

**Intelligent Transport Systems UK  
Submission to the Spring Budget 2023**

**1. About Intelligent Transport Systems UK**

- 1.1 Intelligent Transport Systems UK (ITS UK) is the national membership association for transport technology providers. ITS UK is the voice of the transport technology industry; we provide a national platform to support the roll out of technology for a cleaner, safer and more effective transport network, both at home and abroad.
- 1.2 ITS UK has 150+ members, from both the private and public sector, and covering all sizes and disciplines, with members working in areas like Mobility as a Service (MaaS), traffic management and enforcement, integrated transport, connected and autonomous vehicles, public transport services, smart ticketing and much more. More information on ITS UK and the intelligent transport sector can be found at [www.its-uk.org.uk](http://www.its-uk.org.uk)

**2. The value of Intelligent Transport**

- 2.1 We believe that intelligent transport has a vital role to play in supporting the UK Government's ambitions:
  - **Economic growth:** The sector is conservatively valued at £1.5bn and generates £15bn a year for the UK economy. It is an important export, with UK businesses integral in the roll out of intelligent transport overseas, and there is potential for the UK to develop a competitive advantage in the sector in the future, with the global market expected to be worth £900bn by 2025. The industry also supports highly skilled jobs and training opportunities.
  - **Decarbonisation:** The intelligent transport sector is vital in incentivising the travelling public to low carbon forms of transport and decarbonising the road, rail and wider transport network. The sector is ready to support Government in reaching Net Zero by 2050.
  - **Supporting Zero Harm:** Intelligent transport systems can help reduce road deaths, such as by helping local and national transport authorities, through data, to identify potentially hazardous junctions. Similarly, the implementation of new operational and enforcement technology can help ensure we continue to make our roads safer for all who use them.
  - **Increasing capacity & cost efficiency:** Intelligent transport has a key role in optimising the usage of our transport network, by making best use of current infrastructure assets, incentivising behaviour change and through the predictive maintenance of infrastructure, to name a few. Ultimately, this ensures the best possible usage of our limited road and rail network and can provide cost effective increases in capacity.

2.2 In a tough fiscal environment, intelligent transport offers a way to ensure more efficient use of our transport network and reduce costs from large infrastructure projects. In the following sections of the Submission, we have set out how the application of intelligent transport can support the various modes as well as by integrating transport together, to offer a better service for the public.

**3. Roads**

- 3.1 **Pay as You Drive:** The UK should look to implement a national 'pay as you drive' policy focused on calculating charges by use. This will reduce congestion, improve air quality and reduce noise pollution, as well as provide better public health. It will also offer a more holistic approach to filling the £35 billion gap left by the take up of electric vehicles, rather than the piecemeal plan to extend Vehicle Excise Duty.

- 3.2 Road pricing is a fair and equitable way of charging for the use of the roads. It complies with the 'user pays' principle, as payments can be geared to use. It could be used to fund specific infrastructure projects without the need for a separate toll system, such as the Dartford crossing, the Mersey Gateway, the new Lower Thames Crossing etc. It could also replace the present HGV levy, which is a very blunt instrument, and does not encourage desirable behaviour. It would encourage users to reduce mileage as they would see a knock-on reduction in the cost of using their vehicle. And it would apply equally to UK and foreign vehicles (especially freight coming into the UK), stopping the incentive to buy fuel overseas.
- 3.3 Distance-based (pay-as-you-drive) schemes also give the Government a new set of tools to influence driver behaviour. This includes the ability to manage demand by charging more for use of the most congested parts of the network, and charging more to use the network at the most congested times. Conversely, this rewards drivers who use the less used parts of the network, or who time their trips out of the peak hours. What's more, current clean air zones and low emission zones schemes are useful tools, but for the future there is the ability to vary the charge to (for example) address pollution 'hot spots'. In this way a road pricing scheme can replace the patchwork of LEZs and CAZs.
- 3.4 'Pay as you drive' schemes are becoming increasingly popular. Research by the Campaign for Better Transport found that that 60% of people believe vehicle taxation needs reforming with only 6% disagreeing. 69% would be more supportive of pay as you drive if public transport was made more affordable and better connected. The sector should work to improve public perceptions of road user charging, by promoting its social value and potential as a levelling up tool that could support those on lower incomes.
- 3.5 Other countries in mainland Europe are already charging HGVs on a pay as you drive distance based toll and some have implemented technology-driven road user charging systems or are looking to implement them over the coming years. UK expertise is supporting a number of countries to deliver these schemes, so will have the technical knowhow to deliver it at home.
- 3.6 **Digital Roads:** The UK should also seek to digitalise its road network. ITS UK supports National Highways' Digital Roads Strategy, which will utilise technology to deliver improvements around construction, operations and customer improvements. Yet, whilst there is strategy for the digitalisation of the strategic road network, around 185,000 miles of roads are managed by Local Authorities (the significant majority). These Authorities need more support, particularly in terms of budget and political backing, in order to roll out these improvements. The UK Government should therefore look to support the recommendations of the Digital Local Roads Action Plan as well as speed up the digitalisation of Traffic Regulation Orders.
- 3.7 The growing digitalisation of the road network will see a transition towards an instantaneous view of the network. Digital exhaust data provided by vehicles, for example, can now be used to understand and optimise the use of infrastructure. For instance, vehicle video cameras can now be processed anonymously to identify potholes, litter, lighting infrastructure etc., replacing manually and carbon intensive tasks with more carbon efficient methods. There are opportunities to develop digital twin models from this data, supporting the use of predictive maintenance and more effective use of assets. These tools also provide real world applications of AI in public services, accelerating this industry and generating export opportunities.

- 3.8 **Connected and Autonomous Vehicles:** The road network is increasingly producing more data than ever before, as more connected vehicles are introduced. Connected vehicles allow the opportunity for every public vehicle to be a sensor platform providing data (vehicle as a mobile sensor), a concept being considered in many other countries. This data can provide services that improve safety, reduce congestion and decrease carbon emissions.
- 3.9 However, this data is often siloed, limiting its potential usage. The emergency SOS eCall system, which has been installed in all vehicles post-2018, is a clear example. Currently the data is not shared with transport authorities, yet it could provide valuable analytics that support the safety of road users by helping identify potentially dangerous locations on the network. The Government should publish the Transport Data Strategy as a matter of priority, to ensure the right frameworks are established for the effective use of transport data.
- 3.10 Autonomous vehicles are an important emerging technology that the UK Government should seek to support. ITS UK welcomes the trials of autonomous vehicles taking place around the country and most recently the £81 million provided by Government and industry to self-driving transport technology. Continued support will be essential in seeing this technology reach maturity and will require the setting of a regulatory framework, as planned in the upcoming Transport Bill.
- 3.11 **Freight:** When it comes to road freight, Government should look at supporting businesses to introduce collaborative logistics that reduce the need for separate companies to provide last mile delivery, which can increase carbon emissions. Incentives should be introduced to support businesses that seek to combine or collaborate on delivery.
- 3.12 **Safety:** The UK has some of the safest roads in Europe, but between 2016 and 2020, 28 people were sadly killed on hard shoulders. One road death is too many, and further work is needed to achieve the 60% improvement in road safety by end of RIS2. The Government should continue to support smart motorways, which provide safety, carbon and efficiency benefits. Most collisions are between moving vehicles, which smart motorways help reduce, but the UK needs to continue rolling out Stop Vehicle Detection to ensure those who break down on smart motorways are as safe as possible.
- 3.13 The moratorium on smart motorway roll out should provide the opportunity to generate more public awareness about the safety benefits and to increase understanding around their use. A national effort, from Government and transport authorities, is required to ensure motorists know how smart motorways work and what process is in place should they break down.
- 3.14 **Alternative Fuels:** As the UK shifts to alternative fuels, including electric and hydrogen vehicles, there will be further applications of intelligent transport technologies, for example, to support energy demand and to identify areas for charging stations to be installed. The transport industry will also need to consider how our current infrastructure best supports these vehicles, such as in the case of breakdowns.

#### **4. Rail**

- 4.1 The UK rail network is at a cross-roads, as it transitions to Great British Railways. It is important that the new industry structure supports innovation and the introduction of digital technologies, whether that's onboard train services, ticketing or through signalling.
- 4.2 On ticketing, shifting to more dynamic demand-led and pay as you go pricing can help train operators in smoothing out congestion on the network. There should be a greater shift to digital and account-based ticketing systems that provides 'tap in, tap out' access and which allows for greater integrated transport.
- 4.3 Rolling out digital signalling will be vital over the next 15 years as at least 60% of the UK's rail signalling infrastructure becomes life-expired. Continued investment is needed to support HS1 and Transport for London's digital signalling plans. The Government should continue to fund the Long-term Deployment Plan for digital rail, set out by Network Rail.
- 4.4 Data is playing an increasingly important role on the UK rail network. Barring London, the UK is behind other countries in providing information to passengers and operators. The announcement of funding for the Rail Data Marketplace is a positive step in the use of data.

#### **5. Buses**

- 5.1 Buses play a vital role in our transport network. ITS UK welcomed the Bus Back Better Strategy and the introduction of Bus Service Improvement Plans (BSIPs). However, recent Department for Transport statistics show a 19% decrease in bus vehicle miles since 2012. Declining bus usage can be reversed through a focus on growth and marketing and the use of technology to better support demand management.
- 5.2 The bus sector has a fundamental opportunity to change the business model for buses based on electrification and automation. This is where countries like Japan are focusing their efforts, and the UK has an opportunity here too, with the expertise to become a world leader. CAVForth and autonomous bus trials in Oxford provide an example of what can be done in automation.
- 5.3 The Bus Open Data Service has become a valuable resource upon which transport authorities can better plan and businesses can develop new services to support the bus network. Government should continue the roll out of digital ticketing on the bus network.
- 5.4 Support for the introduction of demand responsive transit (DRT), particularly in rural and peri-rural areas, will be vital in reducing emissions for those who would not previously have had access to public transport. Longer term funding and a larger scale of activity is required - DRT has been proven to work across the US and Europe, so action can now be taken for the larger roll out of schemes.

#### **6. Active Travel**

- 6.1 Technology can support the incentivisation of active travel. For example, through local authorities understanding how to best optimise walking routes to encourage the public to use them. Continued support for local authorities is needed to ensure they are utilising this data

optimally. This can support travel management, giving the public greater choice, and encouraging them to stay active, thereby lowering costs for the health service.

- 6.2 The gamification of active travel has been shown to be an effective way to promote healthy travel options. A number of businesses are developing new apps and tools that, through working with local authorities, can support behaviour change to encourage people to walk and cycle more.

## **7. Integrated transport**

- 7.1 The greater integration of transport modes will support a better user experience. It will support Mobility as a Service providers, making it easier to travel using any form of public and private transport, without having to own assets like a car, bike or scooter.
- 7.2 Helping local and sub national transport authorities better integrate their transport systems will be essential in delivering a modern, future-ready network. In particular, Government should look to roll out further Future Transport Zones, which are working to deliver intelligent mobility in the West of England, Solent and Derby and Nottingham.
- 7.3 As well as the roll out of Future Transport Zones to support MaaS regionally, the Government should look to establish a national plan for MaaS that sets out the framework for the private sector to then be able to develop products for the travelling public. The UK risks falling behind on the development of MaaS, with other countries making greater strides in recent years.

**Intelligent Transport Systems UK**  
**February 2023**