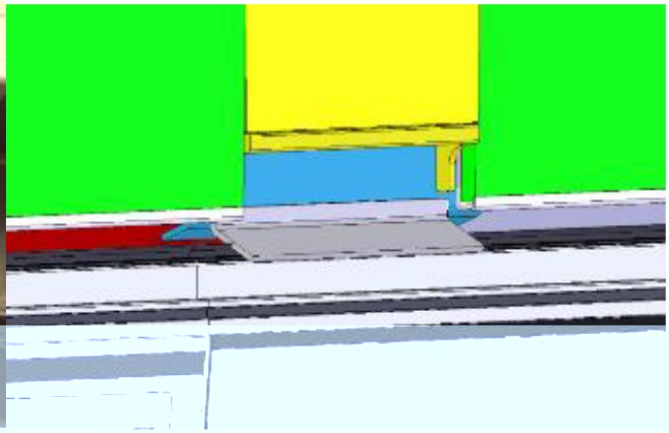

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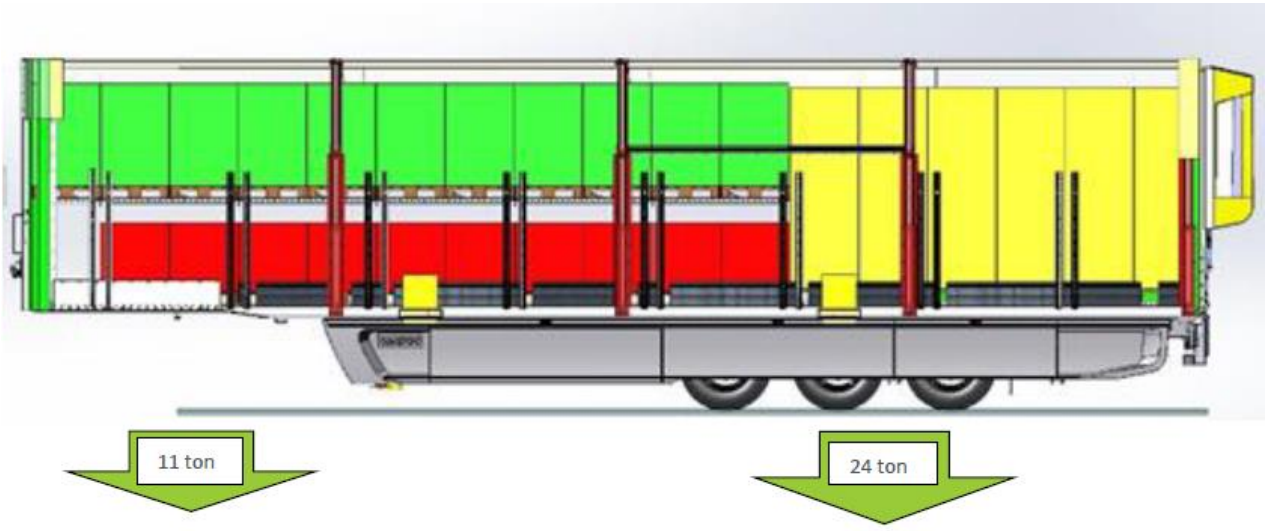

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[9] https://uic.org/IMG/pdf/guide_du_tc_en.pdf

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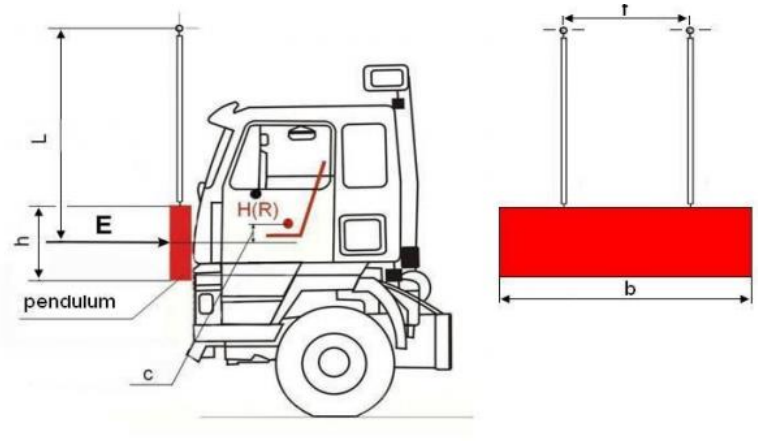

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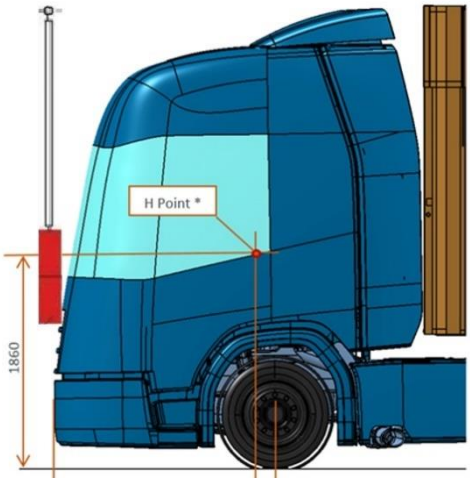

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[10] AEROFLEX – Deliverable D5.3 “Virtual demonstator” - https://aeroflex-project.eu/downloads-2/

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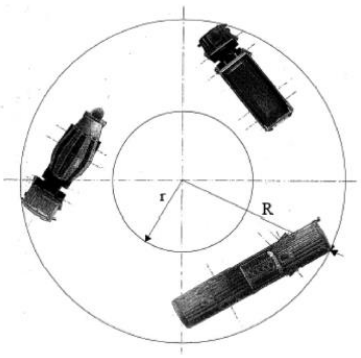

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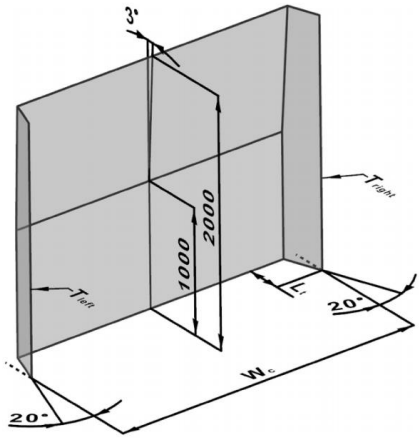

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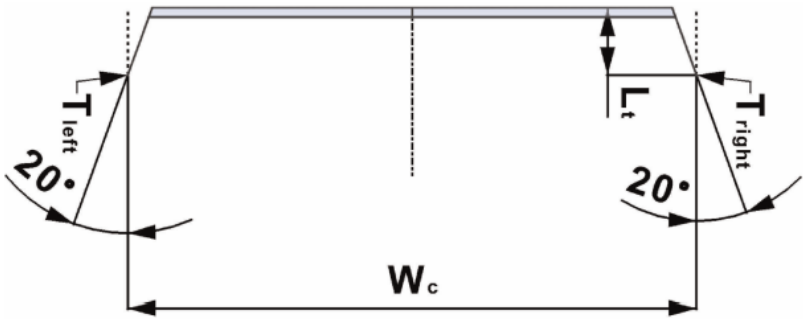

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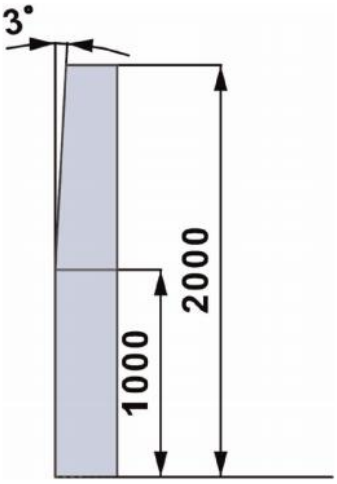

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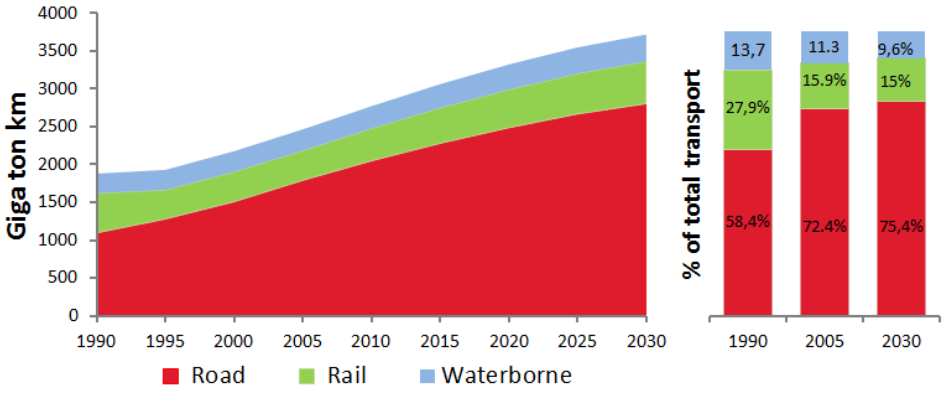
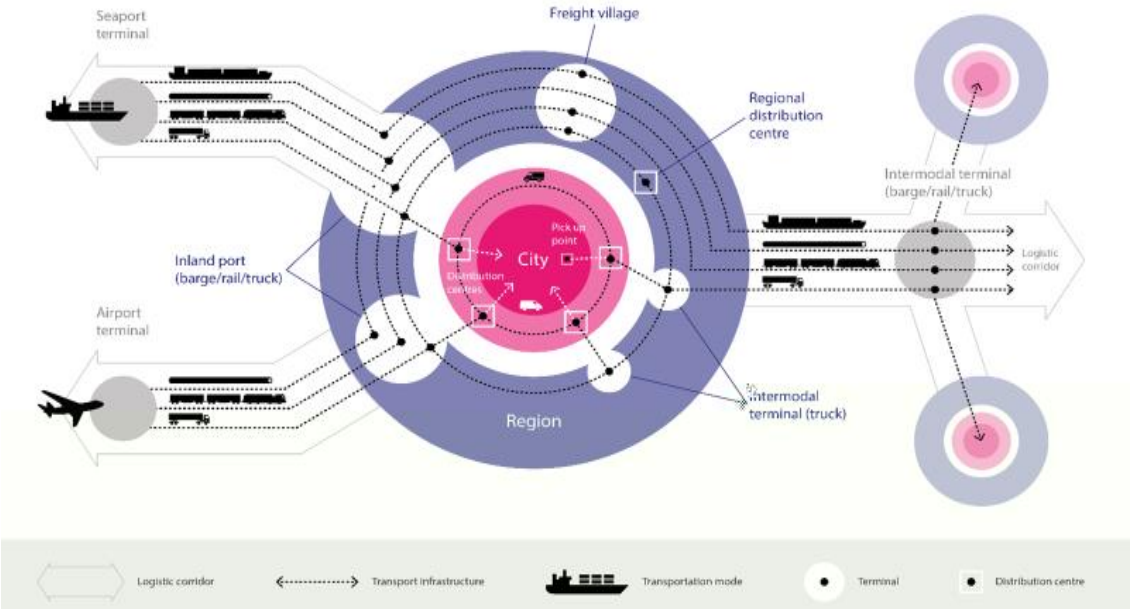


G A A A n A [11]A

[11] European Commission, Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, Brussels, 2011

[12] OECD/ITF, High-Capacity Transport: Towards Efficient, Safe and Sustainable Road Freight, 2019



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[13] Project ReVeAL, https://civitas-reveal.eu/

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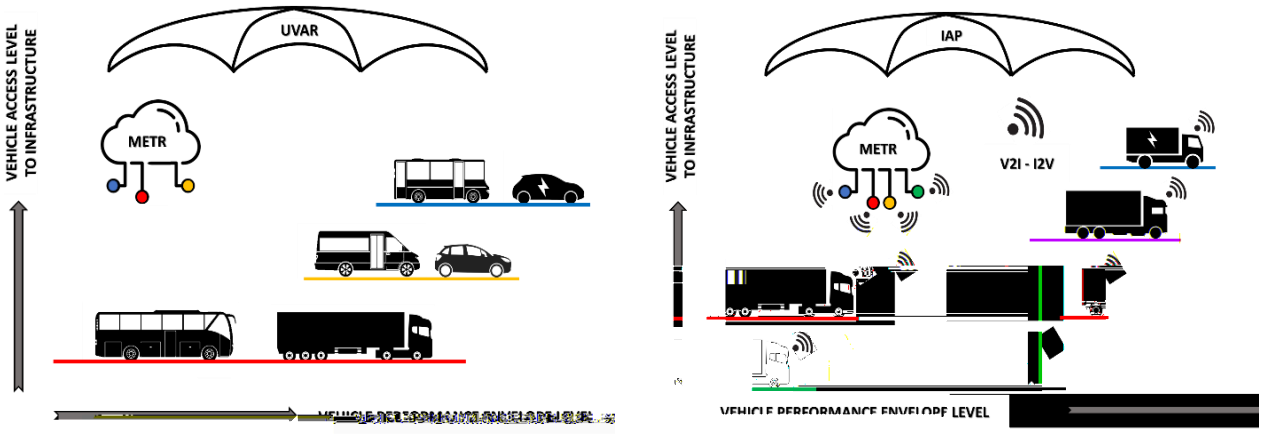

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[14] E. van Eijk, G. Koorneef, S. Wilkins, P. Mentink, Aeroflex – Transport efficiency potential of EMS vehicles using logistics Use-cases, Proceedings of the HVTT16, Qingdao, China, 2021

[15] K. Kural, Analysis of high capacity vehicles for Europe: application of performance based standards and improving manoeuvrability. Doctoral dissertation, Technische Universiteit Eindhoven, 2019

[16] Nordic Way project, www.nordicway.net

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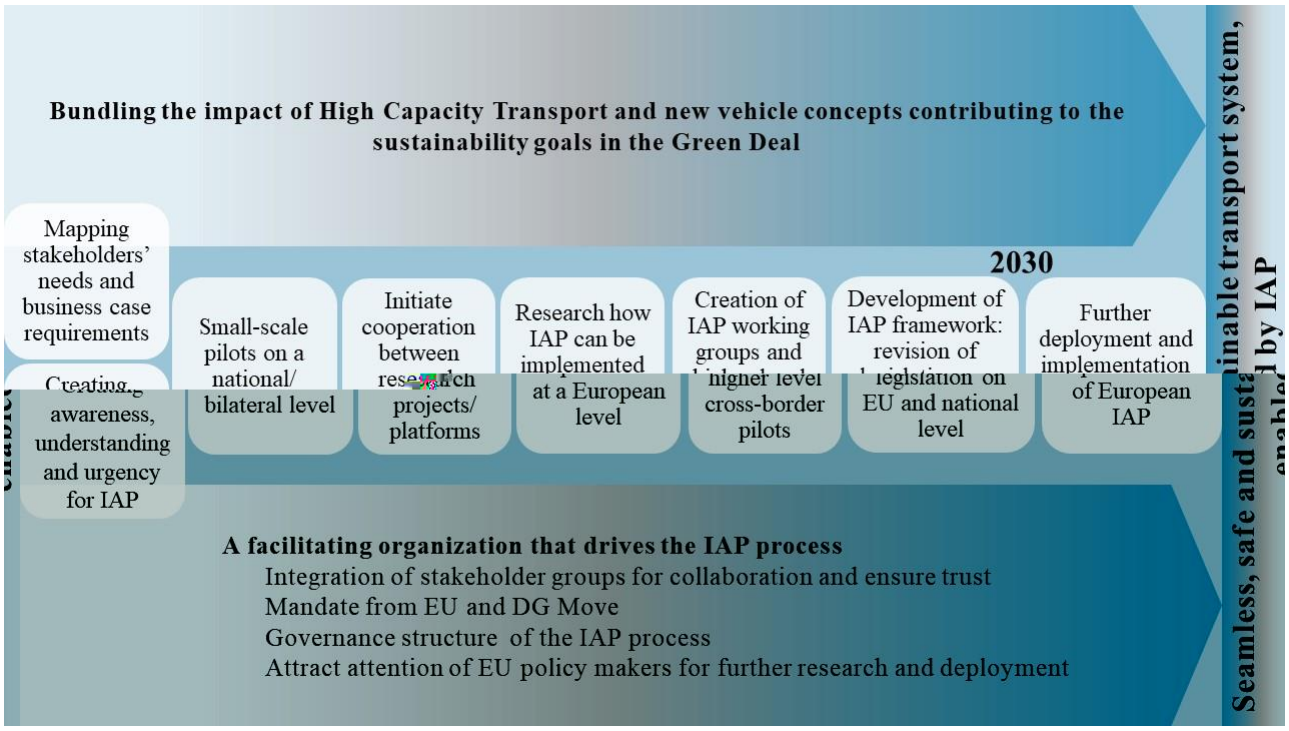
Bundling the impact of High Capacity Transport and new vehicle concepts contributing to the sustainability goals in the Green Deal
Mapping stakeholders' needs and business case requirements
Creating awareness, understanding and urgency for IAP
Small-scale pilots on a national/ bilateral level
Initiate cooperation between research projects/ platforms
Research how IAP can be implemented at a European level
Creation of IAP working groups and higher level cross-border pilots
2030
Development of IAP framework: revision of legislation on EU and national level
Further deployment and implementation of European IAP
A facilitating organization that drives the IAP process
Integration of stakeholder groups for collaboration and ensure trust
Mandate from EU and DG Move
Governance structure of the IAP process
Attract attention of EU policy makers for further research and deployment
Seamless, safe and sustainable transport system, enabled by IAP

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[17] https://aeroflex-project.eu/newsflash-2030-looking-back-at-the-driving-forces-behind-the-success-of-the-intelligent-access-policies-in-the-early-2020s/

THE INTELLIGENT ACCESS POLICIES

NEWS BULLETIN

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AEROFLEX

Safe and efficient transportation of freight

Ensure Equitable Access of Vehicles to the Infrastructure by Digitalization

Started back early in the 2020ies, AEROFLEX achieved its goal: ensuring the right truck with the right cargo at the right time on the right road, by 2030. How? Through actively starting the development of Intelligent Access Policies and introducing it step-by-step throughout Europe.

The European consortium AEROFLEX developed high capacity vehicle technologies and innovations to improve transport efficiency up to 33%. The energy savings were huge and an absolute necessity in order to make the essential steps towards zero emissions in 2050. However, at the time these efficient vehicles were not allowed on the EU roads (except for in a few Scandinavian and Spanish regions). Getting these vehicles on the roads was of the greatest importance and as one transporter put it at the time: *"These vehicles must be part of the solution, we are letting ourselves and future generations down if we do not use all possibilities, we have to cut emissions".*

Inconsistent policies

In the 2020ies, vehicle access to the majority of European infrastructure was conditioned by the compliance with European directive 96/53/EC, last amended by directive (EU) 2015/719, which set strict limits on the weight and dimensions of vehicles and loading units. Among the 27 jurisdictions this resulted in widely inconsistent policies and polarization of access: access was either granted or fully restricted. For international transport, these inconsistent policies were a major bottleneck for introducing more efficient and sustainable vehicle concepts, let alone smooth and efficient transport.

For international transport, these inconsistent policies were a major bottleneck for introducing more sustainable vehicle concepts

Optimally matching vehicle and infrastructure

One might mistakenly think that in 2020 everyone pushed to get high capacity vehicles allowed on every road in Europe. However, learning from Australia, Europe developed a policy system that optimally matched vehicle concepts with the infrastructure: Intelligent Access Policies (IAP). Through European rules and local applications, IAP ensured harmonization of vehicle performance access criteria at an EU level, while at the same time allowing local flexibility (by using real-time data) to ensure vehicle access where appropriate. For example, in Gothenburg where one of first IAP systems was developed out of series of consecutive projects called NORDICWAY.

Thus, IAP contributed to allowing access of new types of vehicles, with capabilities matched with the infrastructure (e.g. maximum possible load, possible turning circles and real-time traffic). As such, these vehicles fit in a multimodal system, where the optimal transport mode could be chosen based on cargo and infrastructure characteristics.

Crucial in the development of IAP was keeping the ultimate goals in mind: improving on sustainability and safety of the transport and mobility system for everyone

Stakeholder involvement was key

Crucial in the development of IAP was keeping the ultimate goals in mind: improving the sustainability, efficiency and safety of the freight transport system. Strong stakeholder involvement was key in this process. As we will show in the following pages, a broad range of stakeholders was repeatedly consulted: from policymakers and planners such as infrastructure managers to community and society. Together these groups brought us to where we are today: supporting process of seamless multimodal freight transport that is sustainable, efficient and safe for the industry, society and planet.

Six stakeholder groups: the driving force behind the IAP success

Users - starting with U of union, IAP brought them together

Different users, such as transport companies, logistics service providers and shippers, had different expectations and goals. However, they had one thing in common: they all were hesitant to share data and were concerned about the privacy of (company) sensitive data. This barrier was overcome by ensuring the anonymity of the shared data. Also, the benefits for this group were emphasized: **by having clear and intelligent access policies international freight transport became more efficient** and procedures for international transport were simplified. As such, better vehicle utilization and cost reduction was achieved.

IAP created the pathway towards using the appropriate data (e.g. GDPR) whilst ensuring compliance with rules and regulations.

Users: Transport companies, fleet owners, logistic service providers and shippers

Policymakers - Harmonisation was key

No simple solution is found when talking about policy making; drafting sensible (international) policy is a complex endeavour. There was a clear consensus in the 2020ies on the need for harmonization and for a change in the legislation at all levels, from local, regional, national to European level. The introduction of IAP helped connect different policy goals: accessibility, CO_2 reduction, quality of life, health, safety, infrastructure ageing … How? IAP was implemented in different countries. **The benefits at local level allowed policymakers to see the bigger picture** and sense the interest from the rest of the stakeholders group. This encouraged a rulemaking progress to a common **framework on Intelligent Access Policies.**

Policymakers at a local and global European level, including national vehicle regulators

Providers – link pin in the standardization of IAP data exchange

A Super EcoCombi (SEC) or EMS2-combination with a total length of 32 metres

At the start of the IAP developments, the providers overcame two main challenges:

1. There were many different Fleet Management (FMS) and Transport Management Systems (TMS), which were mutually incompatible. For implementation of IAP these systems needed to be synchronized to link vehicle characteristics data with infrastructure (and location) data.

2. A lot of vehicles and trailers in the vehicle fleet were not connected at the time. Retrofitting and connecting these to FMS and or TMS was a big challenge at the start of IAP.

The telematics providers worked together to develop links between the various systems, so that the right data could be collected, stored and disclosed.

The FMS organizations ultimately found a business case in developing IAP platforms and services. It turned out that IAP was the catalyst for further standardization. This standardization contributed to higher precision-transport (higher quality transport rather than high-capacity transport), policies for electric vehicles, and better application of automated driving systems. On top of that, exchanging information and frequently requesting data became much easier for data infrastructure providers. As a result, **providers were able to improve their efficiency significantly**.

Providers: Companies and institutes, offering systems and tools to execute IAP such as telematics and data infrastructure

Through IAP planners and owners are better able to maintain the infrastructure

Back in the 2020ies, road authorities faced the enormous task of keeping the infrastructure well-maintained within available budgets, while at the same time facing a predicted growth of (road) transport volumes. Through IAP, infrastructure managers were better able to match vehicle characteristics with the infrastructure characteristics. It ensured (by using GPS positions) that each vehicle did not go outside areas where it was not allowed. Transporters shared vehicle data with road authorities for enabling this.

Since trust between parties was a sensitive issue, it was ensured that data was anonymized as much as possible by facilitators. **With the implementation of IAP, road authorities had a tool which enabled them to control traffic in a better way and protect, plan and maintain infrastructure**. Thus, planners and owners have been better able to conduct infrastructure maintenance, reduce costs, and improve safety. Planners and owners reduced maintenance costs while simultaneous contributing to a transport and mobility system that is now safer and more sustainable for all road users and society as a whole.

Planners and owners: Organizations that are responsible for building and maintenance of physical infrastructure

Facilitators – Essential party for connecting stakeholders and ensuring trust among them

In Europe, a comparable model to that in Australia was followed: a neutral facilitating institution played a central role in the development of Intelligent Access Policies. **The facilitator was essential for connecting all stakeholders and ensuring trust among them**. At the start of the IAP process, the lack of trust was an important perceived barrier for many stakeholders.

By a neutral and transparent process, the facilitating organization was able to overcome this barrier. Through the deployment of scalable projects, the trust of all stakeholder groups (a.o., transporters and road authorities) was gained in using IAP as a means for a safe and sustainable mobility and transport system.

Facilitators: Companies, institutes, or research centers bringing stakeholders together and facilitating pilot projects

Community & Society – Perception changed and led to advantages for all

"Trucks are big contaminating monsters!". "I've just bought a motorcycle, what if they don't see me while I drive near them?". "Cities are not meant for trucks; traffic congestion is their fault!" …

These were some of the concerns that the use of IAP has been able to mitigate. Once cooperation amongst stakeholders was achieved, access policies started being introduced. Introduction started at a local level first and expanded until it became possible to cross international borders. Raising awareness of these developments and disseminating the benefits within the community was an important step. **People gained trust, acceptance for high-capacity vehicles, and started seeing the improvements:** less traffic congestion and fewer accidents… Today, now that access policies are implemented and used daily, it is clear that streets and **roads are safer, the air is cleaner** – due to the reduction of pollution – and **fatalities have significantly decreased,** which have brought benefits to the whole society.

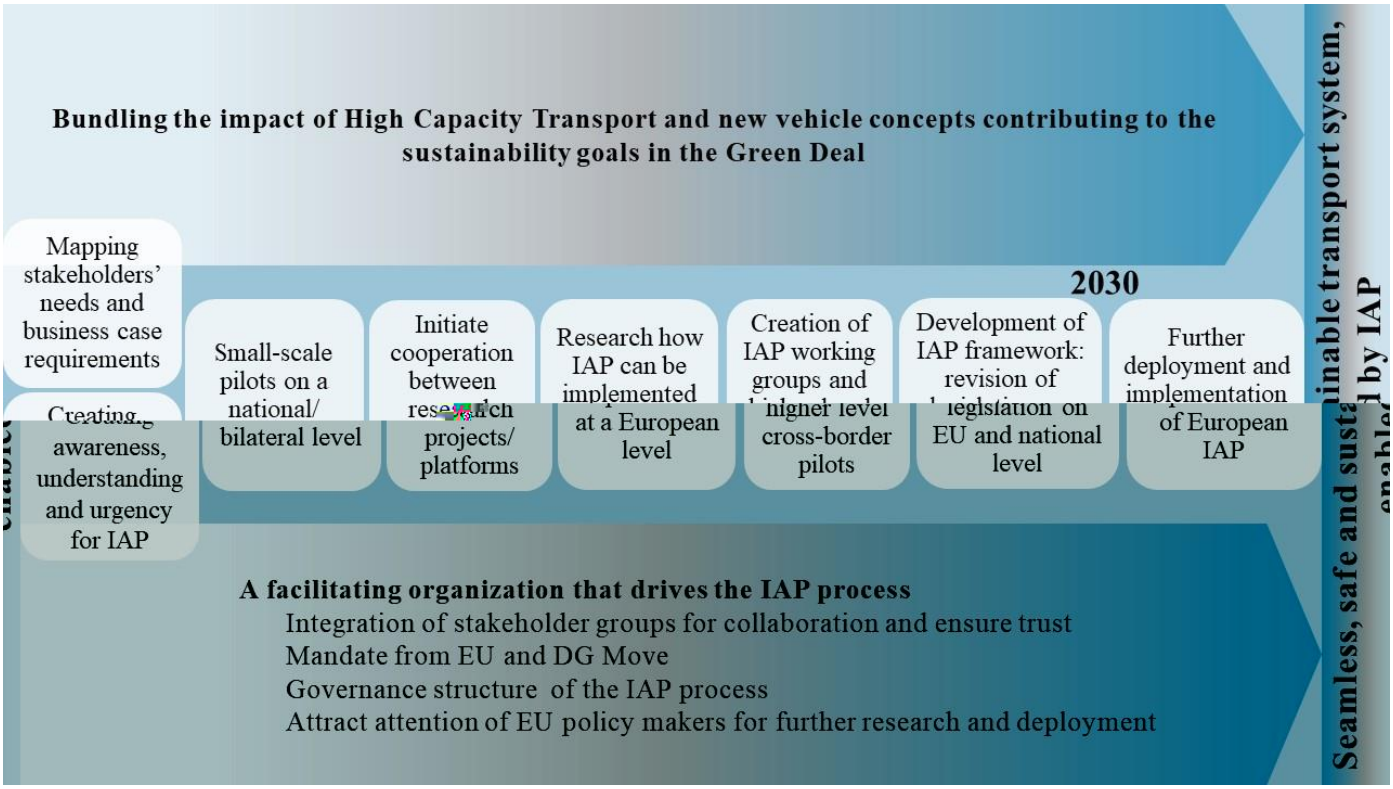
Community: One diverse crowd!

AEROFLEX

Successful Intelligent Access Policies in 2030: Looking back to the 2020ies when it all started

Since the 2020ies – when the developments regarding Intelligent Access Policies started in Europe – major steps have been taken that contributed to today's successes. We cannot stress enough that collaboration across groups was essential for IAP, contributing to a seamless, safe and sustainable transport system.

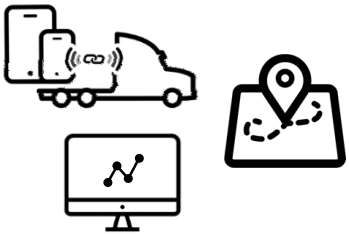
In order to arrive at this collaboration, **awareness and understanding** was created. A **facilitating organization was able to drive the process** and **ensure trust** among the stakeholders. **Small-scale showcases** at national and bilateral levels proved to be successful; further uptake was achieved by **creating IAP working groups** for **pilots along European Corridors**. The **IAP framework** was developed and, after 2030, all stakeholders worked towards further deployment and implementation of IAP. As such, High Capacity Transport was incorporated in policy for sustainability, and contributed to a seamless, safe and sustainable transport system.



Key achievements by each stakeholder group

- Trust among all **USERS** was gained
- Creation of a system that worked and was adaptable to everybody's interest and capabilities
- Data was made accessible for all without compromising security

- Establishment of a common harmonized framework at European level with local applications
- **POLICYMAKERS** acted as frontrunners

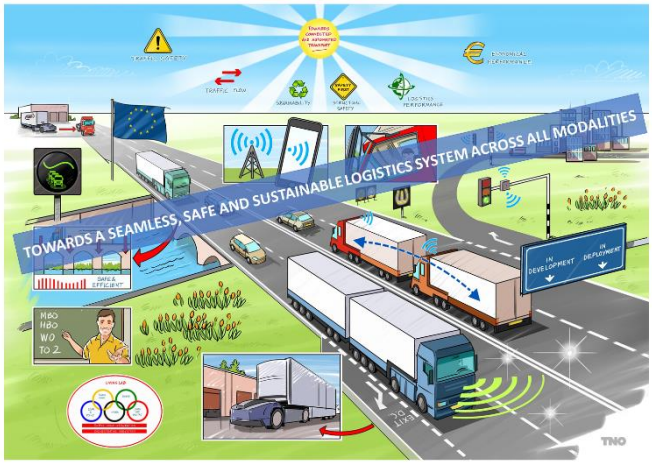


- The telematics **PROVIDERS** worked together to develop linkages between the various systems so that the right data could be disclosed. The FMS organizations ultimately found a business case in developing IAP platforms and services

- **PLANNERS & OWNERS**: Trust for data sharing was ensured by anonymizing data as much as possible
- Road authorities got a tool which enabled them to plan infrastructure maintenance more optimally

- Governance structure of **FACILITATOR** was established
- Mandate from the EU and DG Move was ensured

- Public perception changed and **SOCIETY** was able to see the advantages of IAP in their communities



Colophon

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