PASSAU DECLARATION

on the occasion of the virtual Informal Meeting
of EU and EFTA Ministers of Transport

under the auspices of the German EU Council Presidency

on 29th October 2020

– Smart Deal for Mobility –

Shaping the mobility of the future
with digitalisation – sustainable, safe, secure and efficient

Enjoying mobility is part of our personal freedom and a basic need. The free movement of goods is a key element for the functioning of the EU internal market and for trade relations with our partners. We believe that a smart digitalisation presents great opportunities for future-proof mobility that will help us to meet the objectives set out in the Paris Climate Change Agreement – achieving climate neutral, inclusive, efficient and reliable mobility services for both people and goods.

In our vision of mobility for Europe, it is people and their needs who take centre stage. Our mobility should respect environment, climate, human health and well-being and natural resources. This means reducing the necessity of trips for people and goods by fostering more digitally assisted activities and working from home as well as making full use of digital potentials within mobility.

- For the mobility of people this includes preserving and safeguarding human privacy and inclusive access in order to leave no one behind.
- For the mobility of freight and people we need solutions to ensure that no rural areas or peripheral regions are underserved.
- For the mobility of data, the free flow of information enabling seamless interoperability as a basis for innovative applications needs to be safeguarded without compromising values and interests of the broader society, as private actors will play a pivotal role in making use of the value chain of data.

In our vision of mobility for Europe, there will be a significant reduction in the harm caused by noise, pollutants, GHG emissions or congestion – especially in urban areas. Digital interaction and more reliable journey times through navigation services will make it easier to reconcile work, private and family life – especially in rural areas. The digital transformation, automation and connectivity will create a high-

capacity mobility system that can be flexibly adapted to the overall needs for the transport of passengers and goods. It should play its part in meeting our climate change and sustainability targets and makes optimum use of the existing transport infrastructure at all times. All this will result in a significantly higher quality of life and more sustainable economic growth in Europe.

To make this vision a reality, we intend to cooperate proactively with the European Union institutions and our international partners. We want to join forces to ensure that Europe benefits from the opportunities inherent in digitalisation for future-proof mobility, a powerful economy with secure, attractive and green(er) jobs and a liveable climate-neutral future.

The COVID-19 pandemic has clearly demonstrated the value of IT and digital transformation as societal and business operations have been transferred to the digital world to ensure continuity in administration, business and in people's everyday lives. We expect that the following recovery phase will create a surge in activities aimed at accelerating digital transition.

With the Passau Declaration, we, the EU and EFTA Ministers of Transport, are identifying five action areas where digitalisation can make mobility more sustainable, safe, secure and efficient. This Declaration provides input for the New Mobility Approach that is being developed under the auspices of the German EU Council Presidency and the European Commission's planned sustainable and smart mobility strategy in line with the Green Deal framework.

The measures and approaches favoured in these action areas comprise the following:

1. Place people at centre stage

Mobility is a fundamental need and right of society. When the digital transformation of mobility in Europe is being shaped, the focus must therefore clearly be on people and their needs. For this purpose, Europe needs more societal dialogue, citizen engagement and co-creation in order to link, coordinate and communicate digital transport policy strategies and models with the changing mobility needs of people and enterprises to build a human-oriented mobility system addressing them effectively.

We make the following recommendations for placing people centre stage in mobility:

- If we are to have a successful societal dialogue on the digital future of mobility it is important that the public is effectively involved in innovative mobility projects from the outset and can experience the way they work at first hand. Digital enabled tools can facilitate this co-creation.
- Building on this, new forms of effective public participation can be established that provide all stakeholders with extensive opportunities to formulate their own ideas about the mobility of the future and contribute their specific knowledge to the process of development. This should help to create an overarching common perception among all those involved and will enable workable solutions.
- It is not only the parties directly involved in innovative projects, the public, regions, local authorities, policymakers, but also operators and mobility service providers, which, with their services, make medium- to long-term contributions to the transformation of the mobility system, that should be included in the participatory process. In this way, it will be possible for innovations to improve people's lives in a lasting fashion.

- We need to focus not only on the technological, but also on ethical aspects of the whole process of transport digitalisation. Awareness of a liability of every party of the process, as well as focus on the most vulnerable users of transport and public space is crucial. We also need to ensure a level playing field for all stakeholders in the whole transformation process, e.g. consider job market support during the transition towards digital mobility.
- To develop, operate, maintain and innovate in areas impacted by smart mobility, we need trained personnel and, therefore, educational programmes on training, qualification and requalification, adapted to the requirements of the future, as well as dedicated European funds in this regard should be considered.

2. Expand the digital infrastructure and make mobility infrastructure smart

Digital infrastructures with a high level of availability that are secure and provide universal coverage will create the basis for new possibilities in the fields of automation and digital connectivity in the mobility sector. Fibre optic, satellite communications, WIFI technologies, space technologies, the 4G/5G mobile communications and cooperative intelligent transport systems (C-ITS) are of key importance here. To make our transport system more dynamic, it is also essential that our transport infrastructure across the whole EU be equipped as appropriate with sensors, electronics and sophisticated digital technology., that are integrated into Internet of Things (IoT) related development. Our objective is a high-performing, digital and physical infrastructure for all transport, while fully exploiting existing infrastructures.

The following measures will enable us to take a crucial step forward along this path, bearing in mind sectoral specificities and differences in the level of basic infrastructure among member states:

- The rapid roll-out of appropriate mobile connectivity needs to be promoted. Through the widening of mobile communications coverage, Europe could be developed into a lead market for 5G and connected mobility. New standards on latency and availability would lay the foundation for the Internet mobility solutions. Furthermore, ad hoc solutions for safety-critical radio services support the development towards a new generation of communication for trains, connected and automated/autonomous and cooperative driving, as well as for other modes of transport, including both public transport and freight. Moreover, as a basis for the delivery of high-capacity communications networks along transport infrastructure, an adequate coverage of fibre optic or telecommunications ducts with pre-installed fibre across Member States is necessary to enable seamless real-time data sharing of traffic and transport information as well as smart contracts built upon new standards and regulations.
- For the digital transformation of mobility, the EU state aid rules should be linked more clearly to the gigabit targets and both current and upcoming market developments. State aid will be of crucial importance in enhancing broadband fixed and mobile communications networks rollout – especially along Trans European Transport Network (TEN-T) – as it is essential for the Member States to respond to market failures via public interventions.
- To fully benefit from the potential inherent in digital connectivity for efficient mobility management, we need to make our infrastructure smarter. Equipping it with high-capacity digital sensor technology that can interact with sensors in vehicles and monitoring systems as appropriate as soon as possible is important, for instance for condition surveys, situation monitoring, real time traffic information services and emergency response (eCall). This digital upgrading of our transport infrastructure should be accelerated

and intensified throughout Europe, especially where bottlenecks could be resolved by better digitalisation. An important basis for this will be the opportunity of funding provided within the scope of the new CEF Regulation for the period 2021-2027 to be adopted as well as within other EU funding programmes.

- While focusing on digitalisation of existing transport infrastructures, we reiterate the need to further support, including financially, and continue the timely development of the Trans European Transport Network (TEN-T).
- Building Information Modelling (BIM) is an appropriate tool for the digital upgrading of our transport infrastructure. BIM makes it possible to plan in five dimensions right from the outset – including deadlines and costs. With the help of a "digital twin", planning and approval procedures for infrastructure construction can be significantly simplified and accelerated. In this way, future scenarios can be simulated just as realistically as maintenance, upgrading, conversion and dismantling. It should also reflect the diversity of users and aim to be as inclusive as possible. The promotion of the digital transformation of planning and construction along the entire length of the construction value chain could contribute significantly to unlocking this potential for the transport infrastructure in Europe.
- Decentralized computing capacity for mobile-edge computing and smart networks (e.g. high availability) is becoming increasingly important for future applications in the field of mobility management across all transport infrastructures. Data from e.g. the road infrastructure or fairways/waterways lime sensor data (weather data, traffic flow), static and dynamic traffic regulation data or satellite data can be analysed, processed and shared on the ground. Supply chain visibility in conjunction with just-in-time-transport performance is pursued by public and private stakeholders geared

towards the greening of transport, a fair level playing field and collaborative innovation. For innovative mobility applications based on smart networks, independent capacities for the provision of decentralized computing performance should be made available, especially along Trans European Transport Network (TEN-T). This will also help to contribute to the digital sovereignty of Europe by giving us a choice of offers complying with European rules and standards.

- As part of Europe's digital mobility infrastructure, the space infrastructure and services also have to be further deployed and developed. Galileo, EGNOS and Copernicus' infrastructures and services enable European technology sovereignty, economic growth and international responsibility. European space-based initiatives should provide for innovative services and solutions while taking into due account the existing constellations._Independent and reliable access to navigation, positioning and timing as well as earth observation data and services fosters increased efficiency, reduction of greenhouse gases and resilience of all transport modes in Europe, facilitating tracking and tracing, routing and transport planning. Furthermore, Galileo-enabled GNSS services , combined with adequate regulations and standards, will enhance rail infrastructure capacity and make it more cost-effective, lay the foundation for innovative digital applications in the whole mobility sector and strengthen the industry so that it can successfully position itself in a global growth market, allowing even the increase of the safety and security of citizens enhancing the location capabilities of the devices by the emergency services. New communication satellites could also provide access to 5G connection in areas not covered by mobile communications, thereby supporting automated driving much beyond dense areas or along motorways.

3. <u>Promote automation in all modes of transport</u>

Automation and digital connectivity relieve operators of routine tasks, should in the long run improve transport safety, present possibilities for new ranges of services in passenger and freight transport and should help to enhance traffic efficiency, reduce the burden on the environment and provide the means for a more inclusive mobility. Automated/autonomous and connected means of transport and digital mobility solutions are key drivers of change and present significant opportunities for shaping tomorrow's mobility with innovative products and new services. Automation and connective digital mobility solutions are also applicable in other industries and vice versa.

We support the following measures and approaches to ensure the speedy introduction of automation in all modes of transport, bearing in mind safety and security as well as sectoral specificities and differences in the level of basic infrastructure among member states:

- The development and phasing-in of cooperative, connected, automated/autonomous operation functions for all transport modes, and digital systems together with their connectivity should be given priority. The systems must be able to reliably and safely perform the activities for which the operator has hitherto been responsible. We also need more education for users. Because partly automated/autonomous vehicles will share the infrastructure and also air space with "traditional" users (mixed traffic), new safety risks in particular for vulnerable users such as motorbike riders, cyclists and pedestrians need to be carefully addressed. To this end, more focus is needed on promoting safety and cybersecurity-by-design in these systems and across all modes of transport. Safety, fairness and efficiency need to be ensured through regulation and system validation requirements as appropriate. At the same time, the respective responsibility of human drivers, human road users and automated vehicles needs also to be addressed in the relevant national legislation on liability and traffic rules. Fur-

ther international and EU cooperation/harmonization in these fields could be explored to avoid any market fragmentation.

- Emerging automated/autonomous mobility technologies will create new challenges for enforcement. We will seize the opportunity of emerging technological innovations to develop suitable and feasible digital enforcement.
- To enhance efficiency in order to reduce the burden on the environment with the help of automated/autonomous mobility services and freight transport operations, the deployment of trustworthy artificial intelligence solutions across all modes of transport should be studied and fostered wherever possible. In addition, AI coupled with IoT and dedicated sensors are expected to significantly enhance reliability of mobile assets and infrastructure alike, through predictive maintenance.
- Transparency is key from the safety point of view and helps to ensure the social acceptance of automated/autonomous transport by making the functioning of the technology understandable to all relevant stakeholders, including users. The responsibilities and rights relating to automated/autonomous transport need to be clearly defined.
- The development and trialling of automated/autonomous functions for all modes of transport should continue to be actively promoted especially by Member States, on digital test beds and in real-world laboratories and to be further reflected in standardisation/regulation with the help of the relevant European partnerships. Cross-border cooperation in Europe is of particular importance here and EU level coordination should be enhanced to further support safe, smart and sustainable transport operations. To this end, digital test beds and real-world laboratories should be interlinked throughout Europe and de-veloped into European innovation clusters and mobility centres as an optimal venue for en-

hanced collaboration amongst a variety of sectors and industries. Lessons learnt from experience, research, development and innovation (RDI) projects and pilots should be shared and used in follow-up activities, thus creating a space of mutual knowledge.

- Standardization, appropriate approval procedures and interoperability in the Single European Market set the conditions enabling automated/autonomous and connected functions to be quickly implemented in Europe. This will also boost international competitiveness.
- Important regulatory work is being carried out in international organizations, like UNECE, OTIF, ICAO and IMO. Rules governing the Europe-wide interoperability of technologies of cooperative, connected and automated/autonomous operation should enable the use of all existing technologies. Therefore, the work on a Delegated Act on C-ITS supplementing the ITS Directive should resume in close dialogue with Member States and all relevant stakeholders.
- To proactively shape the trends in passenger and freight transport gradual deployment of higher levels of automation is to be incentivized by means of EU-wide cross-modal financial assistance programmes for innovative technologies, for instance autonomous transport of passengers and delivery systems, ERTMS and Digital Automatic Coupling to increase rail capacity, platooning, highly automated trucks in highway operations or advanced maritime technologies.

4. Strengthen smart connectivity – towards a European mobility data space ecosystem

Digital connectivity presents an opportunity to make more effective use of existing capacity and infrastructure, to better interlink transport modes and infrastructure, to enhance safety and security and to reduce transport emissions. The modes of transport will merge

into an integrated multimodal transport ecosystem. On the basis of comprehensive and accurate mobility data, a synchronized overall portfolio will emerge from the services offered by each mode of transport, providing the user with the optimum mobility options at any time. This applies to both the movement of persons and goods.

We support the following measures and approaches to boost smart connectivity:

- To improve the provision of high-quality and real-time data and services and the use and processing of data by the private and public sectors for mobility in the entire EU, for the benefit of the final customers/passengers, the establishment of a European mobility data space is of crucial importance and should be progressed with priority. We want to establish a resilient, interoperable and secure exchange, based on voluntary principle, trust, and innovative cooperation across all modes of passenger and freight transport and all data flows. Adequate governance should be set in place to protect rights and interests of all stakeholders.
- Secure digital mobility platforms as new access services for finding of mobility services best for passengers and freight, have a key role to play in the seamless intermodal connectivity of different modes of transport and the shared use of vehicles across European cities and regions. We need a better framework and better incentives for intermodal travel and logistics chains and end-to-end booking/forwarding systems, including the necessary payment interfaces for tickets, tolls, parking and other fees, so that the "Mobility/Transport as a Service (MaaS/TaaS)" platforms, which today are usually stand-alone solutions, converge to form an overall system across regions and between Member States. Appropriate incentives and mechanisms to enhance trust for voluntary data sharing are key in the context of the European mobility data space and an appropriate legal framework should be put in place to ensure a

fair access to vehicle data while ensuring cybersecurity, personal data protection and respect of intellectual property.

- Within the context of the revision of the ITS Directive planned for 2021, the European mobility data space ecosystem should be taken into account, including the new approaches proposed by Commission in the EU data strategy, the EU digital strategy and the White Paper on artificial intelligence. In particular, the National Access Points shall help strengthening the European mobility data space. To enhance and harmonise the functioning of the National Access Points as well as to define long-term strategic objectives, the participation of all Member States in the forthcoming coordination mechanism to federate the National Access Points is desirable. Appropriate options for funding this are to be considered.
- To gain technological excellence and resilience, Europe needs to have a freedom of choice concerning digital technology and further step up its efforts in the sphere of cyber security. The funding at European and national level of appropriate measures, focusing on the specific requirements of the transport sector, should be increased.
- Our objective is that people using passenger transport should be able to obtain (new) mobility services on the basis of real-time data and information – including with the help of artificial intelligence – on all transport options from the beginning to the end of the travel chain. For cross-border intermodal freight transport, the exchange and sharing of transport-related data (including real-time data)should prevail as it could lead to reduction of costs for operators and make the supply chains more resilient and efficient. There is need to speed up the timescale of the implementation of EU policy objectives emerging from EU Regulation on electronic freight transport information (eFTI), which establishes a legal framework for safe, secure and fully interoperable exchange of

digitised information between business and authorities and of European Maritime Single Window environment (EMSWe).

5. Promote innovations for digital and virtual mobility

To enable digitalisation, automation and digital connectivity to produce innovative applications for the mobility of persons and goods, ingenuity, creativity and entrepreneurial commitment are essential. Digital innovations can make mobility more climate friendly throughout Europe and support implementation of the European Green Deal while enhancing competitiveness. In this context, virtual options for substituting physical mobility offer new potential.

We make the following recommendations for promoting digital mobility in Europe:

- The European mobility sector needs a quicker transfer of digital innovations from research to practice. Here, real-world laboratories and innovation clusters are of key importance. They should make greater use of experimentation clauses than in the past to create legal leeway so as to be able to safely trial innovative mobility solutions. In addition, the European mobility data space should improve connectivity between real-world laboratories, industry, society and the public authorities throughout Europe. Digital innovations such as virtual driving licences and ticketing platforms must be interoperable to work across the whole EU.
- Artificial intelligence, automation and self-learning systems are of key importance for the mobility of the future. They can help to improve transport safety, optimize capacity use as well as traffic flows and facilitate technology and language interoperability. The development of reliable AI algorithms for mobility places high demands on the data analysed (e.g. integrity). Access to suitable data that can be used across all competitors should be ensured for all the relevant stakeholders complying with European rules and

standards. Financing through the Digital Europe Program-DEP and the European Cloud Federation will give a crucial boost to the development of AI applications for mobility.

- Data driven innovations form the basis for digital business ideas based on mobility, spatial, space and weather data. These include digital mapping of infrastructure, projects like SESAR for air traffic management, new navigation services, innovative sharing platforms, smart journey planners, more accurate and trustable European navigation services or high-precision weather applications. We need a comprehensive approach to innovation for digital mobility in Europe that covers innovations from the very moment when digital business ideas are born and supports the entire process from the blueprint through development to commercial maturity.
- Virtual reality applications and AI-based digital avatars are enabling increasingly realistic communication and interaction between people, including over long distances. As a result, digital interaction (like home office, video conferencing, e-government solutions, distance learning, telemedicine, online shopping etc.) is increasingly becoming a viable and cost efficient alternative to physical mobility and enables people to have a better mobility experience while reducing the volume of traffic and traffic jams. These innovative options should be strengthened actively for shaping mobility behaviour. They also present new opportunities for meeting our climate change targets in the mobility sector and contributing to the Green Deal.
- Major factors for the success of the practical introduction of innovative mobility solutions are cooperation between local authorities and the exchange of best practice in a European-wide network, including mobility service providers and developers. The European "Urban Air Mobility Initiative" is a good example of a successful

network of innovations that also consolidates social acceptance of new mobility solutions. Such initiatives should be continued and also developed with regard to other thematic focus areas. Thus, for instance, innovative logistics solutions should be progressed and promoted to make it possible to deliver goods in a safe, secure, zero-emission and automated/autonomous manner with the use of self-learning systems, in both urban centres and rural areas. A European best practice toolbox can significantly simplify a broad-based exchange on digital success models of individual EU and EFTA Member States.