Note by the secretariat

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GRVA comments on the ITC strategy on reducing GHG emissions

I. Preamble

1. GRVA received, at its May 2023 session, a presentation from the ITC Secretary on the development of the ITC Strategy on reducing greenhouse gas emissions in inland transport, in line with the decisions of ITC in February 2023 (See GRVA-16-46). GRPE established a task force to deal with ITC's request. WP.29 agreed, at its June 2023 session, that all GR's could contribute to this task force.

2. The following paper provides draft suggestions from GRVA to inform the development of the ITC strategy as well as very brief context elements in the field of automated and connected vehicles having some relevance for this exercise, in the annex.

II. Draft GRVA comments on the proposed outline

Documentation: Presentation GRVA-16-46

3. The ITC strategy outline reads:

I. Inland transport and climate;
II. ITC vision and mission on climate action;
III. Strategic objectives;
IV. ITC-administered instruments to assist in mitigating climate change;
V. ITC Climate Action Plan with milestones–ITC to help deliver on climate goals;
VI. List of priorities;
VII. Resource mobilization for the delivery of the strategy
VIII. Strategic partnerships for the delivery of this Strategy.

4. This paper does not propose comments for each sections, only general comments that may inform the development of the strategy:

(a) Neither the preparatory documents from ITC nor the ITC strategy outline includes a review of what has been achieved during the last decades, what were the results and the potential lessons learnt. **These elements could potentially inform the development of the ITC strategy and GRVA activities**.

(b) The CO2 emissions related to automated and connected vehicles may differ from the typical CO2 emission of traditional road vehicles in their whole life cycle especially during their development and their use. **It may be expected that the GHG/CO2 emissions (or fuel/energy consumption) will be optimized and will not provide the same variability that drivers may cause**.

(c) GRVA is aware of the trials and measures implemented in various place of the world in line with the Avoid/Shift/Improve principle. The diversity of measures in place or envisaged for transforming the transport system is significant. ITC is recognized for establishing provisions supporting harmonization and uniform application by the contracting parties. **The ITC strategy may wish to consider addressing unnecessary diversities and variabilities in terms of transport policies that could lead to a sub-optimum use of automated transport.**

(d) The automotive sector has already informed GRVA of the impact of small variations that occurred in the local implementations of international traffic rules set in road transport conventions. By comparison, it may already be anticipated that strategic differences in terms of transport management and rules may have a strong impact on harmonization and performance optimization. **The impact of the vehicle environment on the vehicle performance may increase and might need to be considered.**

(d) Specifically on Chapters VII and VIII, GRVA recommends, learning from the coordination challenges posed by the number of partnerships and projects on Automated Driving Systems (ADS), to carefully implement **partnership projects** to facilitate implementation and maximize benefits.

(e) The development and innovation in the field of automated and connected vehicles is ongoing. **GRVA's input, actions and milestones might need to be revised, recognizing the nascent nature of the ADS technology** and the high level of uncertainty regarding the ADS performance and impact (see annex, chapter II).

Annex

I. Benchmarking - IMO and ICAO strategies

A. IMO

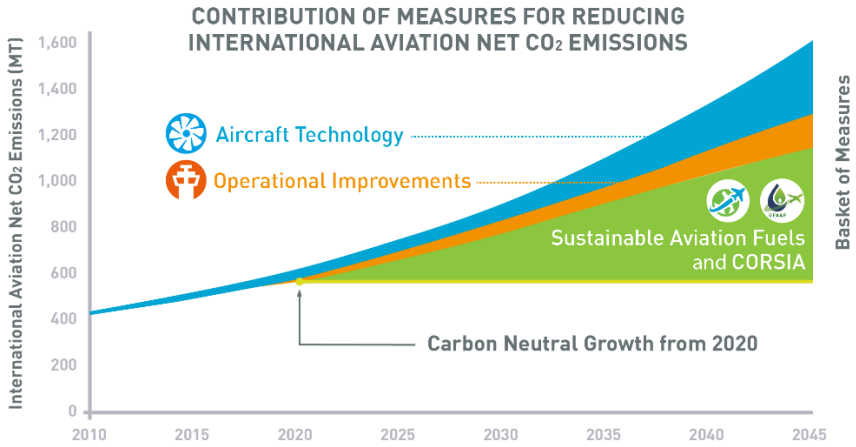
5. The International Maritime Organization (IMO) is a specialised agency of the United Nations responsible for regulating shipping. IMO was established following agreement at a UN conference held in Geneva in 1948 and came into existence ten years later, meeting for the first time on 17 March 1958. Headquartered in London, United Kingdom, IMO currently has 175 Member States and three Associate Members.

6. Member States of IMO, meeting at the Marine Environment Protection Committee (MEPC 80), have adopted the 2023 IMO Strategy on Reduction of GHG Emissions from Ships, with enhanced targets to tackle harmful emissions. The revised IMO GHG Strategy includes an enhanced common ambition to reach net-zero GHG emissions from international shipping close to 2050. IMO's strategy includes a commitment to ensure an uptake of alternative zero and near-zero GHG fuels by 2030, as well as indicative checkpoints for 2030 and 2040, both relative to 2008. It includes a basket of candidate mid-term GHG reduction measures as well as measures addressing the needs of SIDS and LDCs.

B. ICAO

7. The International Civil Aviation Organization (ICAO) assists the 193 Contracting States to the Chicago Convention as they cooperate to adopt standards, practices, and policies for international civilian flight.

8. The ICAO Assembly adopted the collective long-term global aspirational goal for international aviation (LTAG) of net-zero carbon emissions by 2050, in support of the Paris Agreement's temperature goal. To achieve the global aspirational goals and to promote sustainable growth of international aviation, ICAO is pursuing a basket of measures including aircraft technology improvements, operational improvements, sustainable aviation fuels, and market-based measures (CORSIA).



(Source: https://www.icao.int/environmental-protection/Pages/climate-change.aspx)

C. Remarks

9. The strategies of the two sister organizations of UNECE/ITC have in common that they predominantly address the "improve", more than the "shift" or "avoid" of the ASI principle.

II. IPCC about automated vehicles

Table 10.3 | Components of systemic change and their impacts on the transport sector.

Systemic change	Mechanisms through which it affects emissions in transport sector and is likely to affect emissions
Changes in urban form	Denser, more compact polycentric cities with mixed land use patterns can reduce the distance between where people live, work, and pursue leisure activities, which can reduce travel demand. Case studies suggest that these changes in urban form could reduce transport-related GHG emissions between 4 to 25%, depending on the setting (Creutzig et al. 2015a; Creutzig et al.2015b; Pan et al. 2020).
Investments in transit and active transport infrastructure	Improving public transit systems and building infrastructure to support active transport modes (walking and biking) could reduce car travel. Case studies suggest that active mobility could reduce emissions from urban transport by 2% to 10% depending on the setting (Creutzig et al. 2016; Zahabi et al. 2016; Keall et al. 2018; Gilby et al. 2019; Neves and Brand 2019; Bagheri et al. 2020; Ivanova et al. 2020; Brand et al. 2021). A shift to public transit modes can likely offer significant emissions reductions, but estimates are uncertain.
Changes in economic structures	Higher demand as a result of higher incomes could increase emissions, particularly from aviation and shipping. Higher prices could have the opposite effect and reduce emissions. Structural changes associated with financial crises, pandemics, or the impacts of climate change could affect the elasticity of demand in uncertain ways. Thus, the effect of changes in economic structures on the GHG emissions from the transport sectors is uncertain.
Teleworking	A move towards a digital economy that allows workers to work and access information remotely could reduce travel demand. Case studies suggest that teleworking could reduce transport emissions by 20% in some instances, but likely by 1%, at most, across the entire transport system (Roth et al. 2008; O'Keefe et al. 2016; Shabanpour et al. 2018; O'Brien and Aliabadi 2020).
Dematerialisation of the economy	A reduction in goods needed due to combining multiple functions into one device would reduce the need for transport. Reduced weights associated with dematerialisation would improve the efficiency of freight transport. However, emissions reductions from these efforts are likely dwarfed by increased consumption of goods.
Supply chain management	Supply chains could be optimised to reduce the movement or travel distance of product components. Logistics planning could optimise the use of transport infrastructure to increase utilisation rates and decrease travel. The effect of these strategies on the GHG emissions from the transport sector is uncertain.
e-commerce	The effect of e-commerce on transport emissions is uncertain. Increased e-commerce would reduce demand for trips to stores but could increase demand for freight transport (particularly last-mile delivery) (Jaller and Pahwa 2020; Le et al. 2021).
Smart mobility	ICT and smart city technologies can be used to improve the efficiency of operating the transport system. Furthermore, smart technologies can improve competitiveness of transit and active transport over personal vehicle use by streamlining mobility options to compete with private cars. The effect of smart mobility on the GHG emissions from the transport sector is uncertain (Creutzig 2021).
Shared mobility	Shared mobility could increase utilisation rates of LDVs, thus improving the efficiency of the system. However, shared mobility could also divert users from transit systems or active transport modes. Studies on ride-sourcing have reported both potential for reductions and increases in transport-related emissions (Schaller 2018; Ward et al. 2021). Other case studies suggests that carpooling to replace 20% of private car trips could result in a 12% reduction in GHG emissions (ITF 2020a; ITF 2020b). Thus, the effect of shared mobility on transport-related GHG emissions is highly uncertain.
Vehicle automation	Vehicle automation could have positive or negative effects on emissions. Improved transit operations, more efficient traffic management, and better routing for light- and heavy-duty transport could reduce emissions (Nasri et al. 2018; Vahidi and Sciarretta 2018; Massar et al. 2021; Paddeu and Denby 2021). However, autonomous cars could make car travel more convenient, removing users from transit systems and increasing access to marginalised groups, which would in turn increase vehicle-kilometre travelled (Harper et al. 2016; Auld et al. 2017; Sonnleitner et al. 2021). Drones could reduce energy use and GHG emissions from freight transport (Stolaroff et al. 2018).

Source: https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter10.pdf